



ADAMS COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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608-267-2488



ADAMS COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 3.4% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 53.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 69.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 30.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 24.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 18.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.7 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 74.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 3 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS ADAMS COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **3.4%**

CHILDHOOD LEAD POISONING

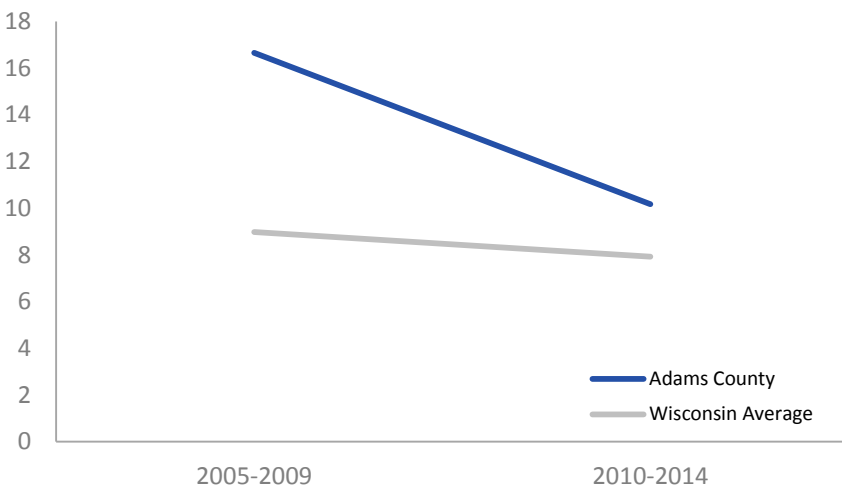
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS ADAMS COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

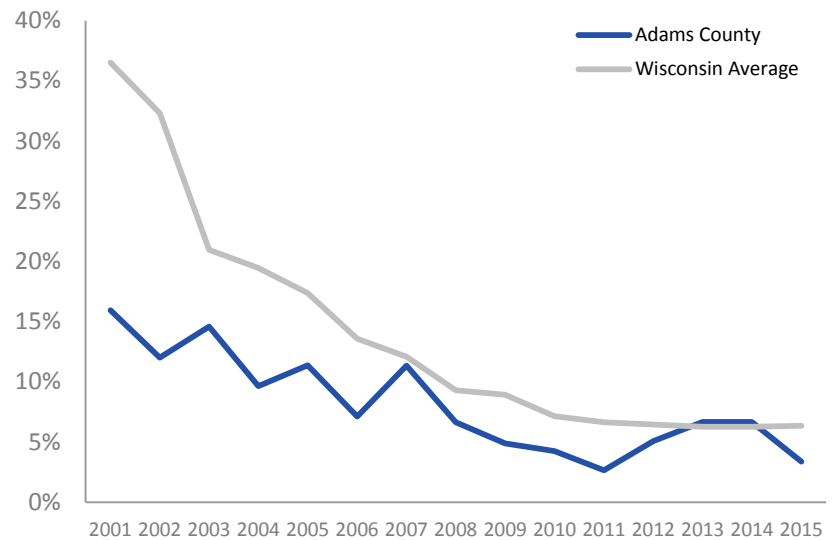
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

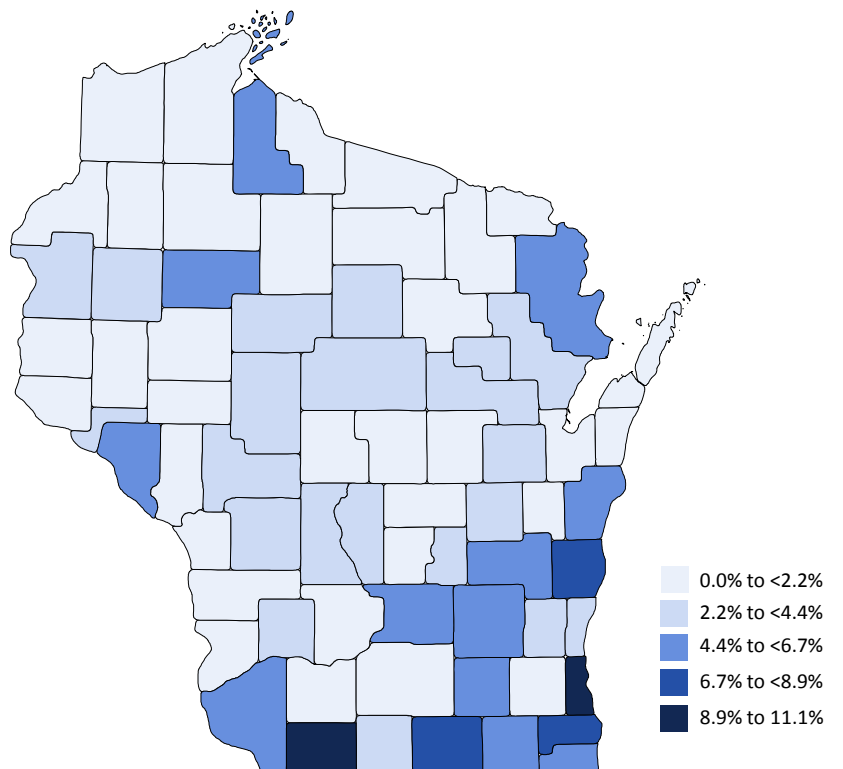
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE ADAMS COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

53.9

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

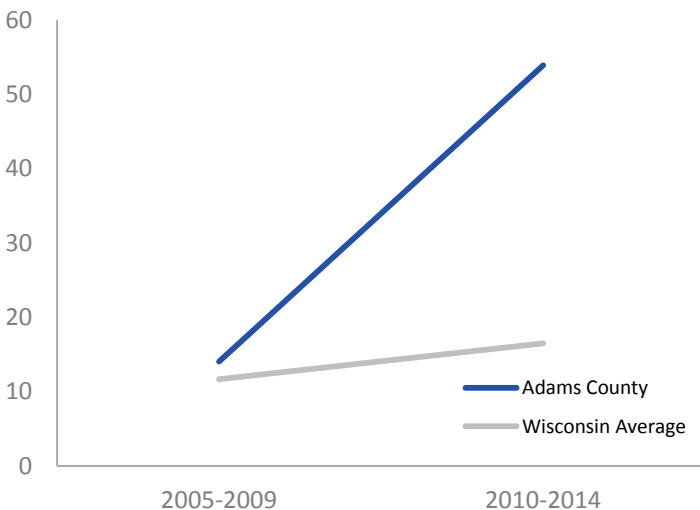
69.5

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

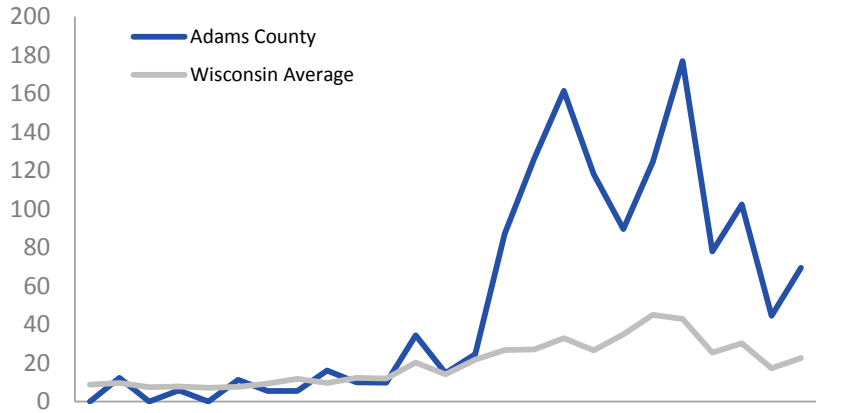
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

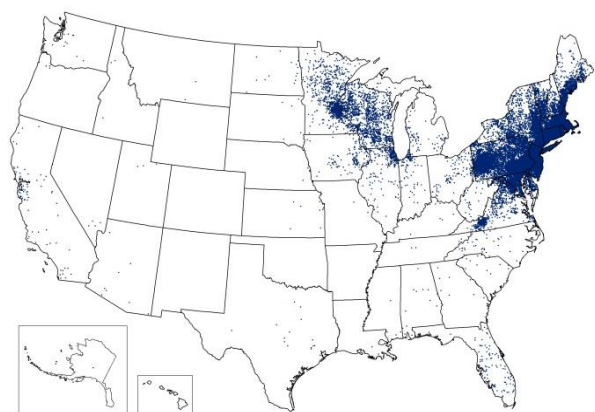
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES ADAMS COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **30.9**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **24.4**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

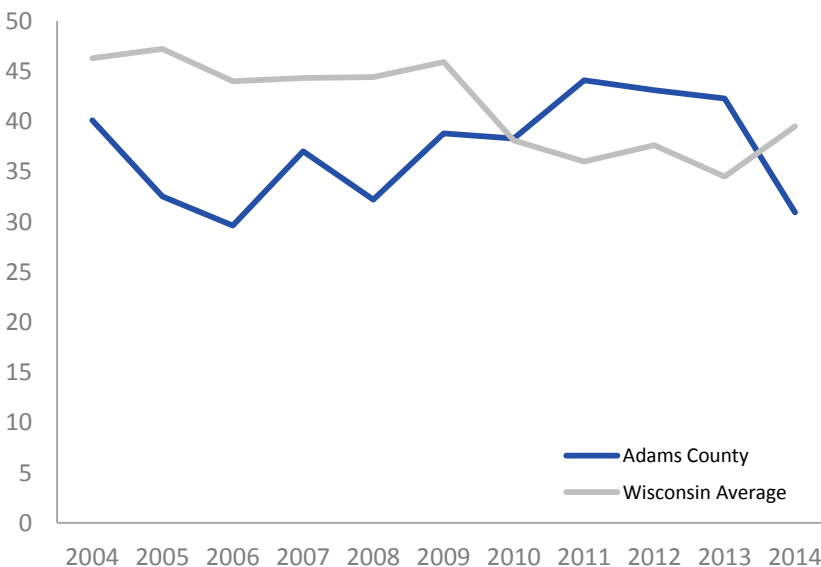
⚠ **85.7**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **18.2**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

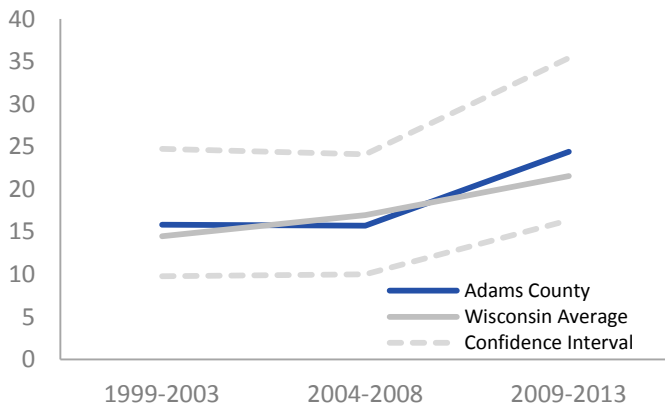
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

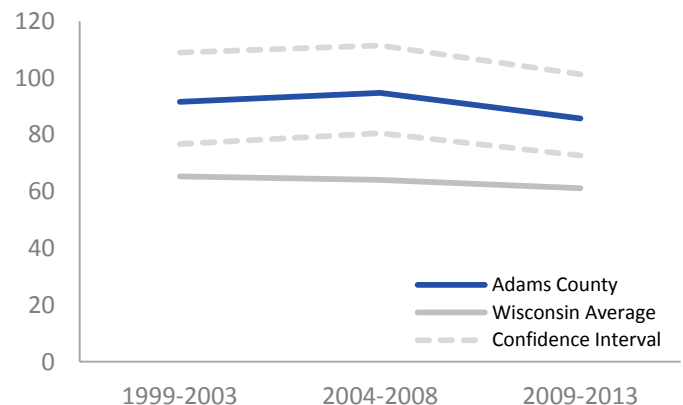
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

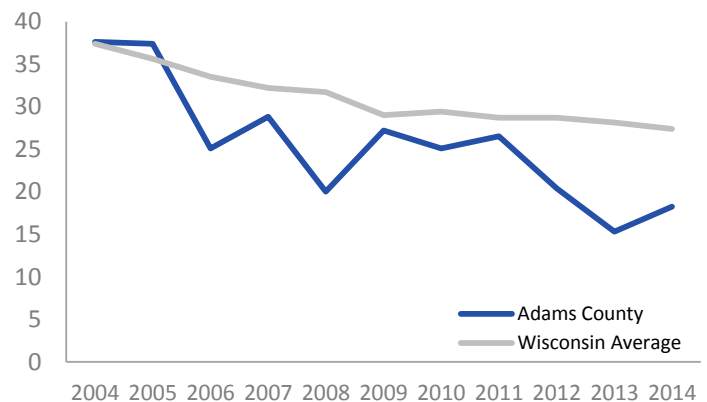
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY ADAMS COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

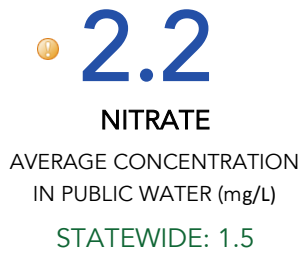
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

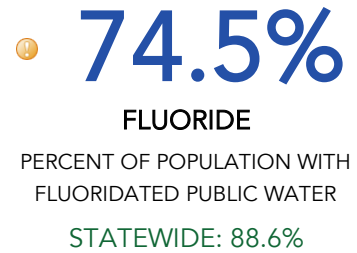
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



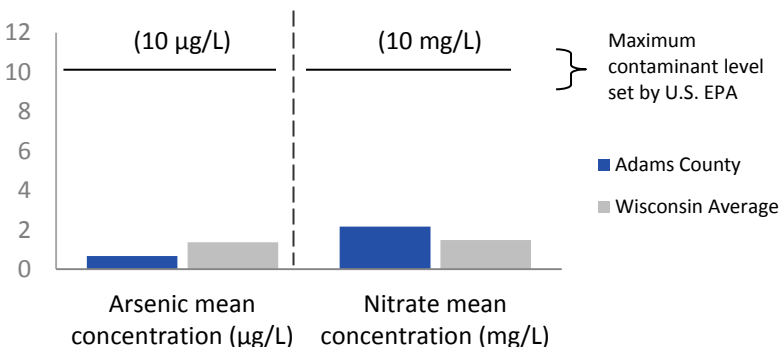
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY ADAMS COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

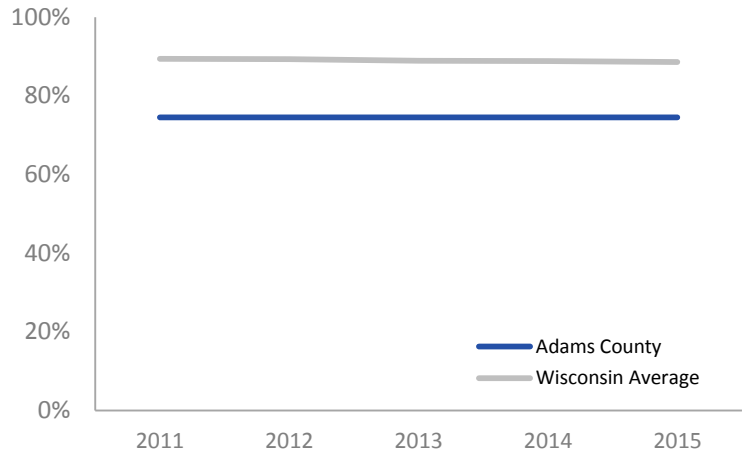
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

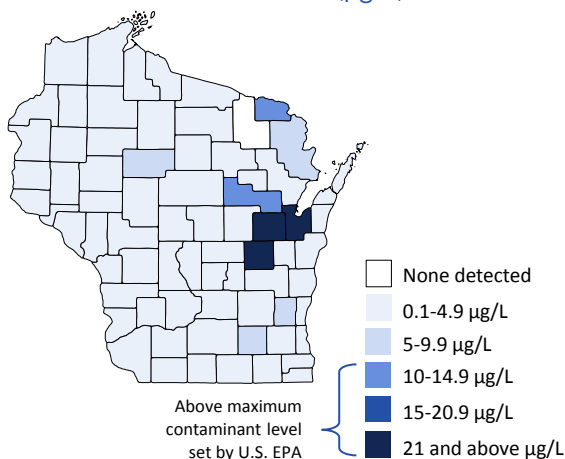
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

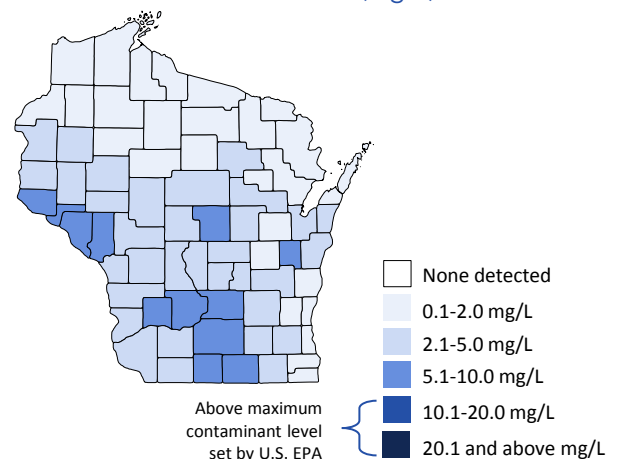
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY ADAMS COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



3

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



9.3

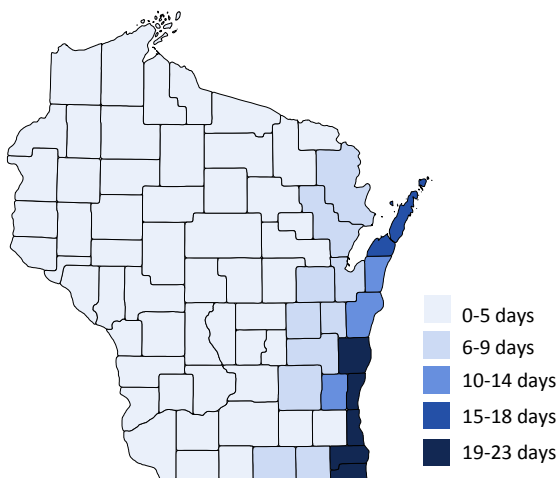
PARTICULATE MATTER 2.5

ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

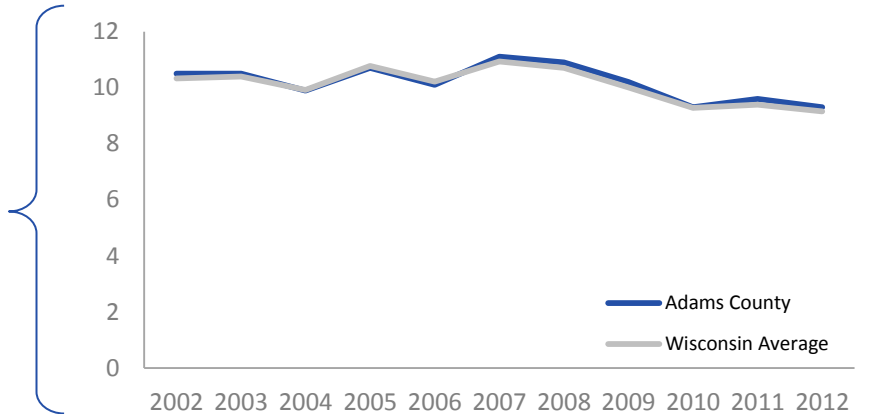


AIR QUALITY ADAMS COUNTY

PARTICULATE MATTER 2.5

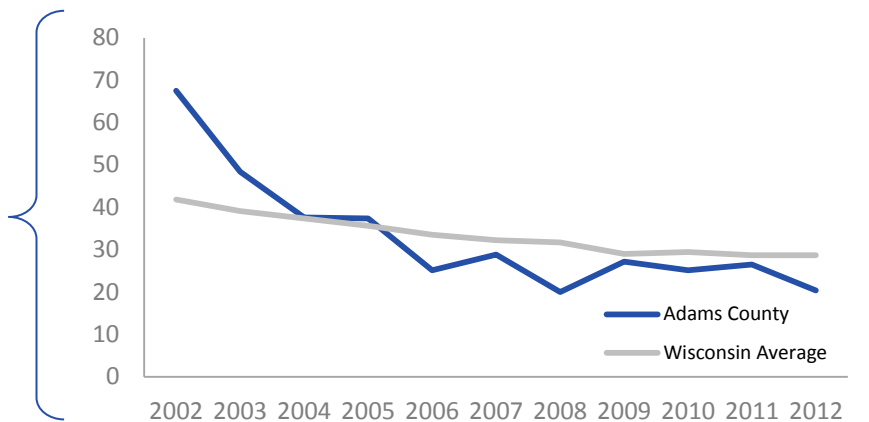
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



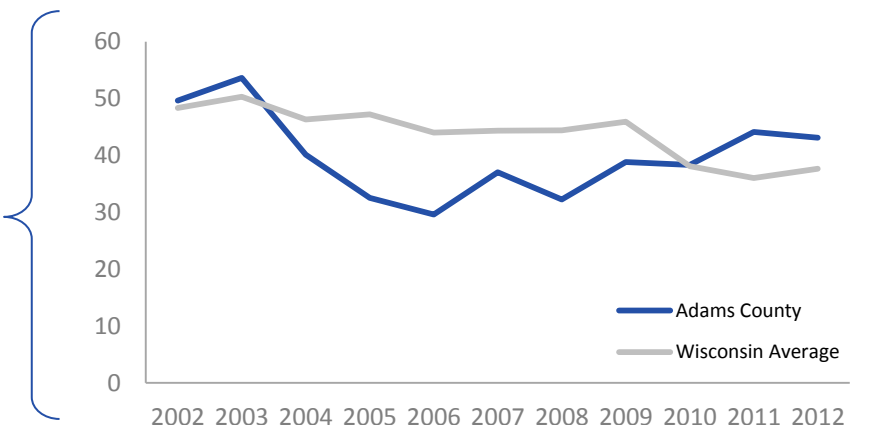
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



ASHLAND COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



ASHLAND COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 4.8% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.8 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 29.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 113.6 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 31.7 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 13.1 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 50.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.0 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 89.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS ASHLAND COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **10.8**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **4.8%**

CHILDHOOD LEAD POISONING

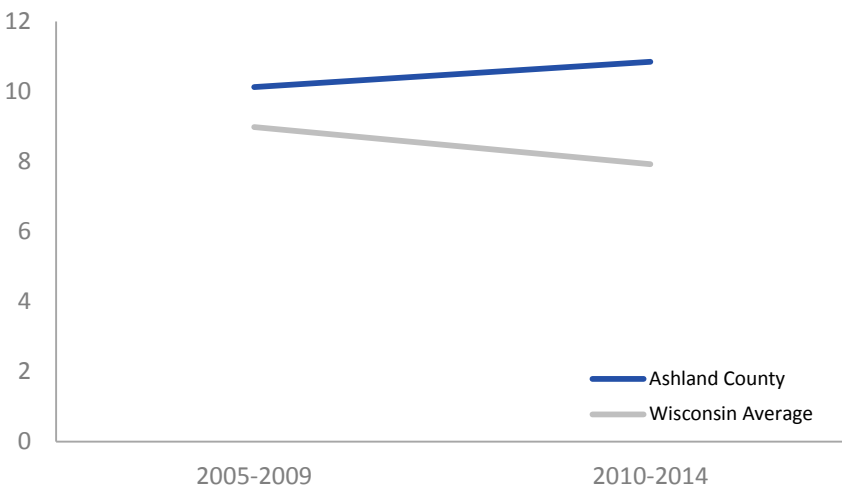
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS ASHLAND COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

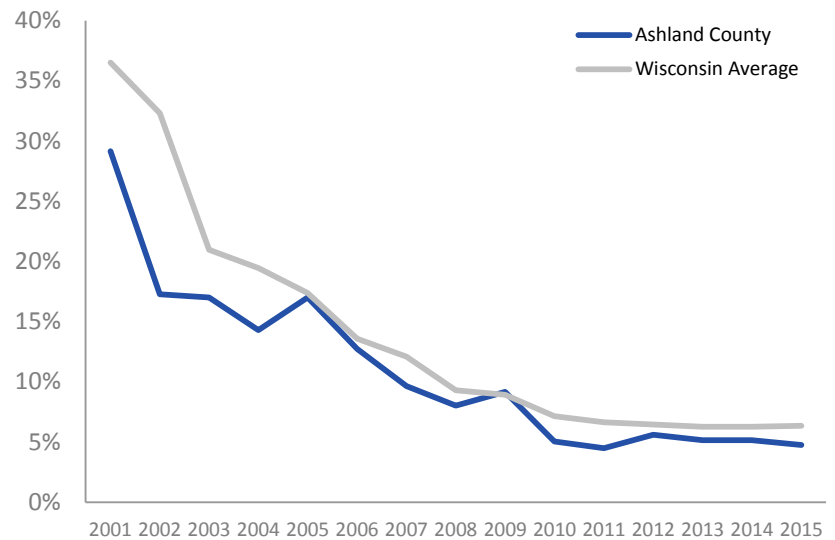
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

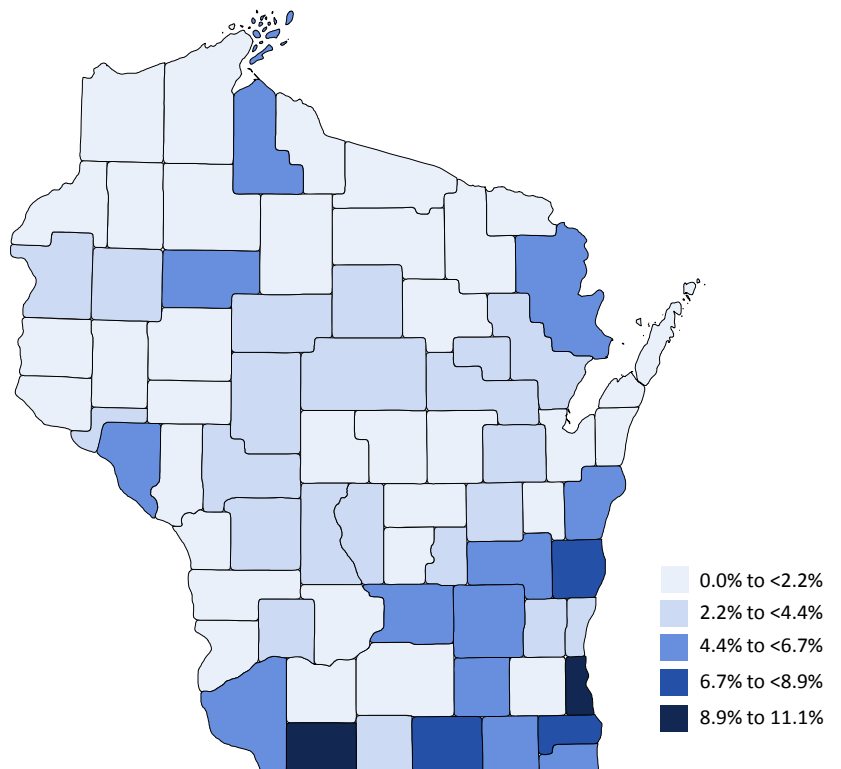
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE ASHLAND COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

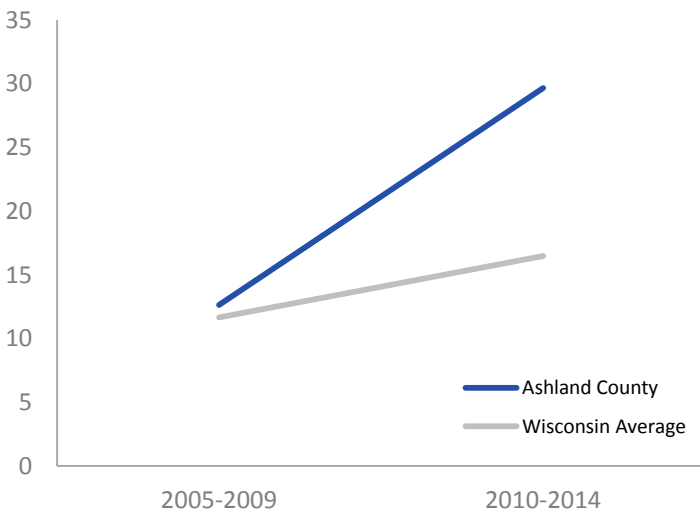
29.7
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

113.6
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

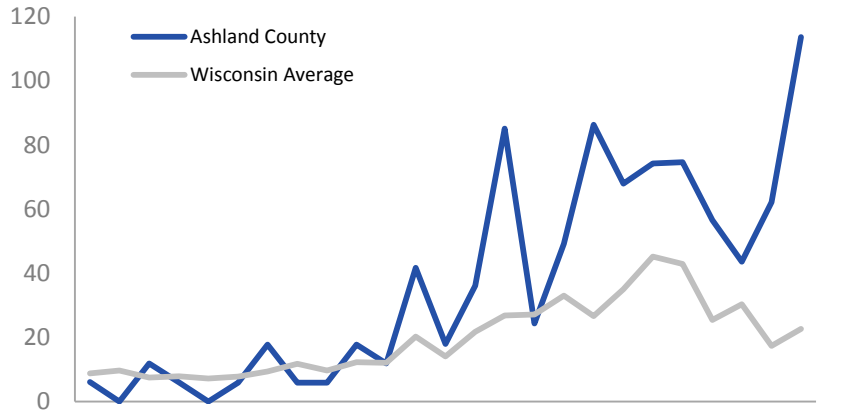
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE

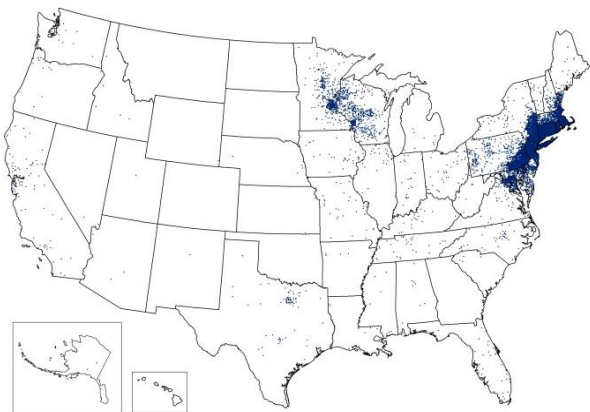


1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

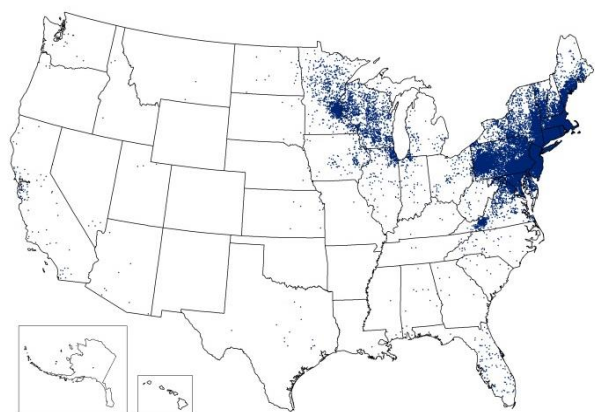
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

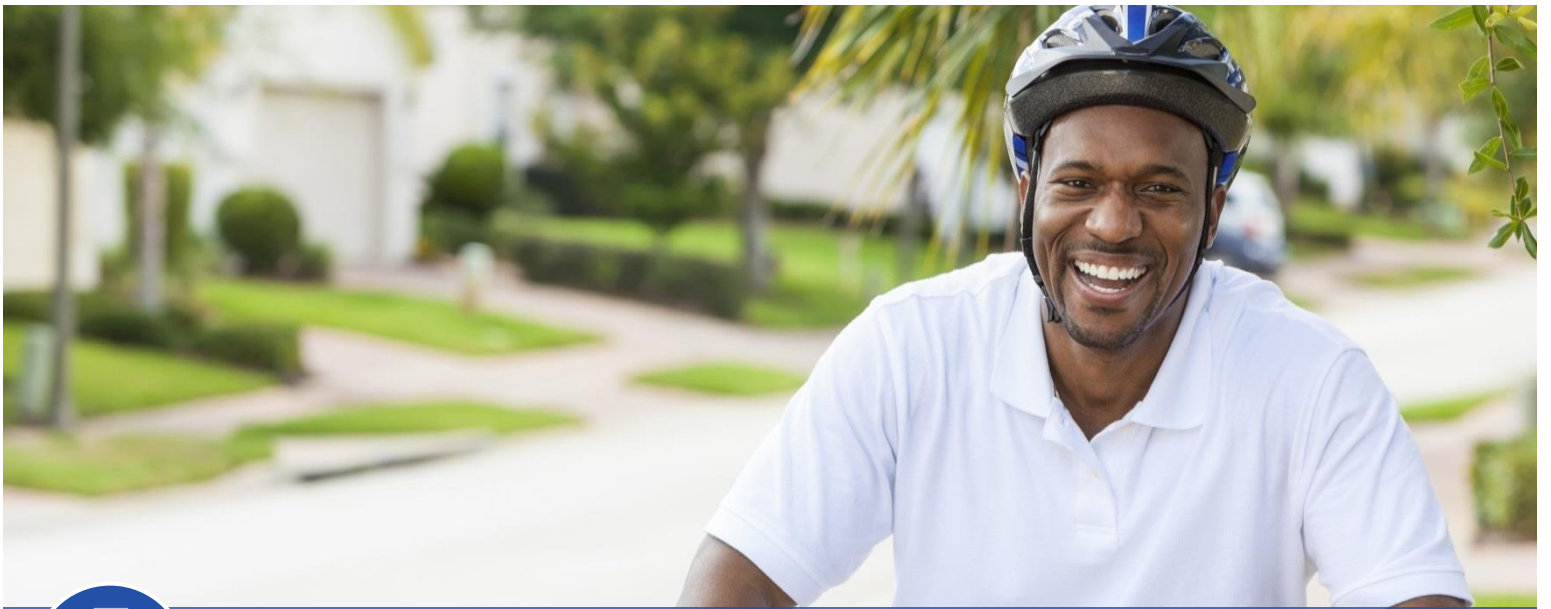


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES ASHLAND COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **31.7**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **13.1**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

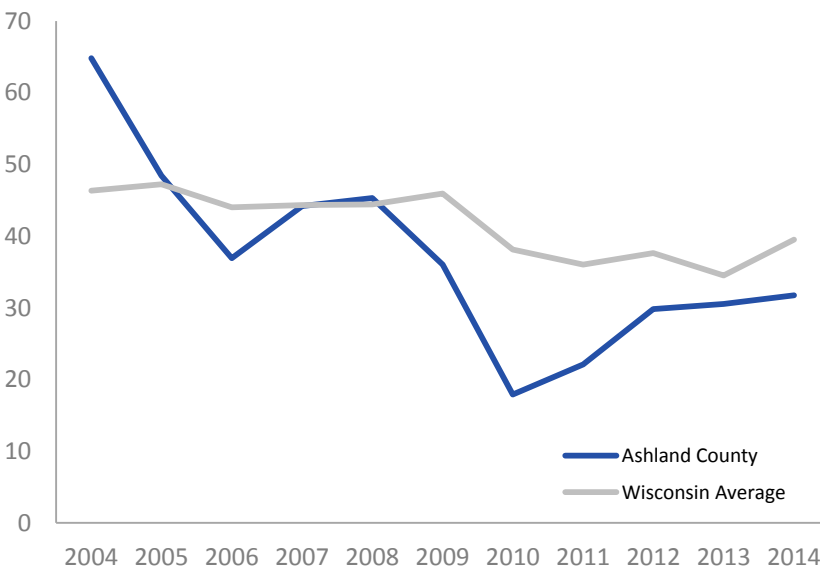
⚠ **71.4**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **50.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

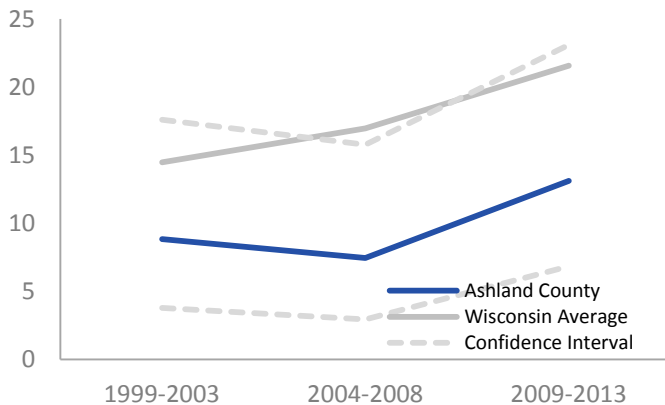
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

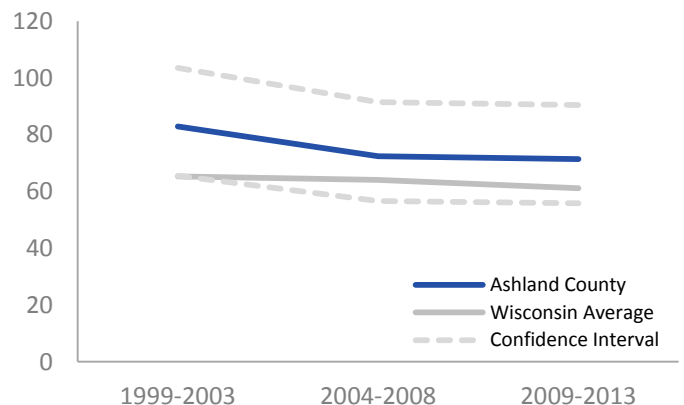
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

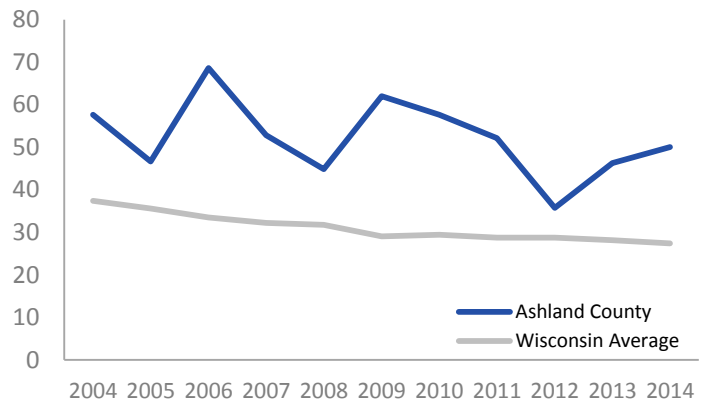
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY ASHLAND COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

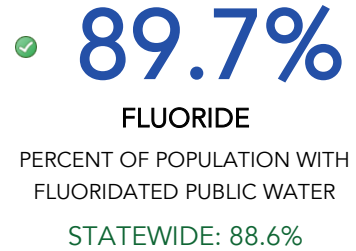
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



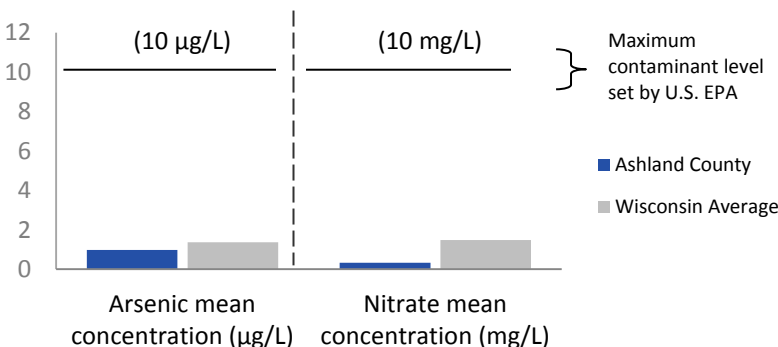
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY ASHLAND COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

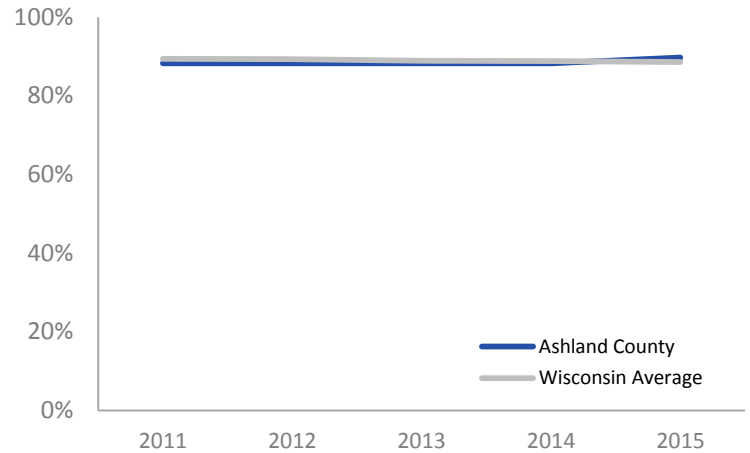
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

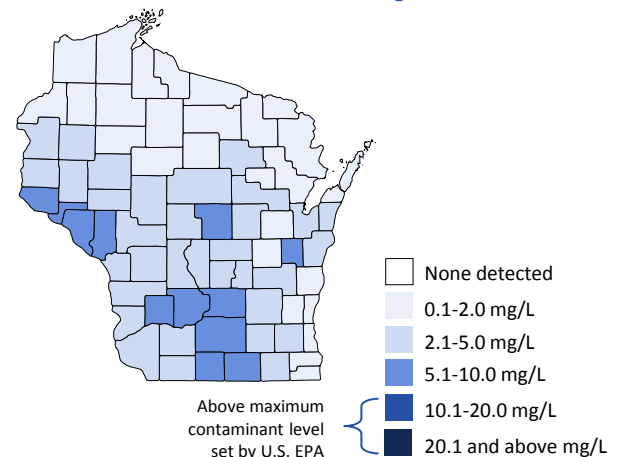
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



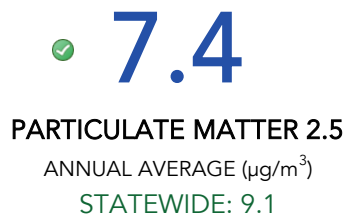
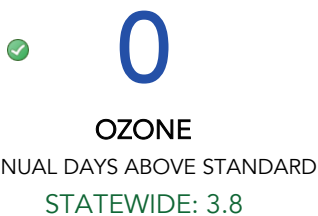


AIR QUALITY ASHLAND COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

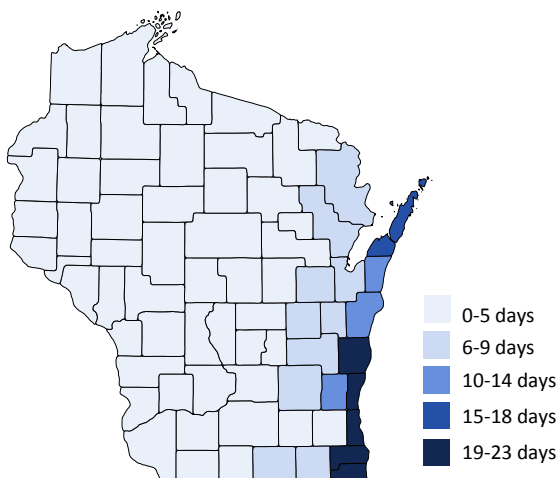
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

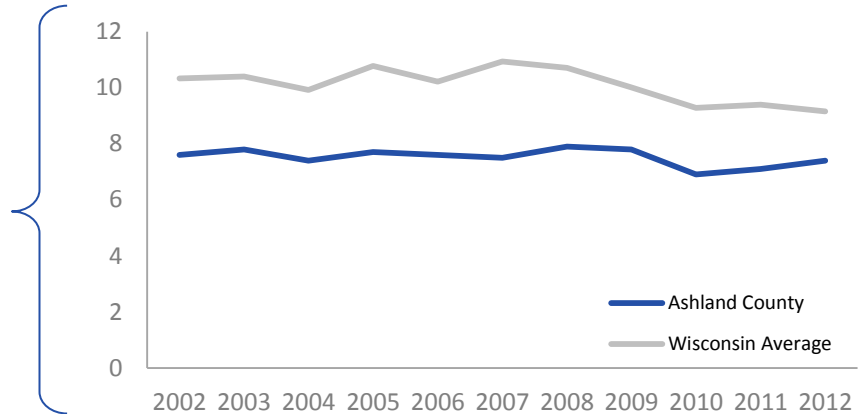


AIR QUALITY ASHLAND COUNTY

PARTICULATE MATTER 2.5

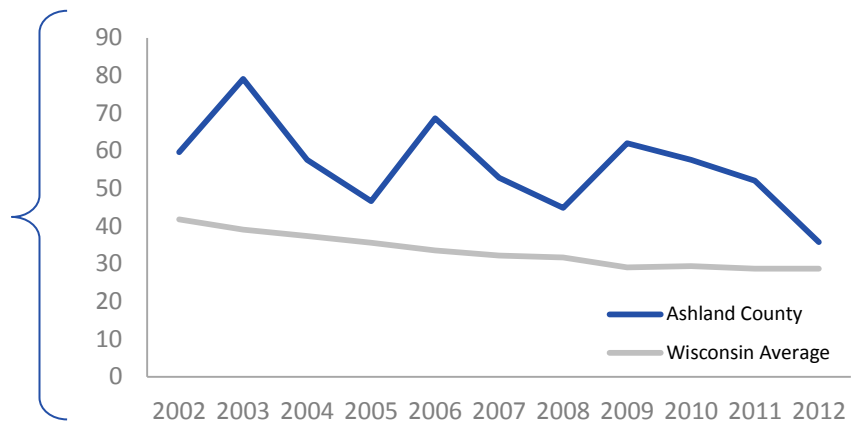
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



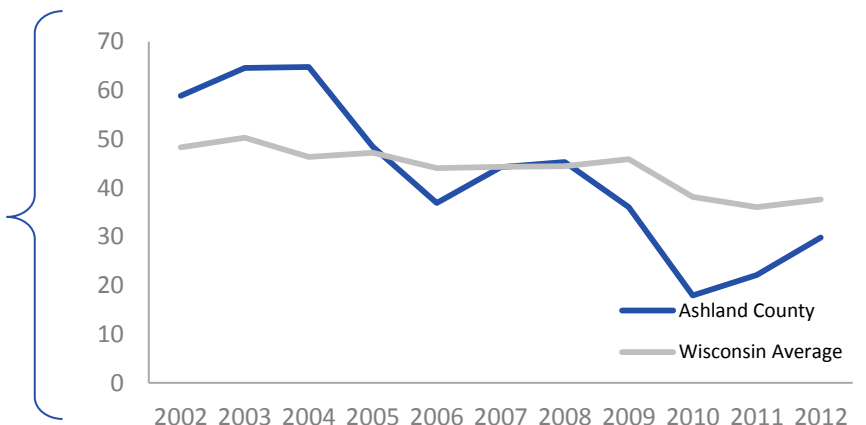
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



BARRON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BARRON COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.4% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 23.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 120.7 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 44.7 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 18.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 31.9 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.9 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 1.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 40.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS BARRON COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **8.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.4%**

CHILDHOOD LEAD POISONING

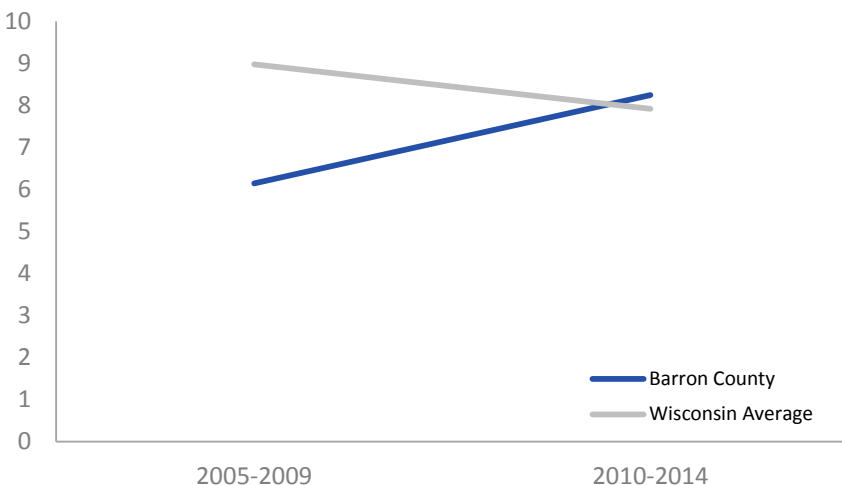
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS BARRON COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

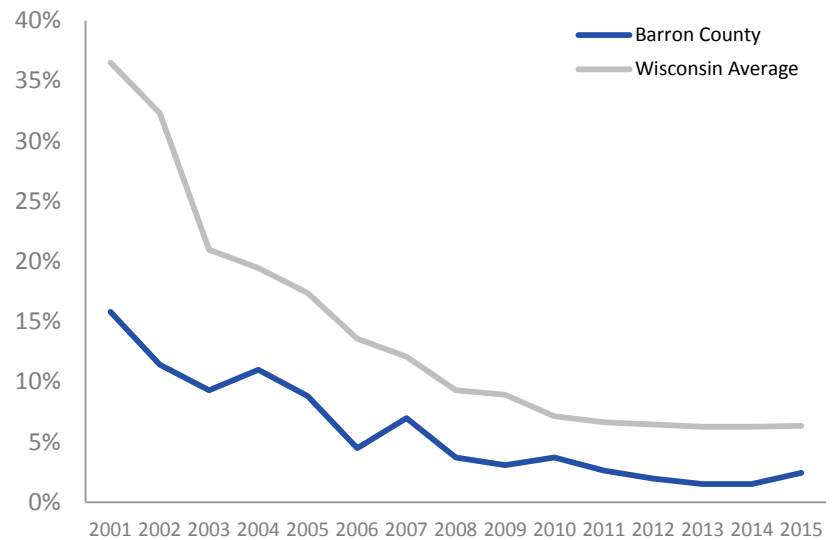
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

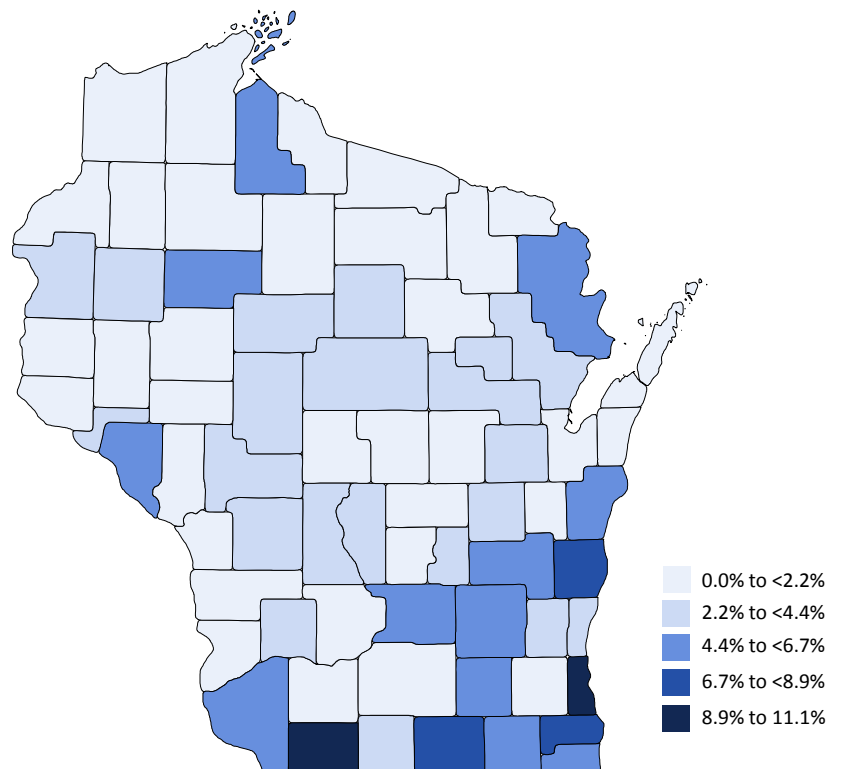
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE BARRON COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

23.9

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

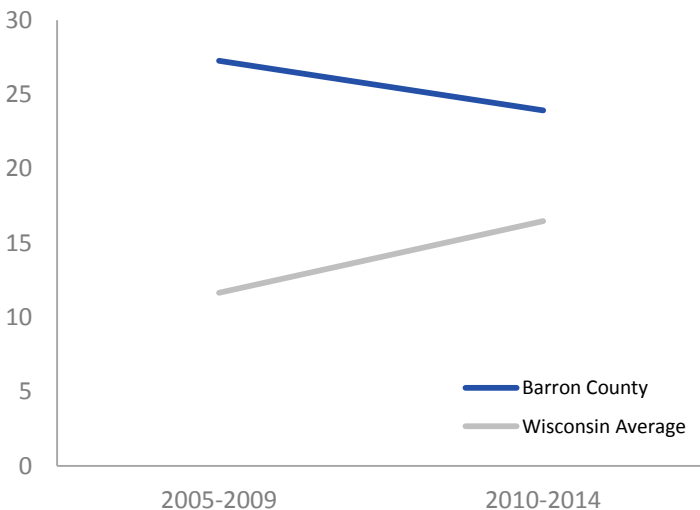
120.7

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

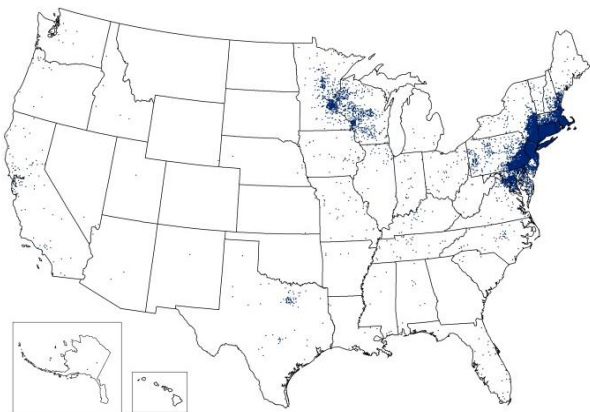
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

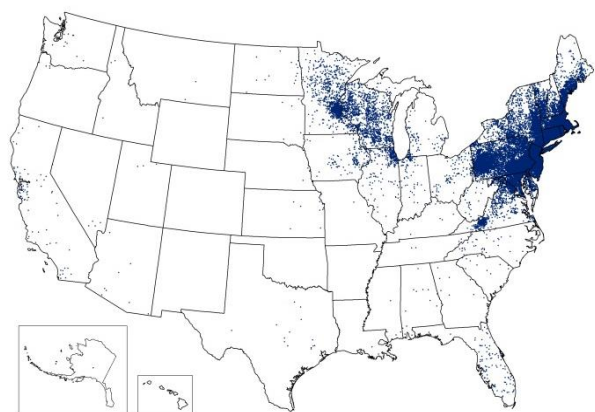
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

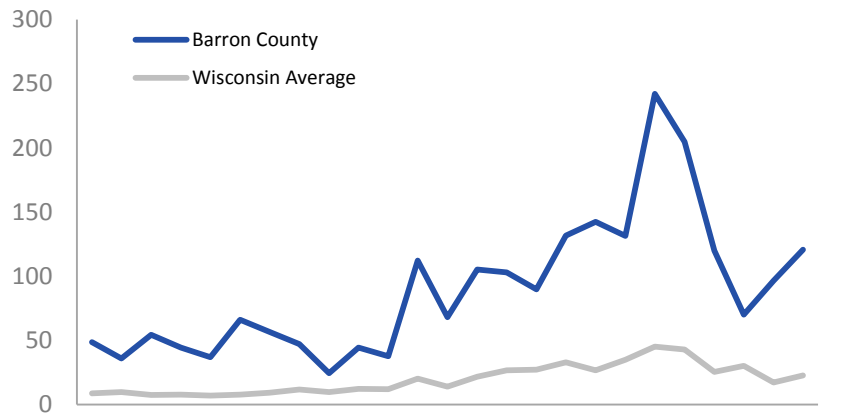


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES

BARRON COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

44.7
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

18.0
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

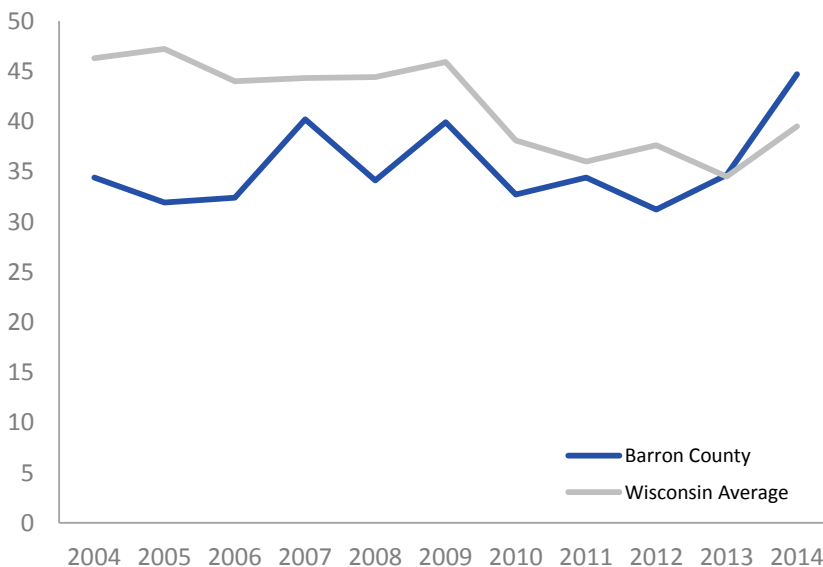
58.9
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

31.9
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

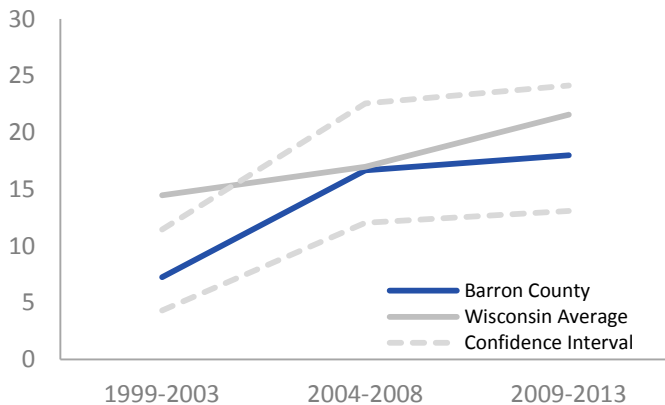
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

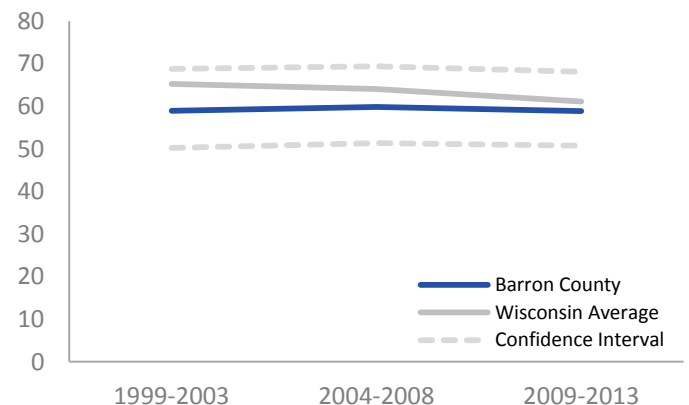
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

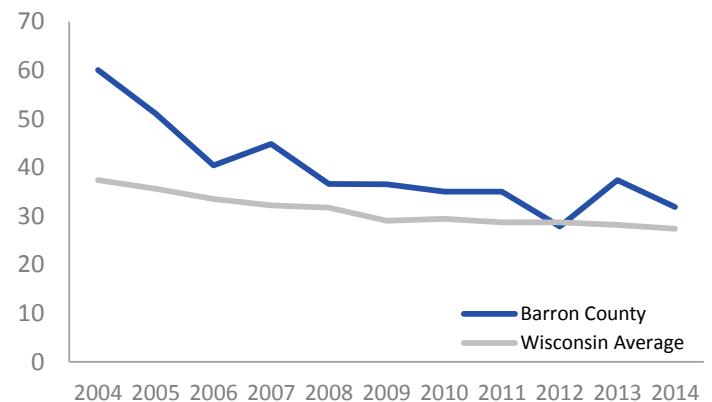
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY BARRON COUNTY

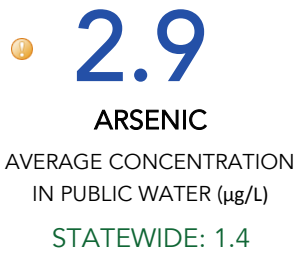
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

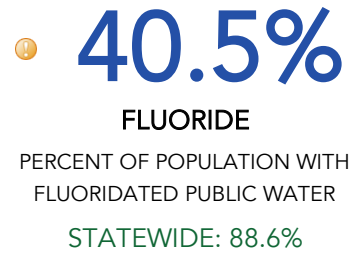
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



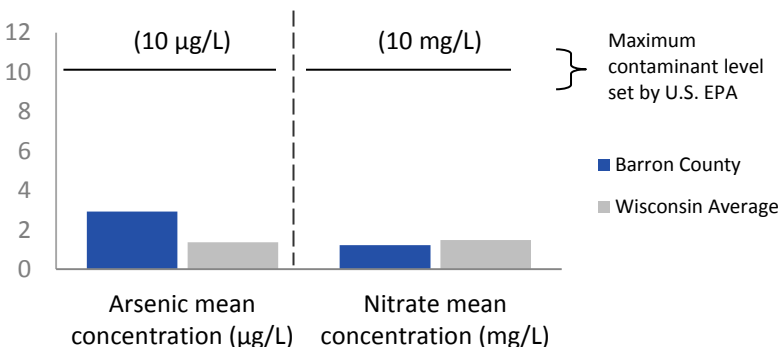
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY BARRON COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

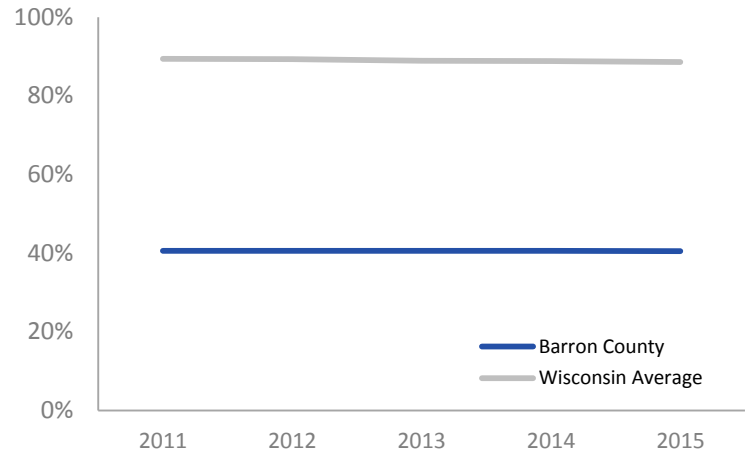
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

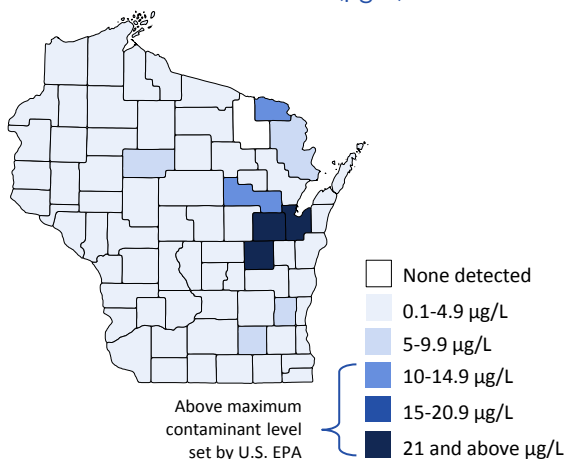
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

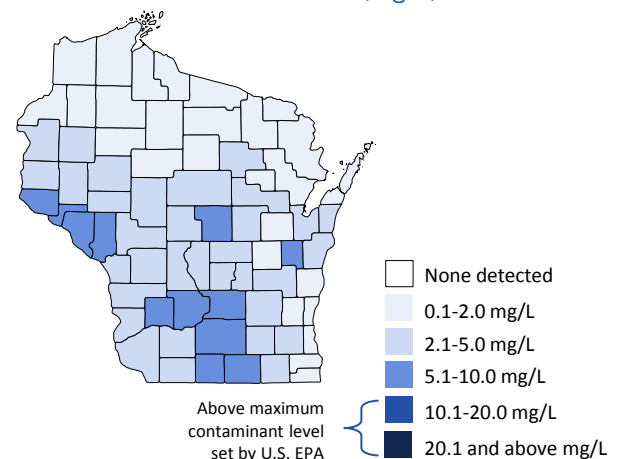
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



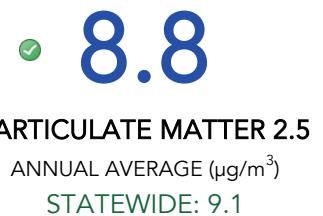


AIR QUALITY BARRON COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

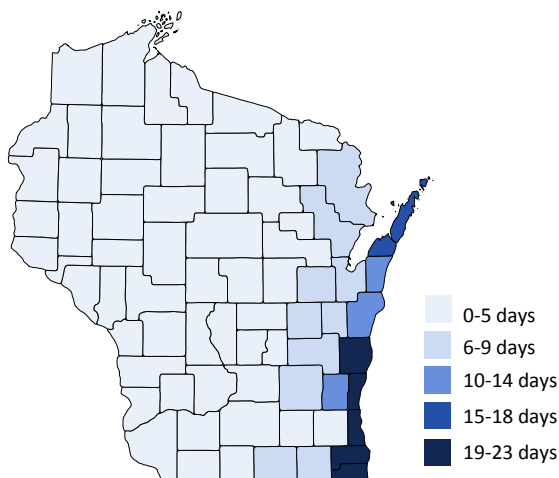
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✔ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

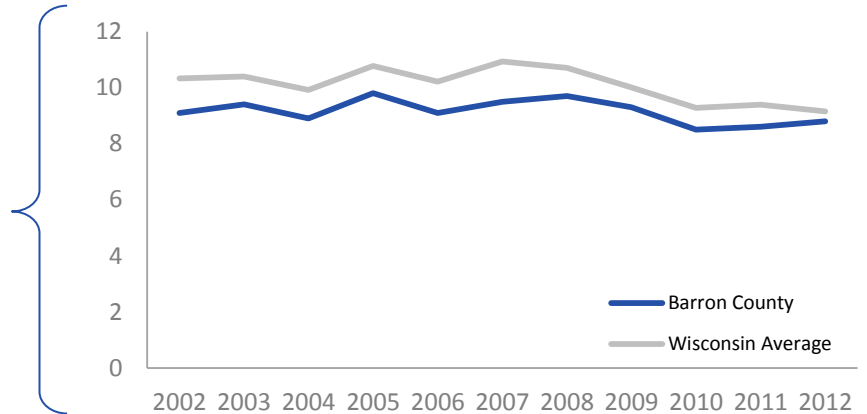
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

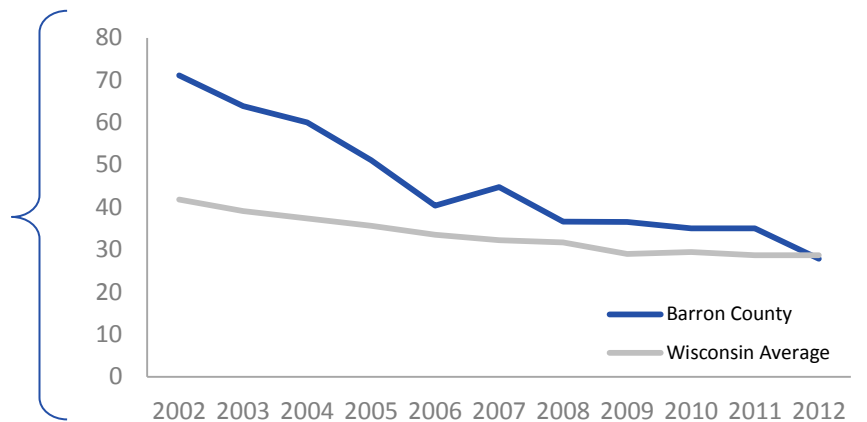
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



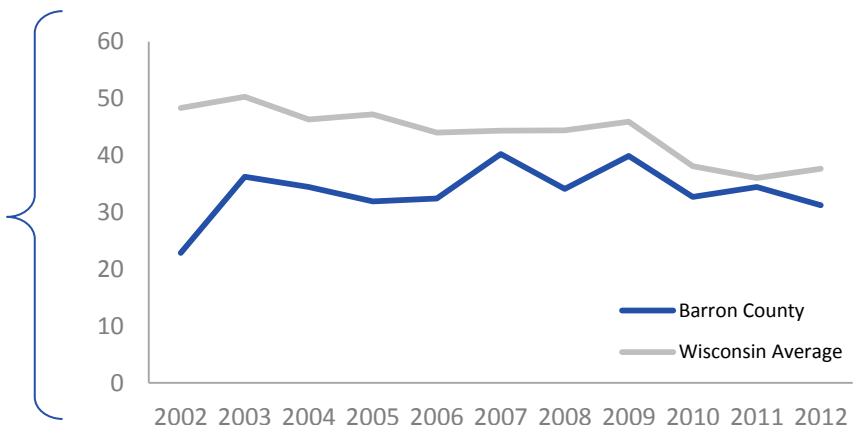
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



BAYFIELD COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BAYFIELD COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.4% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 14.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 12.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 80.1 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 32.4 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 16.9 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 29.6 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.8 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS BAYFIELD COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **14.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.4%**

CHILDHOOD LEAD POISONING

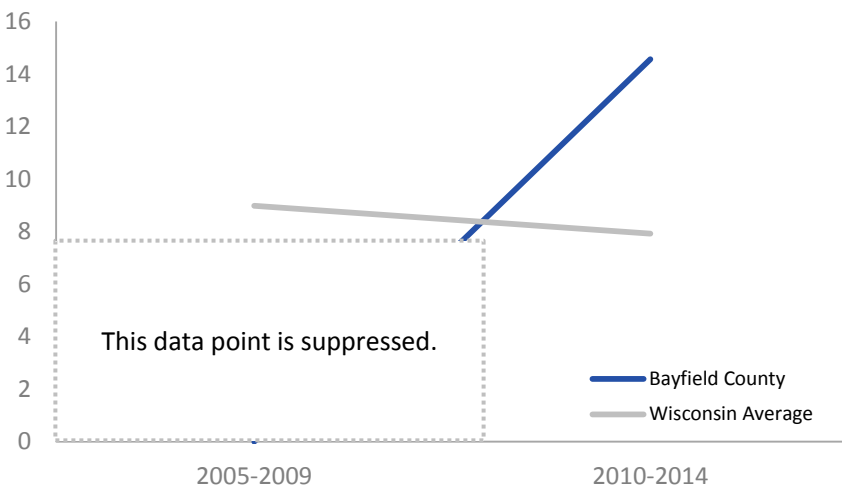
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS BAYFIELD COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

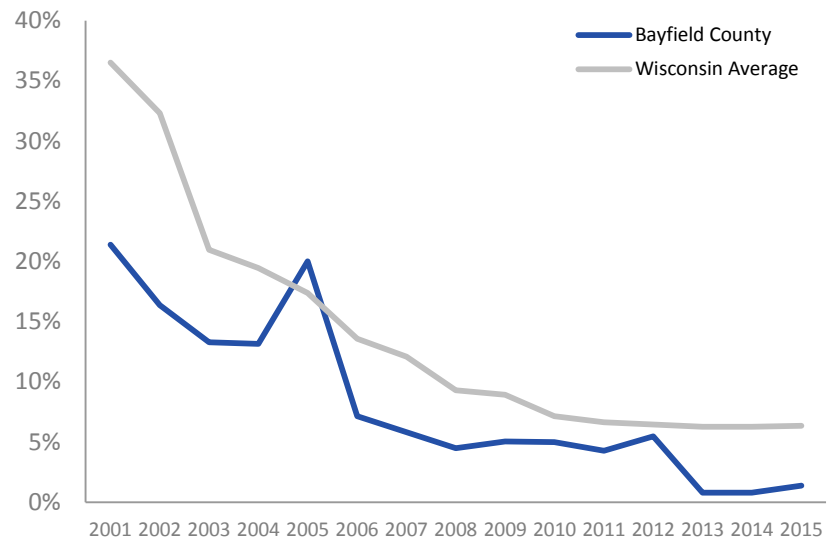
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

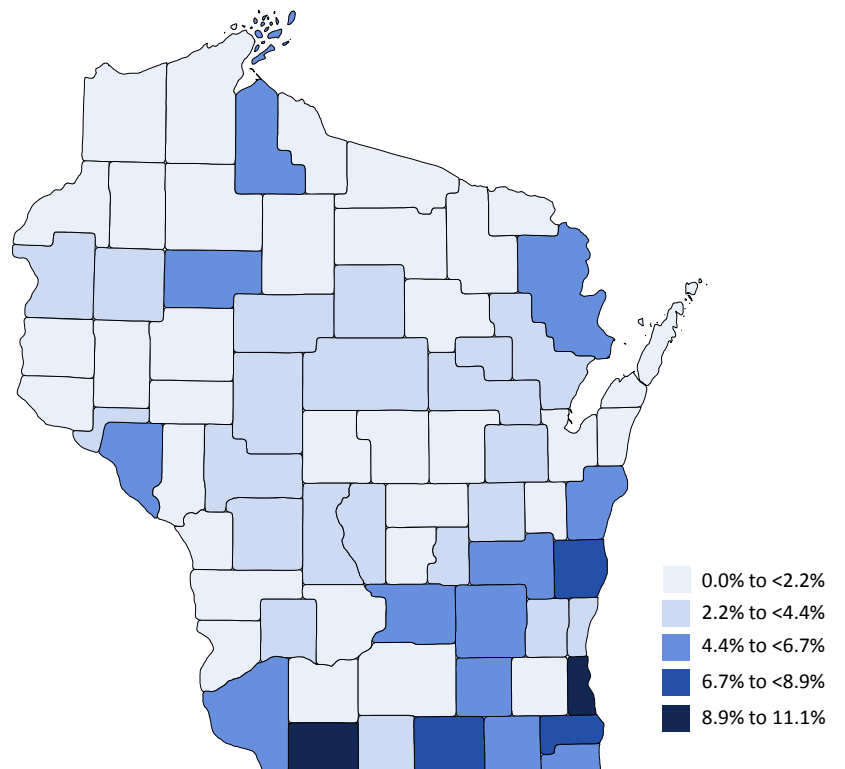
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE BAYFIELD COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

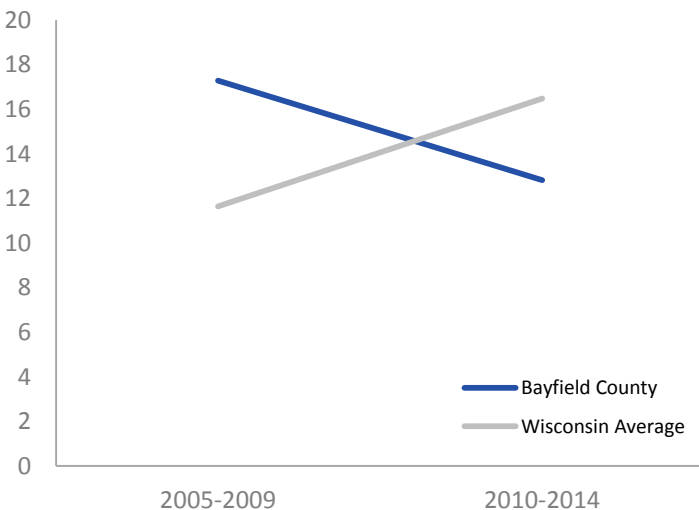
✓ **12.8**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

⚠ **80.1**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

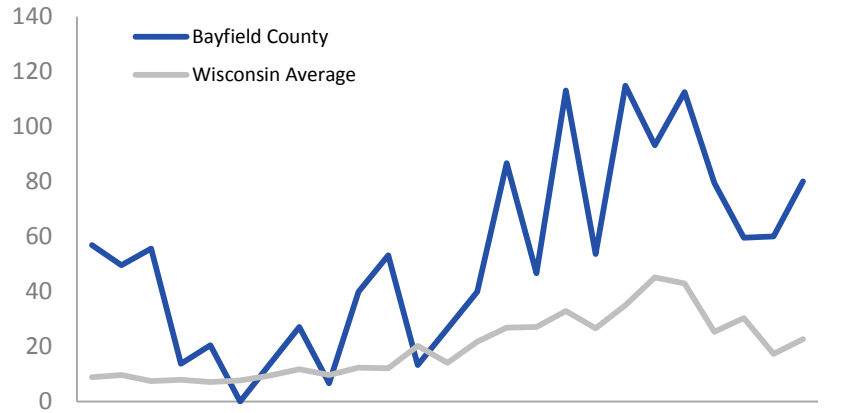
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE

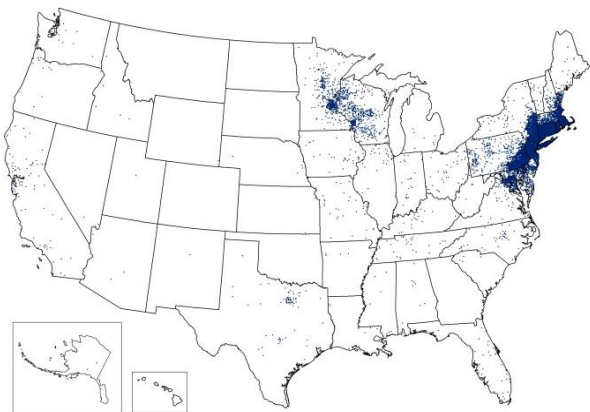


1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

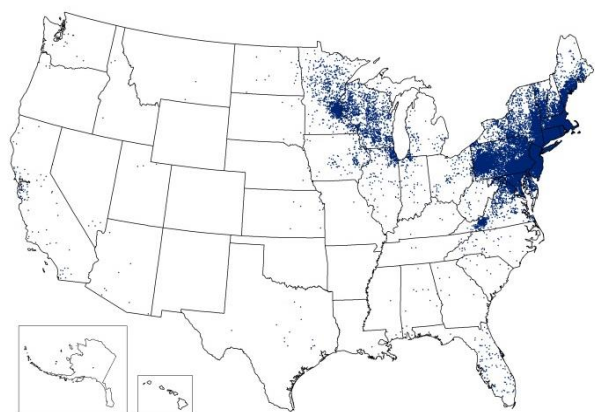
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

BAYFIELD COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **32.4**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

✓ **16.9**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

✓ **54.8**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

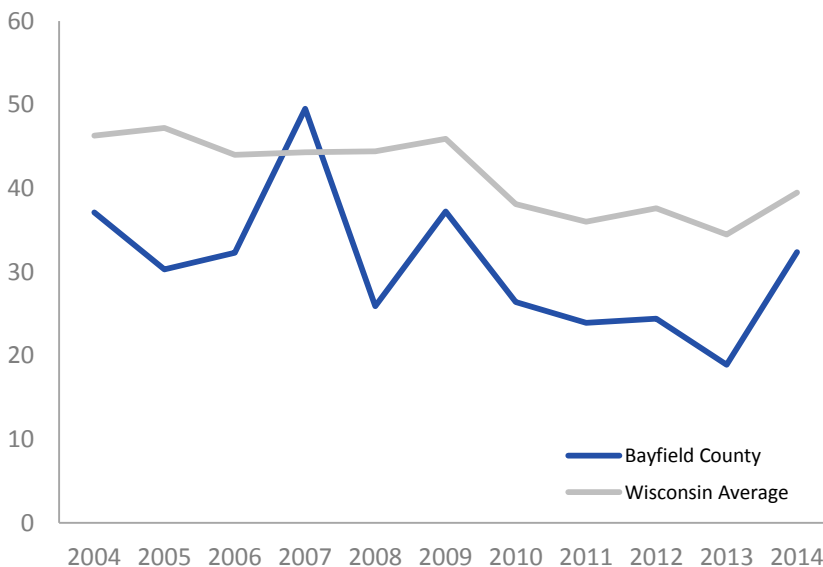
⚠ **29.6**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

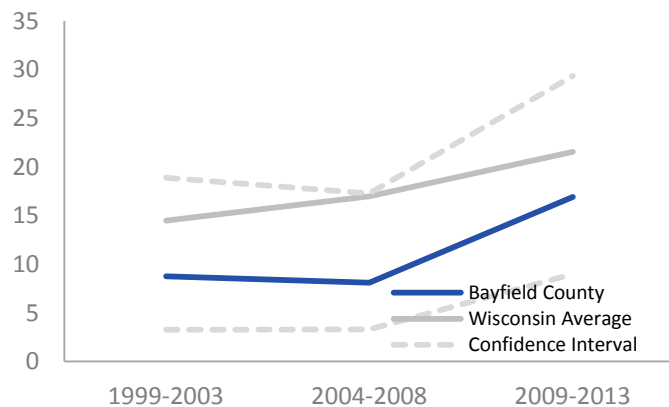
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

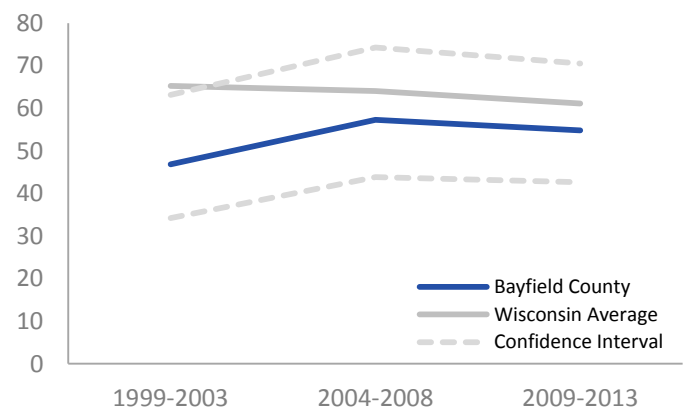
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

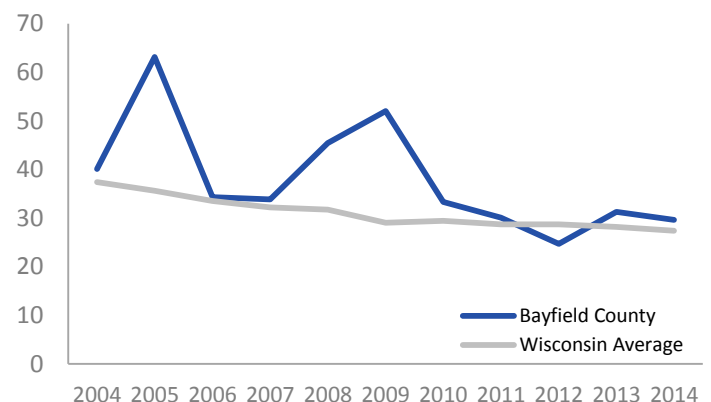
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY BAYFIELD COUNTY

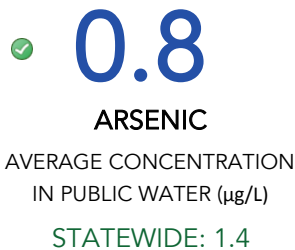
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

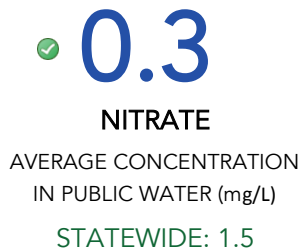
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

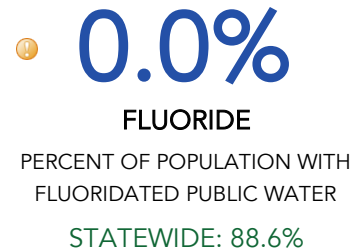
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



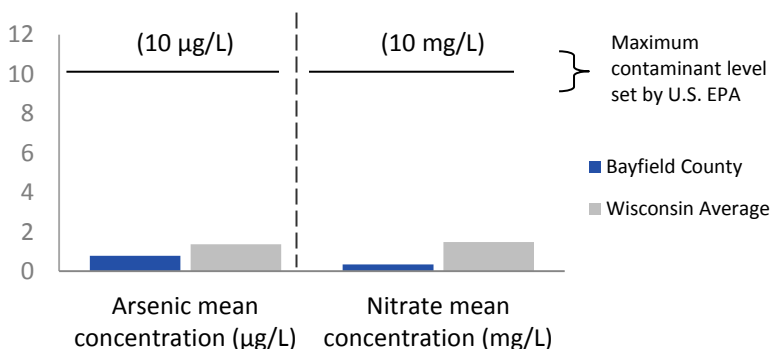
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY BAYFIELD COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

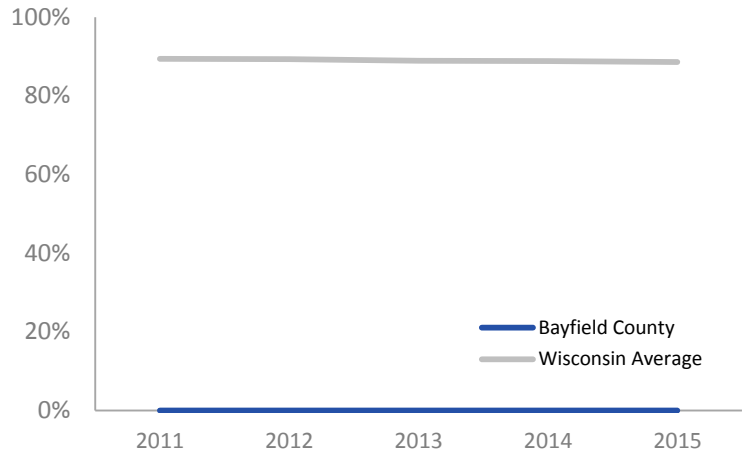
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

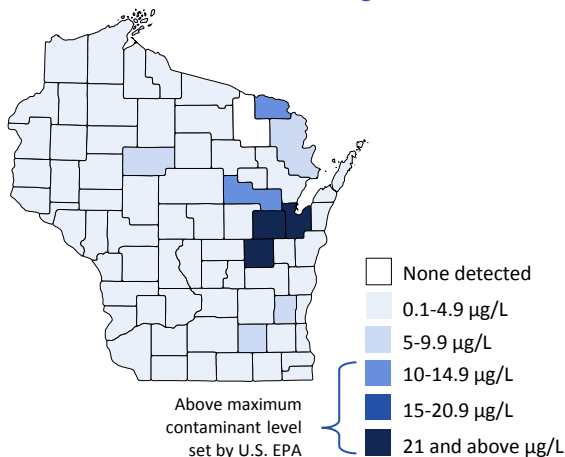
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

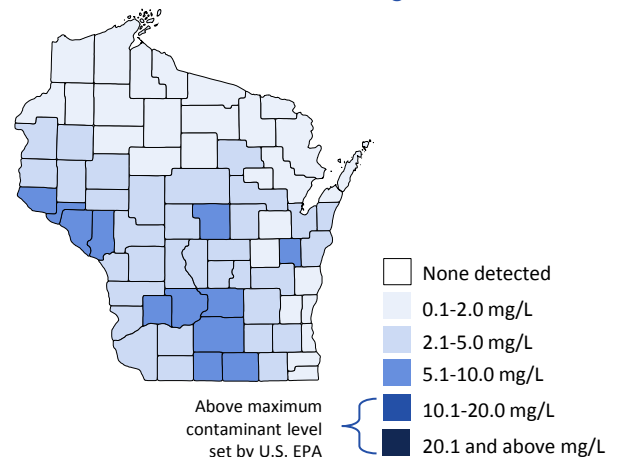
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



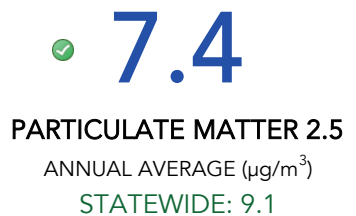


AIR QUALITY BAYFIELD COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

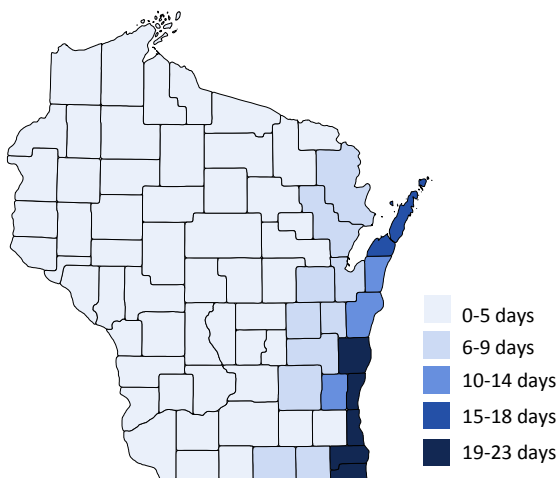
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✔ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

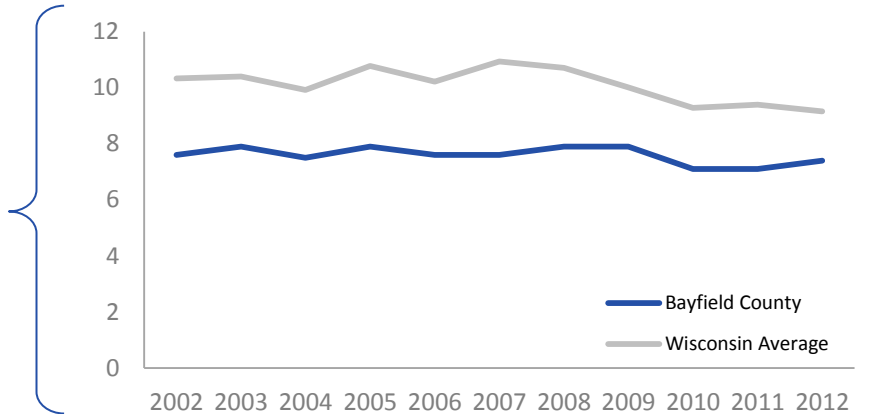
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

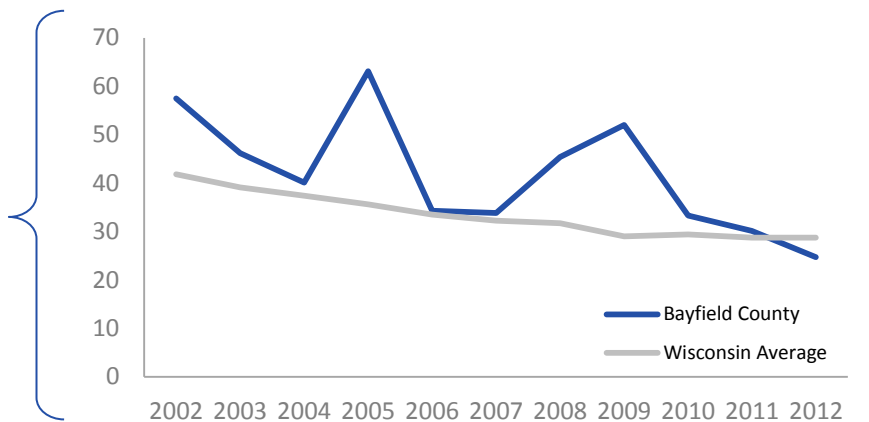
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



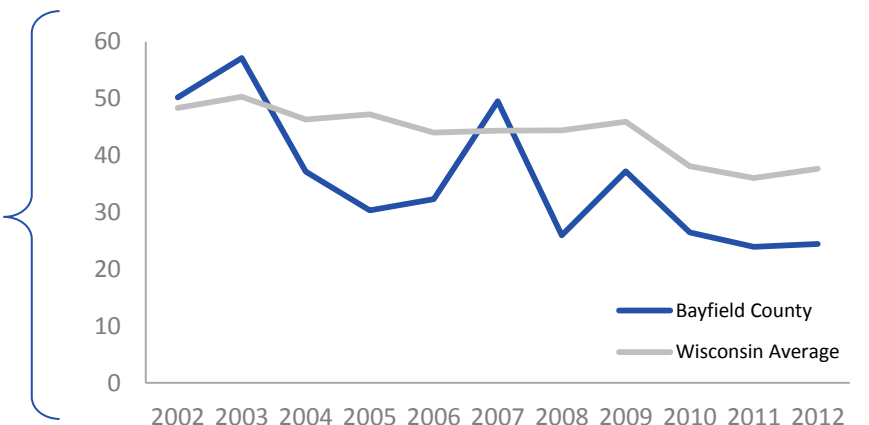
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



BROWN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BROWN COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.5% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.0 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 19.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 11.6 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 39.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 31.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 29.1 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.9 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.1 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 96.4% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 7 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 2 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS BROWN COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.0**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.5%**

CHILDHOOD LEAD POISONING

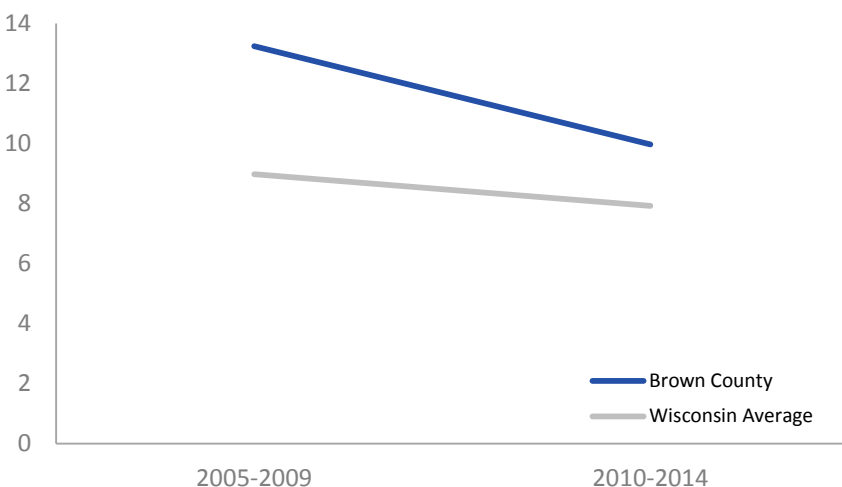
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS BROWN COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

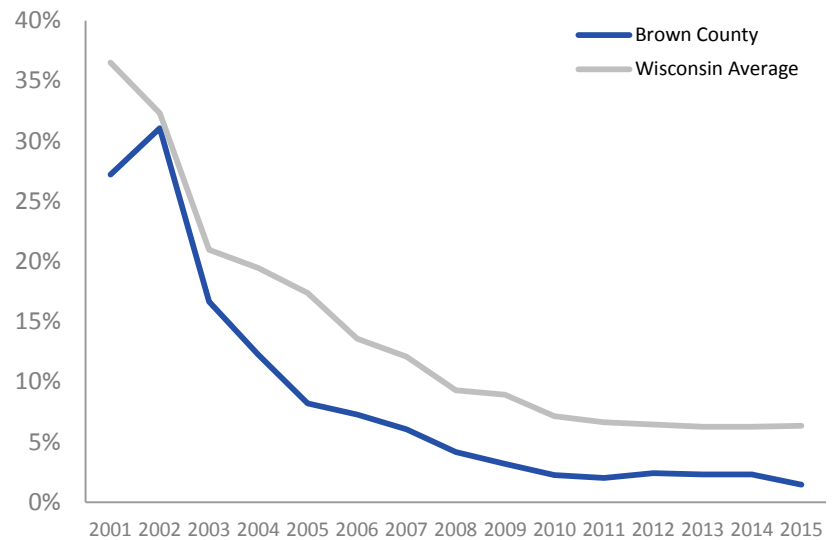
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

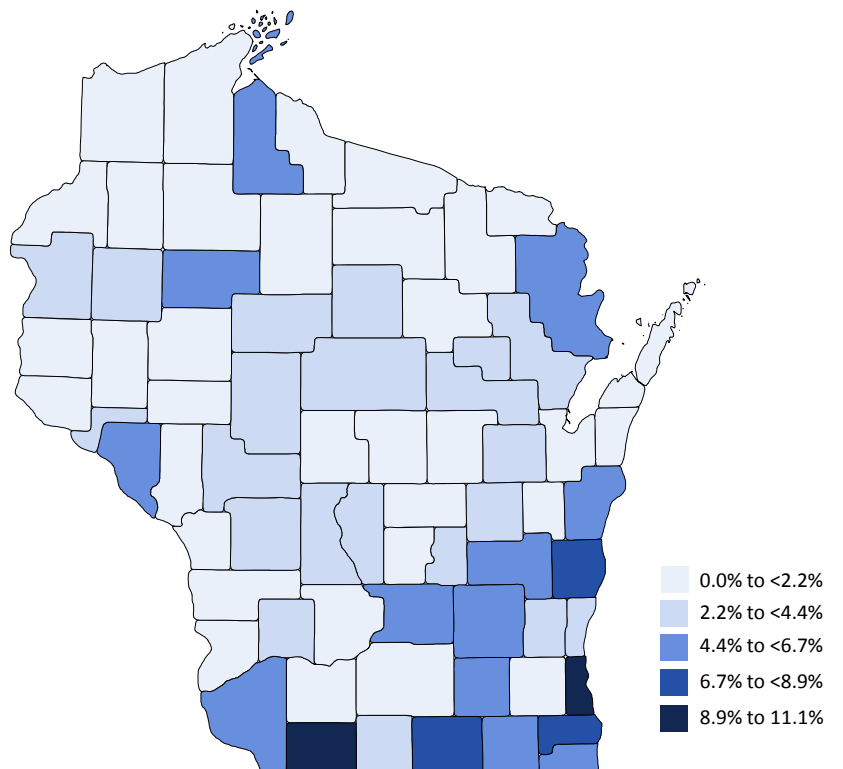
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE BROWN COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

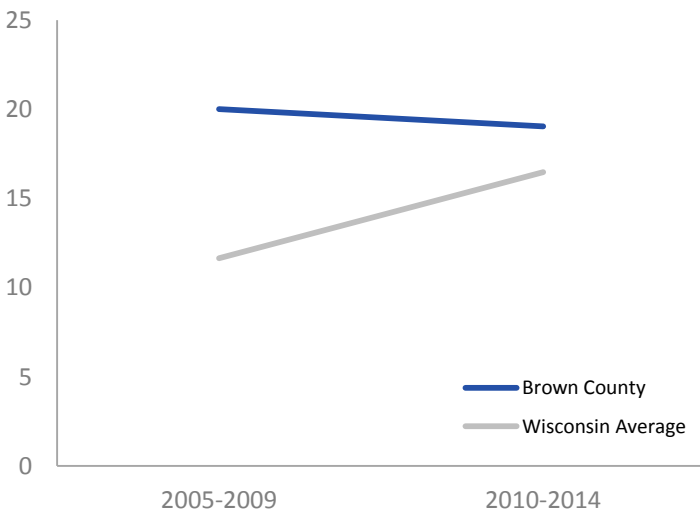
⚠️ **19.0**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✅ **11.6**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠️ Above state value ✅ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

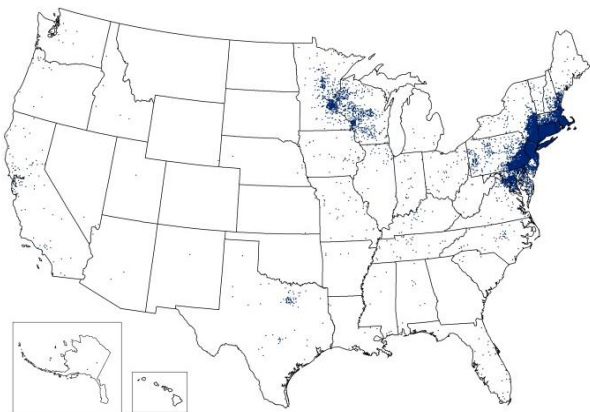
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

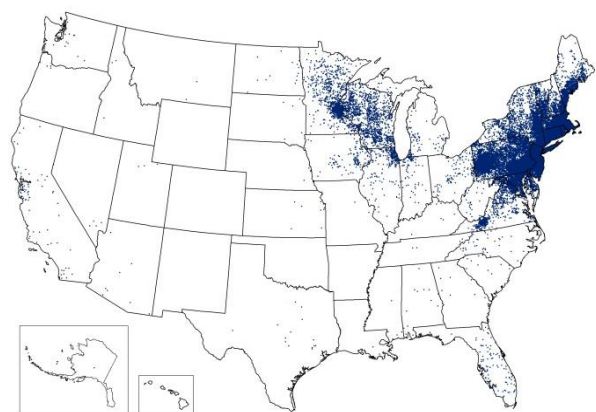
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

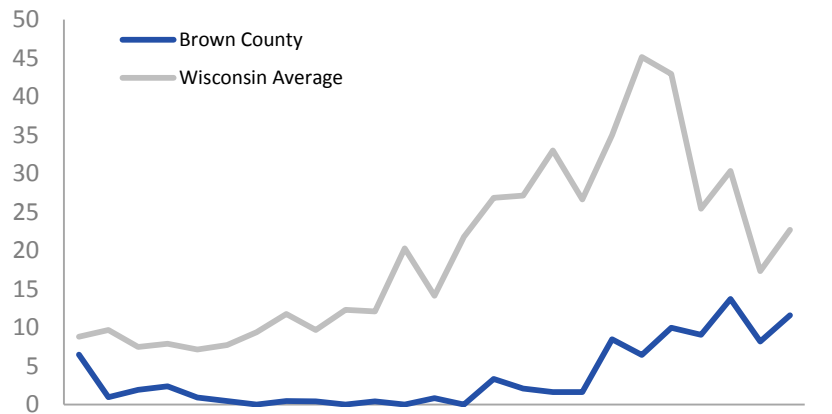


Maps courtesy of Centers for Disease Control and Prevention.

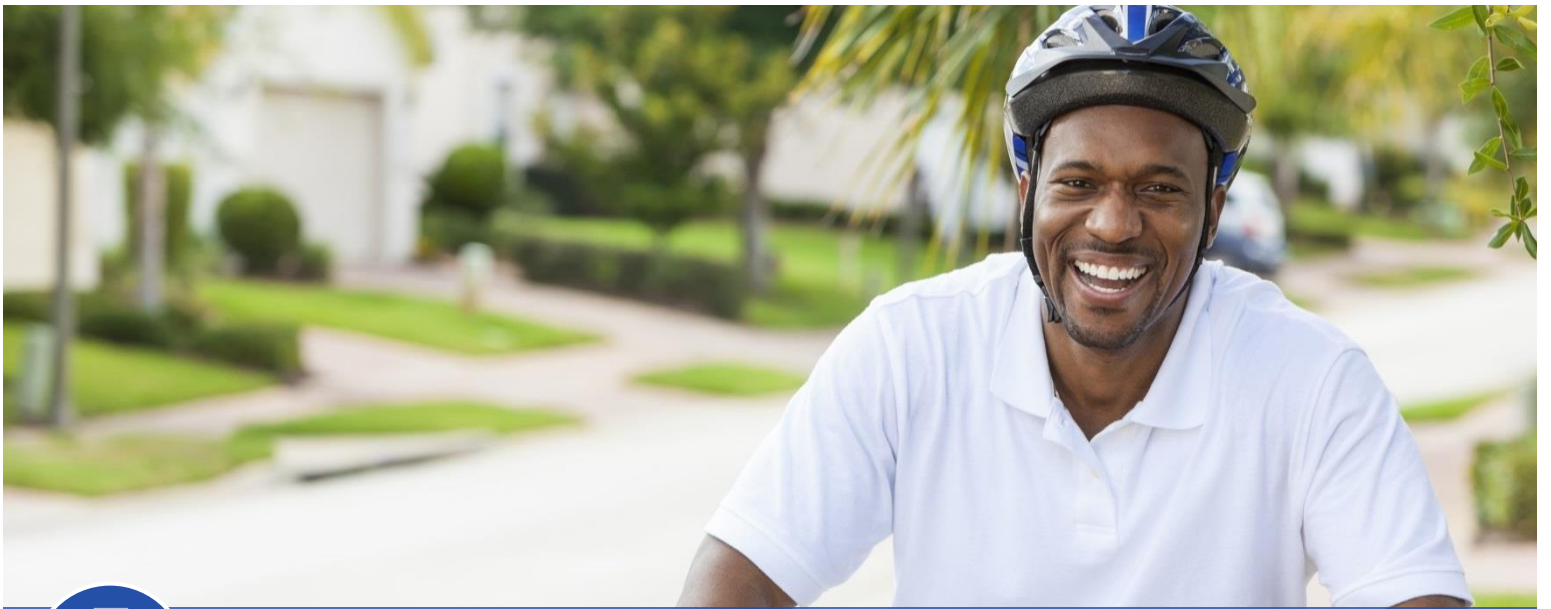
Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES BROWN COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **39.1**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **31.8**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

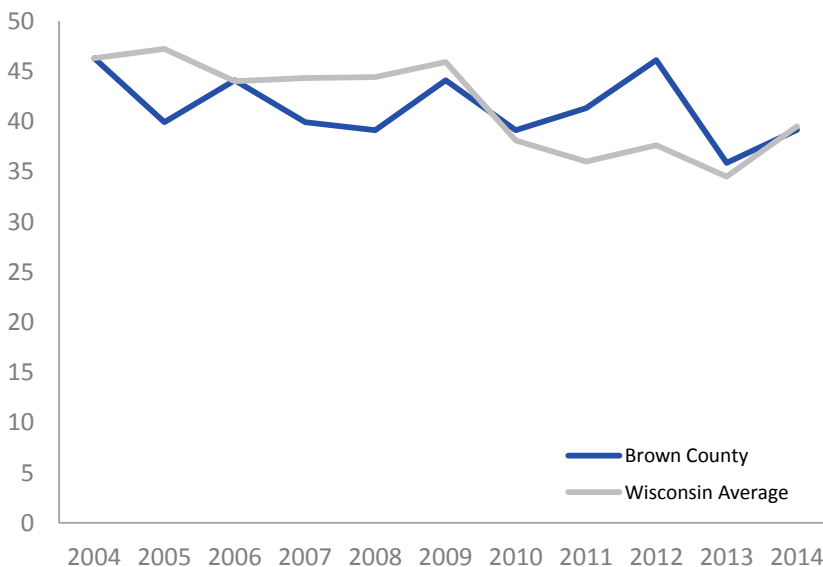
✓ **58.0**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **29.1**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

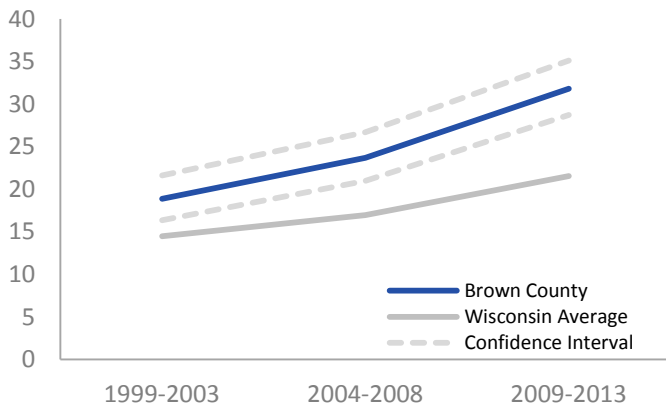
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

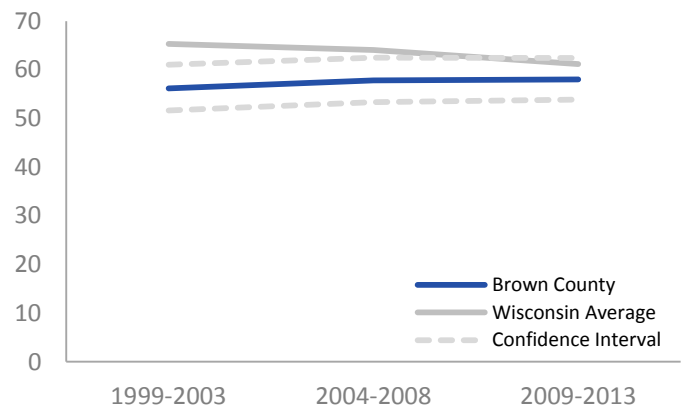
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

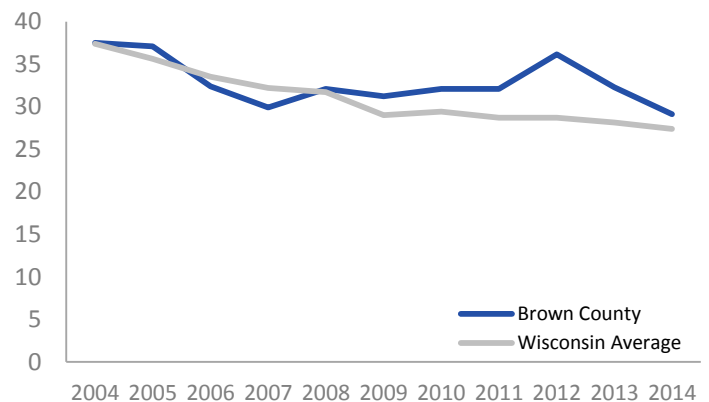
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY BROWN COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.

✓ **0.9**
ARSENIC
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (µg/L)
 STATEWIDE: 1.4

⊕ Above state value (with exception of fluoride where below state value is not preferred)

✓ **0.1**
NITRATE
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (mg/L)
 STATEWIDE: 1.5

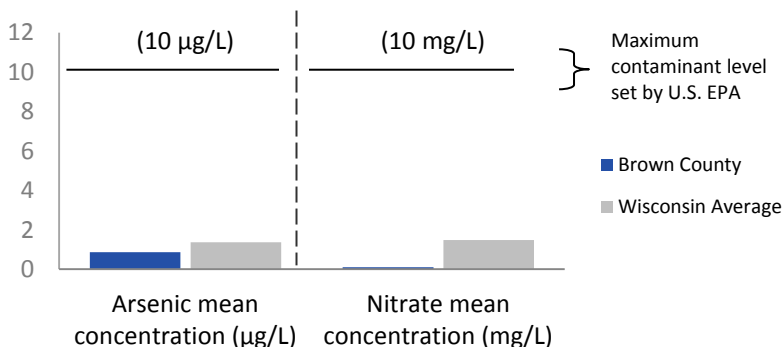
✓ At or below state value (with exception of fluoride where above state value is preferred)

✓ **96.4%**
FLUORIDE
 PERCENT OF POPULATION WITH
 FLUORIDATED PUBLIC WATER
 STATEWIDE: 88.6%

^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY BROWN COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

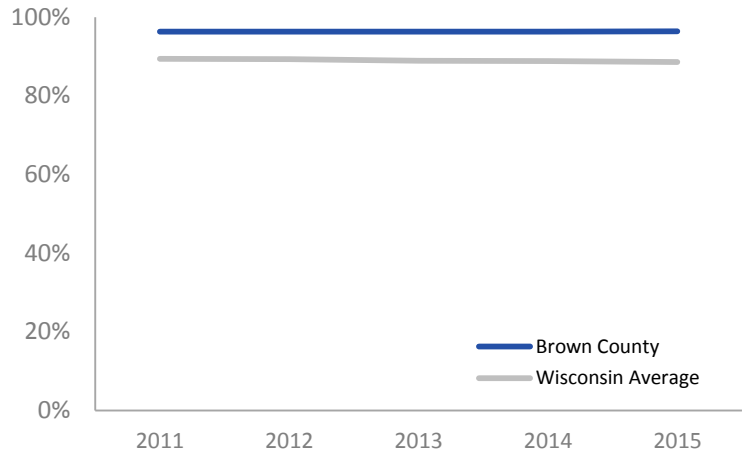
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

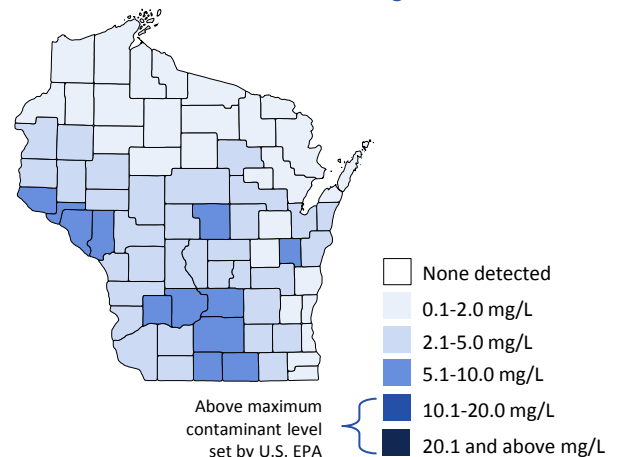
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY BROWN COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



7

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



2

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



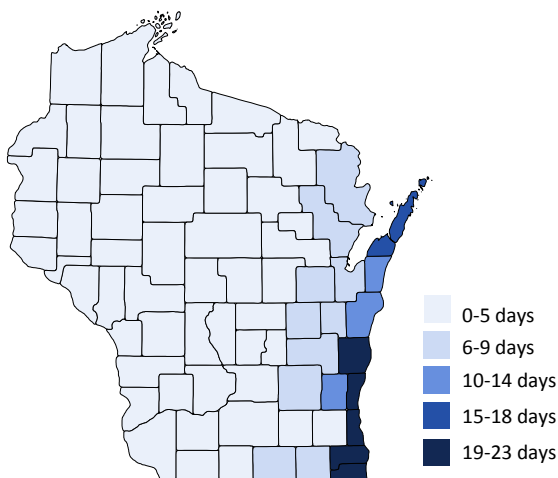
8.8

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

Above state value At or below state value Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

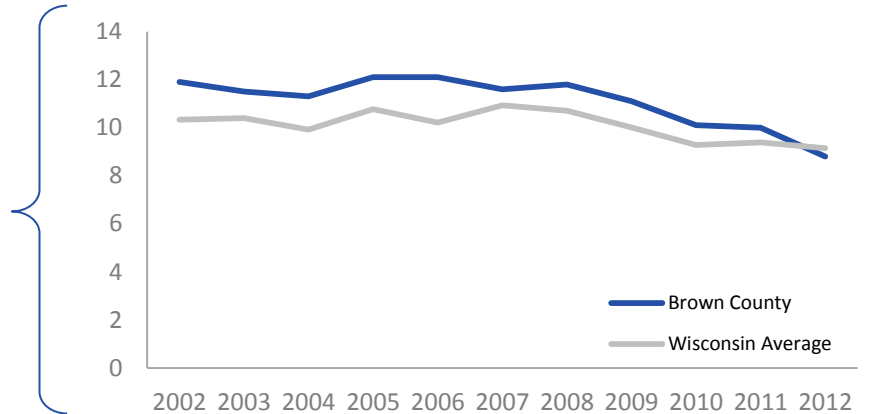


AIR QUALITY BROWN COUNTY

PARTICULATE MATTER 2.5

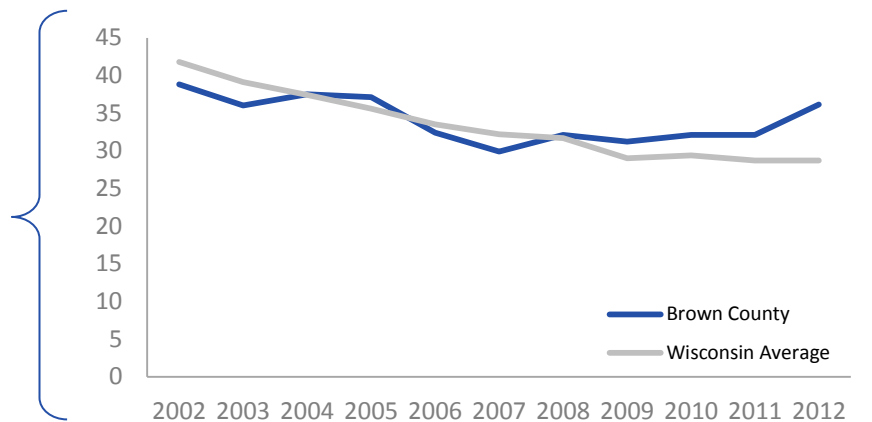
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



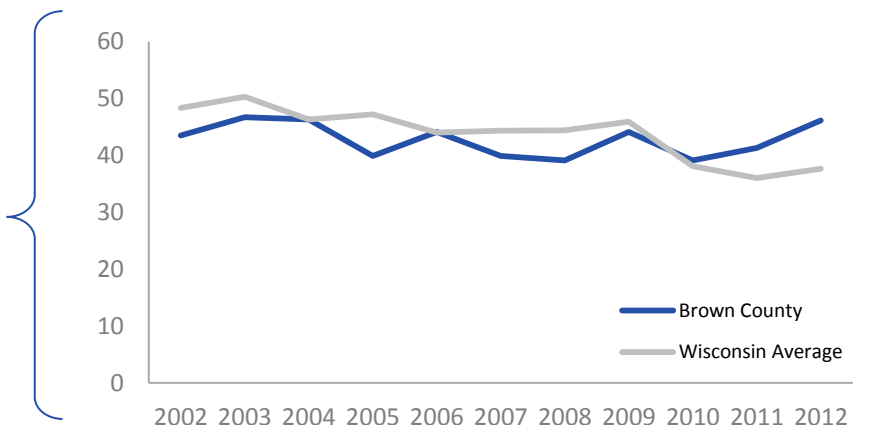
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

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BUFFALO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BUFFALO COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 6.4% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.6 | Rate of ER visits per 100,000 people
Wisconsin: 8.5



CLIMATE

Heat Stress

⚠ 21.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 83.4 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 22.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 19.7 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 27.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 63.2% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2005-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS BUFFALO COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.5

✅ **6.4%**

CHILDHOOD LEAD POISONING

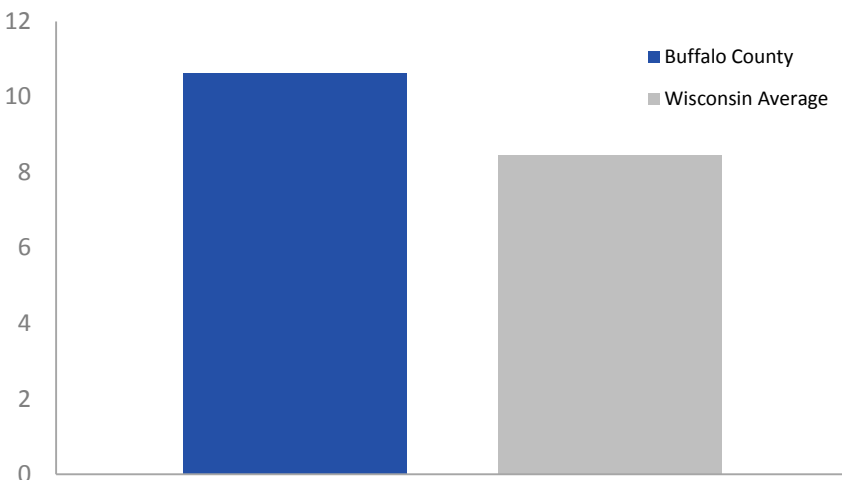
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE (2005-2014)



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



HOME HAZARDS BUFFALO COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

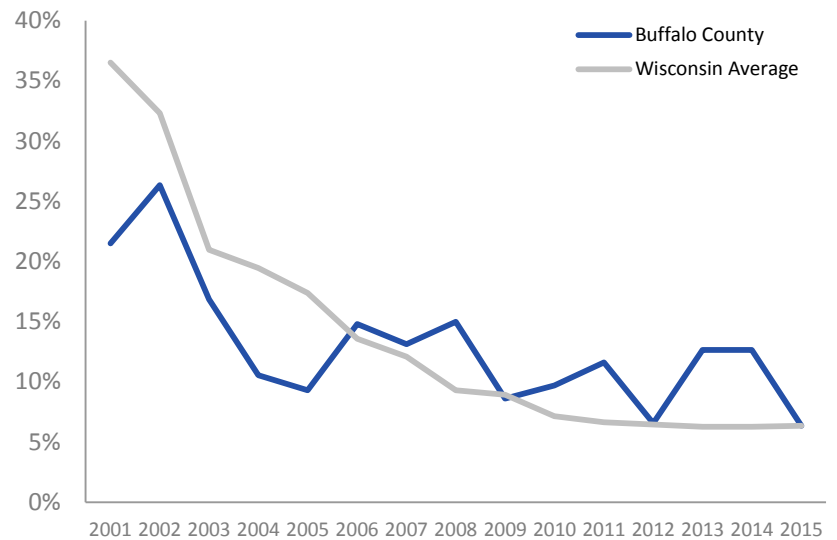
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

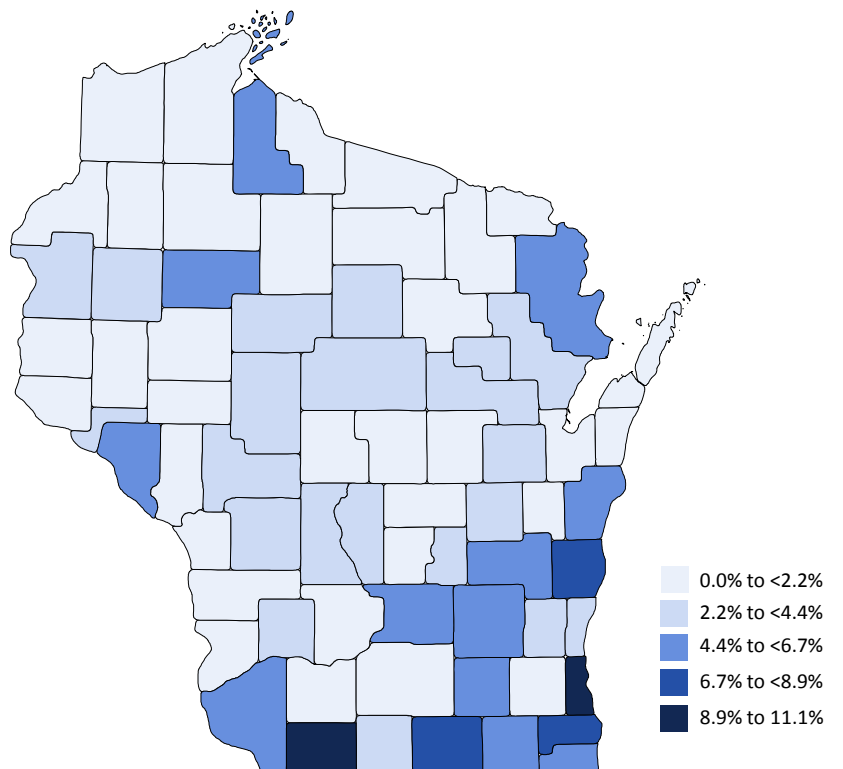
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE BUFFALO COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

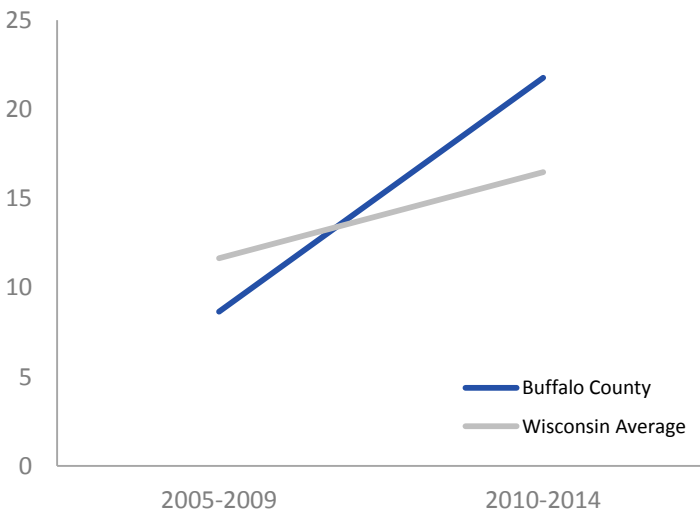
21.8
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

83.4
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

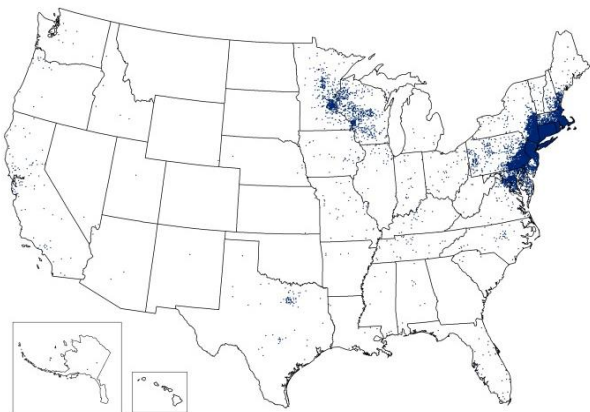
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

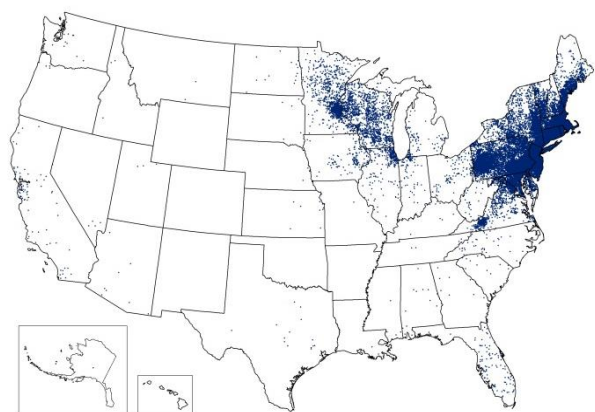
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

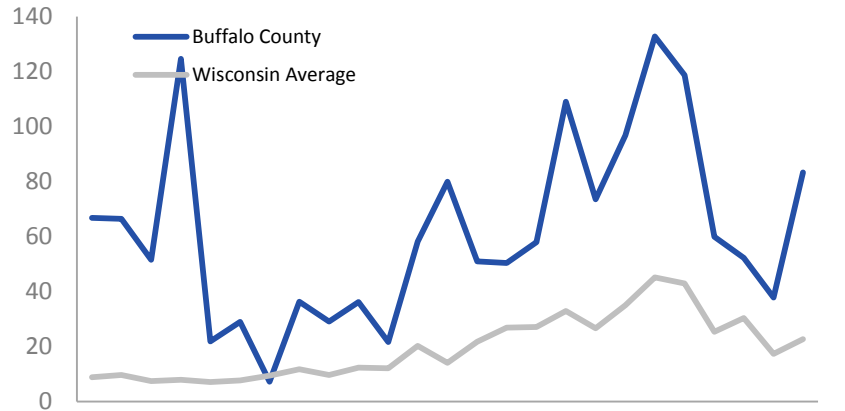


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES BUFFALO COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **22.5**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **19.7**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

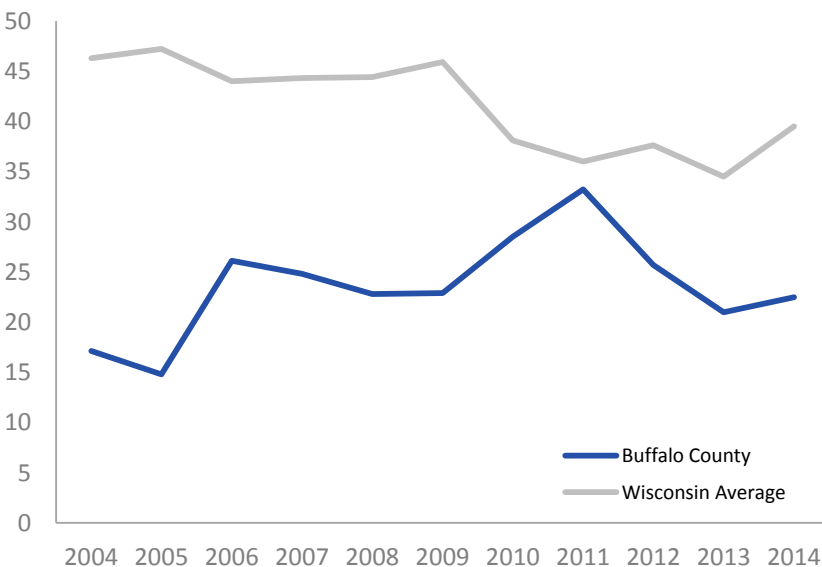
✓ **52.4**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **27.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

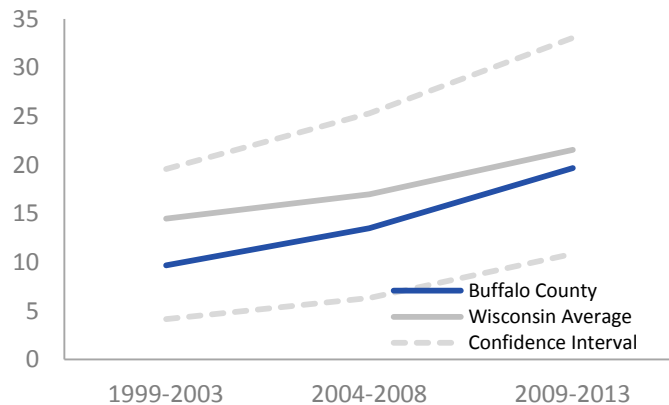
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

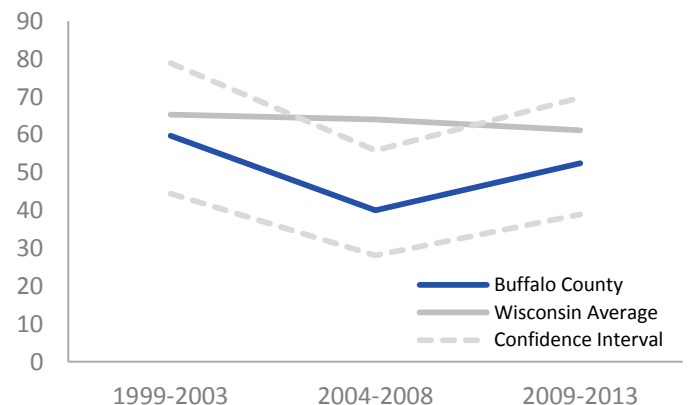
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

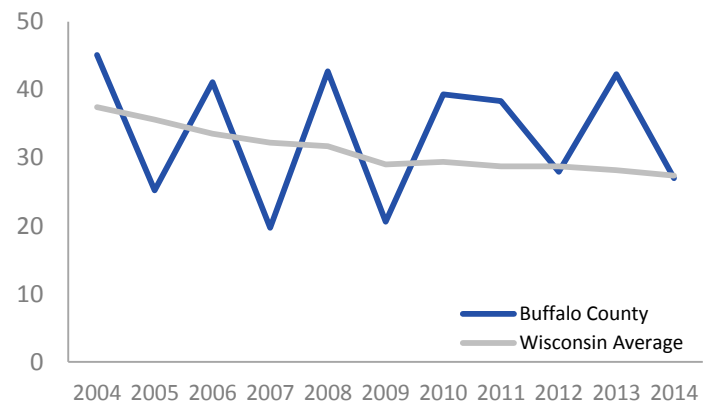
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY BUFFALO COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

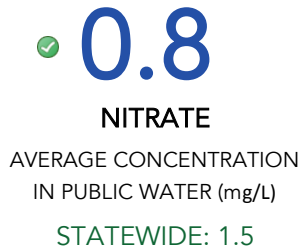
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

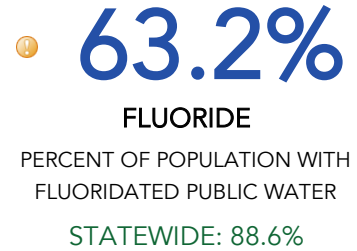
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



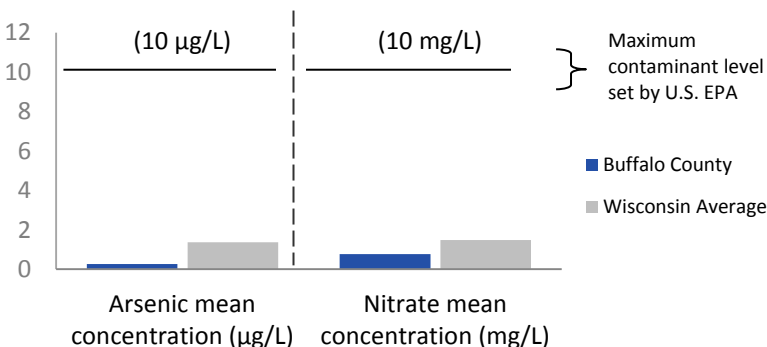
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY BUFFALO COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

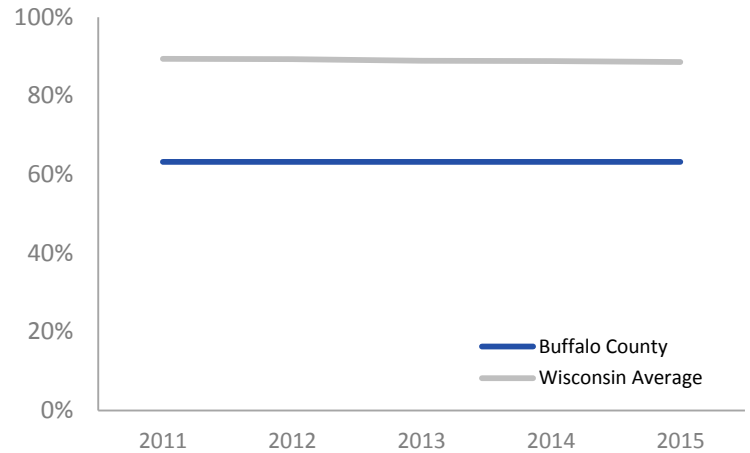
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

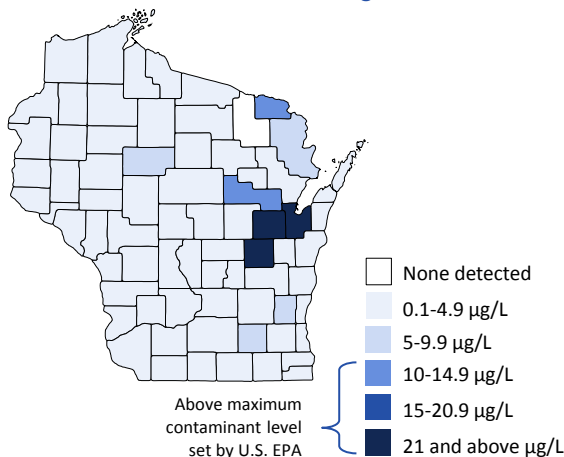
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

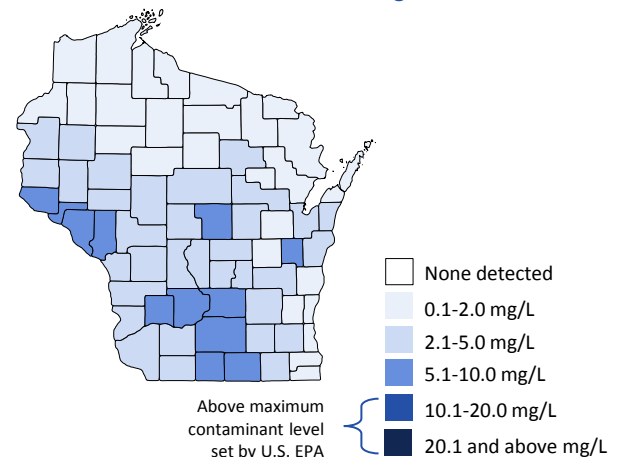
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



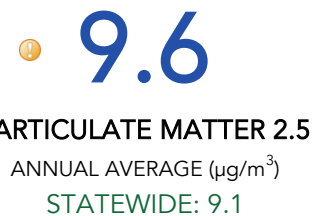


AIR QUALITY BUFFALO COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

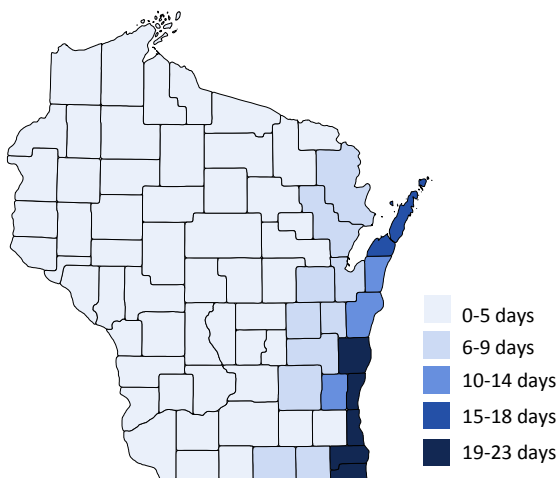
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



⬇ Above state value
 ✔ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

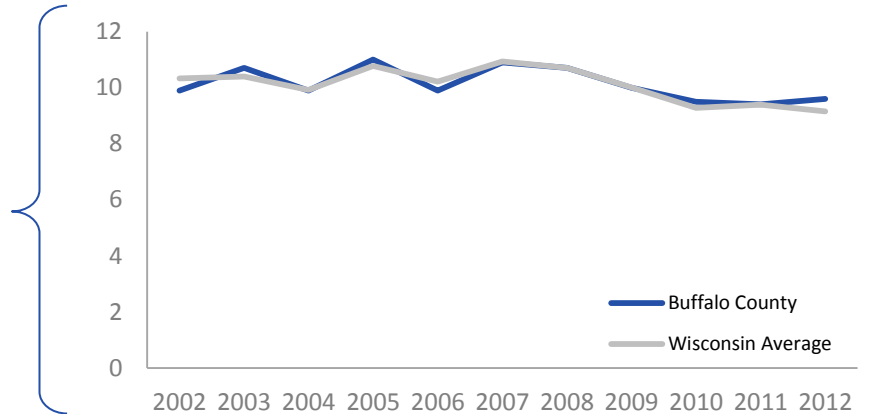


AIR QUALITY BUFFALO COUNTY

PARTICULATE MATTER 2.5

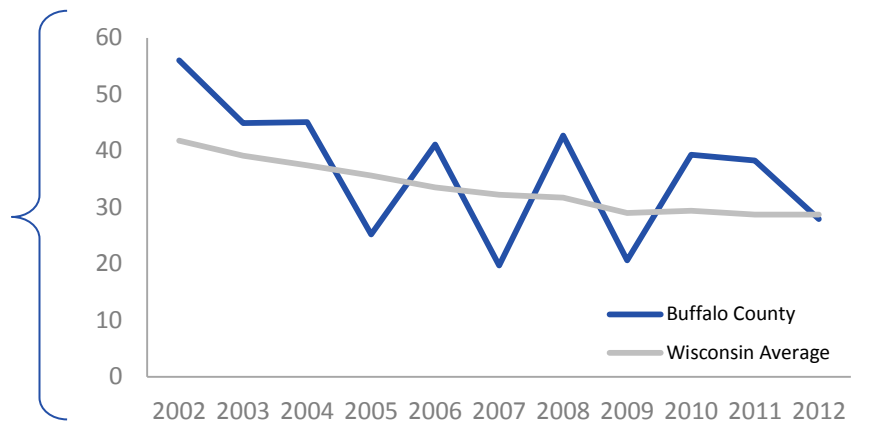
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



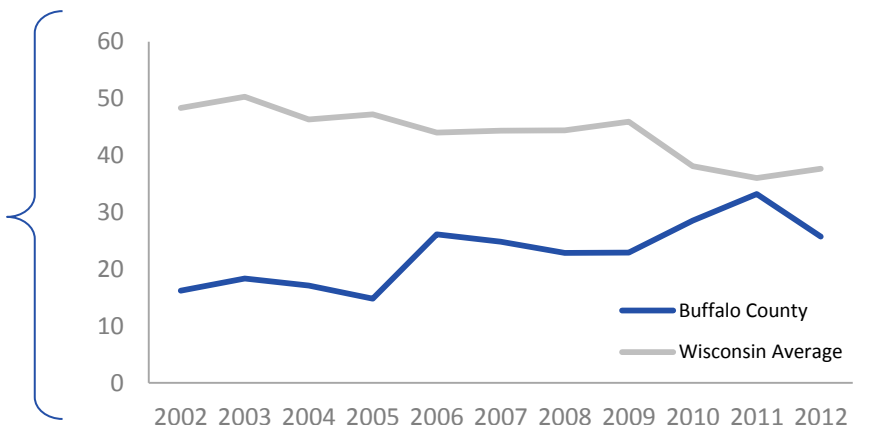
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: Averaged data from 2005-2014

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population. These data were averaged over ten years for five counties in order to minimize suppression.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education,
University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



BURNETT COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

BURNETT COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.1 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 17.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 66.0 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 28.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 17.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 27.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.1 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.0 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

BURNETT COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **8.1**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **0.0%**

CHILDHOOD LEAD POISONING

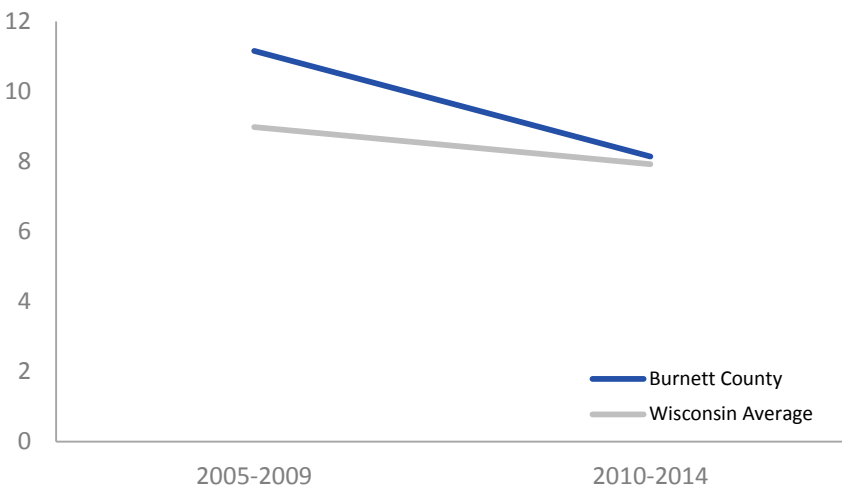
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS BURNETT COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

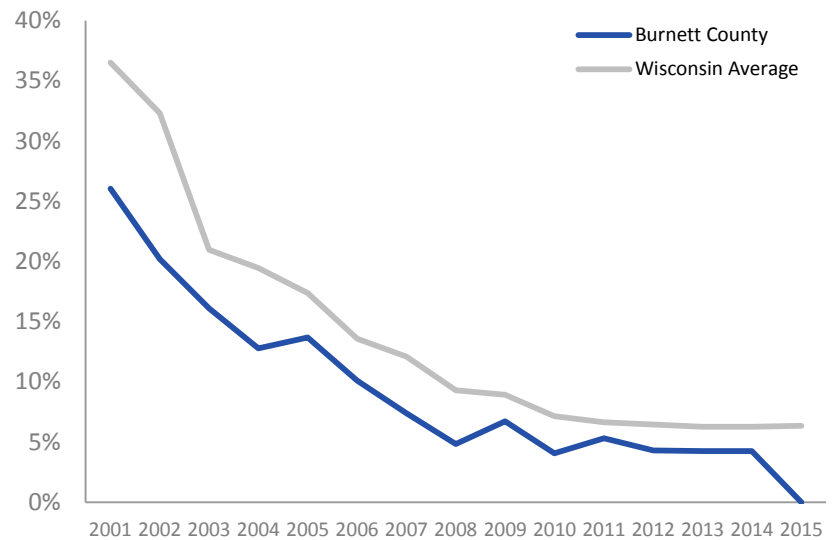
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

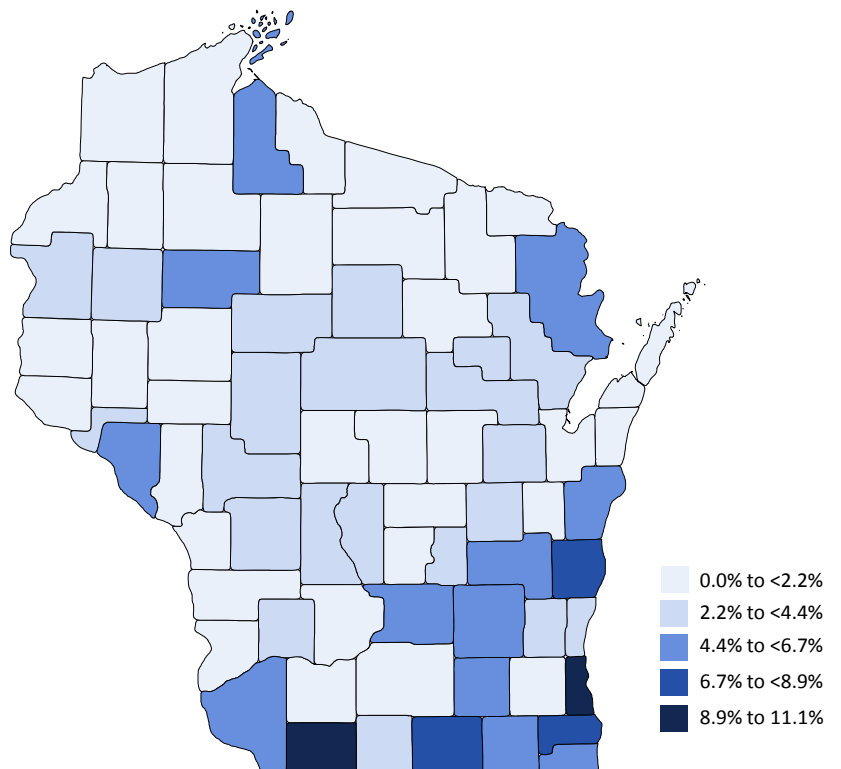
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE BURNETT COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

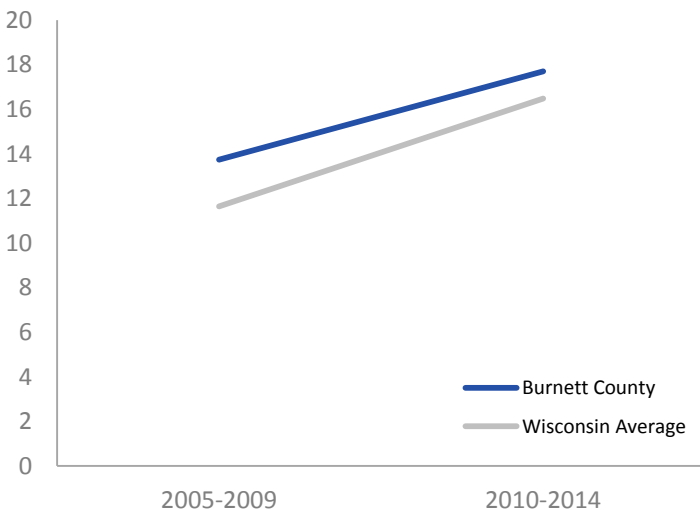
17.7
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

66.0
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

Above state value At or below state value Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

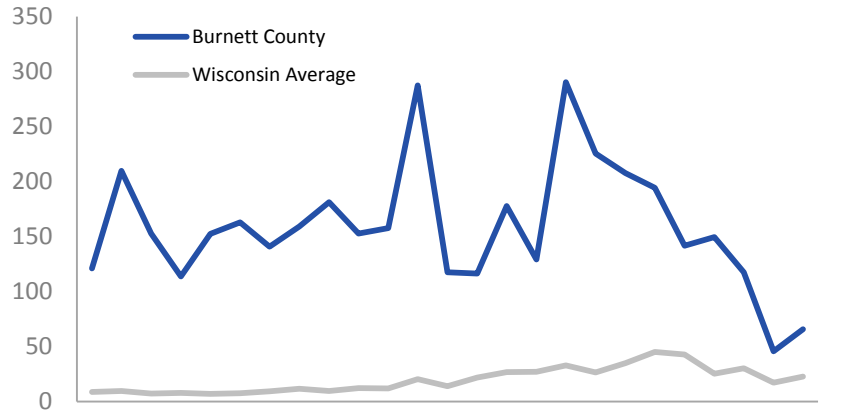
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

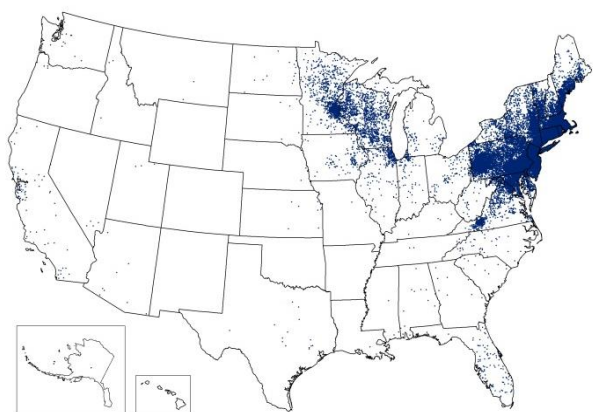
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

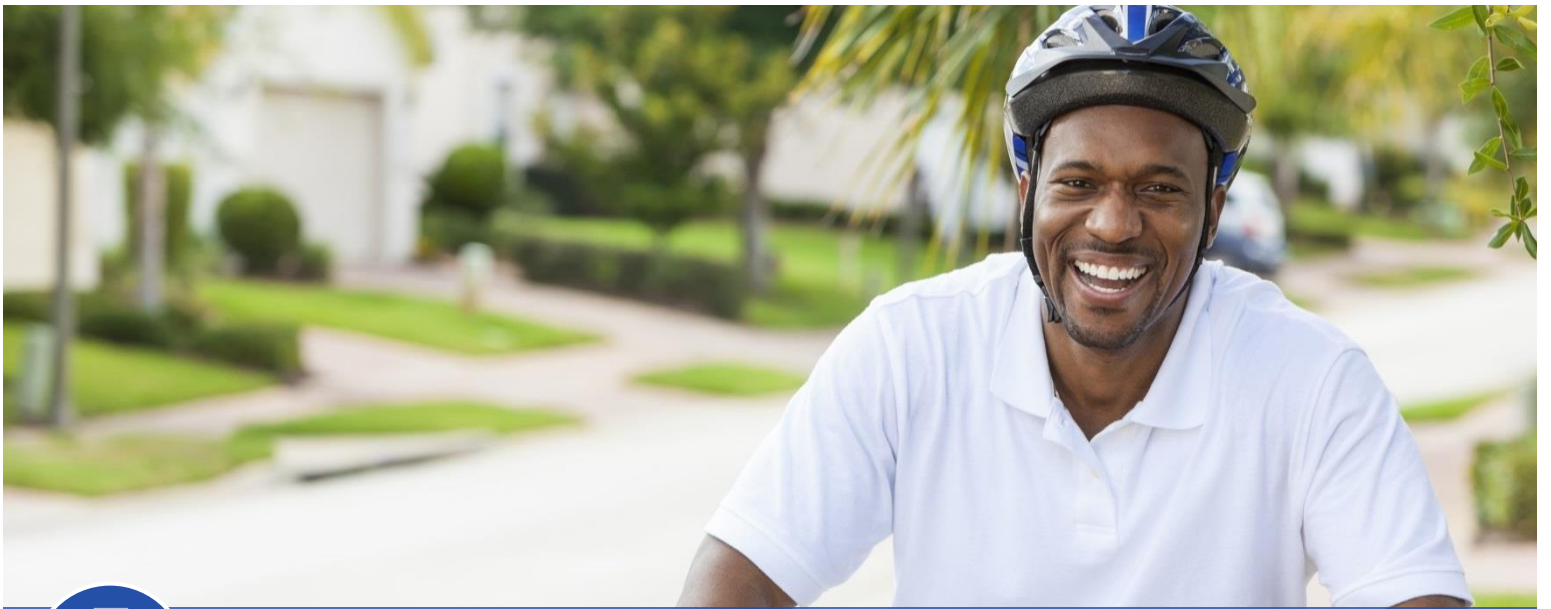


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

BURNETT COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **28.3**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **17.4**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

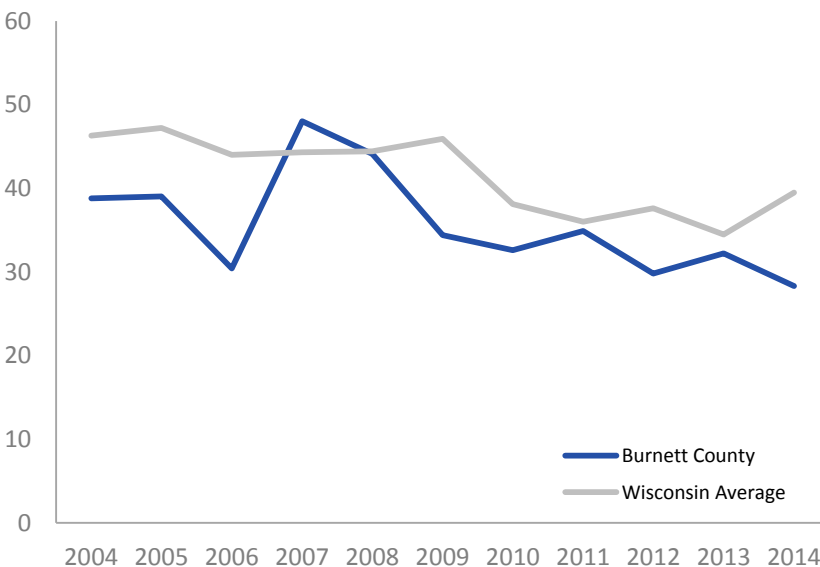
⚠ **75.8**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **27.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

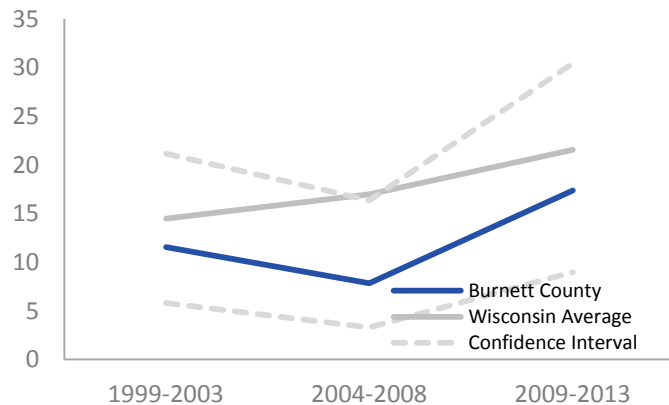
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

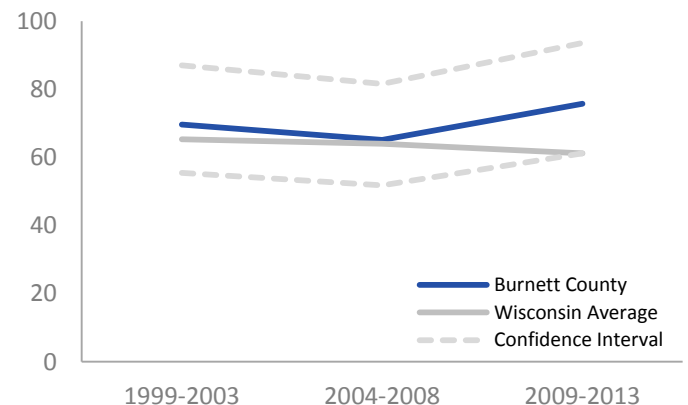
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

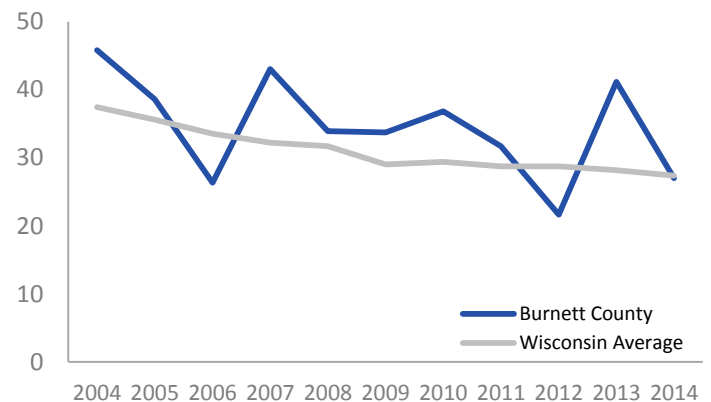
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY BURNETT COUNTY

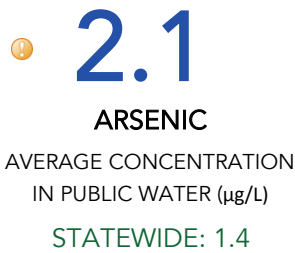
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

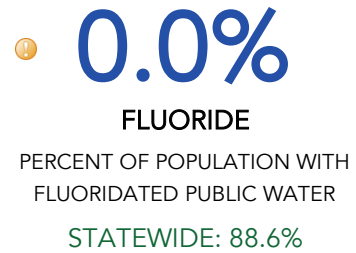
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



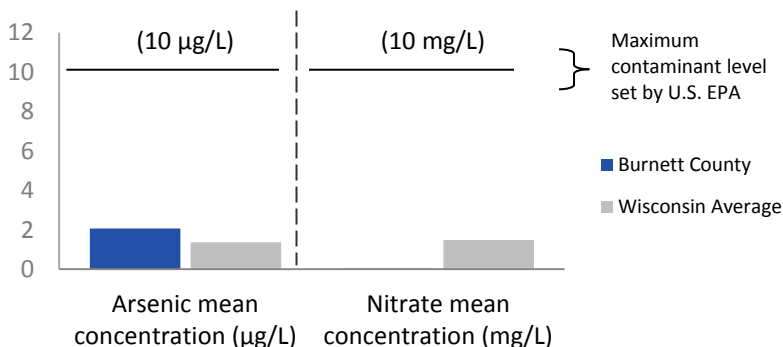
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY BURNETT COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

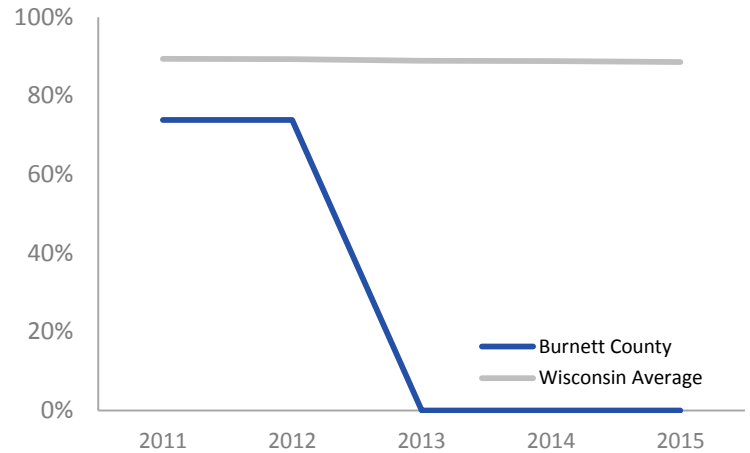
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

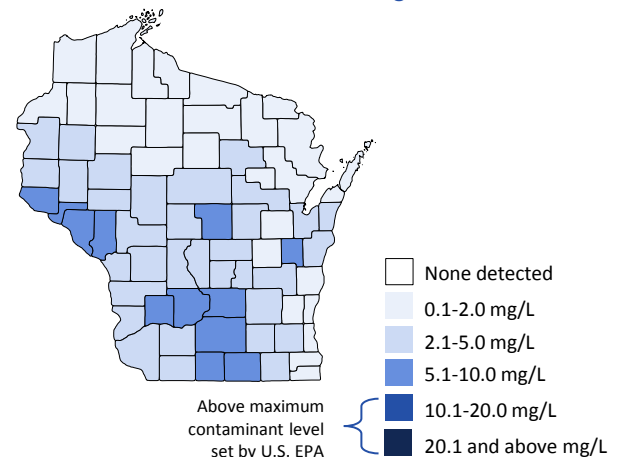
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



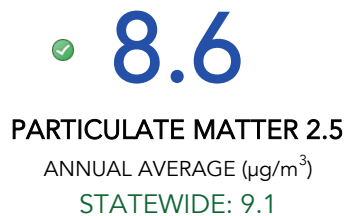


AIR QUALITY BURNETT COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

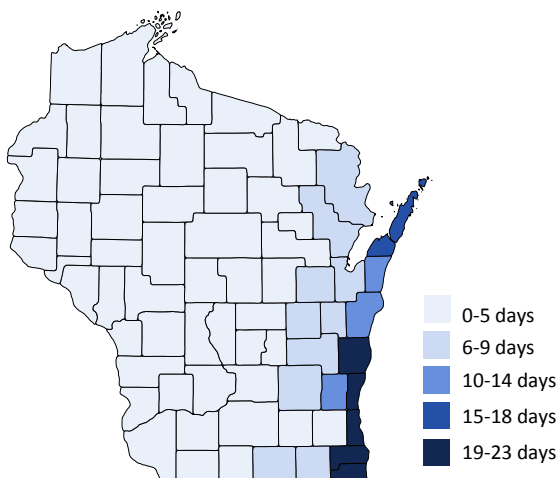
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

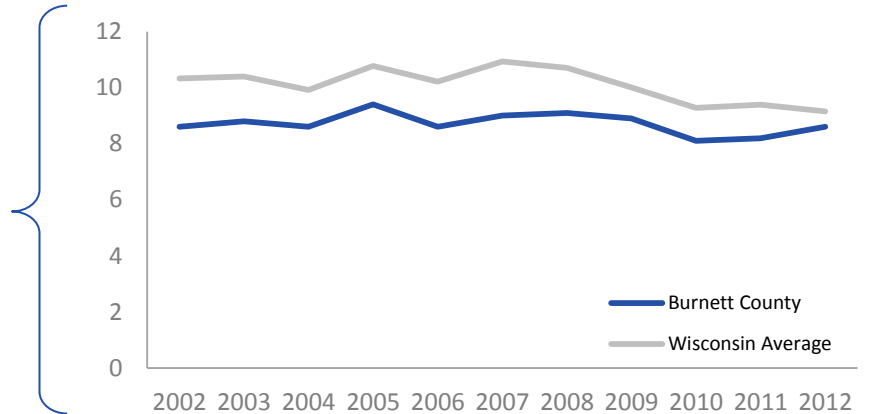


AIR QUALITY BURNETT COUNTY

PARTICULATE MATTER 2.5

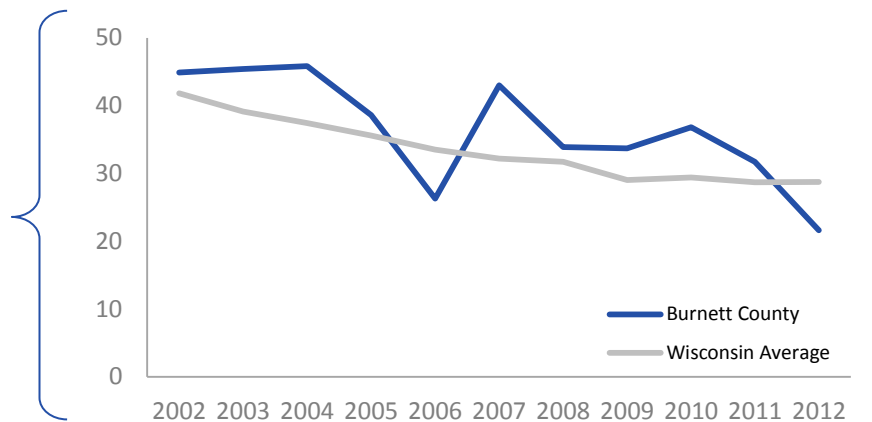
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5
ANNUAL AVERAGE
(µg/m³)



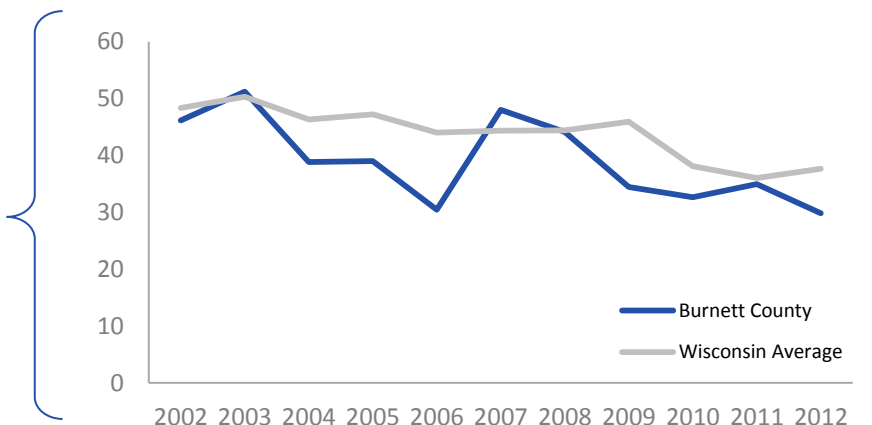
HEART ATTACK
HOSPITALIZATIONS
Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA
EMERGENCY ROOM VISITS
Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



CALUMET COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



CALUMET COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 2.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 3.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

✓ 13.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 2.0 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 17.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 32.1 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 19.1 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

⚠ 1.5 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.4 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 73.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

⚠ 7 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 2 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS CALUMET COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **2.0%**

CHILDHOOD LEAD POISONING

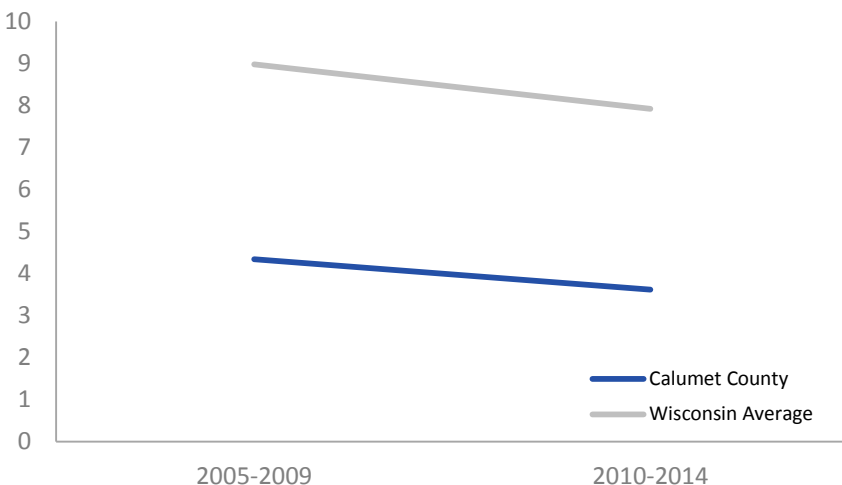
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g}/\text{dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS CALUMET COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

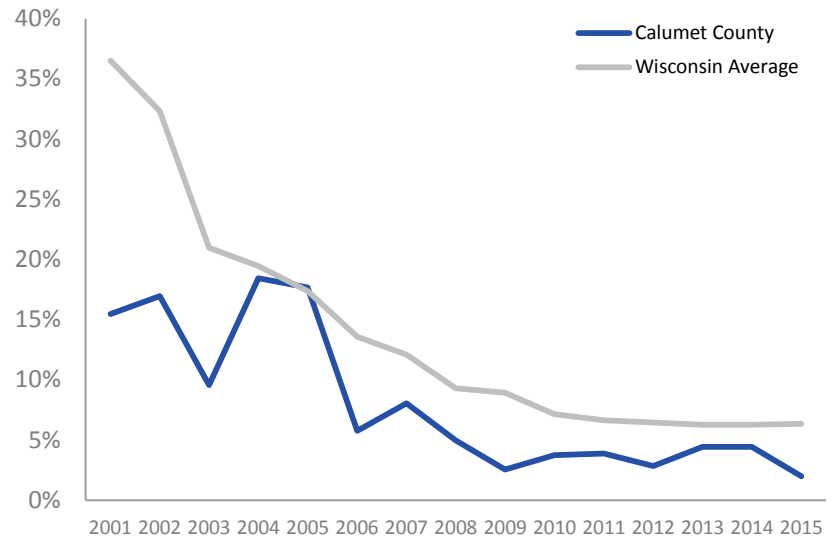
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

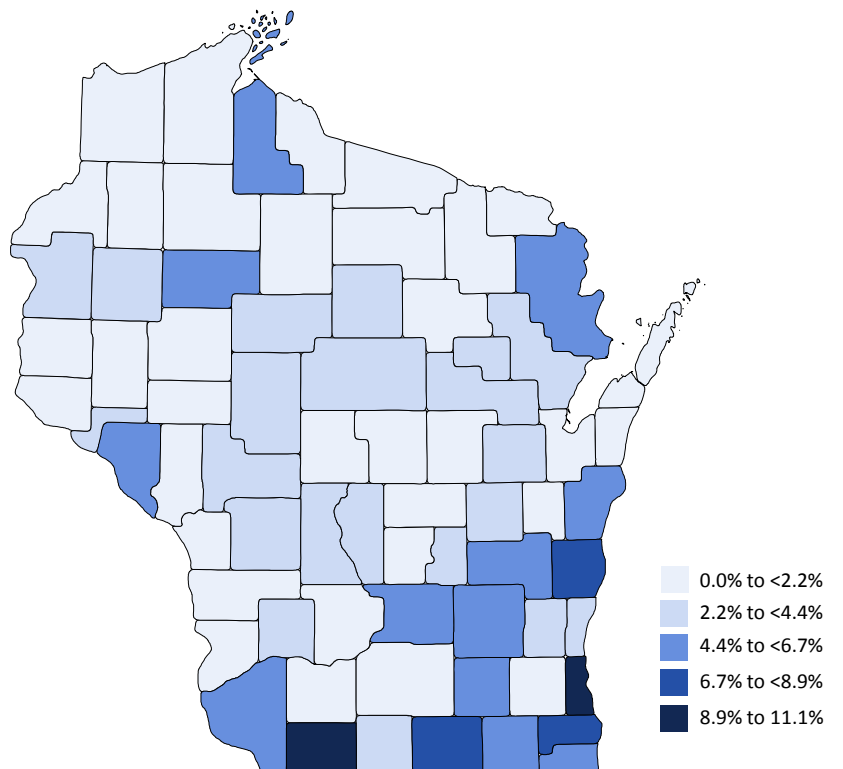
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE CALUMET COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **13.8**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

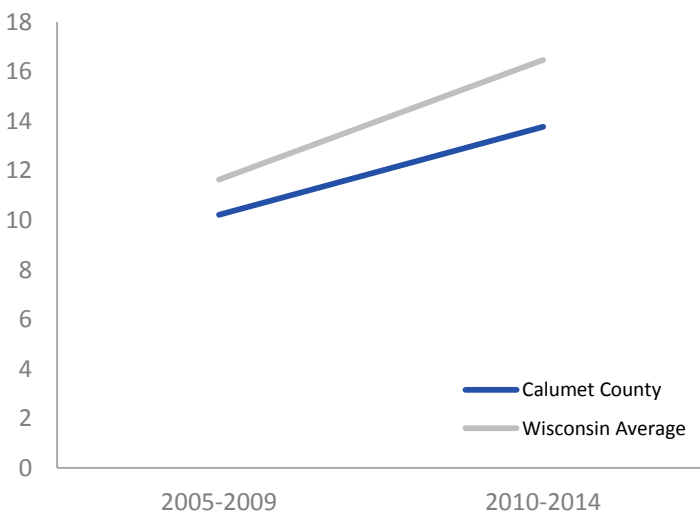
✓ **2.0**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

ⓘ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht

Wisconsin Environmental Public Health Tracking | 7



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

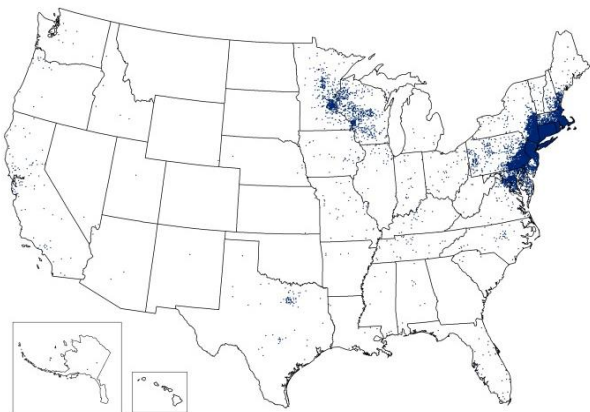
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

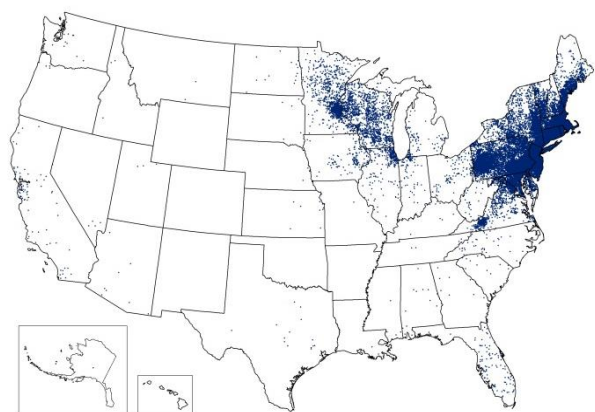
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

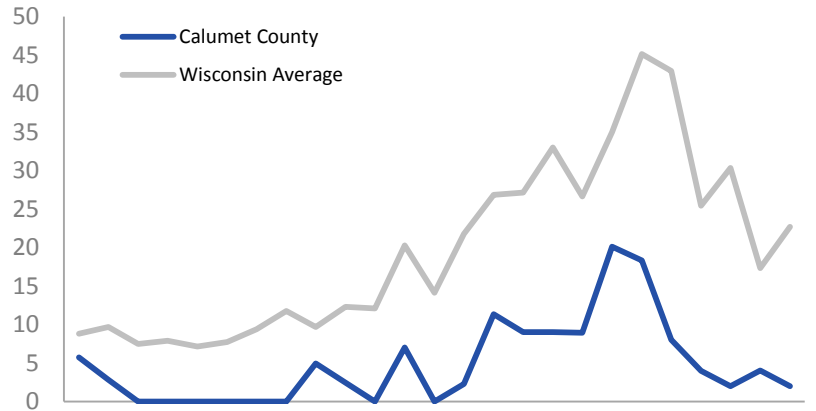


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES

CALUMET COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **17.3**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **32.1**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

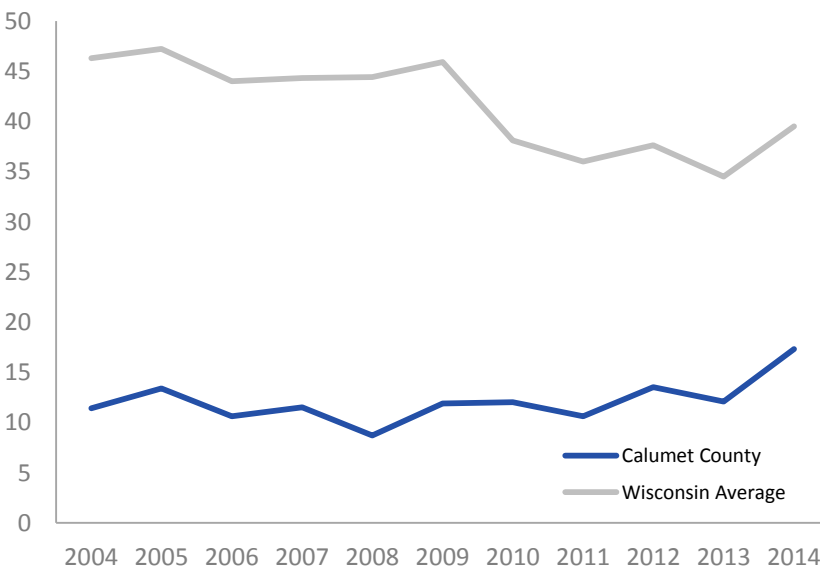
✓ **53.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **19.1**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

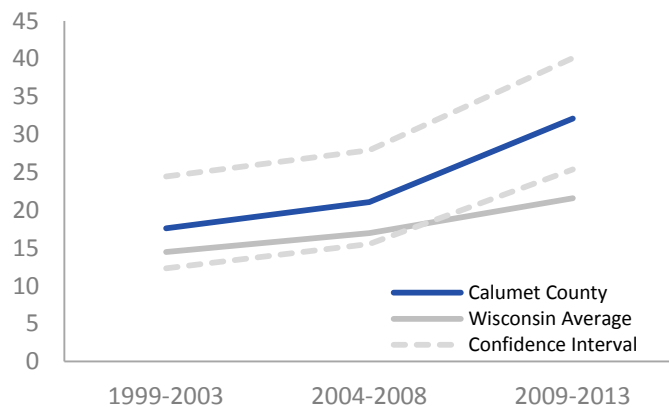
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

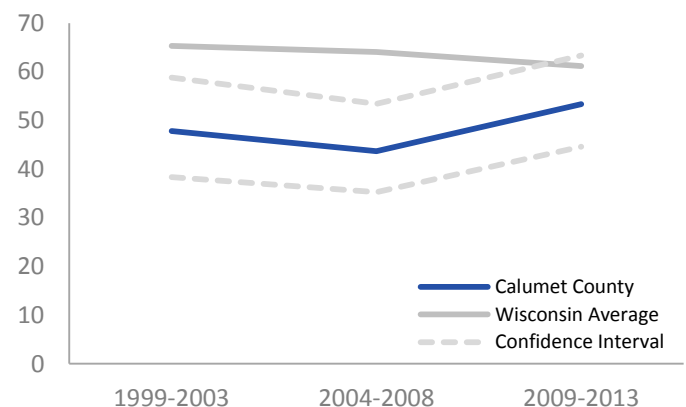
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

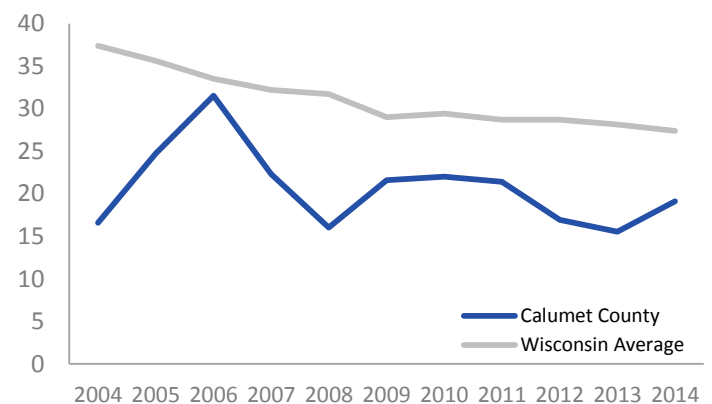
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY CALUMET COUNTY

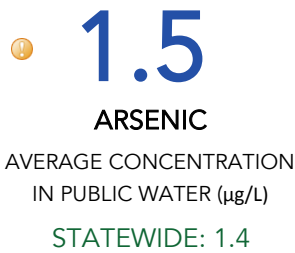
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

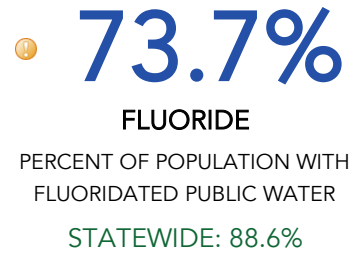
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



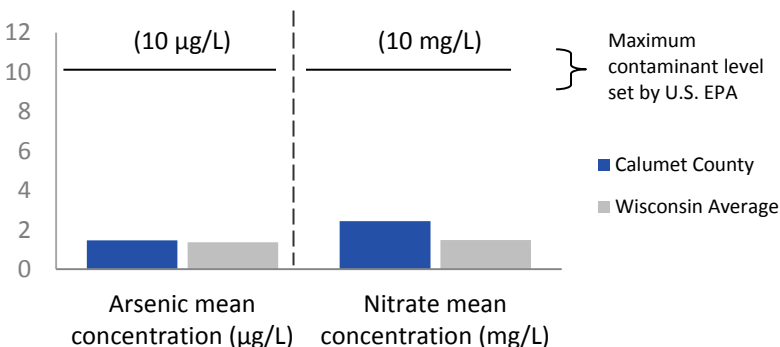
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY CALUMET COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

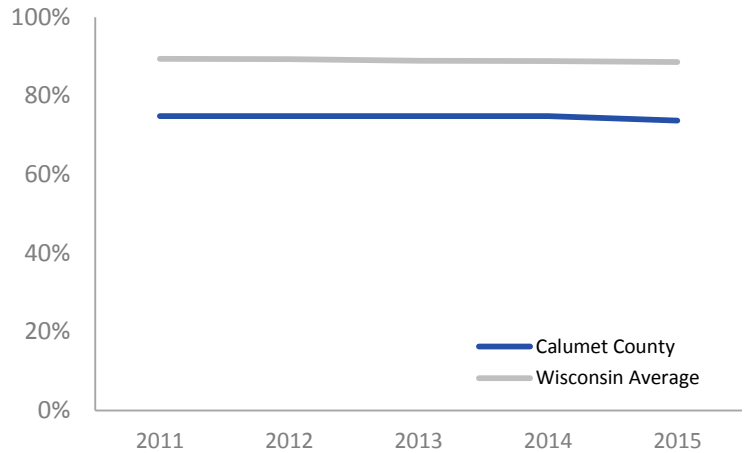
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

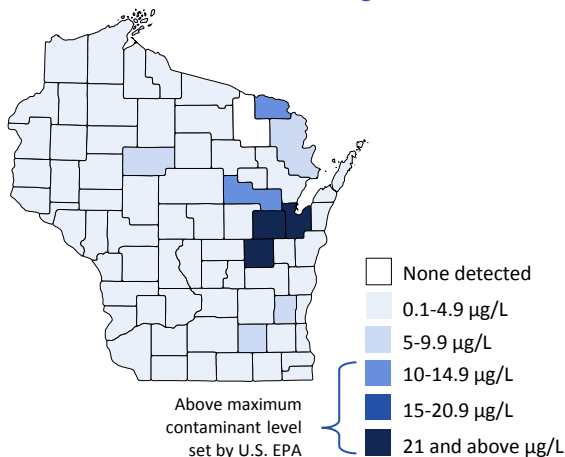
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

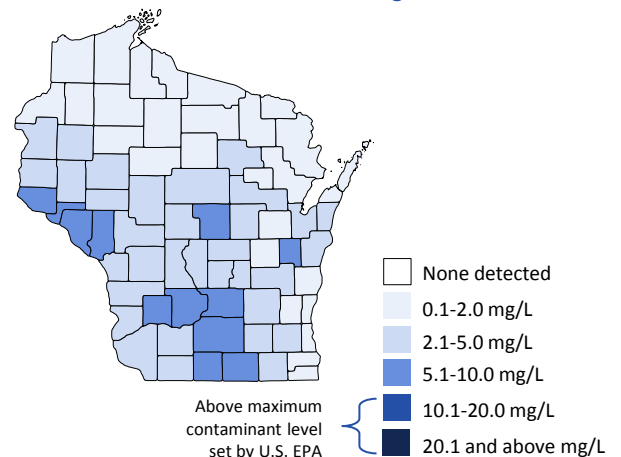
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY CALUMET COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



7

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



2

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



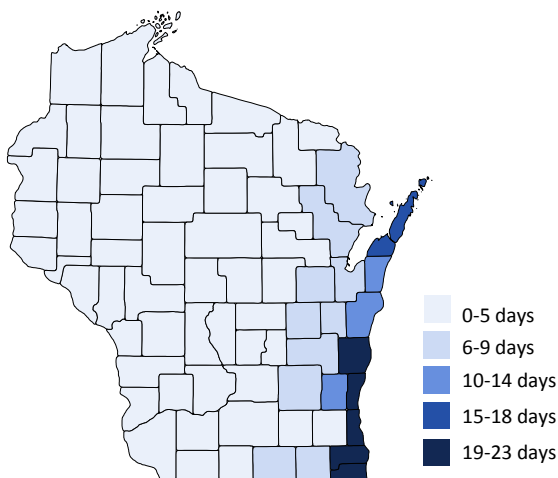
9.6

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

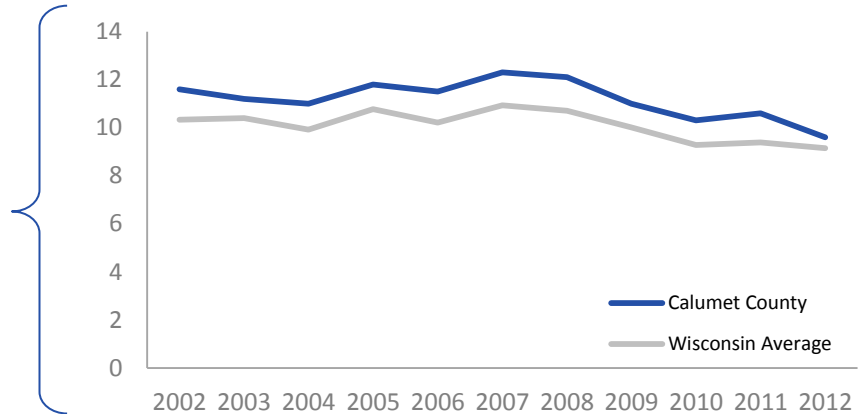


AIR QUALITY CALUMET COUNTY

PARTICULATE MATTER 2.5

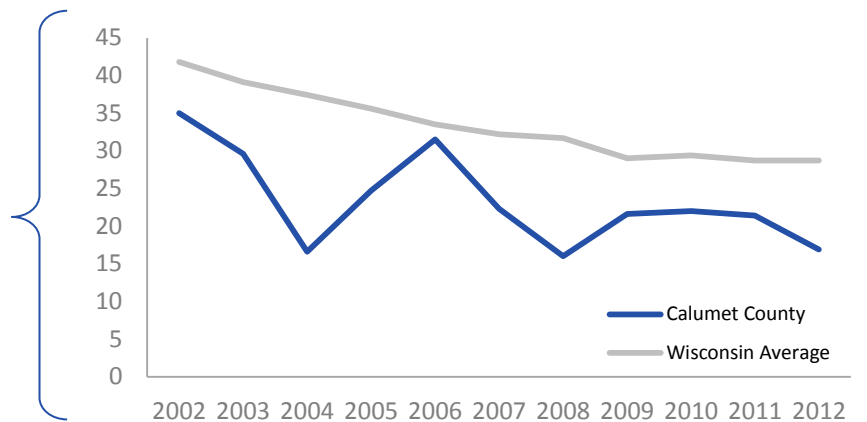
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



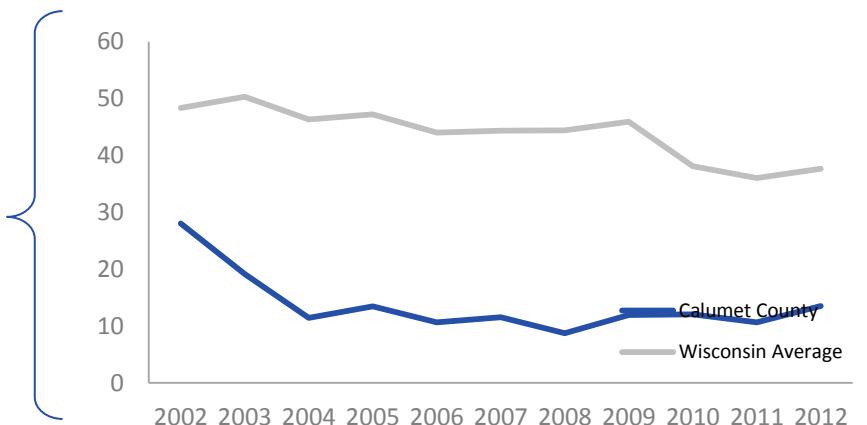
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
Technical Advisory Group

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University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



CHIPPEWA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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CHIPPEWA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.8% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 20.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 64.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 15.4 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 23.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 27.3 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 3.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 15.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

CHIPPEWA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **8.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.8%**

CHILDHOOD LEAD POISONING

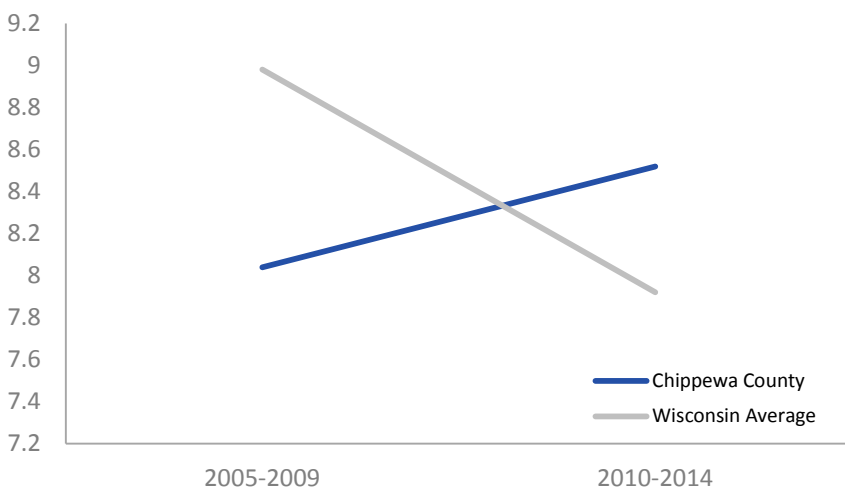
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS CHIPPEWA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

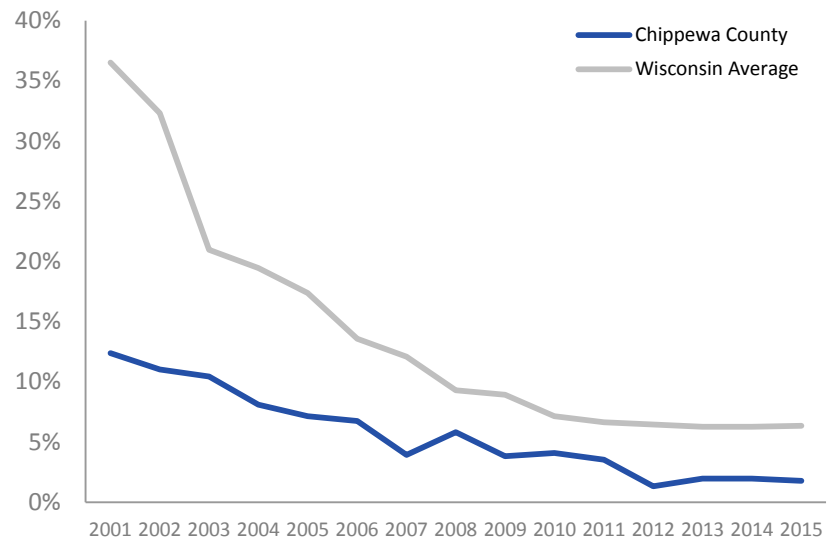
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

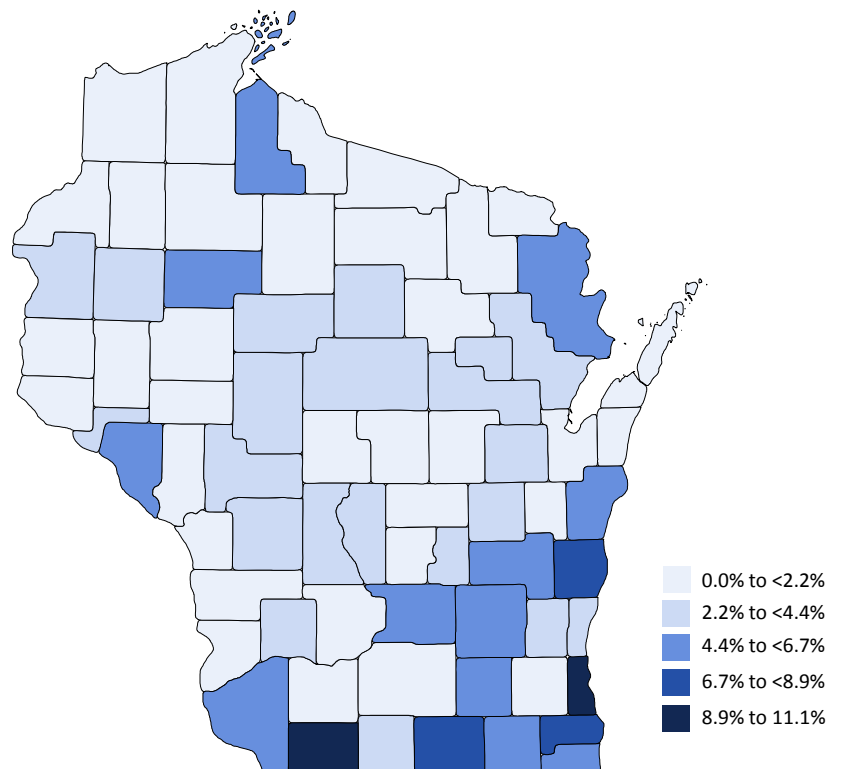
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE CHIPPEWA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

20.1

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

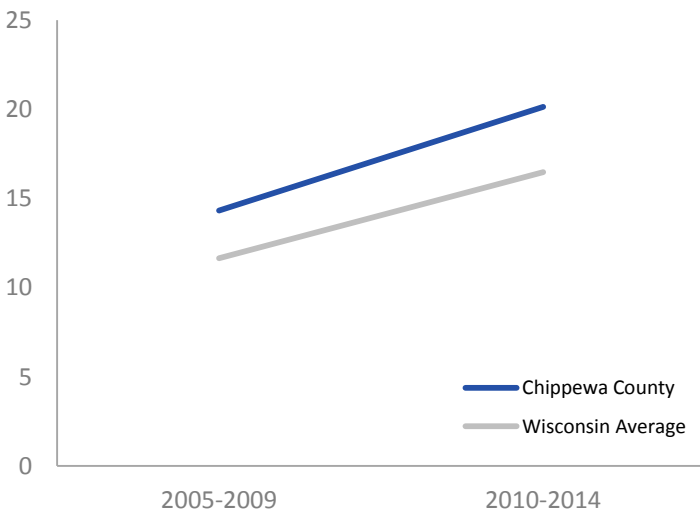
64.5

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

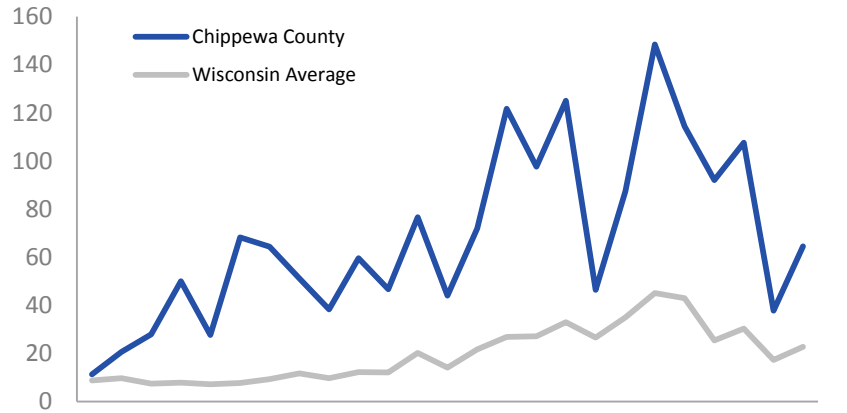
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

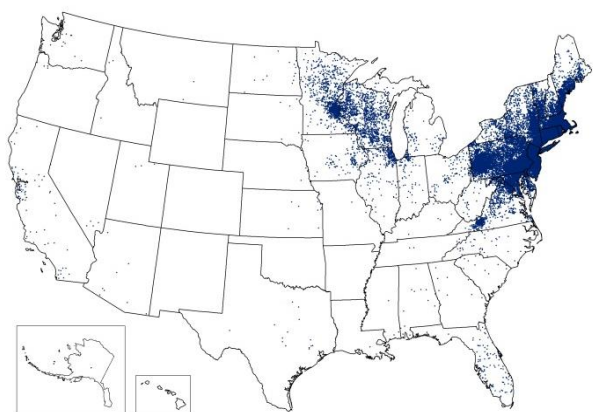
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

CHIPPEWA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **15.4**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

⚠ **23.4**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

⚠ **66.1**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

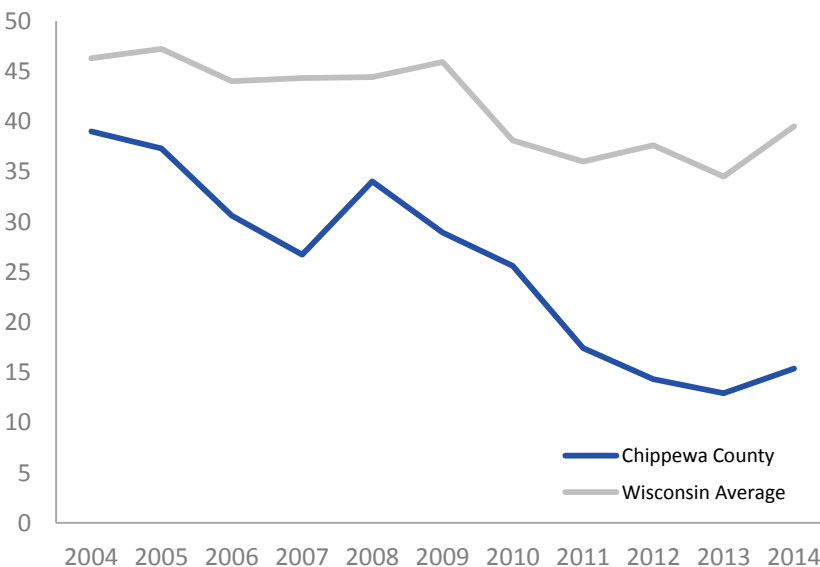
✓ **27.3**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

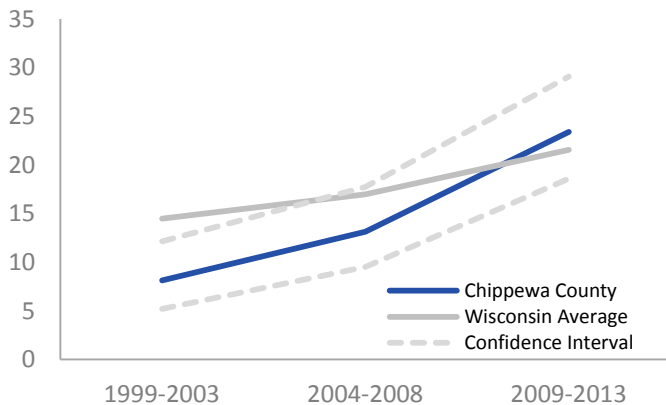
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

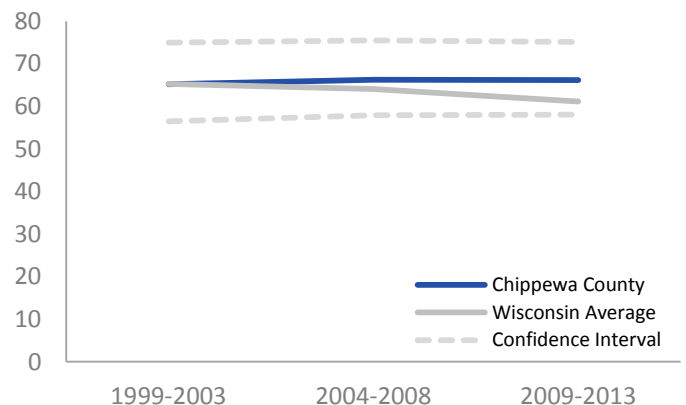
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

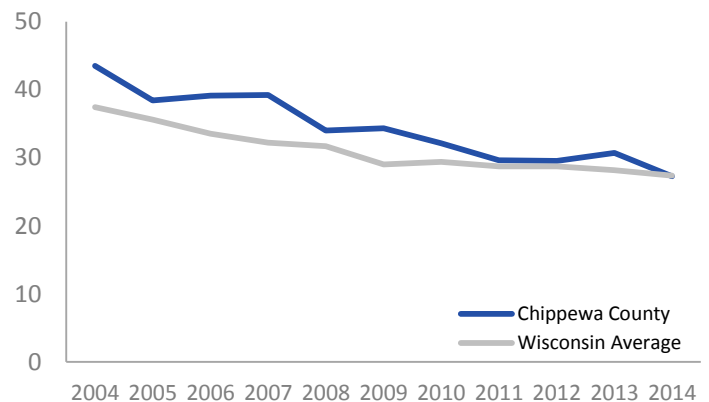
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY CHIPPEWA COUNTY

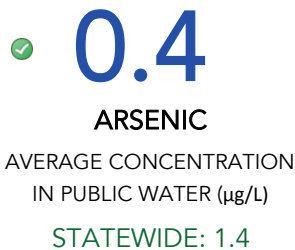
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

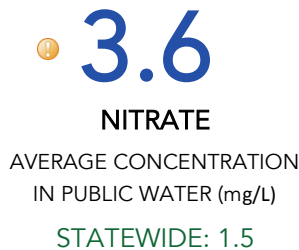
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

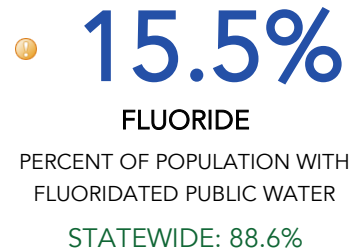
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



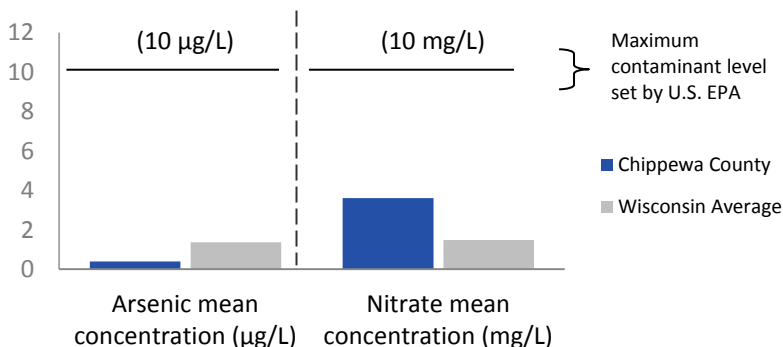
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY CHIPPEWA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

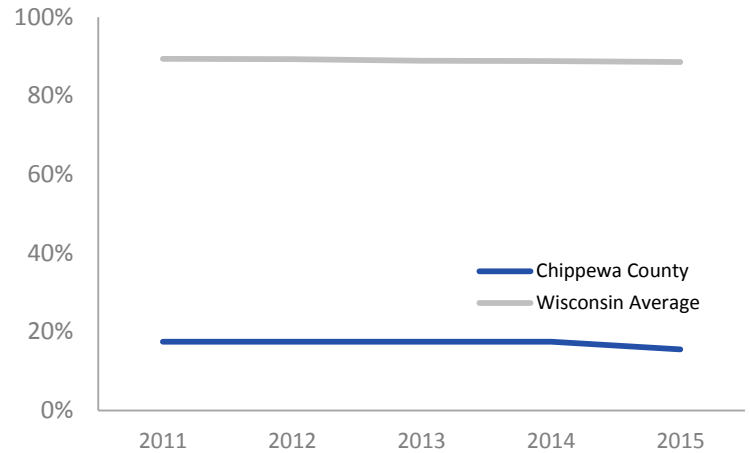
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

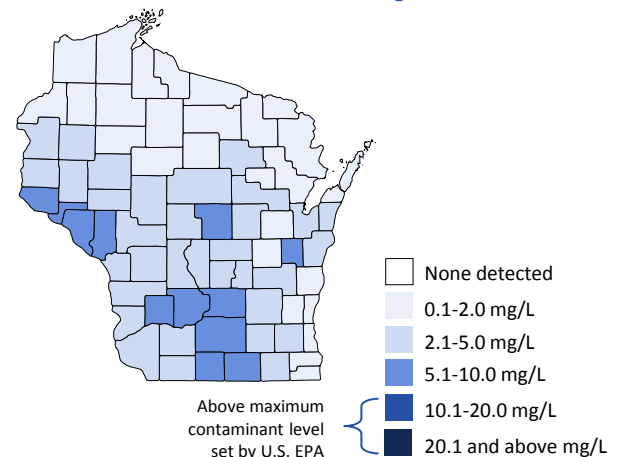
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



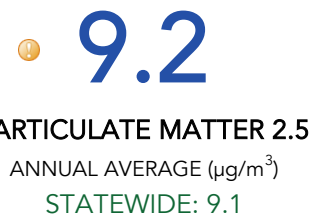


AIR QUALITY CHIPPEWA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

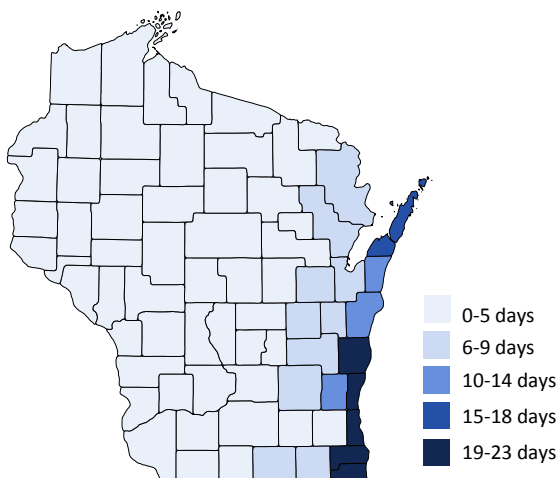
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



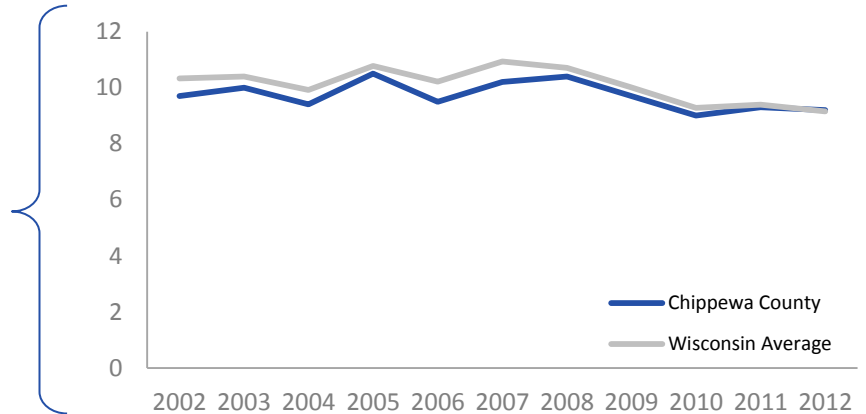
AIR QUALITY

CHIPPEWA COUNTY

PARTICULATE MATTER 2.5

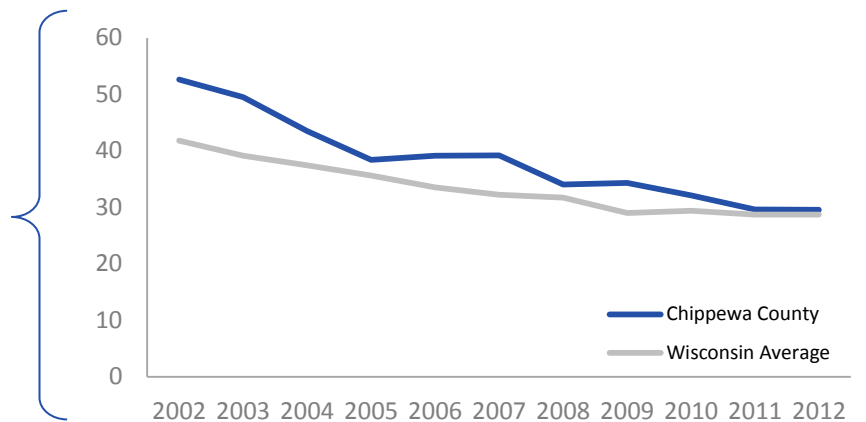
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



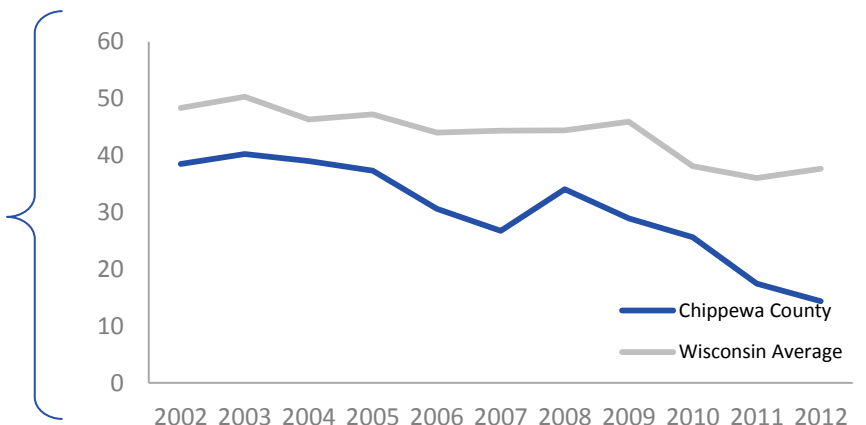
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



CLARK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

CLARK COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 3.7% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.3 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

✓ 16.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 34.8 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 17.2 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 16.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 41.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 0.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 3.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 60.1% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS CLARK COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **8.3**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **3.7%**

CHILDHOOD LEAD POISONING

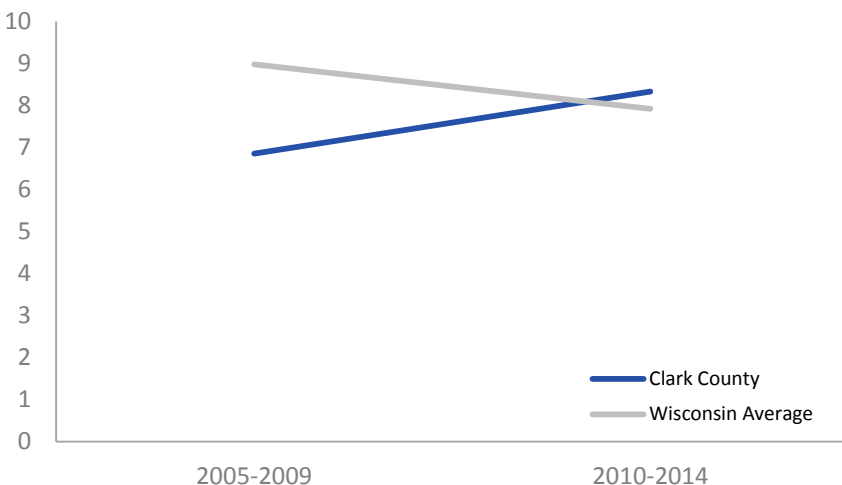
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS CLARK COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

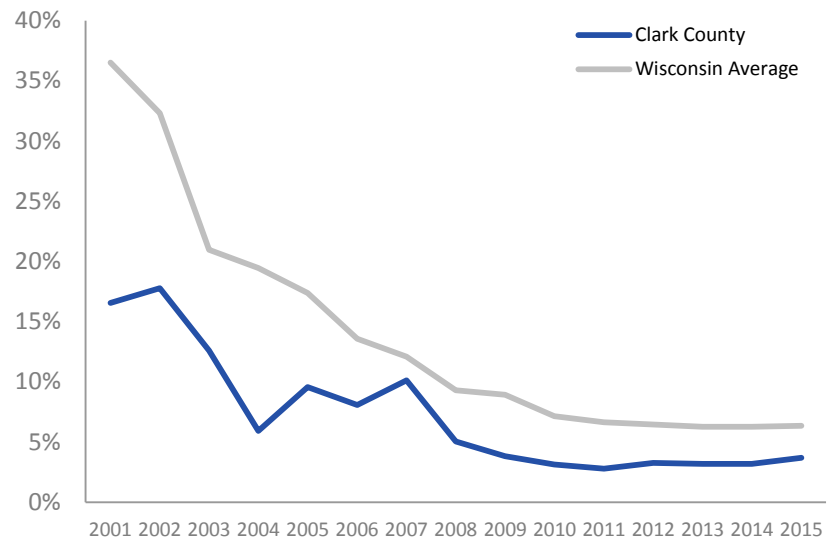
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

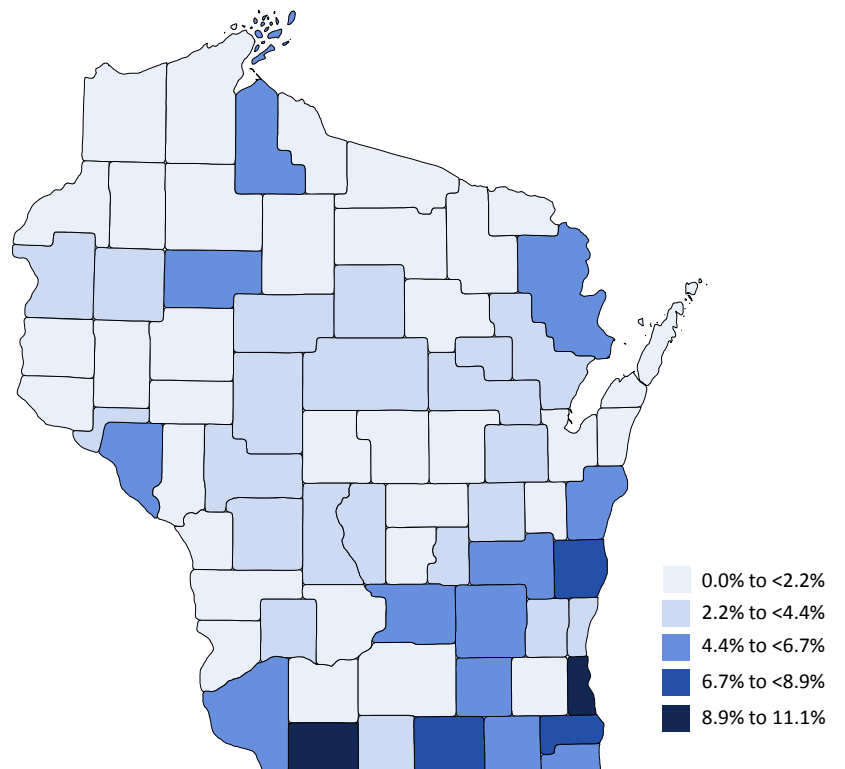
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE CLARK COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **16.0**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

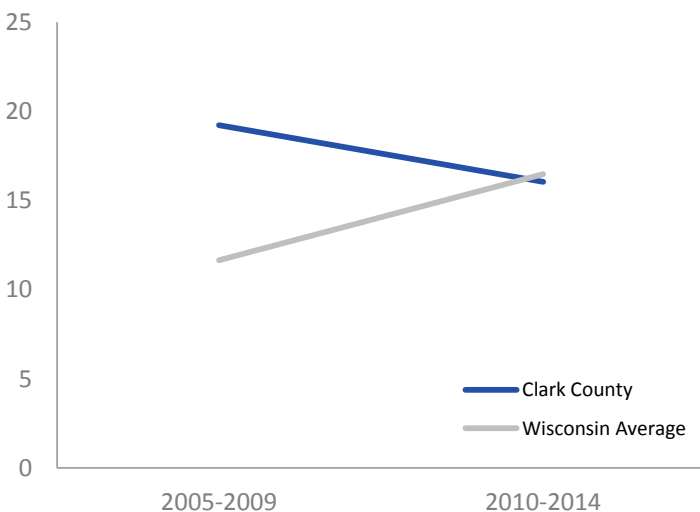
⚠ **34.8**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

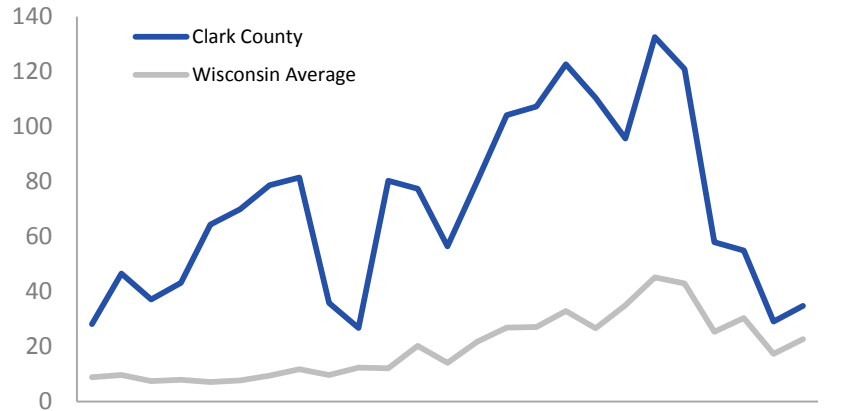
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

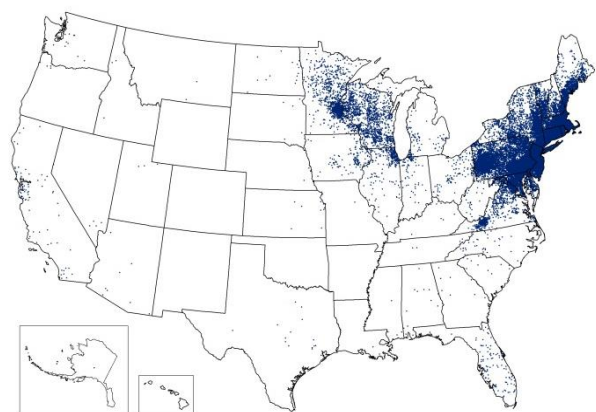
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES CLARK COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **17.2**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **16.4**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

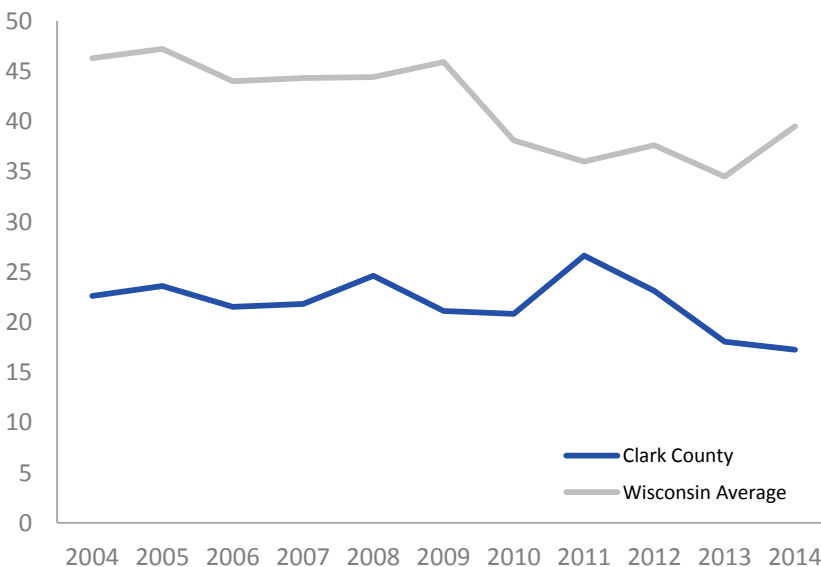
✓ **52.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **41.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

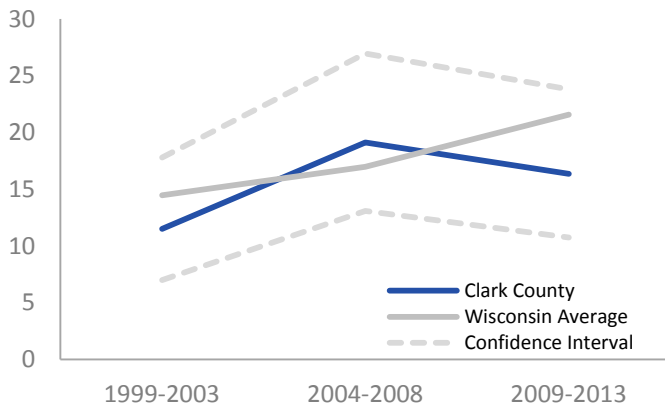
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

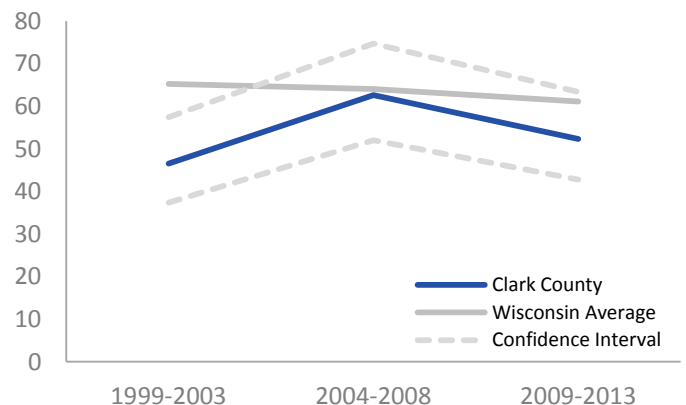
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

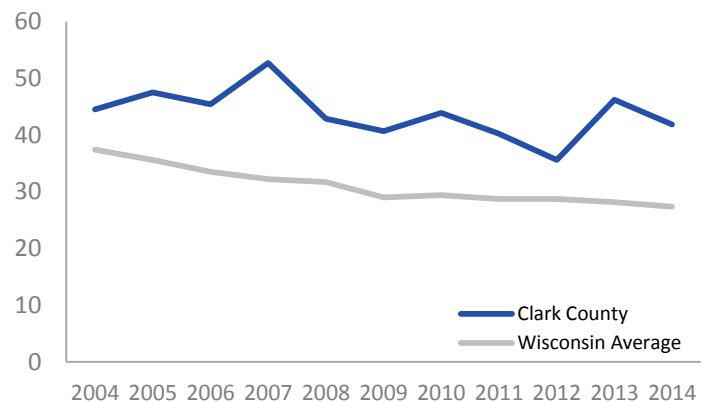
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY CLARK COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

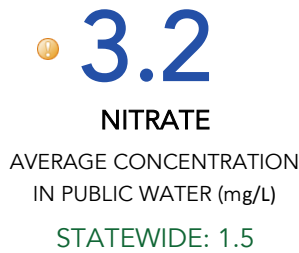
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

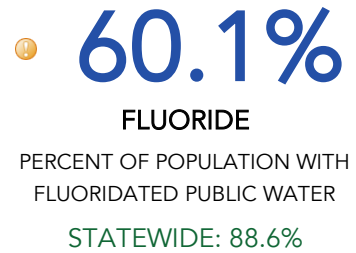
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



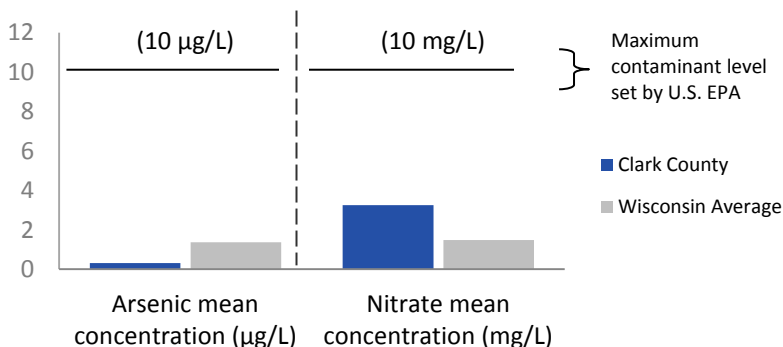
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY CLARK COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

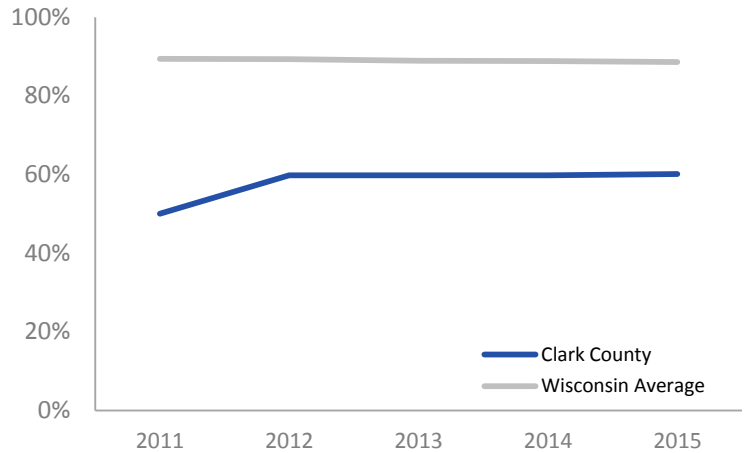
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

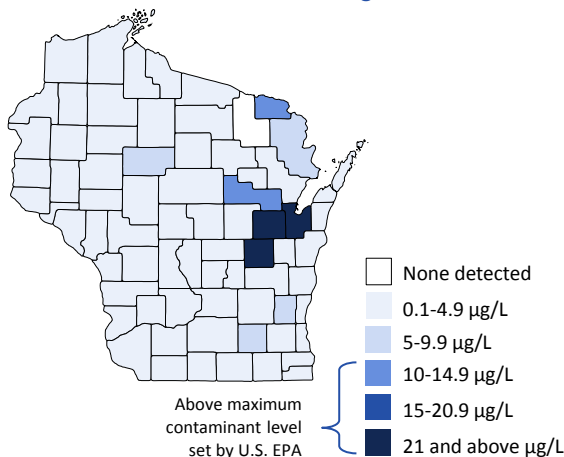
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

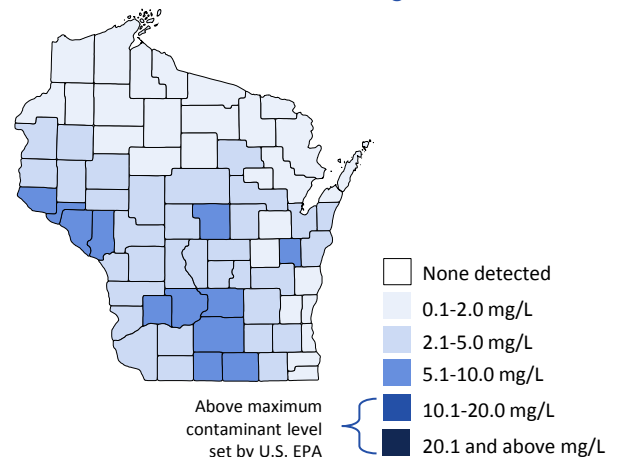
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



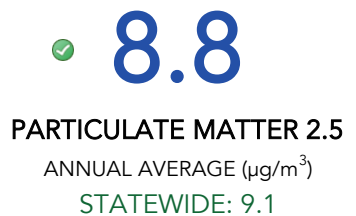


AIR QUALITY CLARK COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

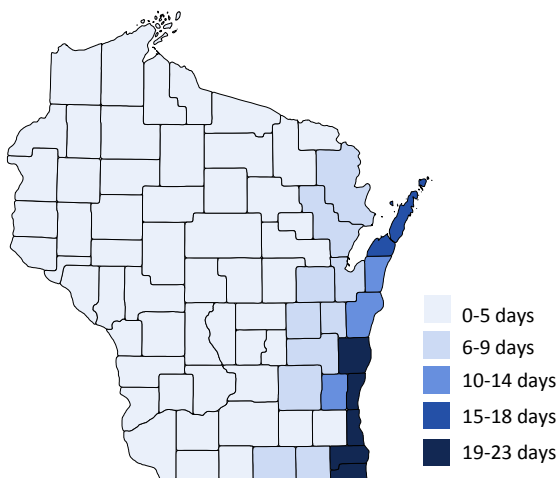
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

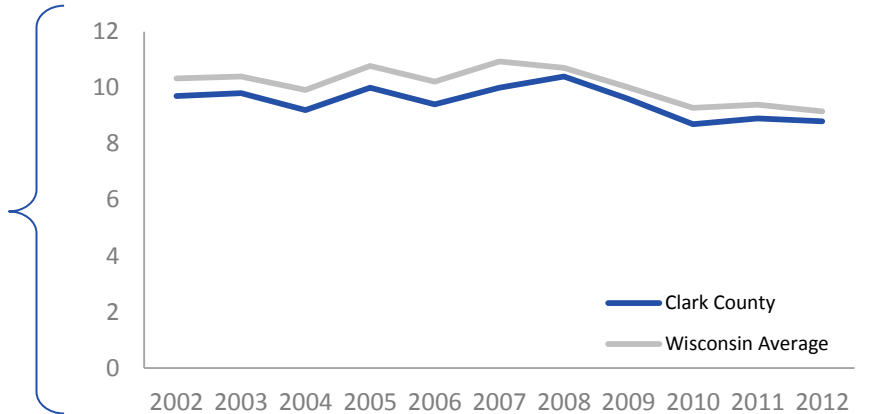
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

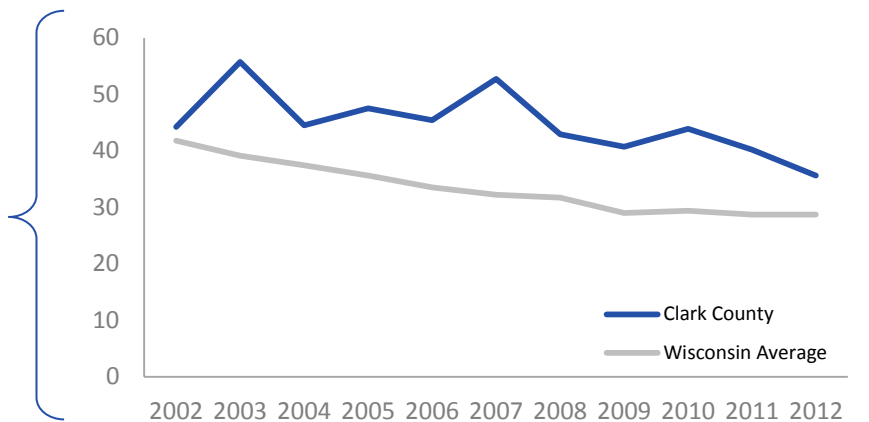
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



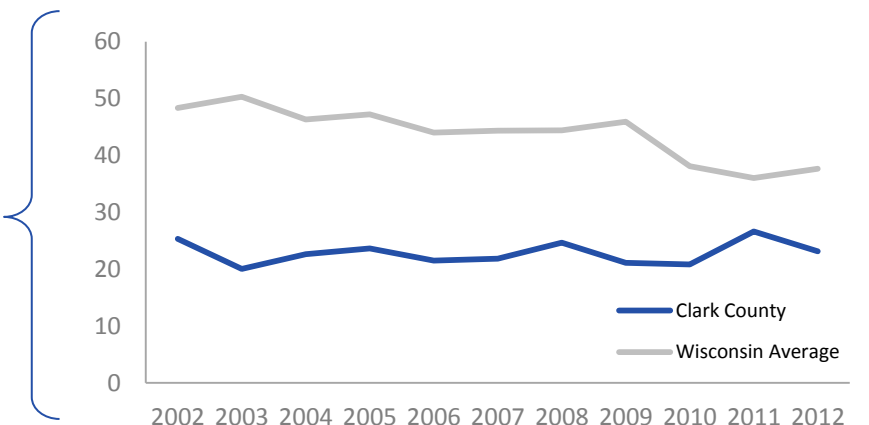
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



COLUMBIA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



COLUMBIA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 5.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 31.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 75.8 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 39.4 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 22.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 28.3 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

⚠ 1.6 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 78.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 2 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS COLUMBIA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **5.0%**

CHILDHOOD LEAD POISONING

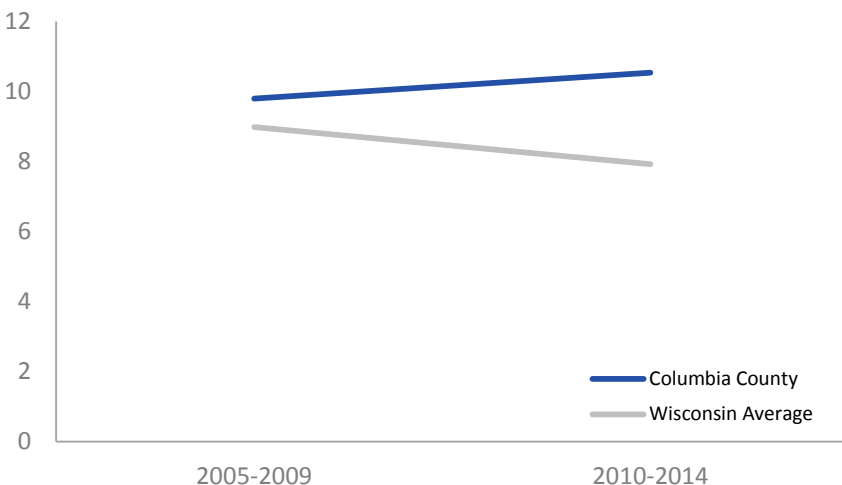
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS COLUMBIA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

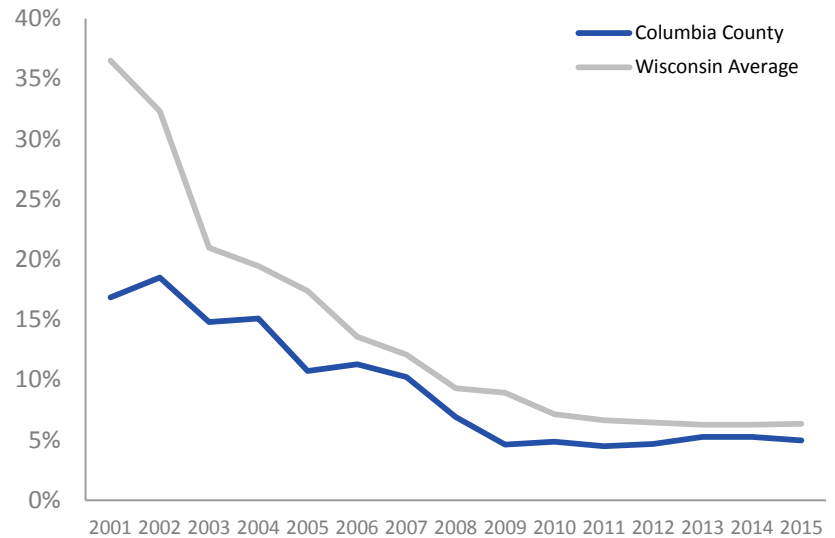
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

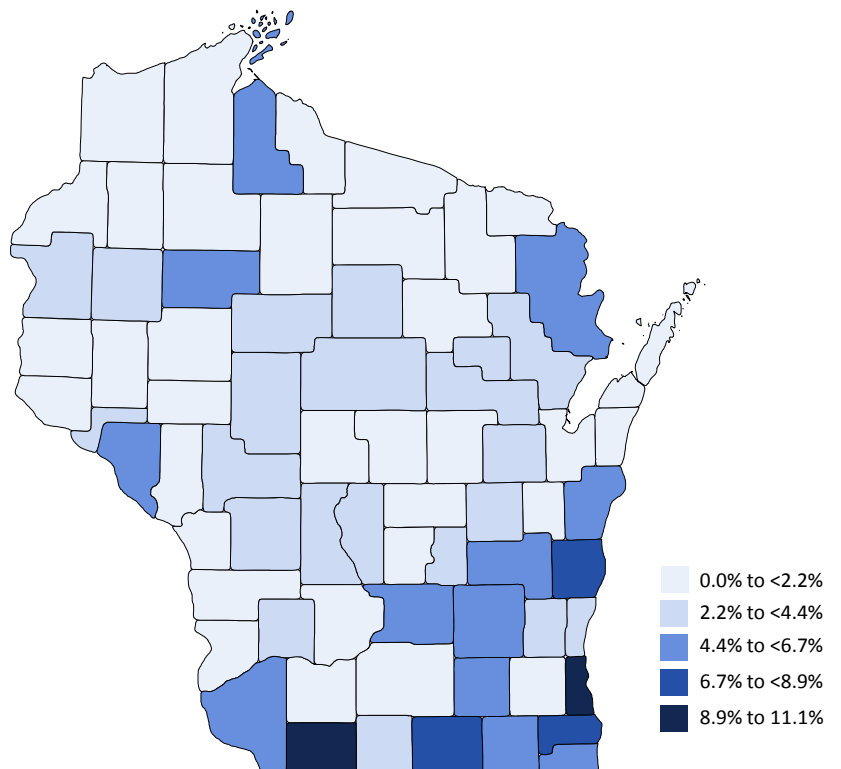
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE COLUMBIA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

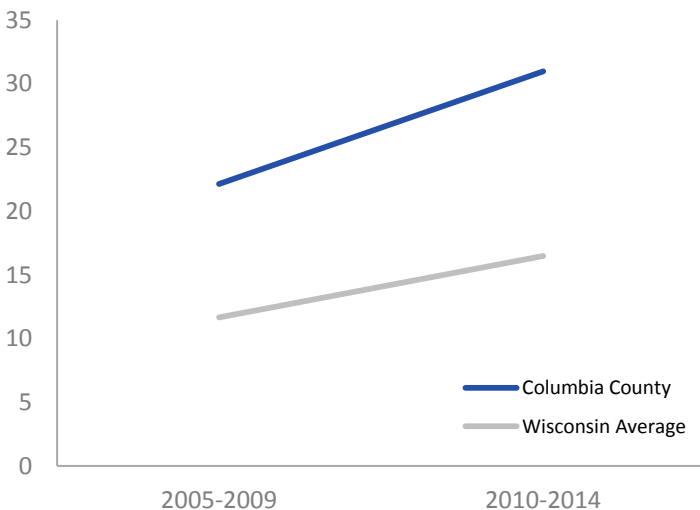
31.0
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

75.8
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

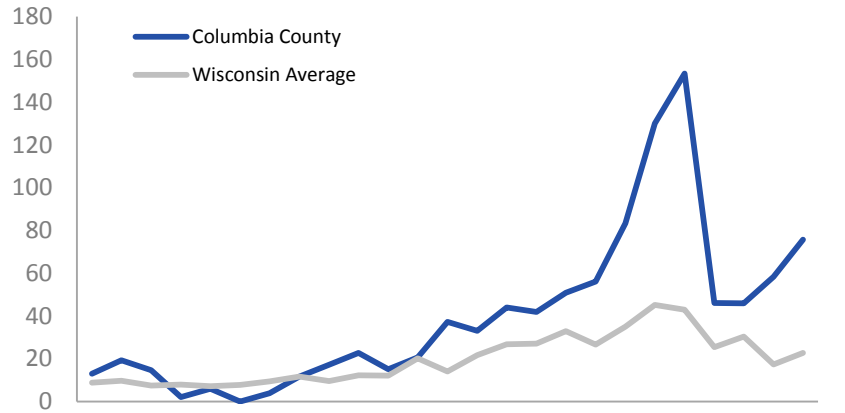
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

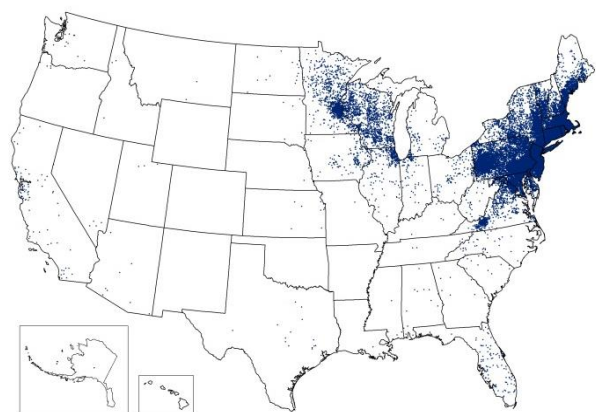
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

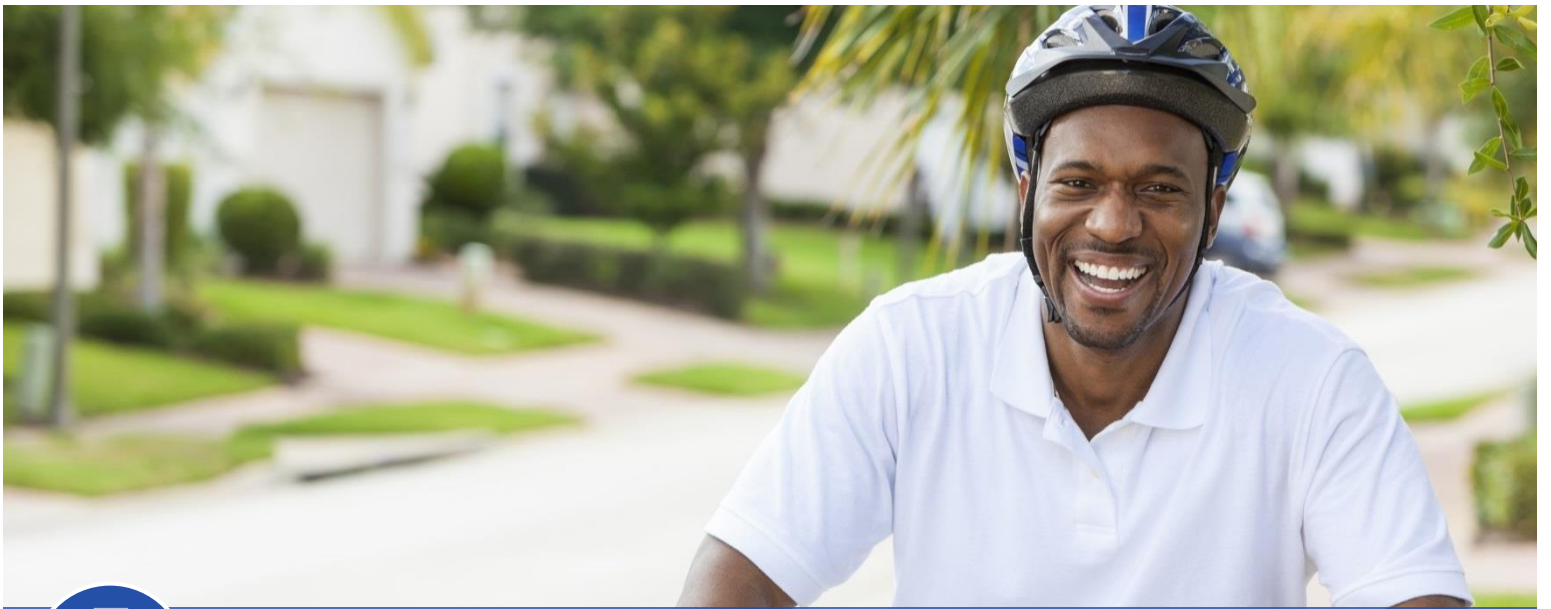


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES COLUMBIA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **39.4**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⬇️ **22.8**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

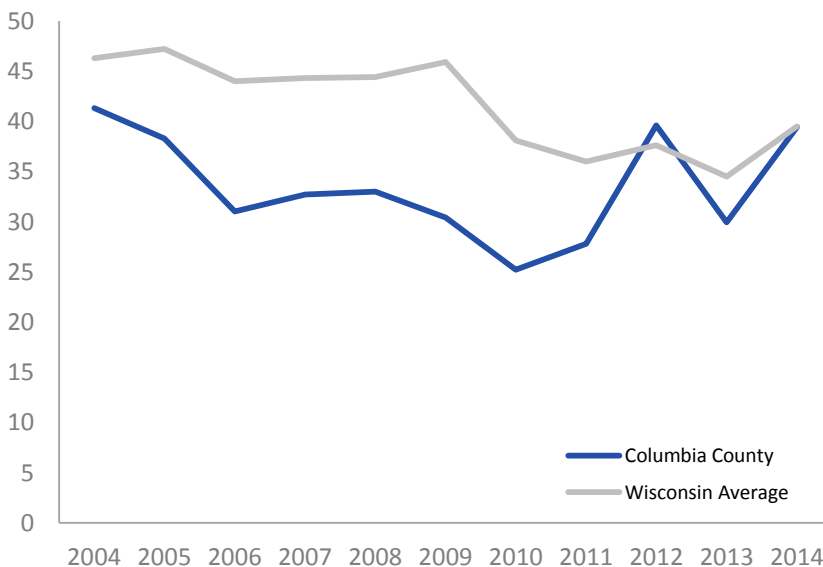
⬆️ **64.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⬆️ **28.3**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬆️ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

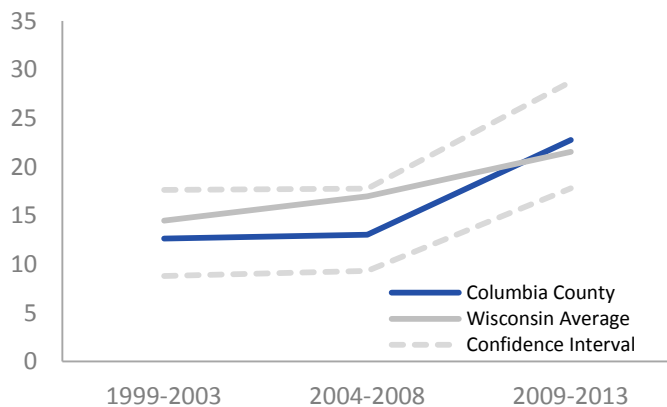
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

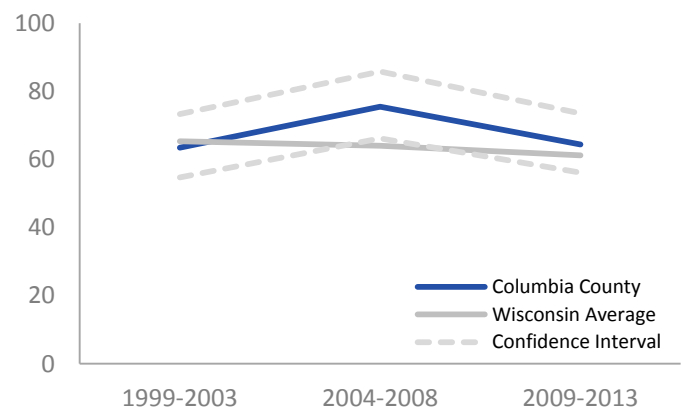
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

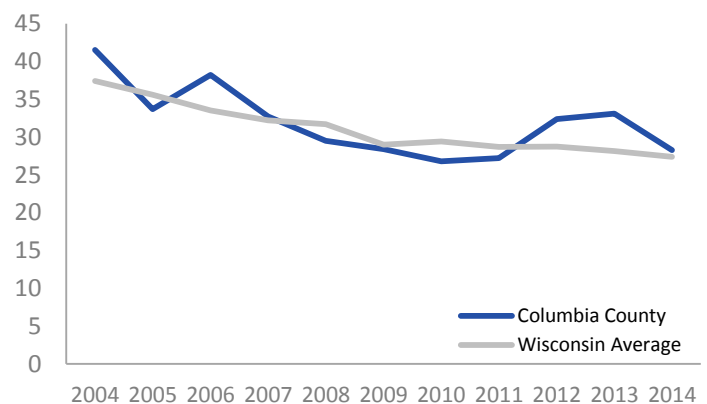
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY COLUMBIA COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

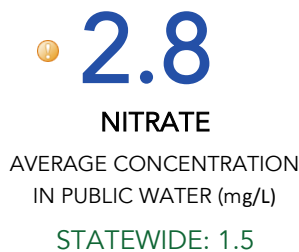
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

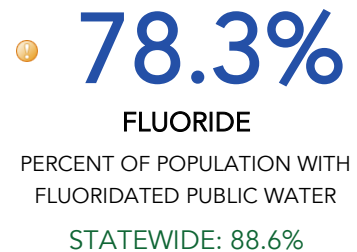
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



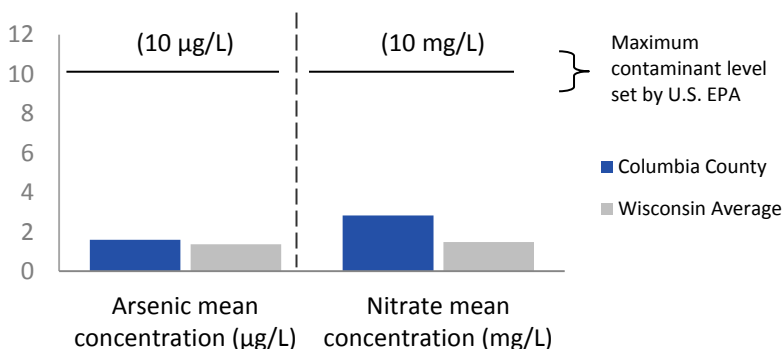
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY COLUMBIA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

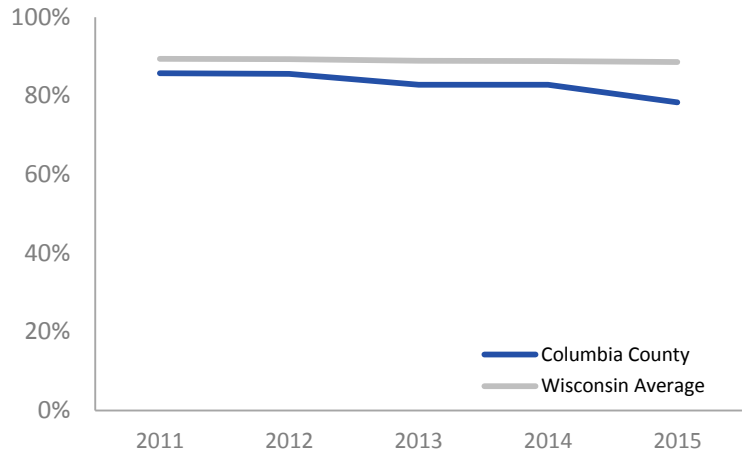
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

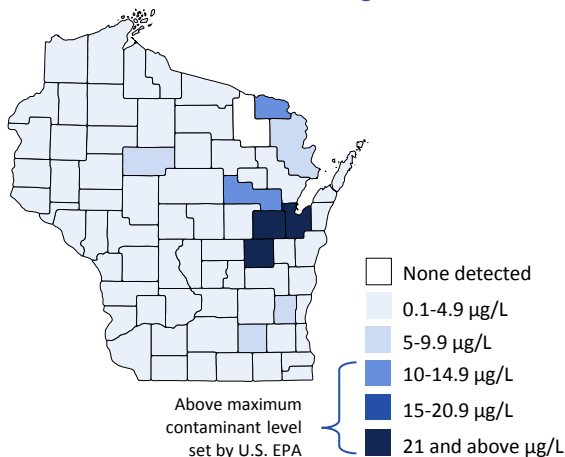
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

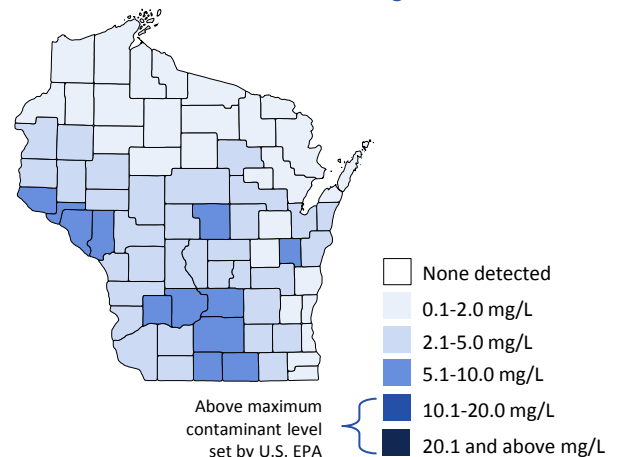
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



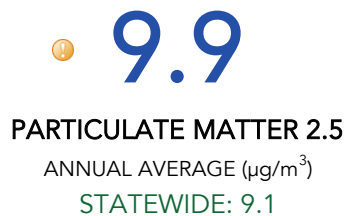
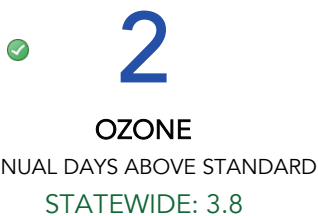


AIR QUALITY COLUMBIA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

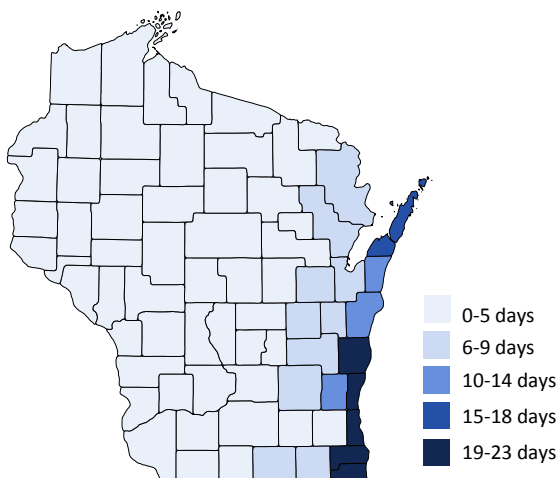
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

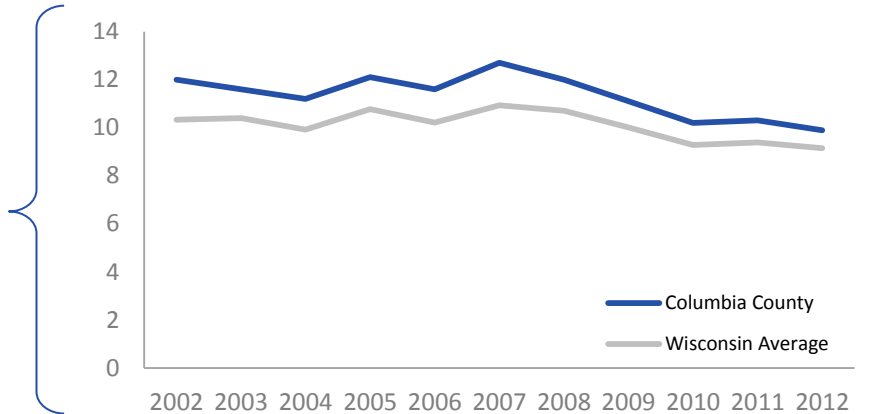


AIR QUALITY COLUMBIA COUNTY

PARTICULATE MATTER 2.5

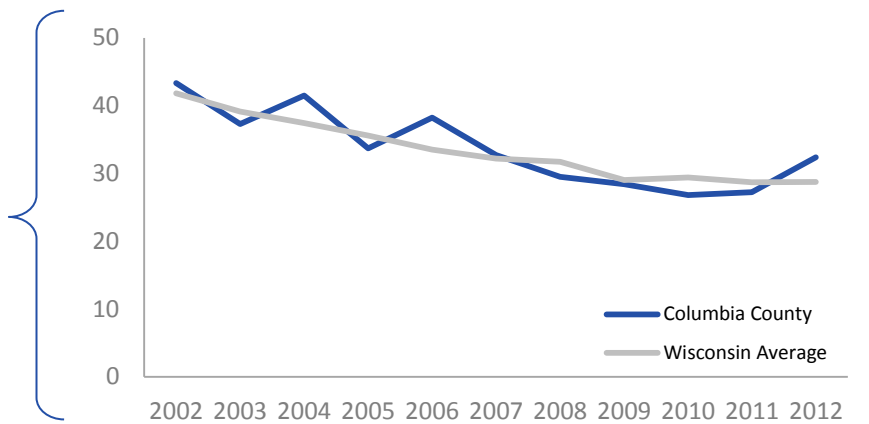
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



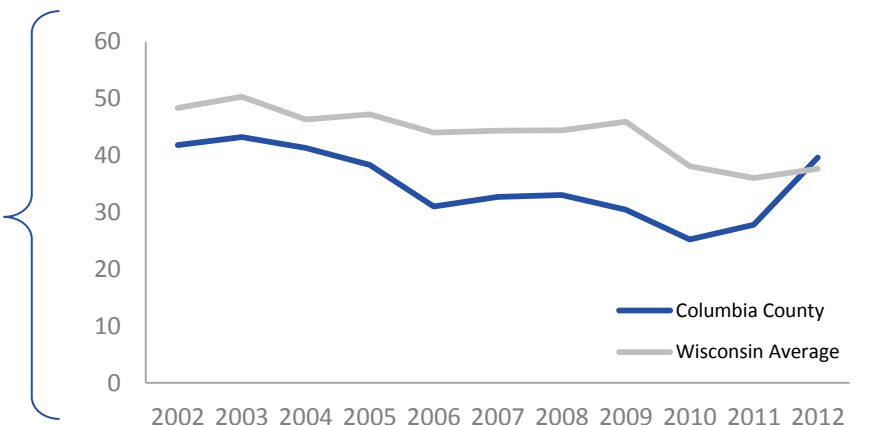
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



CRAWFORD COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



CRAWFORD COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.8% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 6.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 35.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 73.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 20.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 21.6 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 24.5 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 1.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS CRAWFORD COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **6.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **1.8%**

CHILDHOOD LEAD POISONING

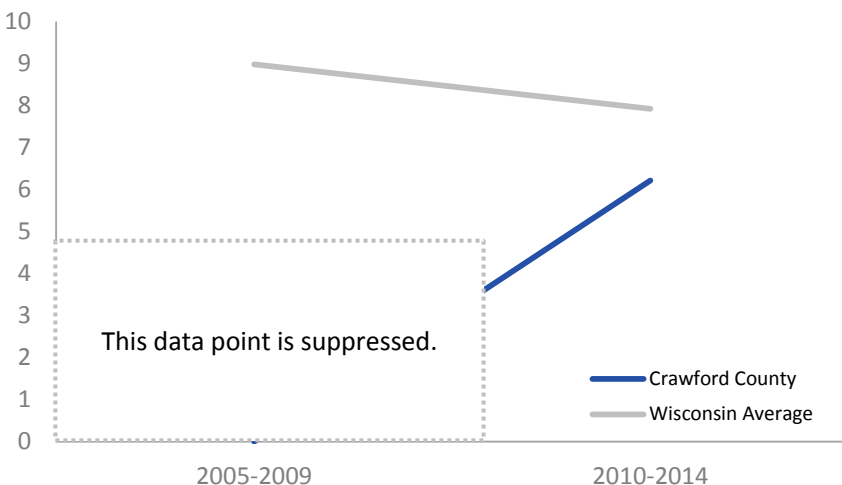
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🟡 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS CRAWFORD COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

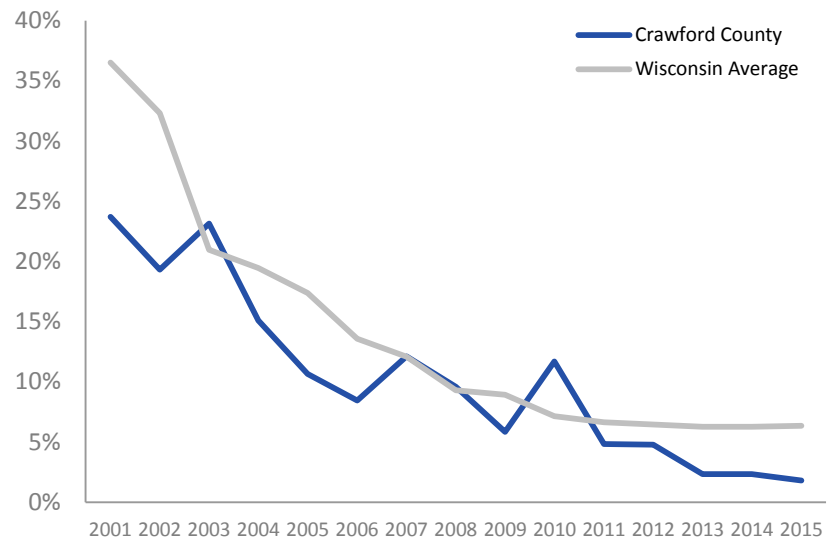
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

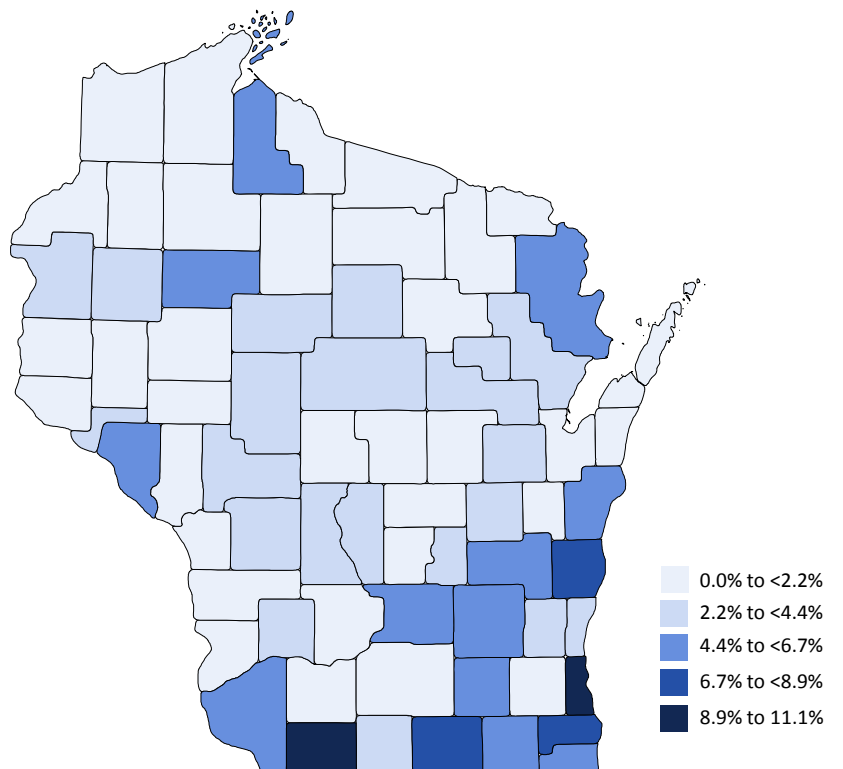
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE CRAWFORD COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

35.5

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

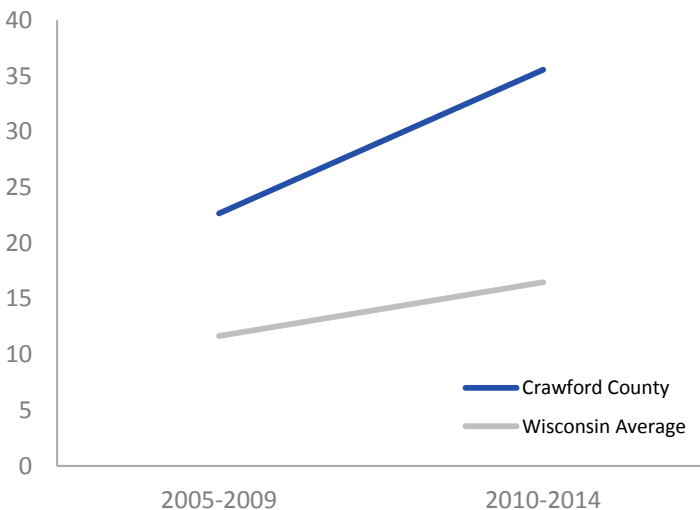
73.2

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

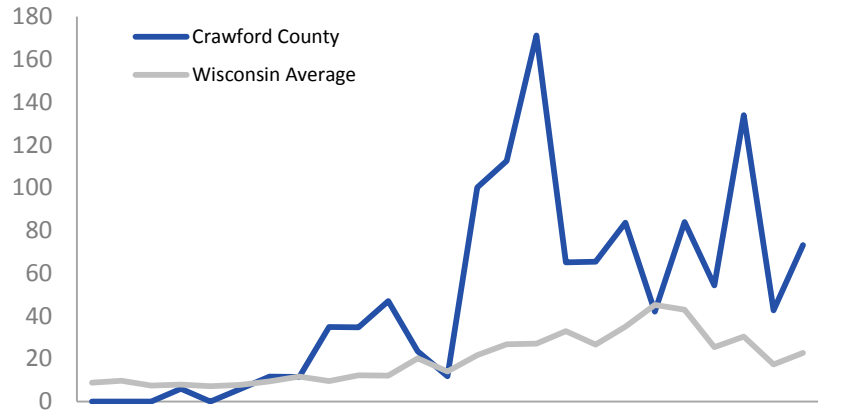
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE

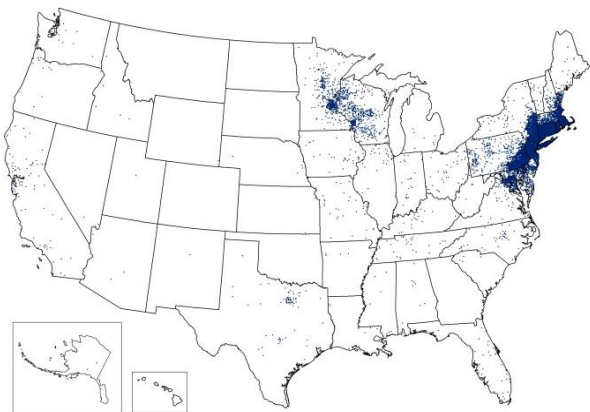


1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

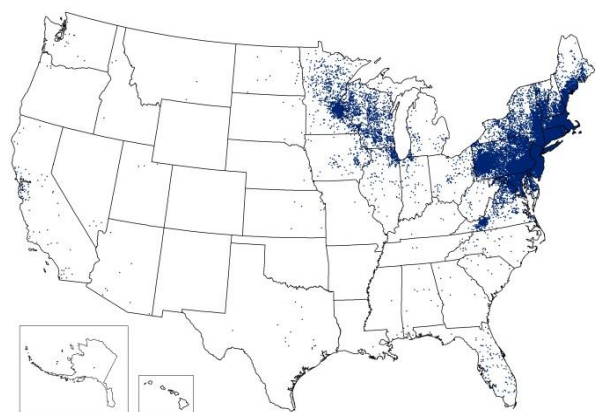
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

CRAWFORD COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **20.9**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **21.6**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

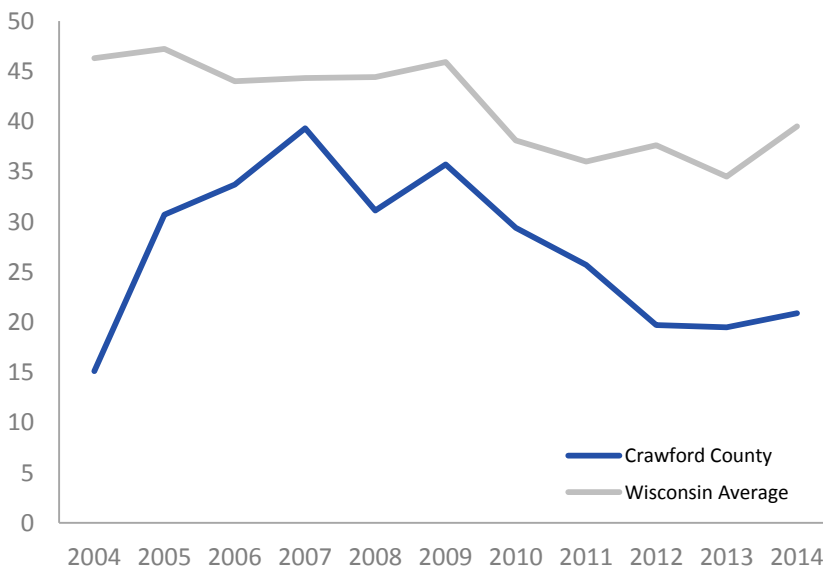
ⓘ **62.5**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **24.5**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

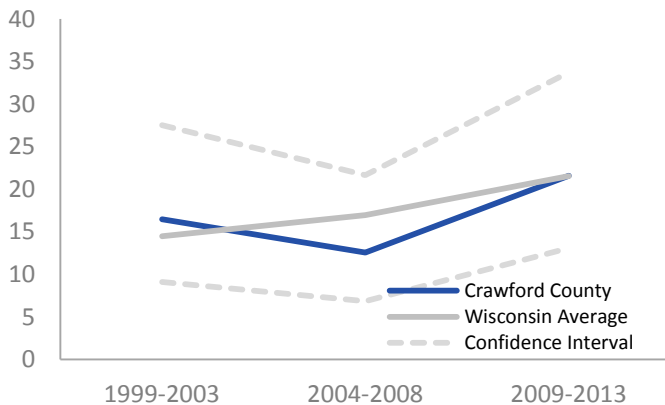
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

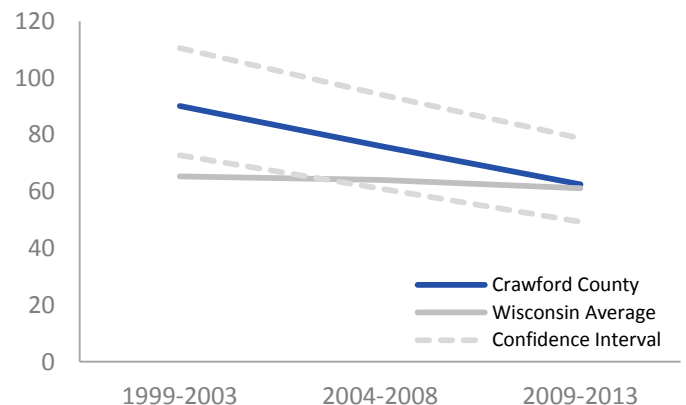
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

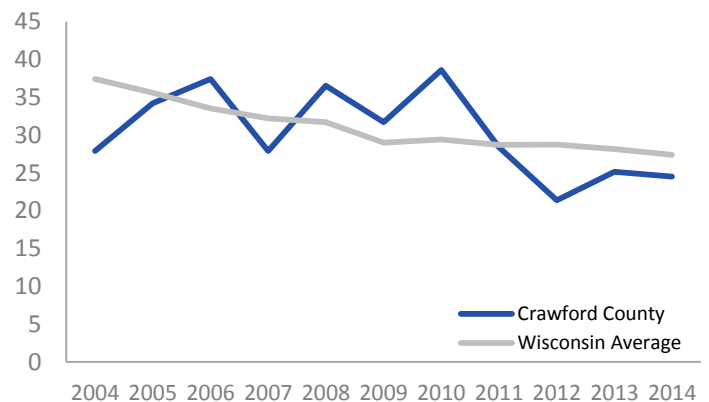
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY CRAWFORD

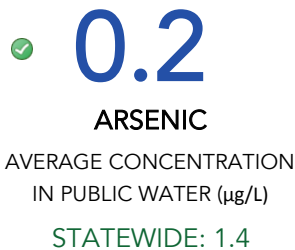
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

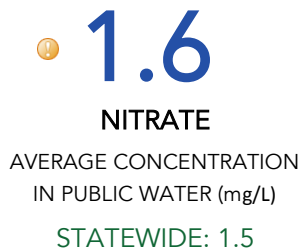
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

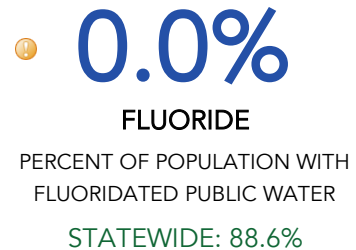
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



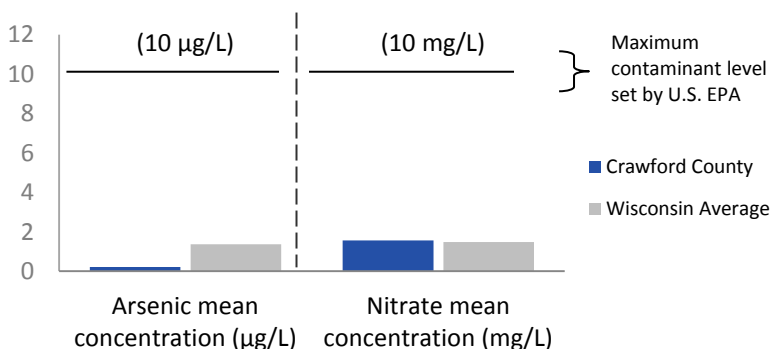
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY CRAWFORD COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

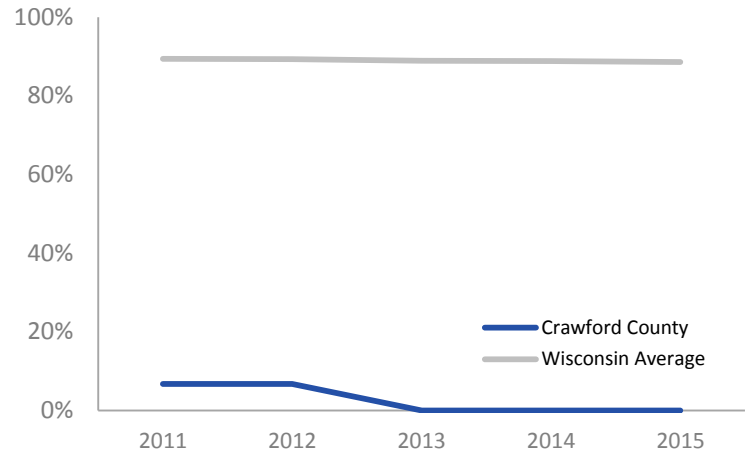
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

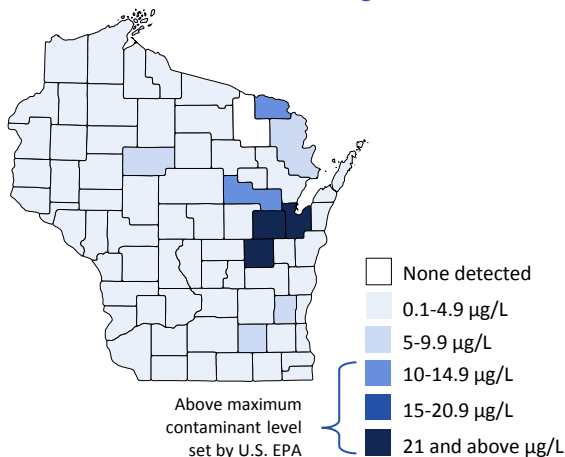
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

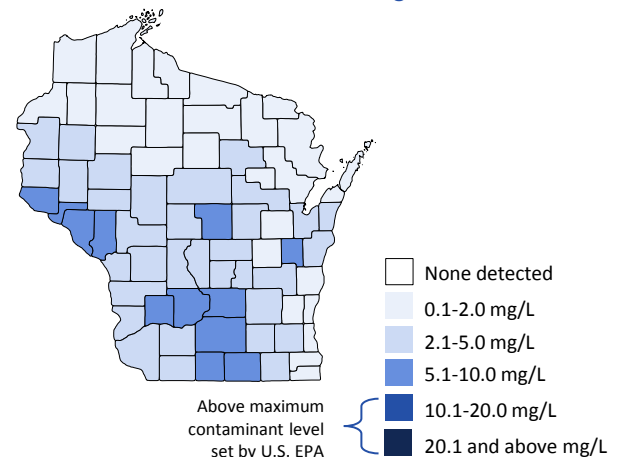
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



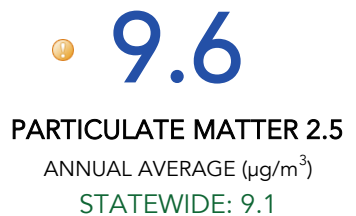


AIR QUALITY CRAWFORD COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

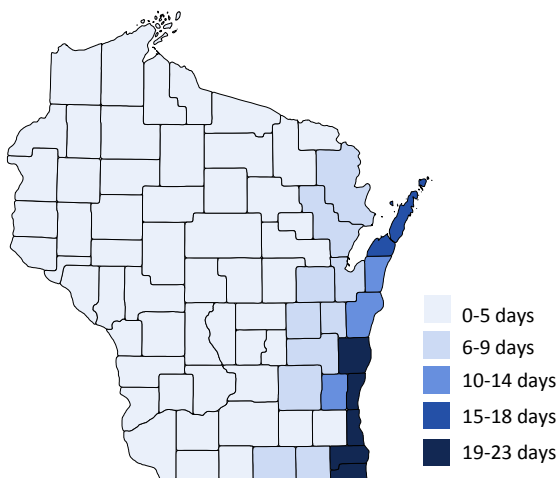
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

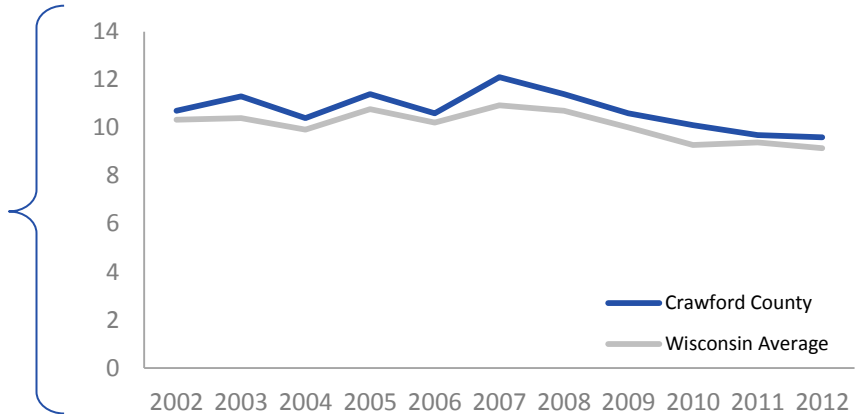


AIR QUALITY CRAWFORD COUNTY

PARTICULATE MATTER 2.5

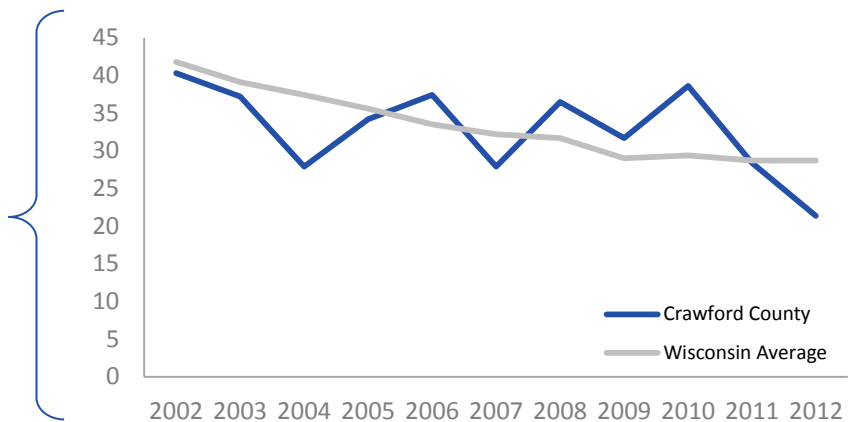
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



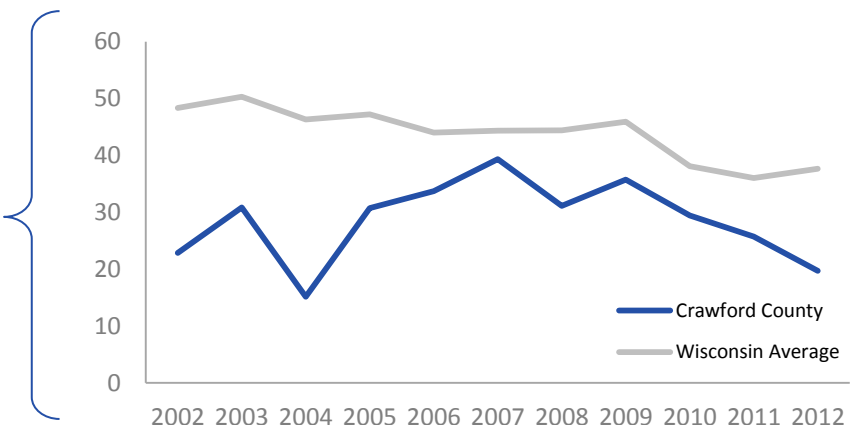
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
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University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

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MAY 2017 | P-00719 (Rev. 05/2017)



DANE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DANE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.9% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 5.3 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 11.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 15.7 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 22.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 26.3 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 22.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.5 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 1.4 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 99.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 2 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS DANE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **5.3**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **0.9%**

CHILDHOOD LEAD POISONING

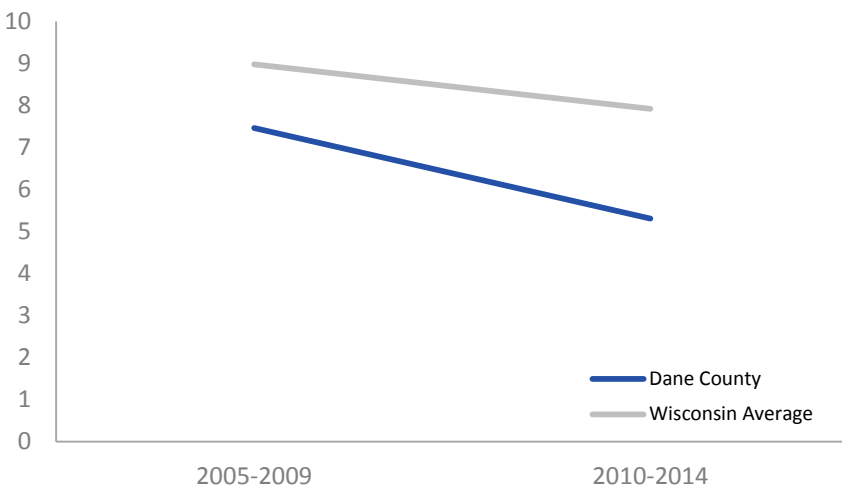
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS DANE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

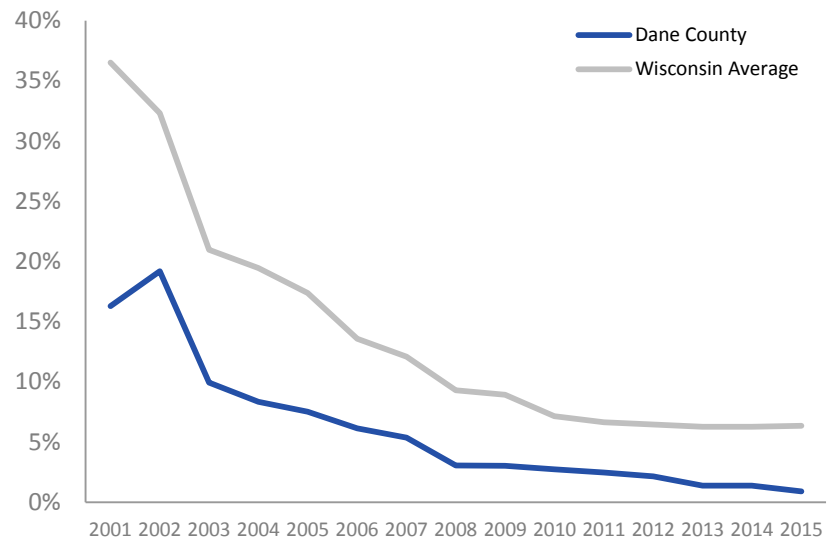
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

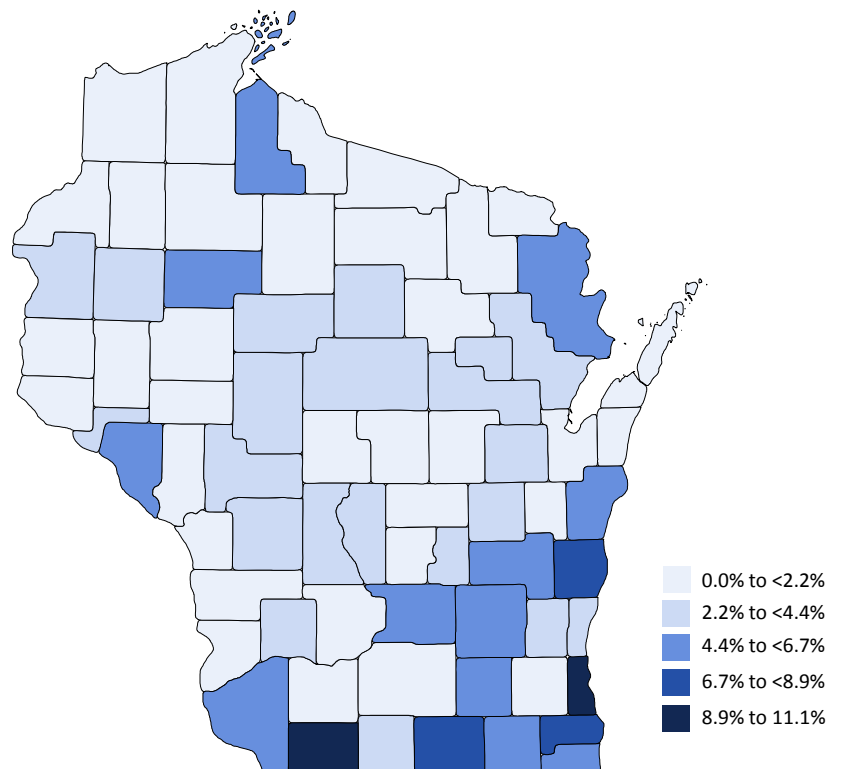
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE DANE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **11.1**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

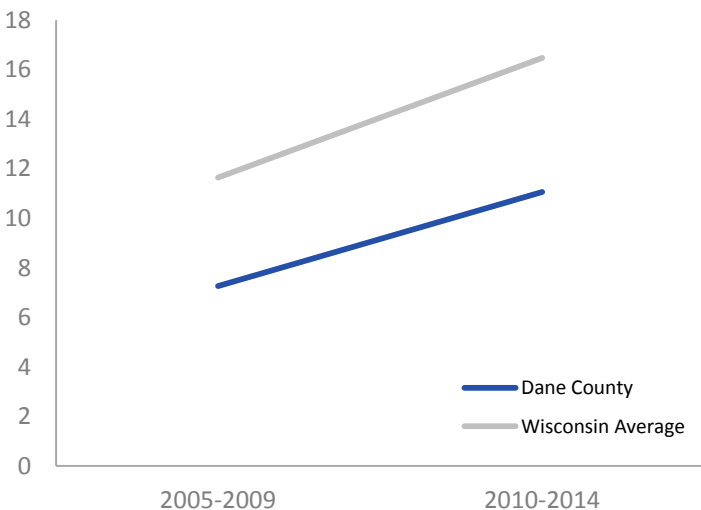
✓ **15.7**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

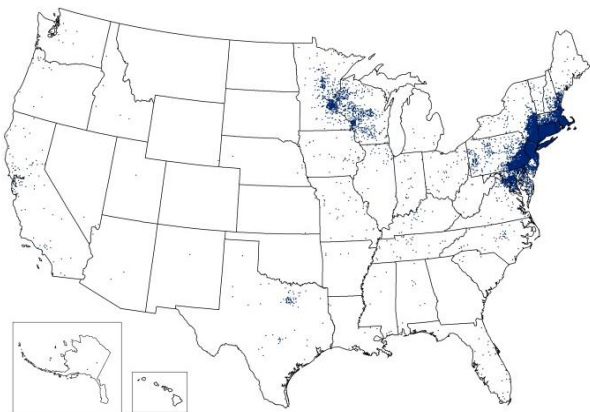
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

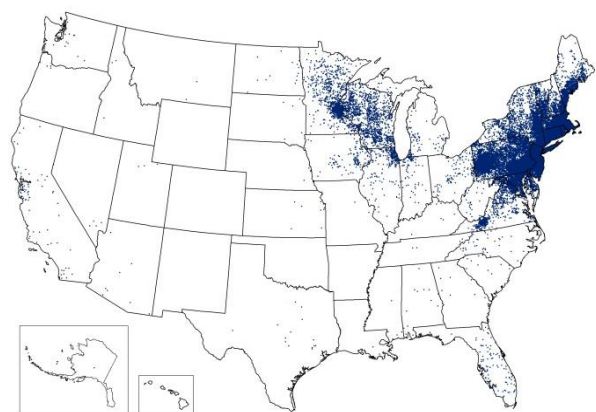
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

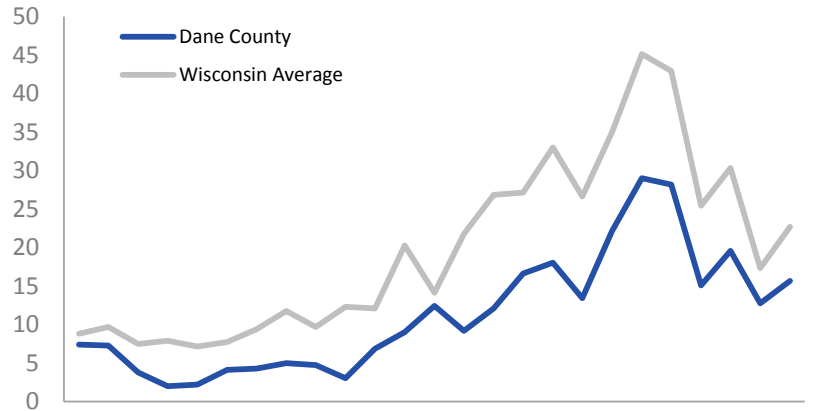


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES DANE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **22.1**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **26.3**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

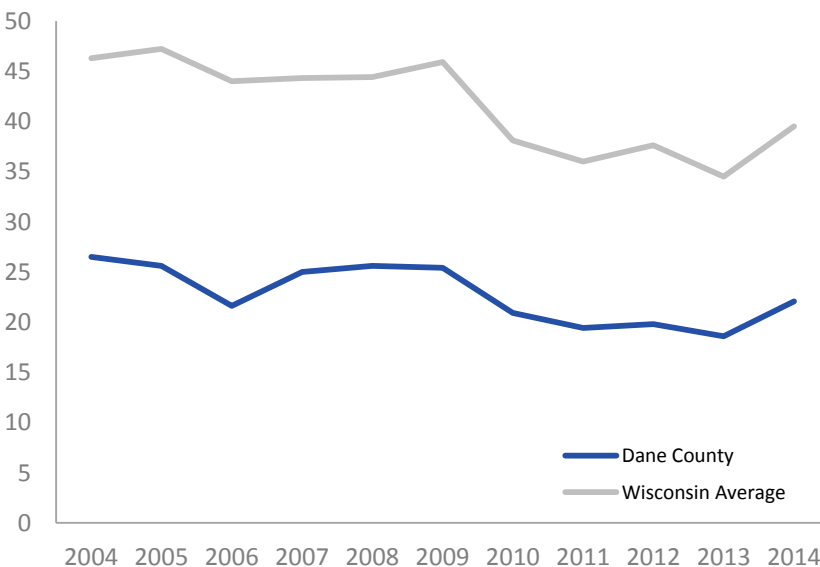
✓ **54.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **22.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

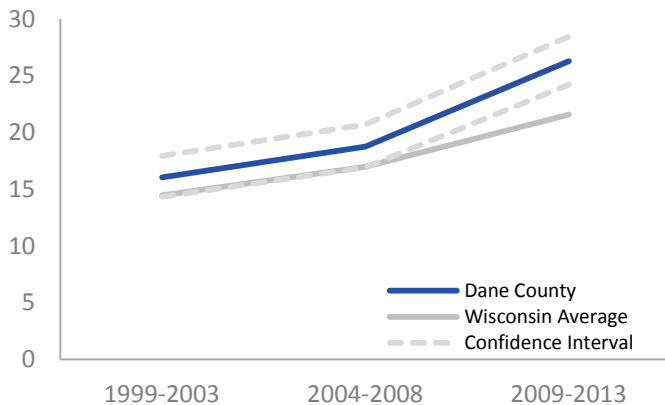
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

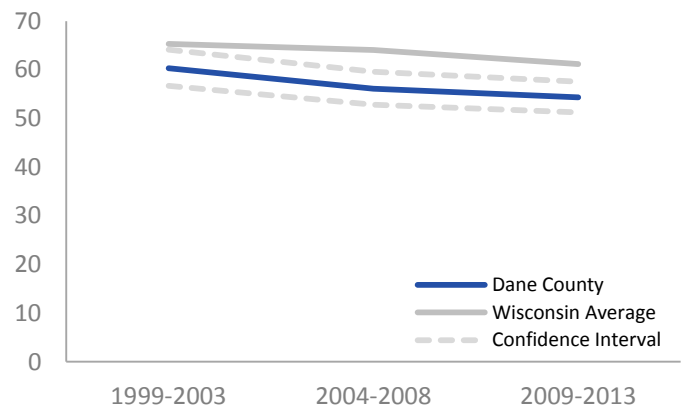
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

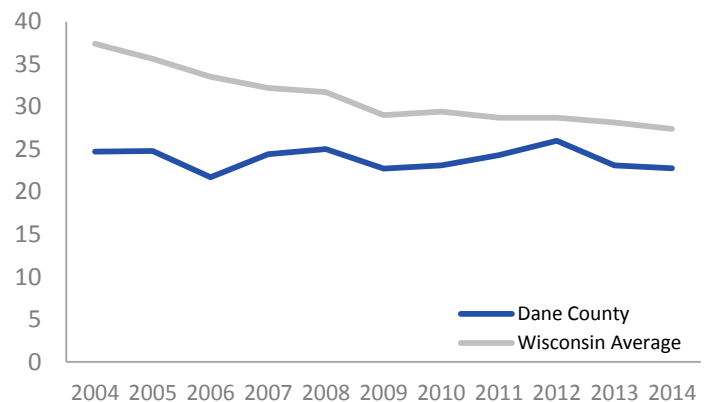
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY DANE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.

✓ **0.5**
ARSENIC
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (µg/L)
 STATEWIDE: 1.4

⊕ Above state value (with exception of fluoride where below state value is not preferred)

✓ **1.4**
NITRATE
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (mg/L)
 STATEWIDE: 1.5

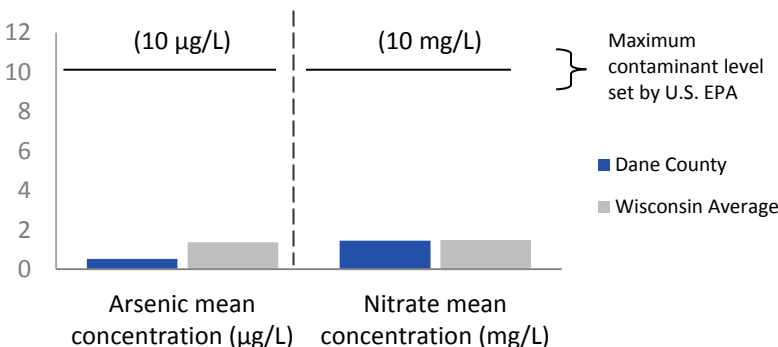
✓ At or below state value (with exception of fluoride where above state value is preferred)

✓ **99.0%**
FLUORIDE
 PERCENT OF POPULATION WITH
 FLUORIDATED PUBLIC WATER
 STATEWIDE: 88.6%

^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY DANE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

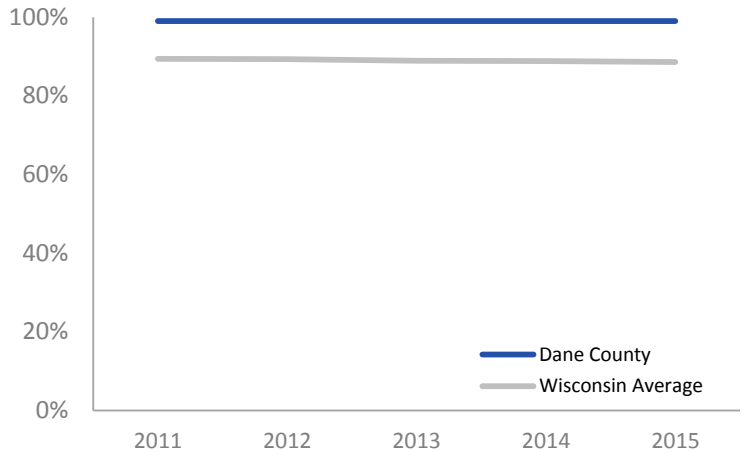
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

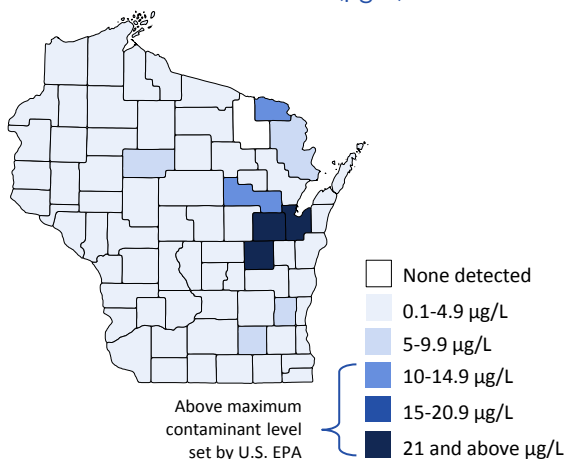
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

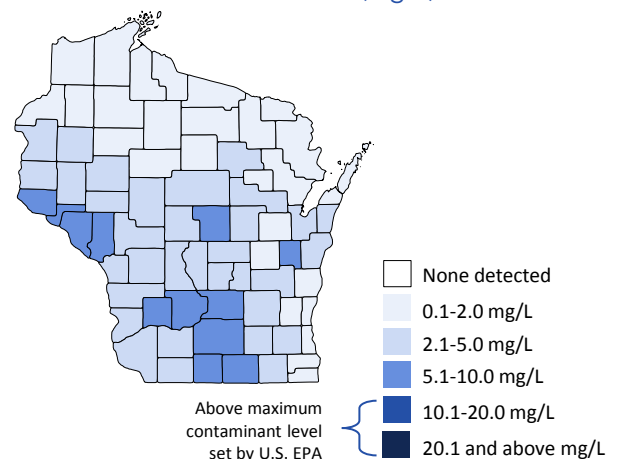
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY DANE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



2

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



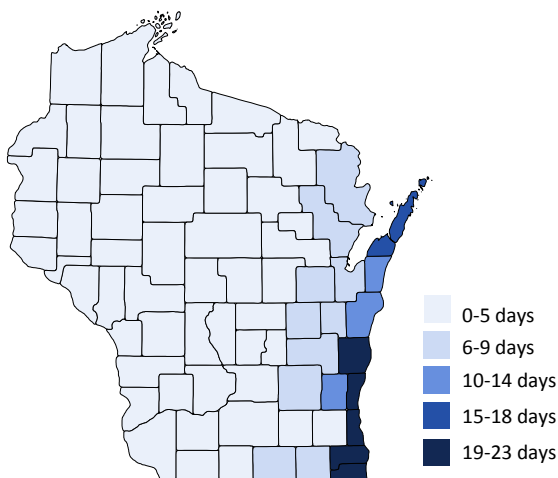
9.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

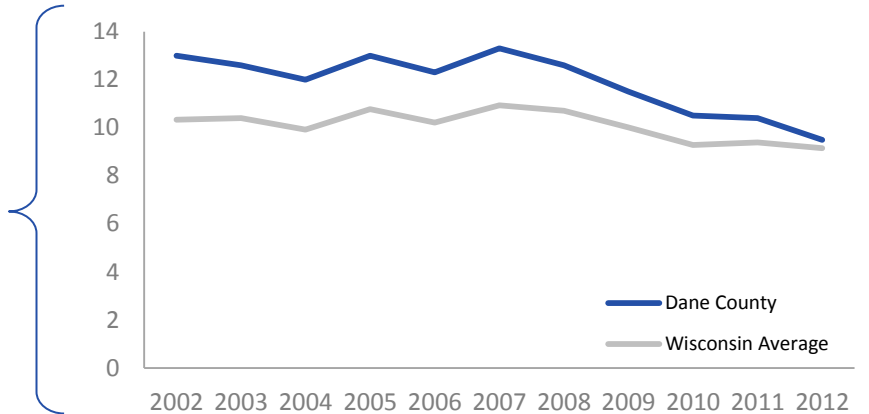
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

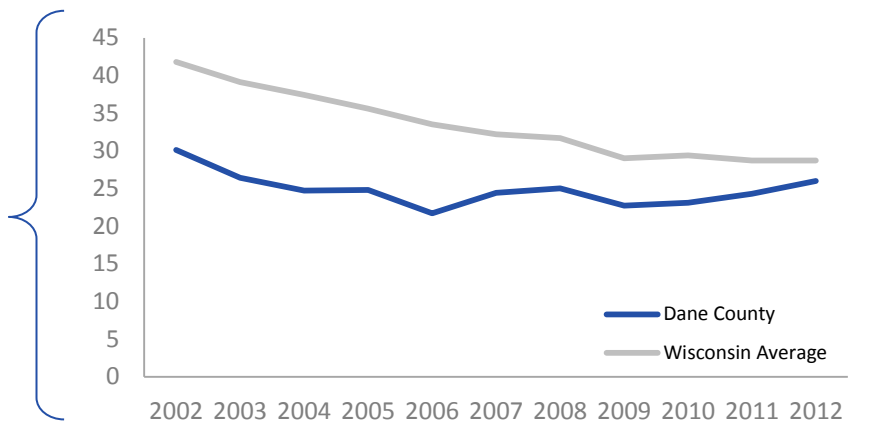
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



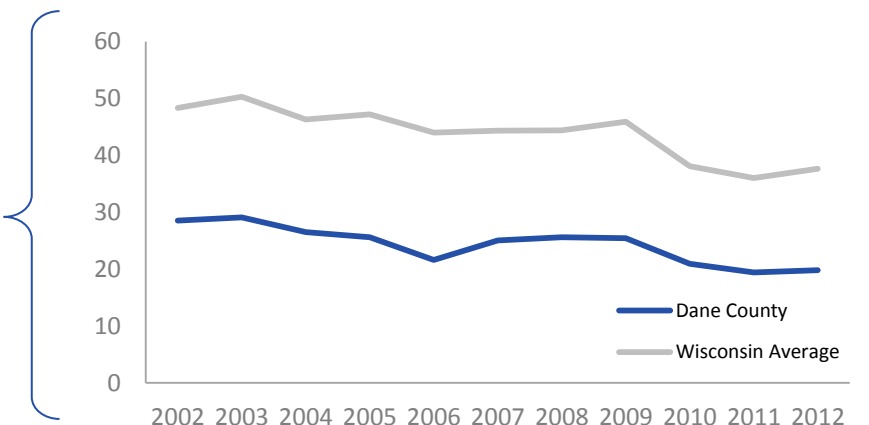
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



DODGE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DODGE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

6.5% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

11.1 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

28.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

10.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

35.8 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

20.9 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

33.7 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

4.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

0.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

69.6% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

6 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⬇ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS DODGE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

⚠️ **11.1**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

⚠️ **6.5%**

CHILDHOOD LEAD POISONING

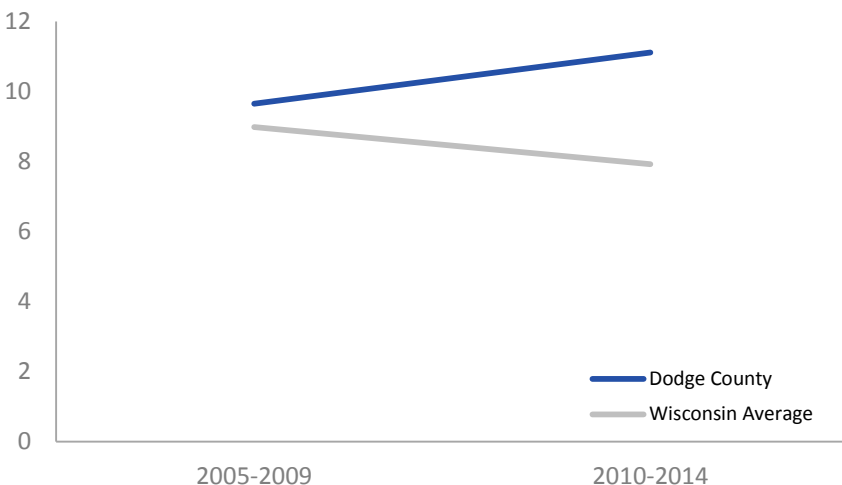
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

⚠️ Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS DODGE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

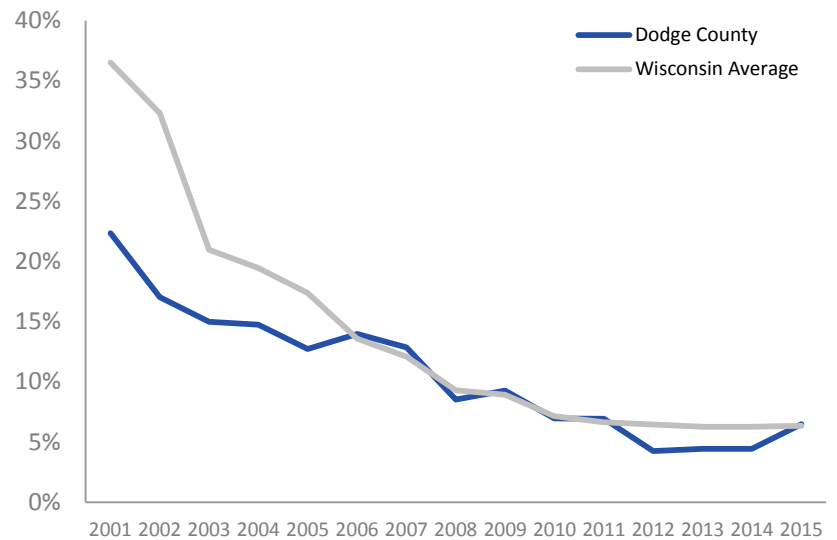
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

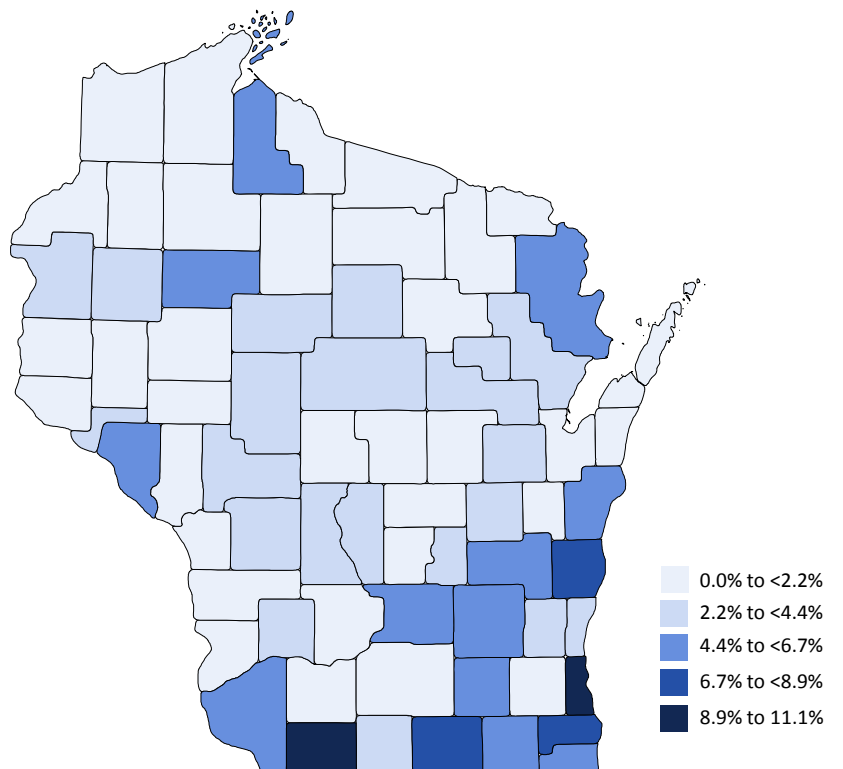
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE DODGE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

28.3

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

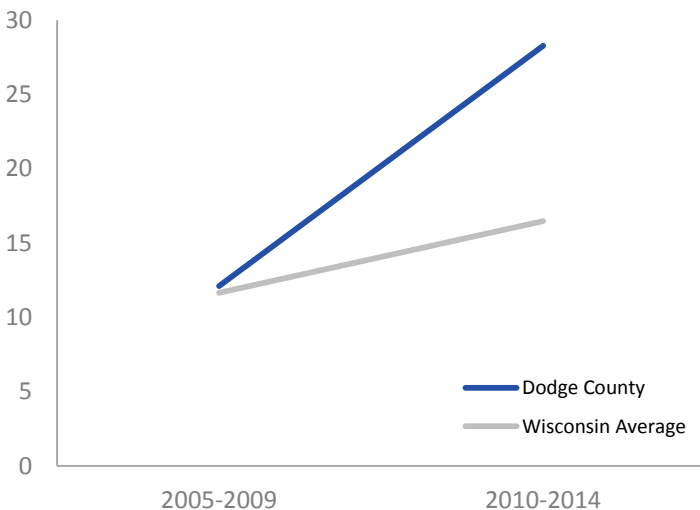
10.2

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

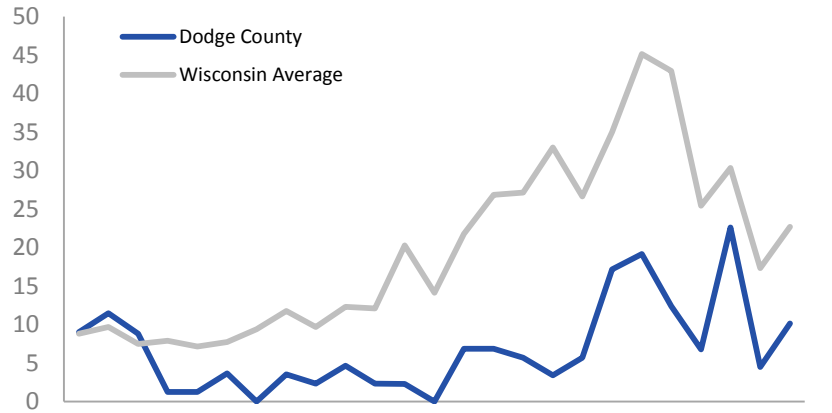
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

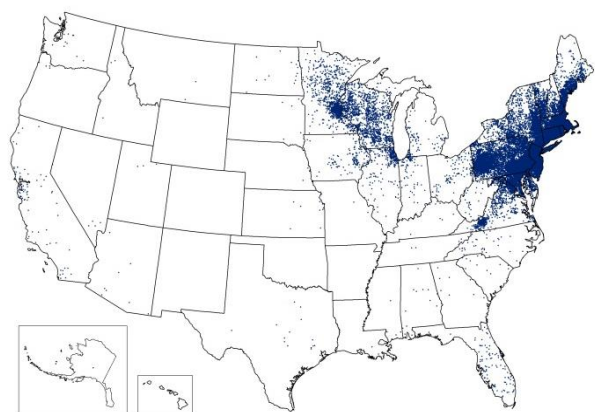
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES DODGE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **35.8**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **20.9**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

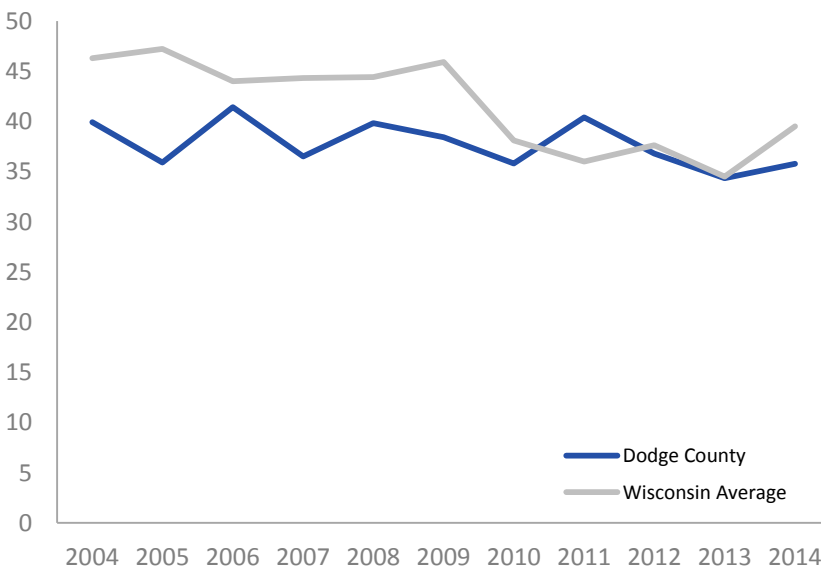
✓ **58.6**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **33.7**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

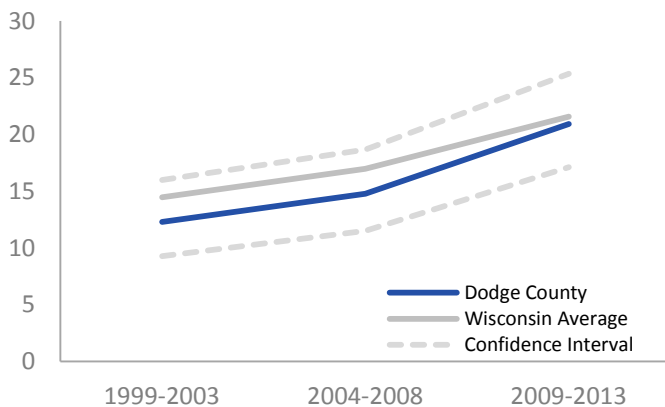
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

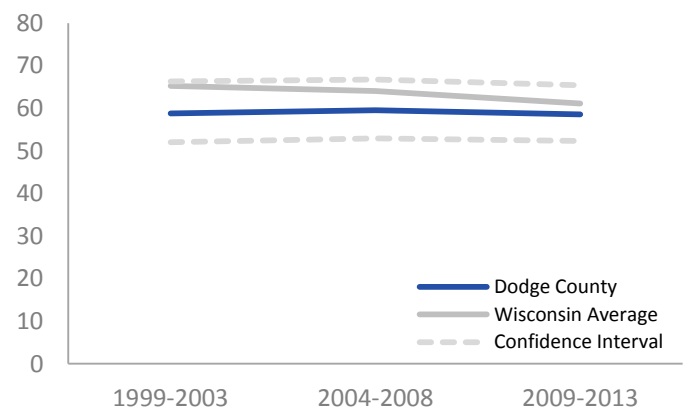
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

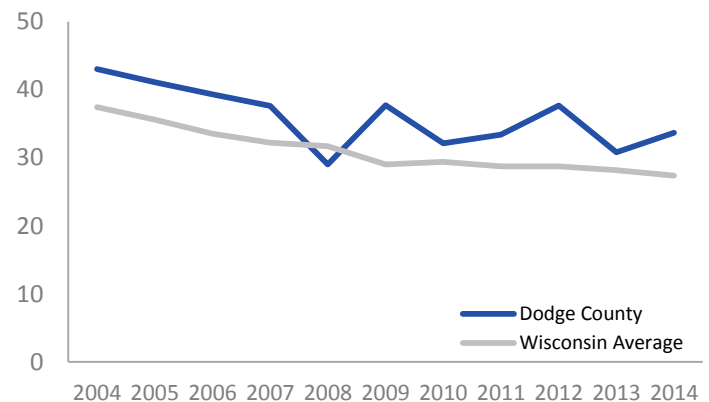
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY DODGE COUNTY

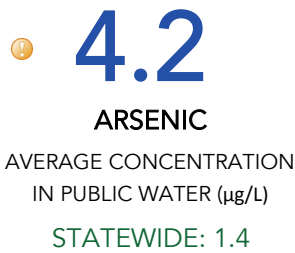
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

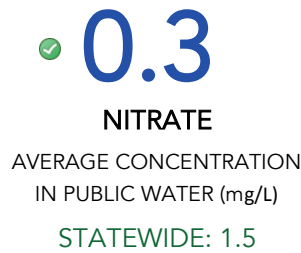
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

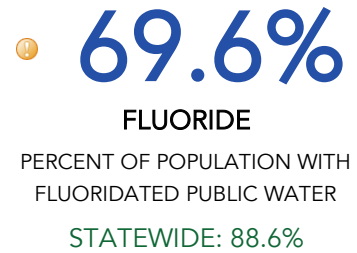
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



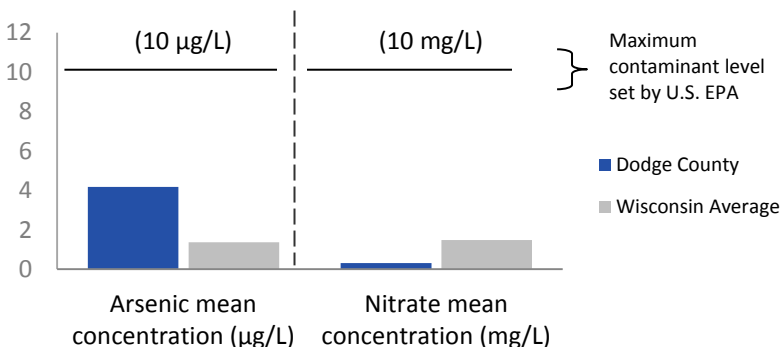
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY DODGE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

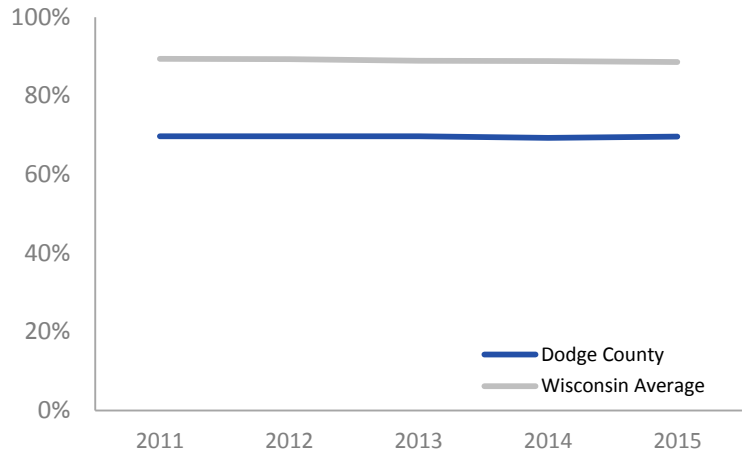
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

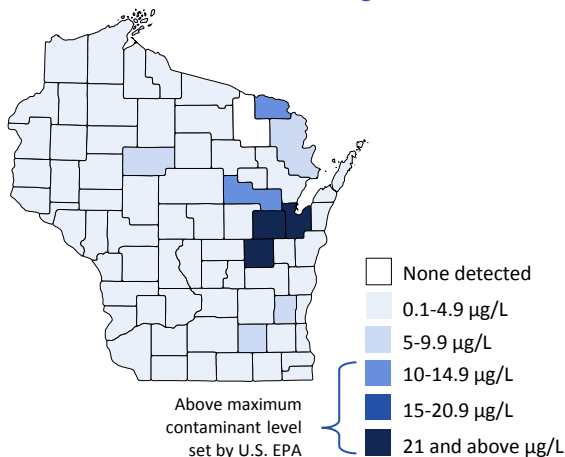
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

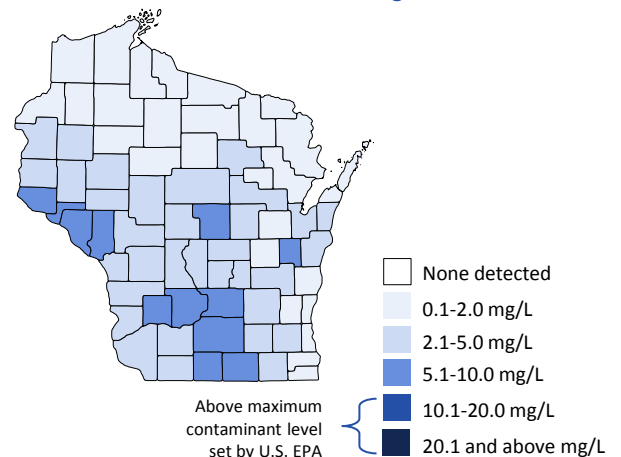
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



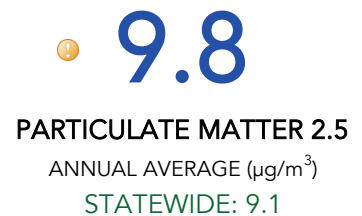


AIR QUALITY DODGE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

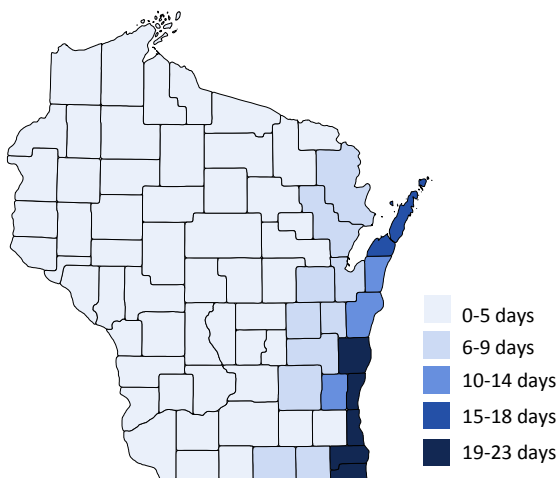
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

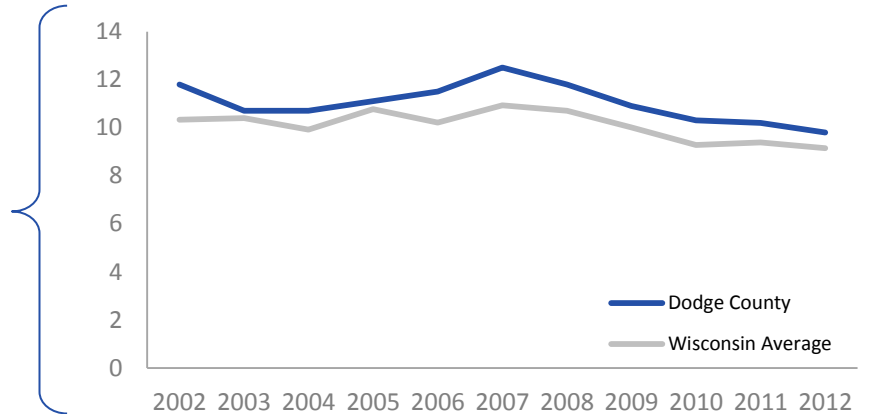
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

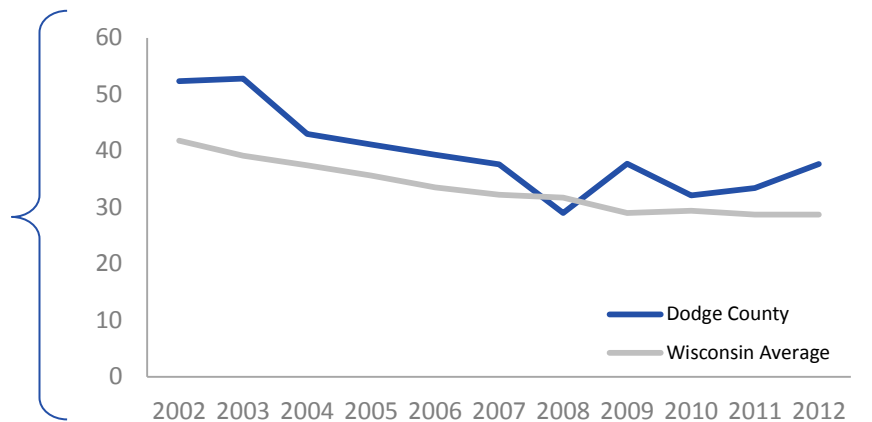
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



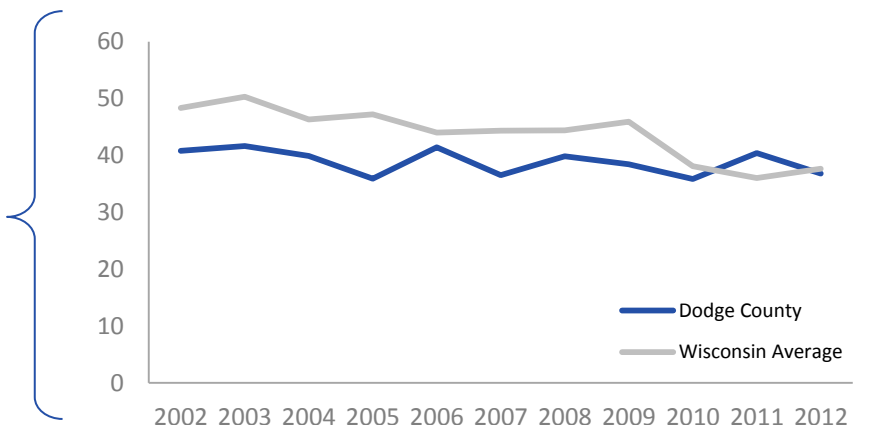
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



DOOR COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DOOR COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.2% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 11.1 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 13.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 10.9 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 33.4 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 39.7 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 26.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.0 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 88.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 14 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS DOOR COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **11.1**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.2%**

CHILDHOOD LEAD POISONING

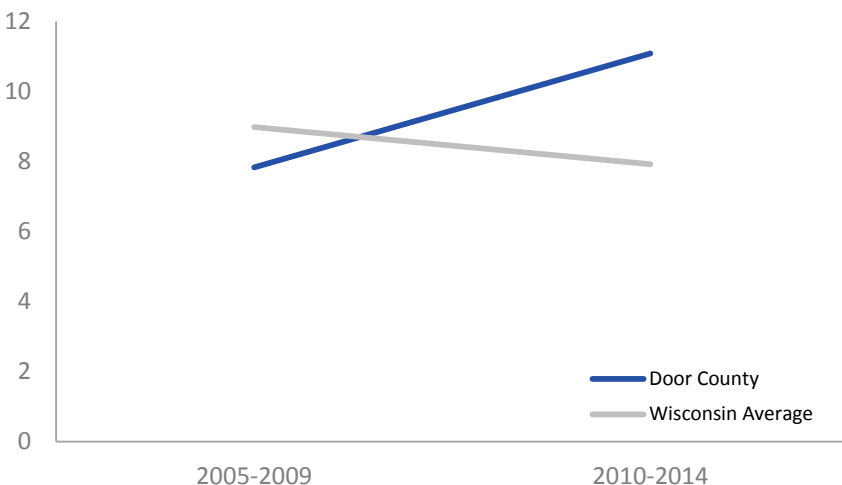
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS DOOR COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

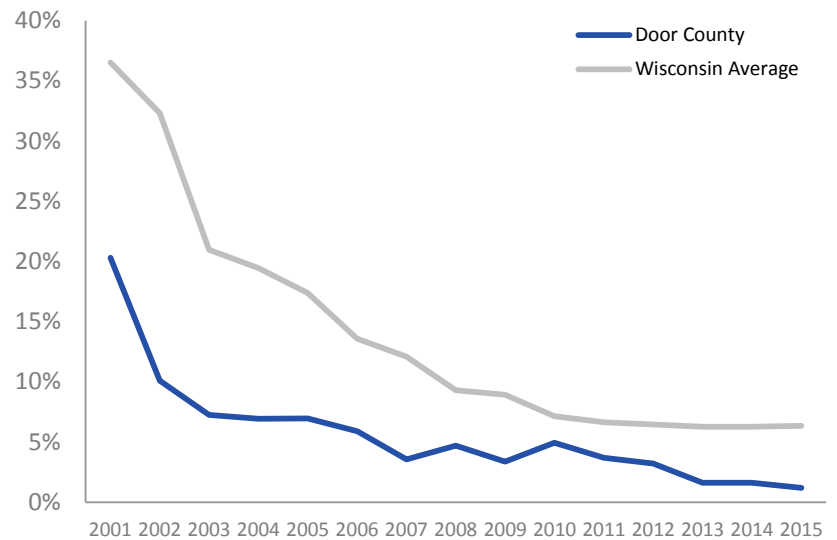
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

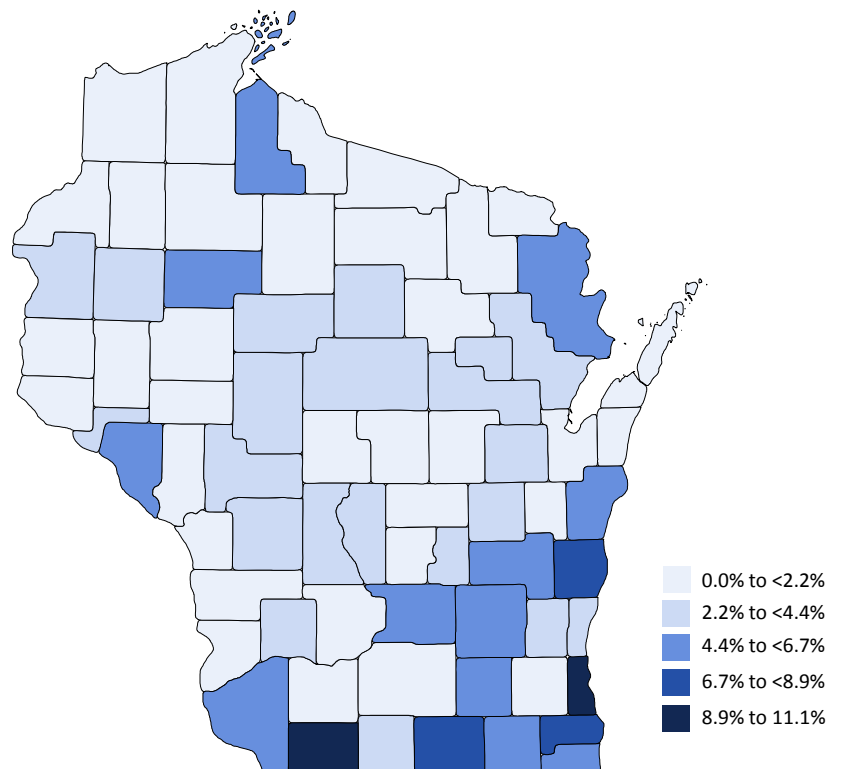
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE DOOR COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **13.6**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

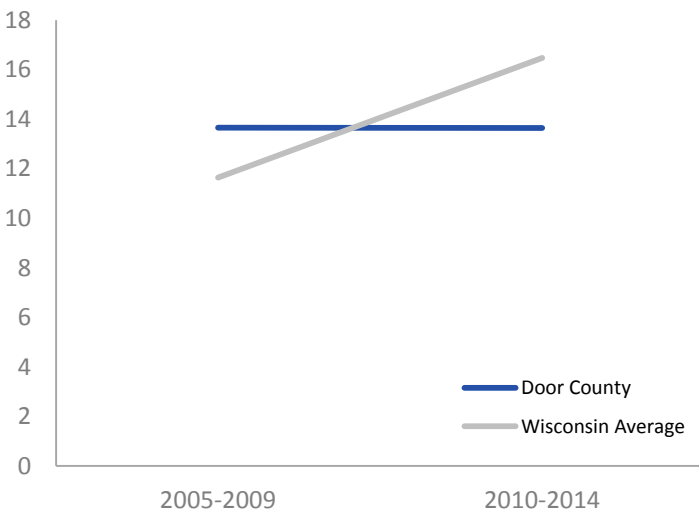
✓ **10.9**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

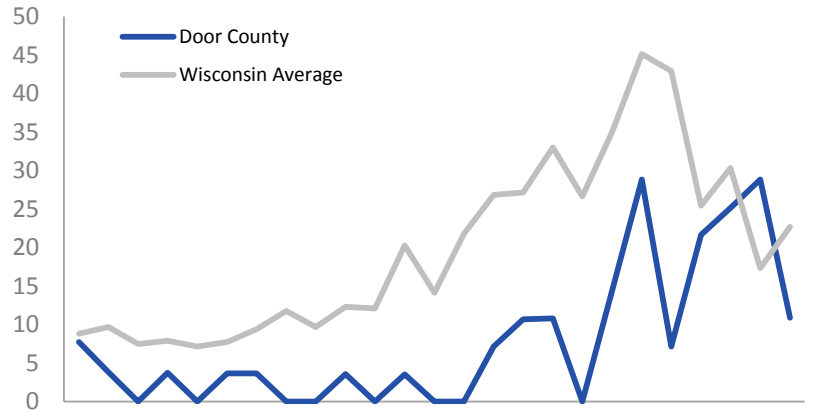
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

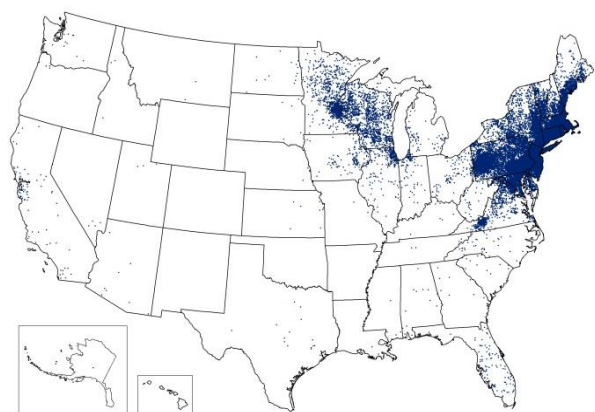
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

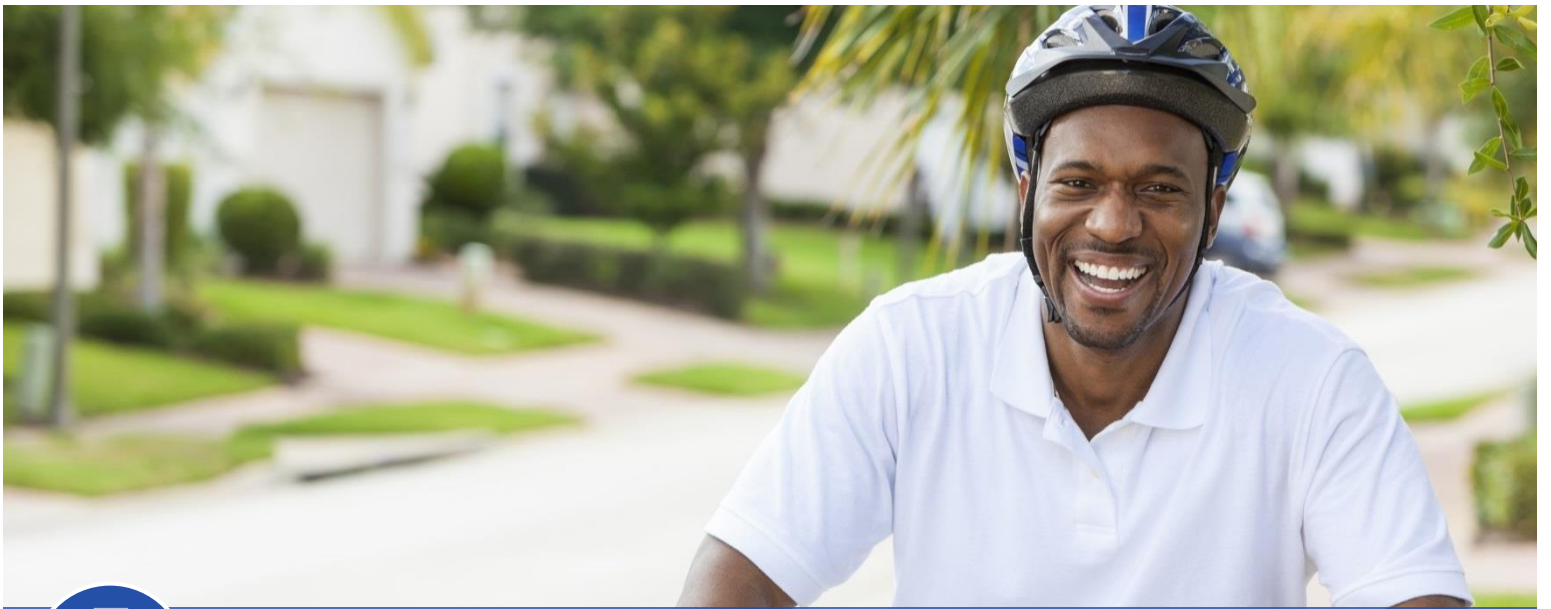


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

DOOR COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **33.4**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

⚠ **39.7**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

✓ **53.8**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

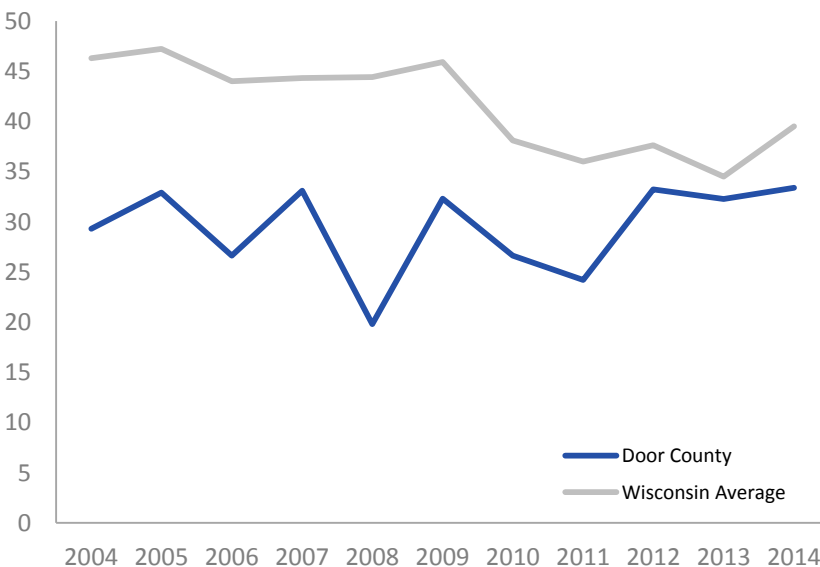
✓ **26.8**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

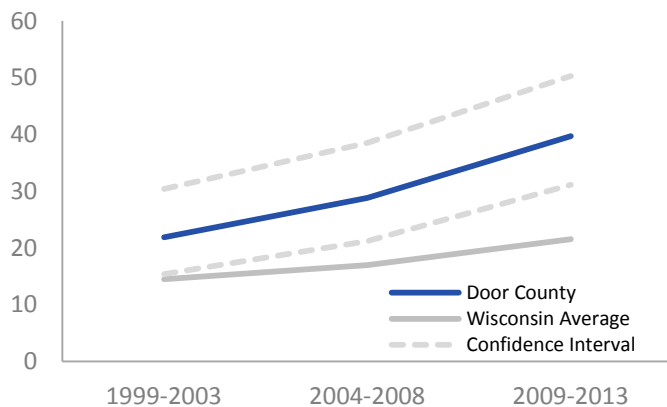
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

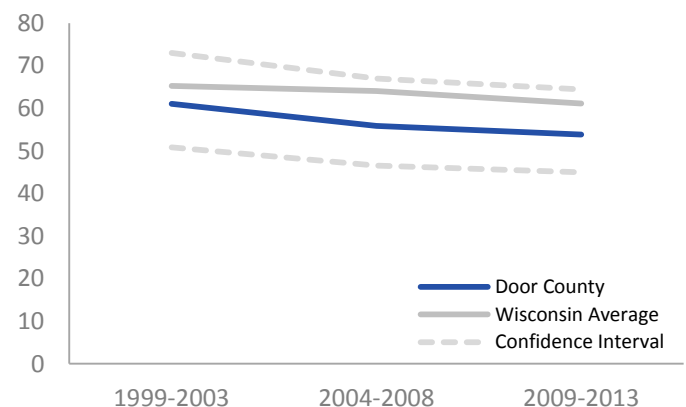
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

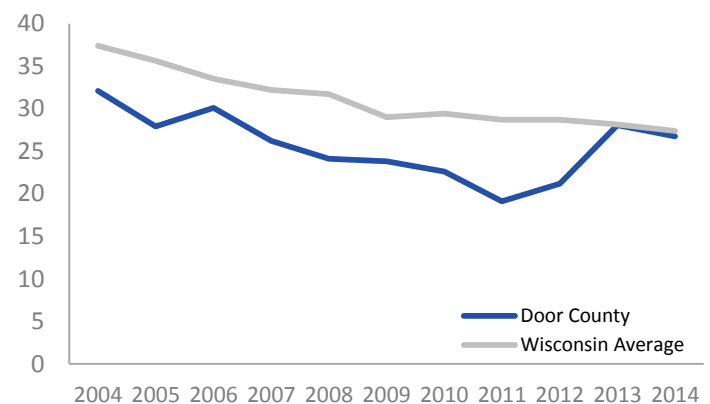
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY DOOR COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

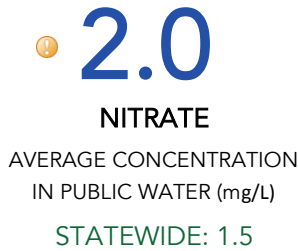
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

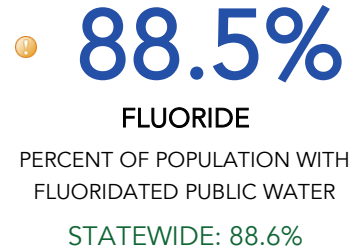
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



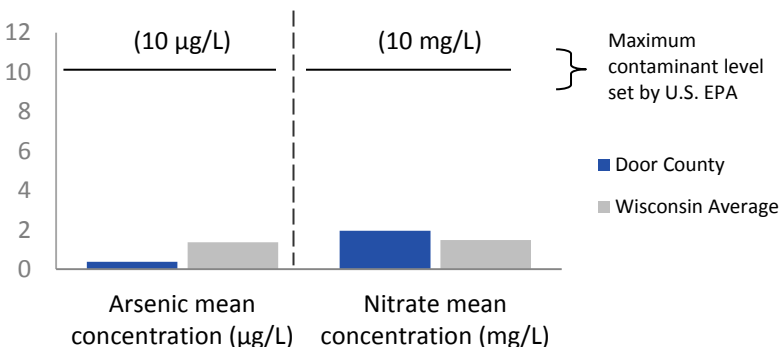
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY DOOR COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

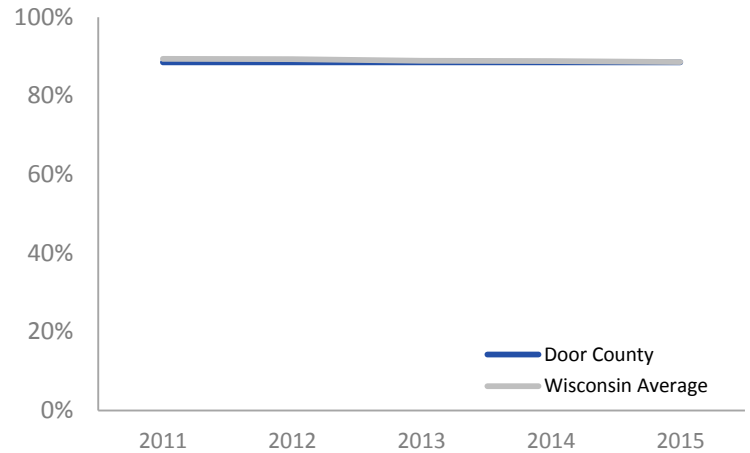
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

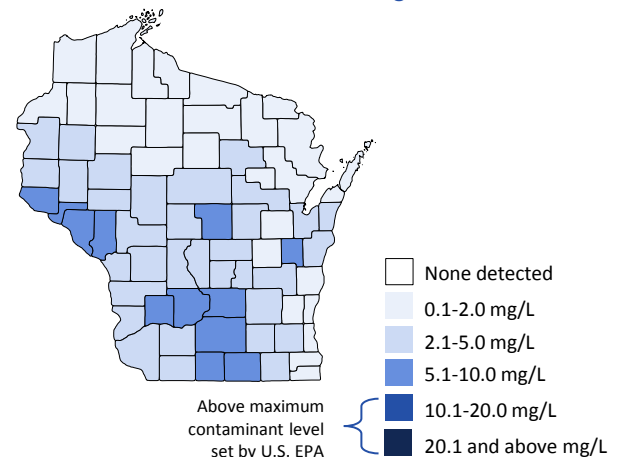
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



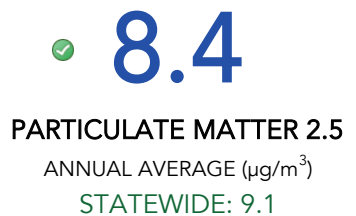


AIR QUALITY DOOR COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

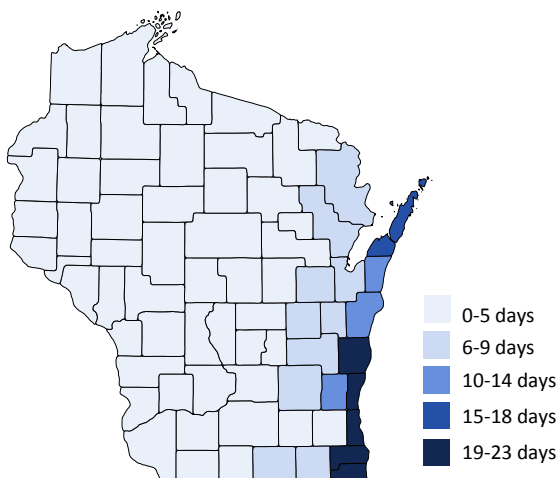
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

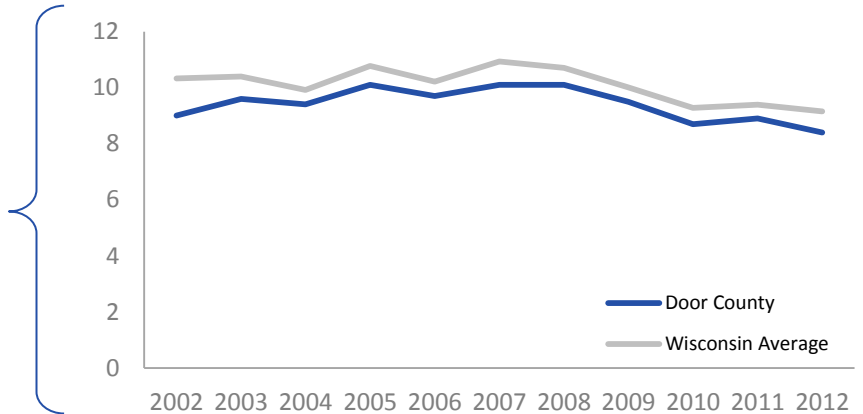
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

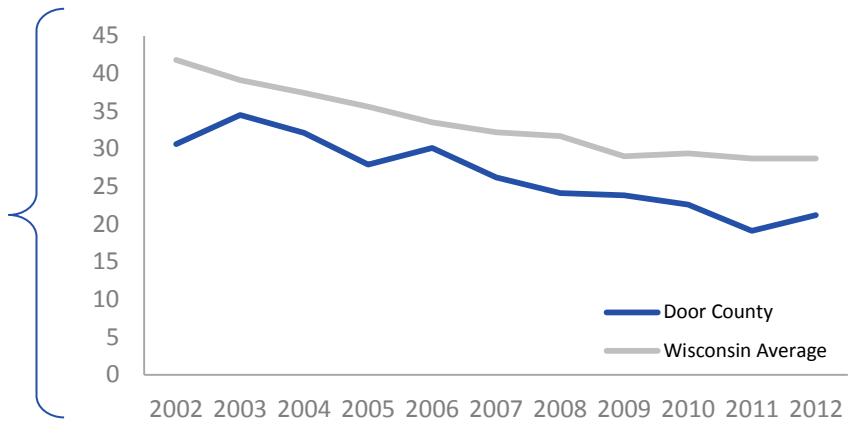
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



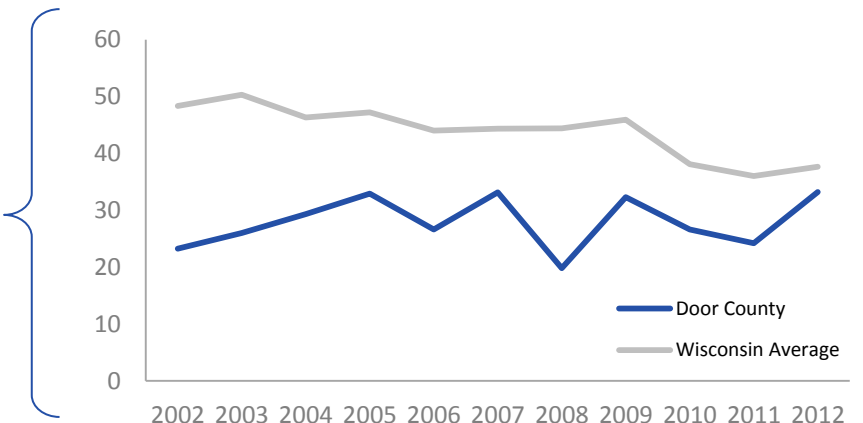
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education,
University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



DOUGLAS COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DOUGLAS COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.7% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 11.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 17.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 48.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 43.7 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 16.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 34.9 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 99.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS DOUGLAS COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **11.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **0.7%**

CHILDHOOD LEAD POISONING

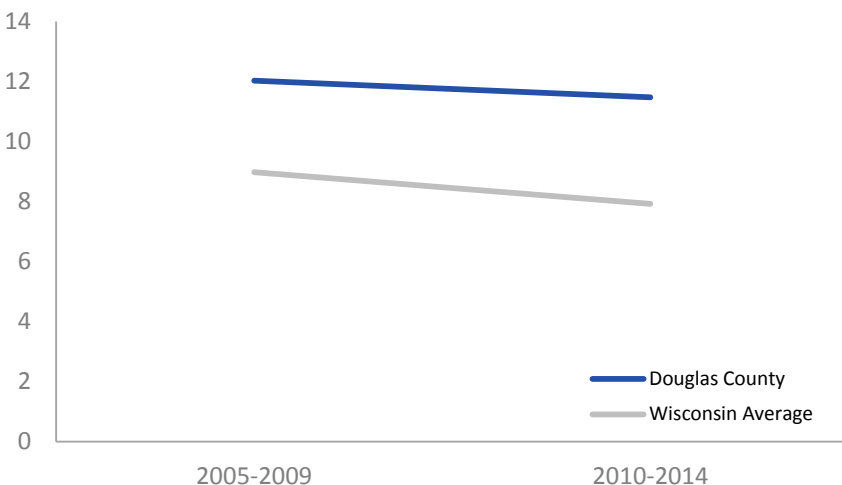
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS DOUGLAS COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

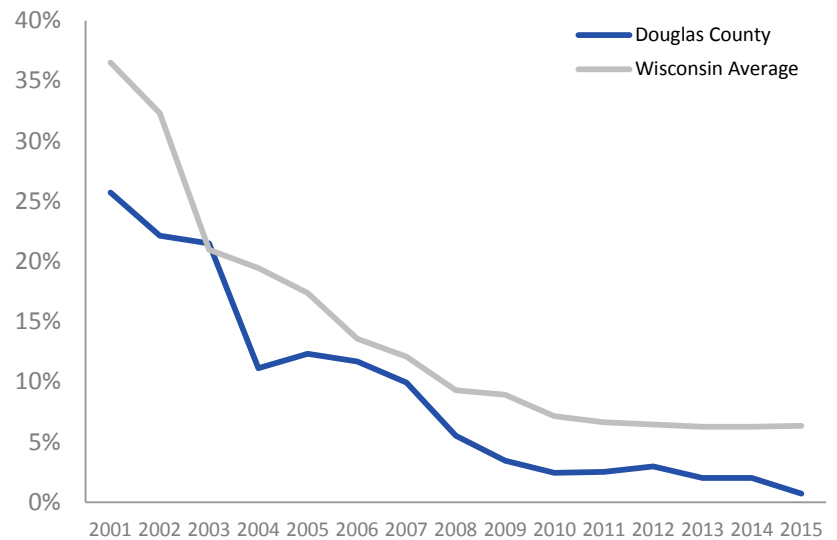
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

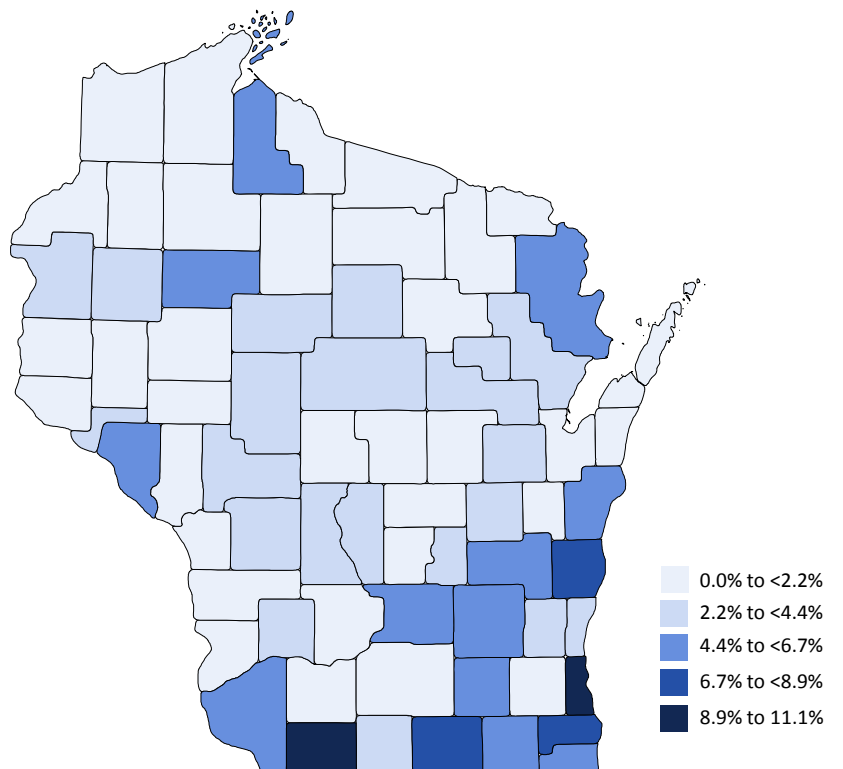
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE DOUGLAS COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

17.5

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

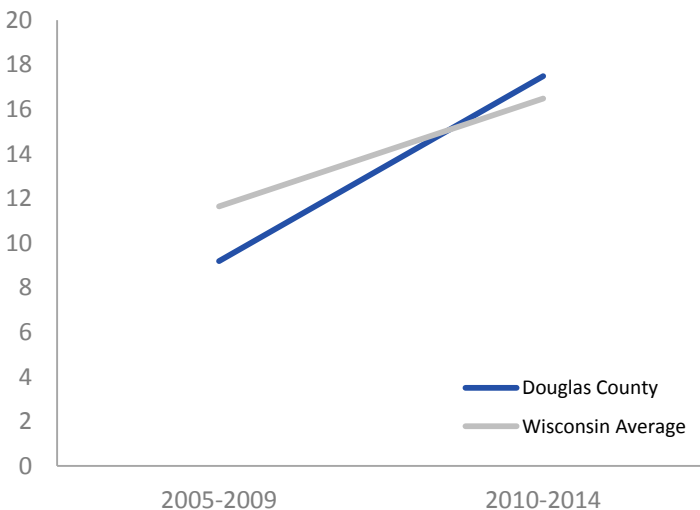
48.2

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

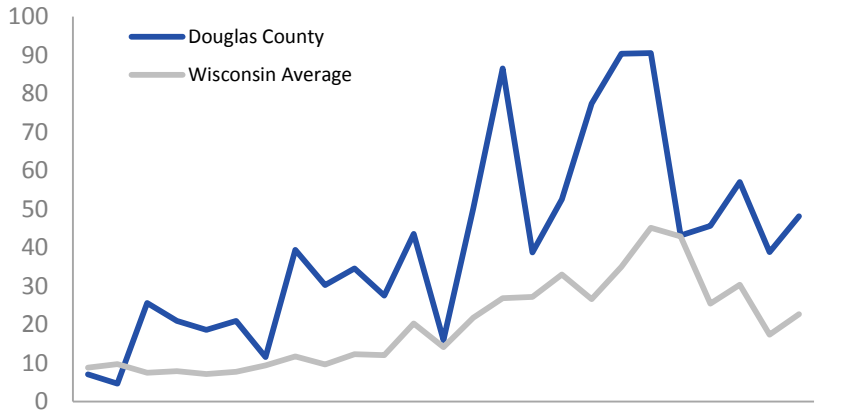
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

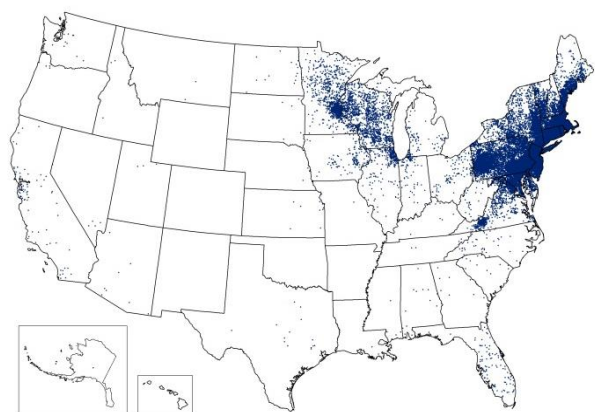
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

DOUGLAS COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

43.7
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

16.8
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

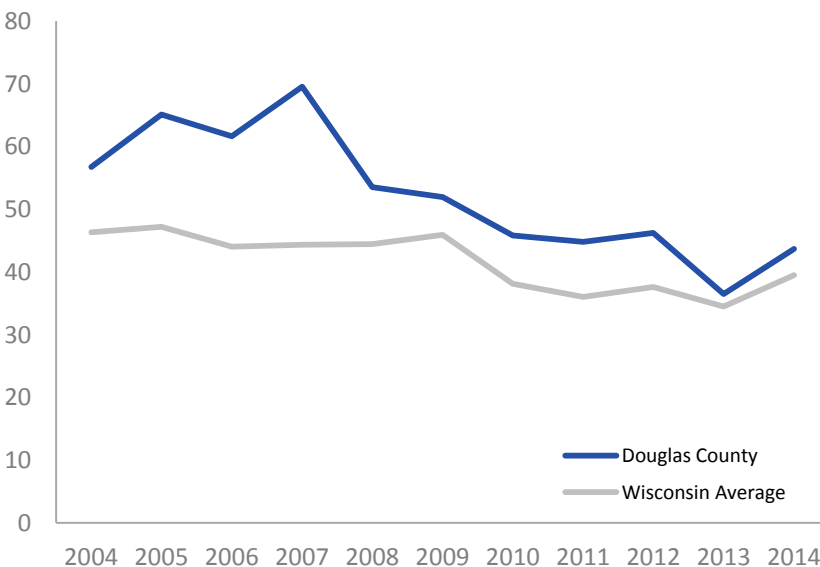
58.1
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

34.9
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

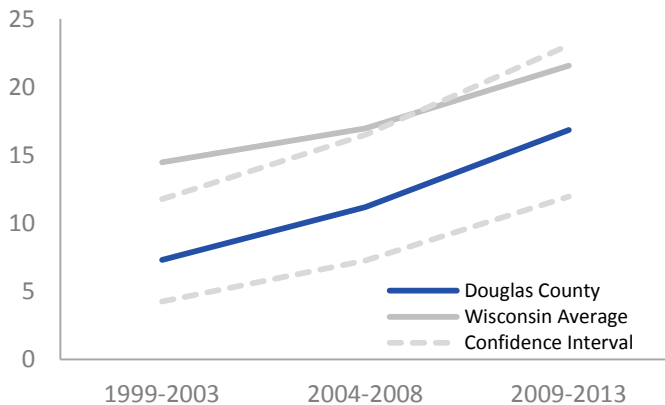
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

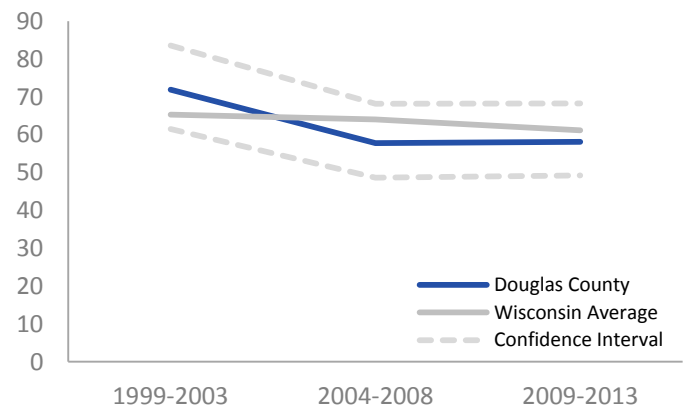
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

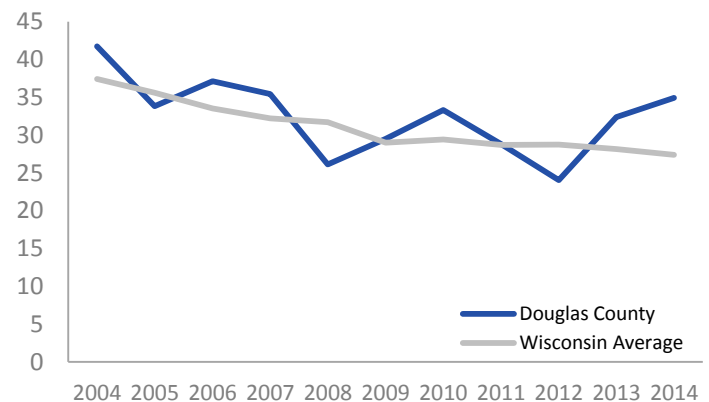
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY DOUGLAS COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

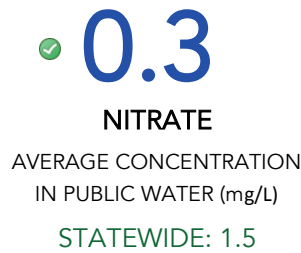
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

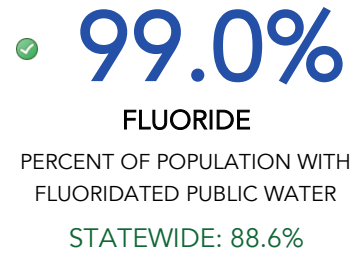
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



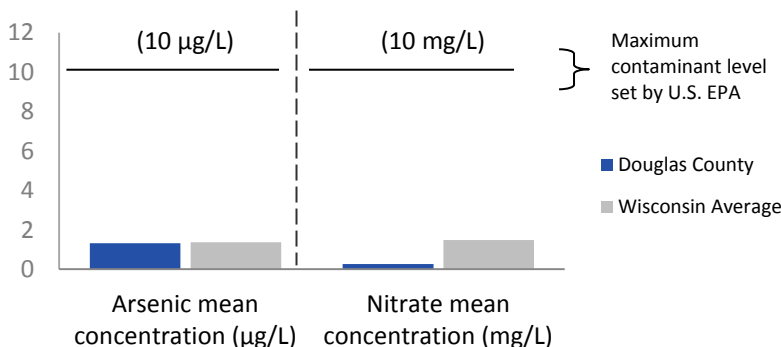
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY DOUGLAS COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

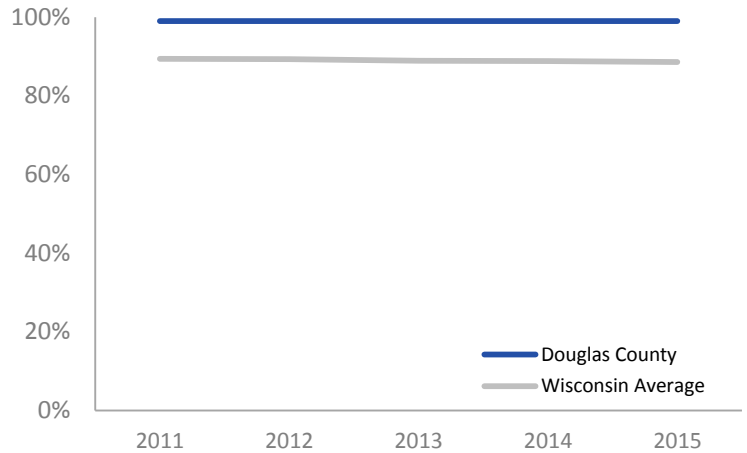
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

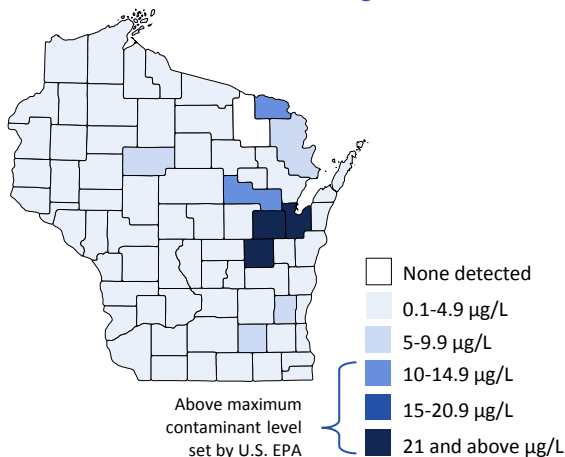
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

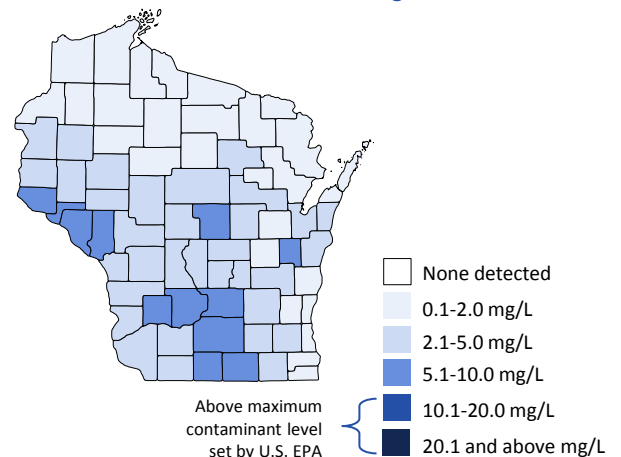
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



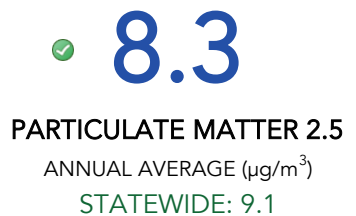


AIR QUALITY DOUGLAS COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

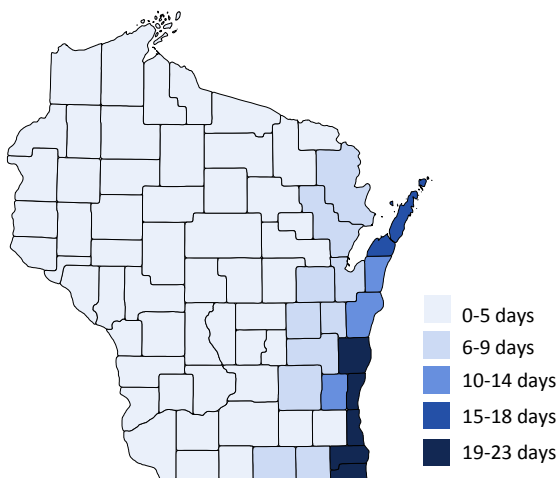
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

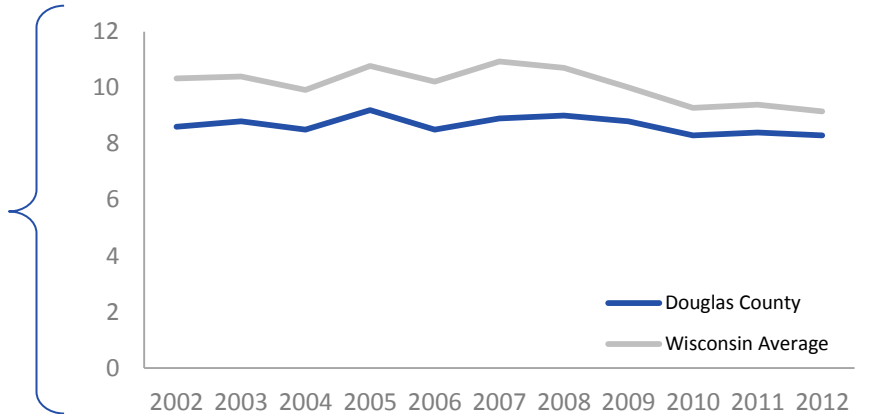


AIR QUALITY DOUGLAS COUNTY

PARTICULATE MATTER 2.5

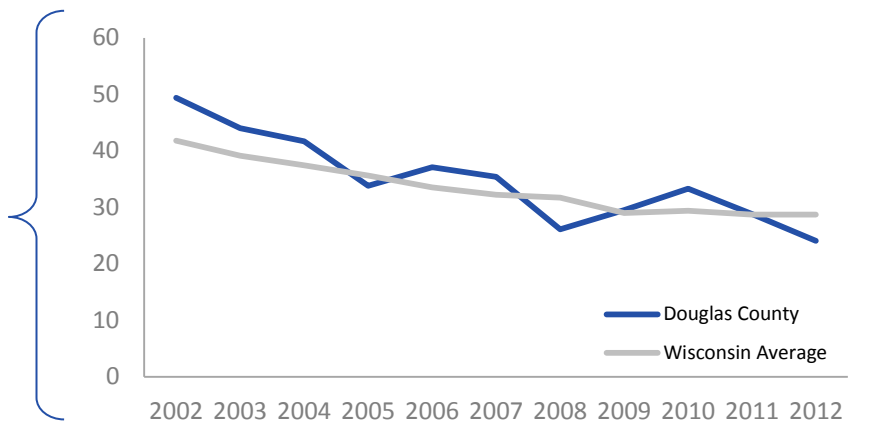
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



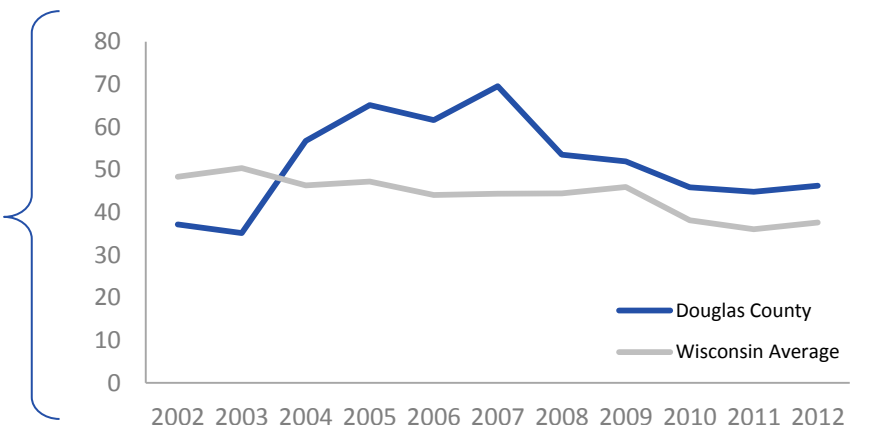
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



DUNN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

DUNN COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.9% | Percent with blood lead ≥ 5 $\mu\text{g/dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 6.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 20.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 78.7 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 23.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 15.5 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 21.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.4

Nitrate

⚠ 2.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 79.4% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS DUNN COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **6.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **1.9%**

CHILDHOOD LEAD POISONING

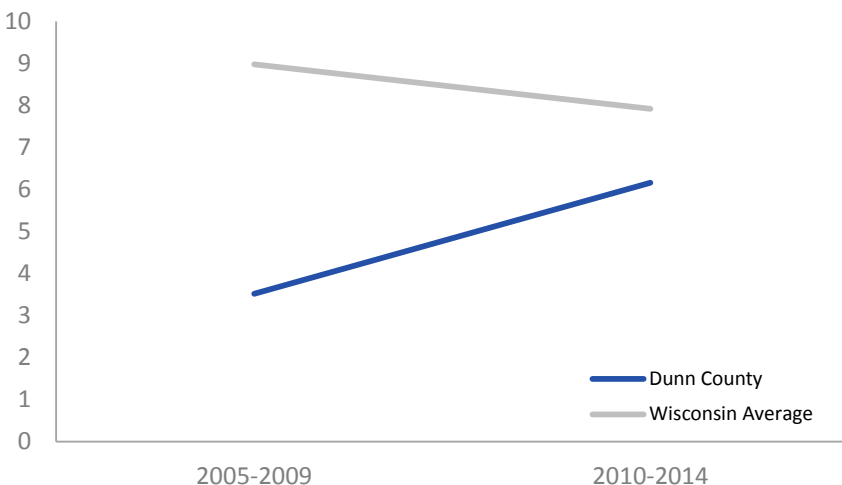
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🟡 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS DUNN COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

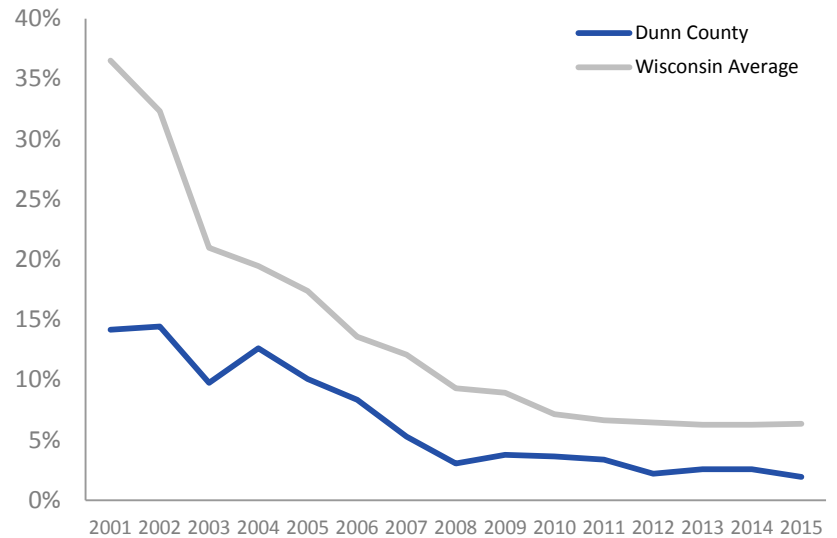
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

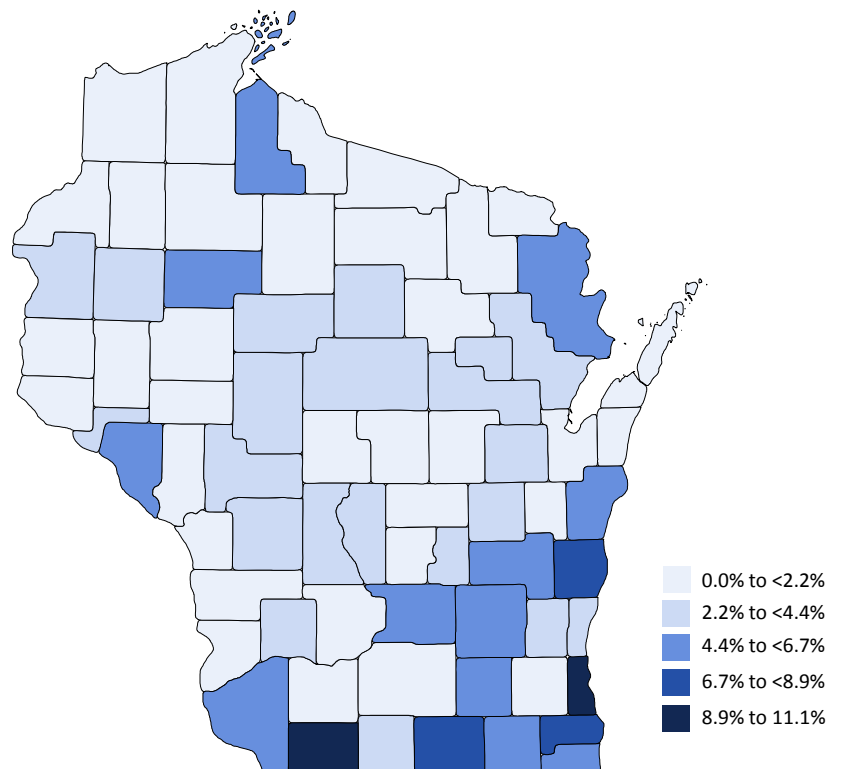
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE DUNN COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

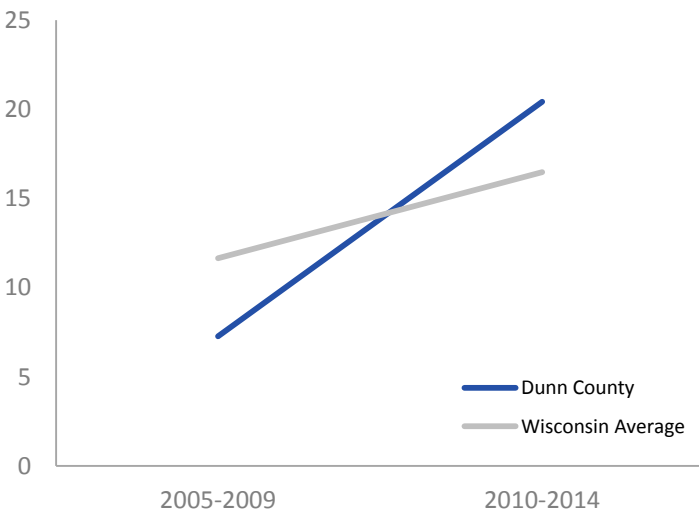
20.4
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

78.7
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

Above state value At or below state value Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

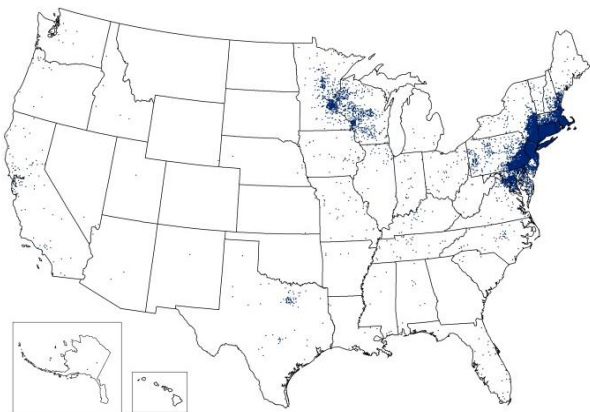
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

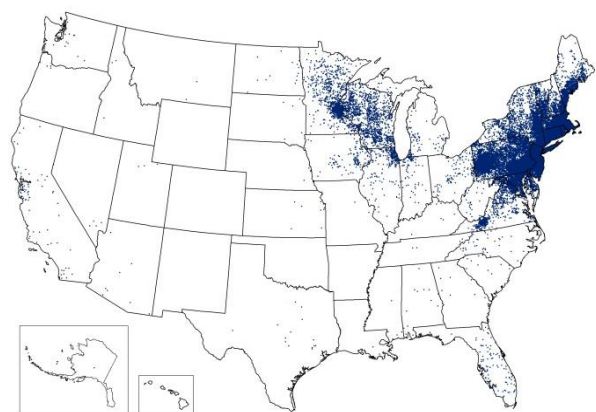
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

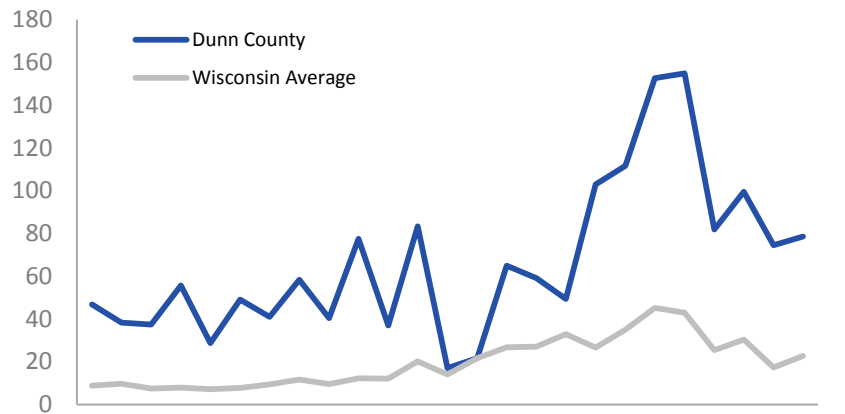


Maps courtesy of Centers for Disease Control and Prevention.

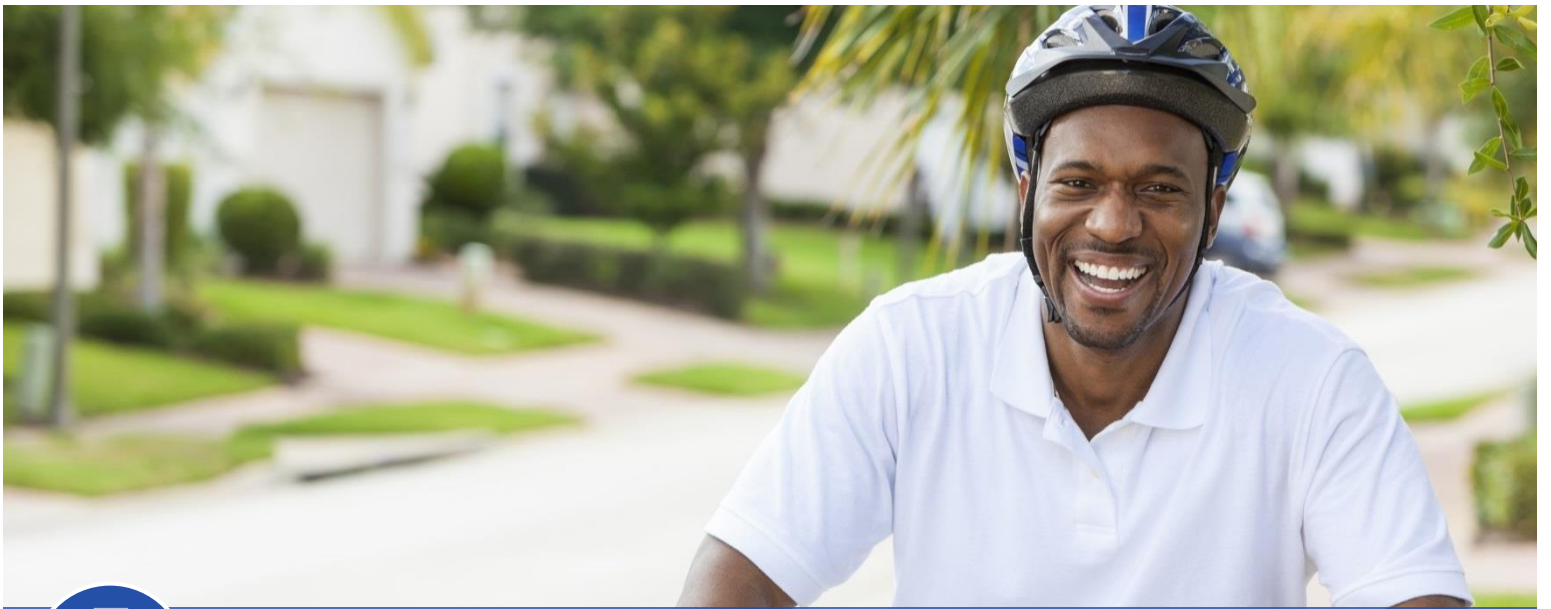
Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES DUNN COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **23.9**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **15.5**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

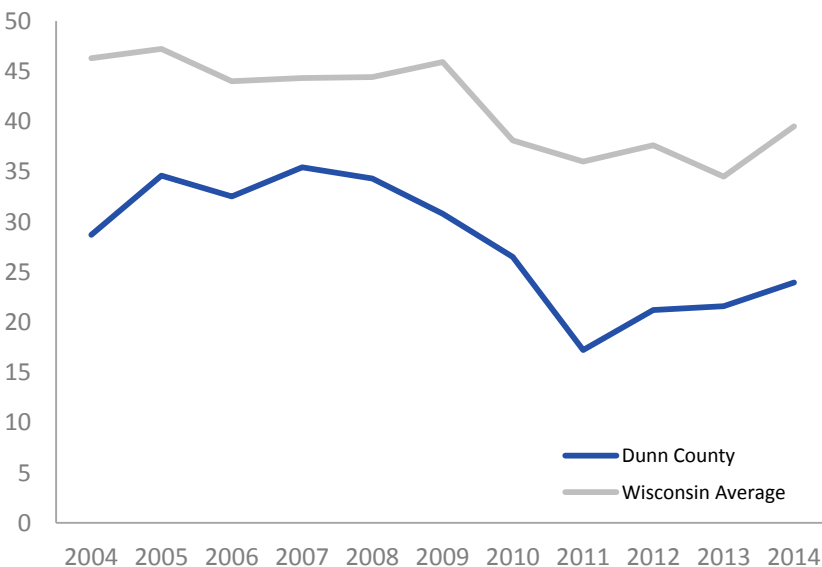
✓ **45.4**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **21.2**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

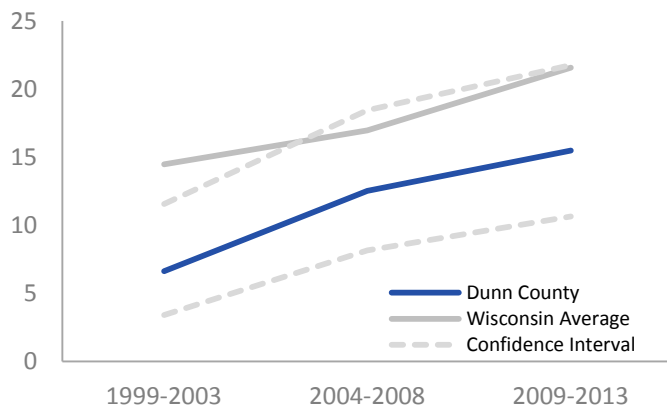
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

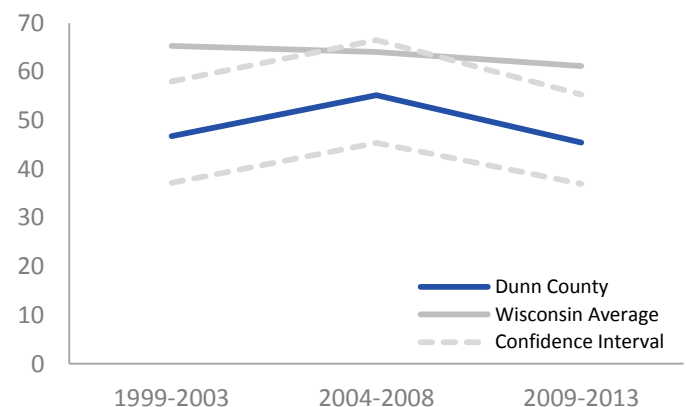
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

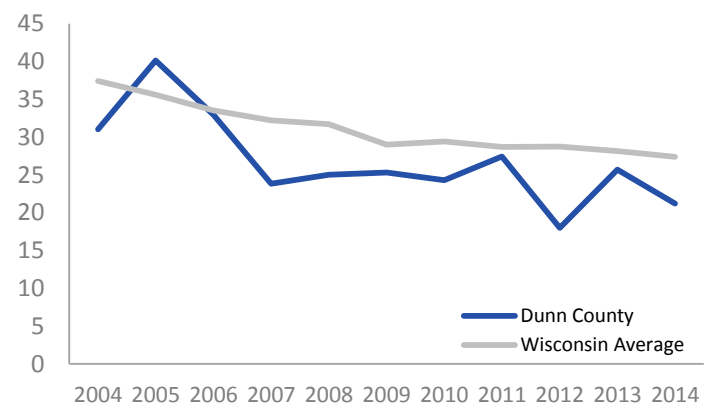
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY DUNN COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

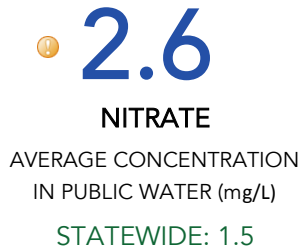
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

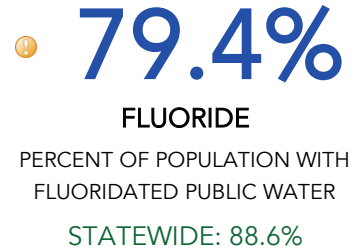
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



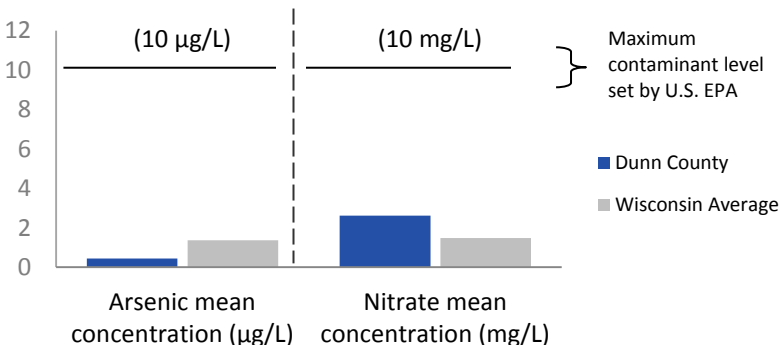
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY DUNN COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

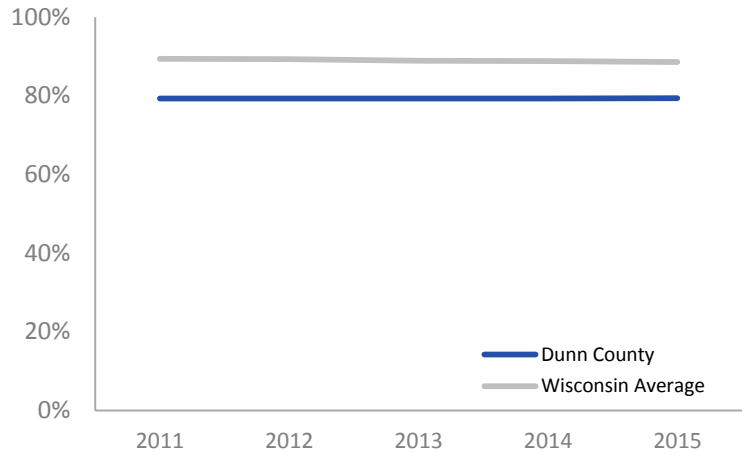
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

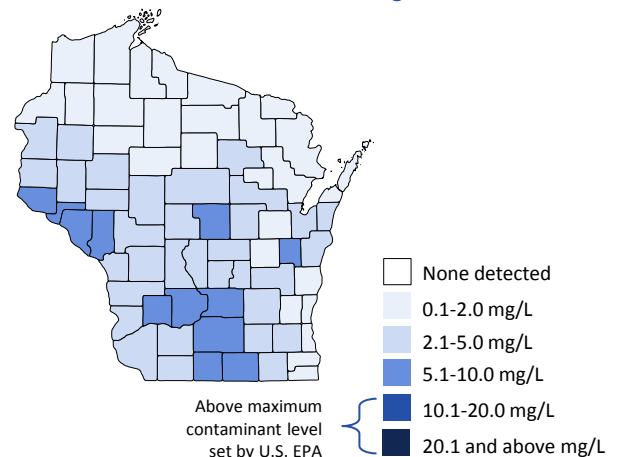
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



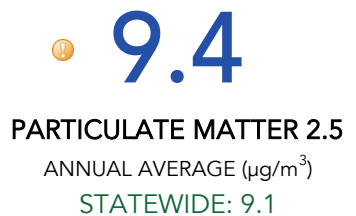


AIR QUALITY DUNN COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

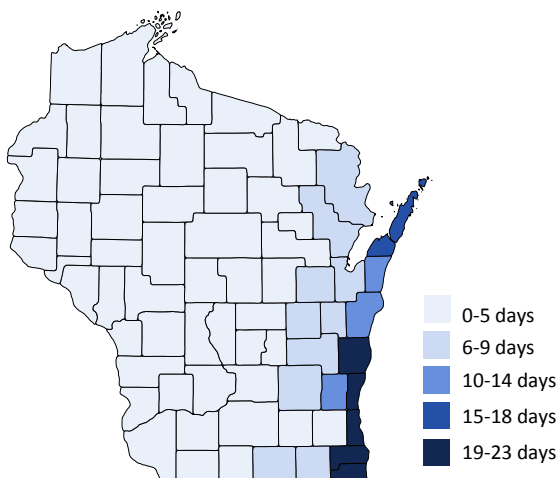
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

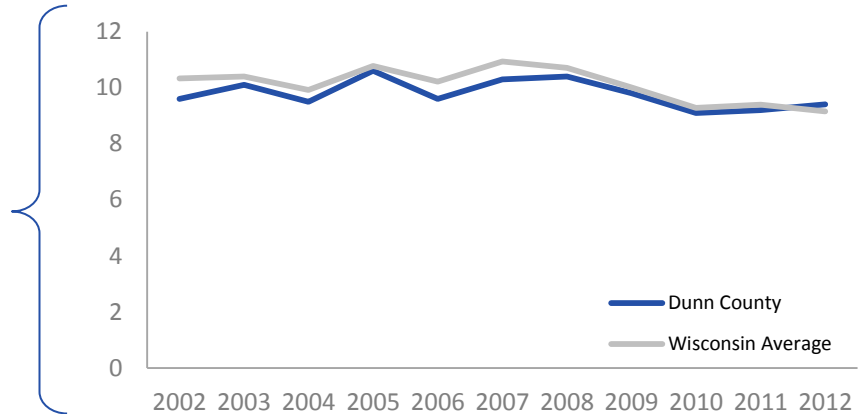


AIR QUALITY DUNN COUNTY

PARTICULATE MATTER 2.5

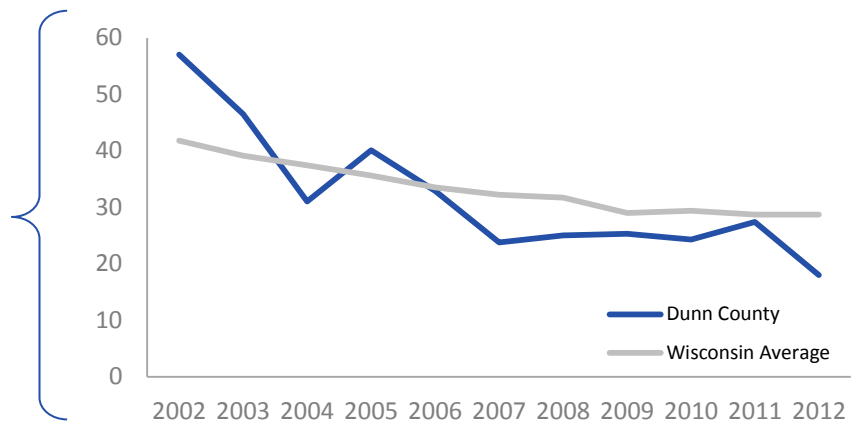
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



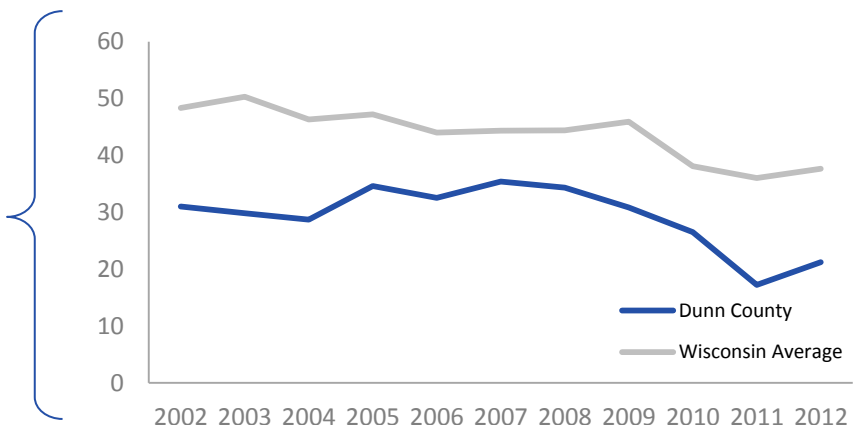
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



EAU CLAIRE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

EAU CLAIRE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.7% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 5.4 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 10.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 38.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 26.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 25.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 26.9 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 83.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS EAU CLAIRE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **5.4**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **0.7%**

CHILDHOOD LEAD POISONING

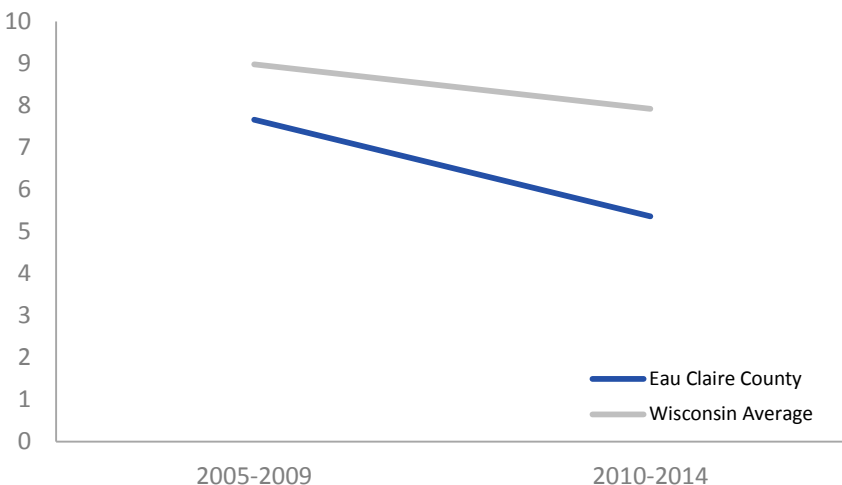
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g}/\text{dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS EAU CLAIRE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

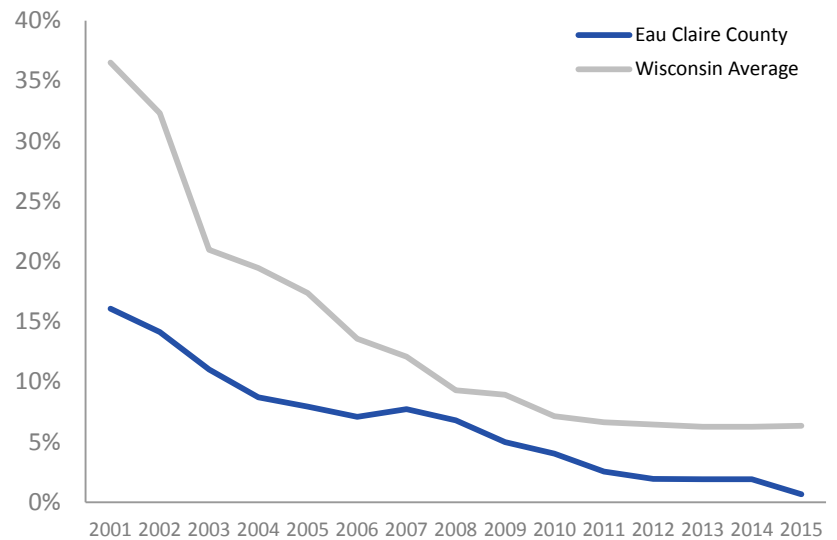
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

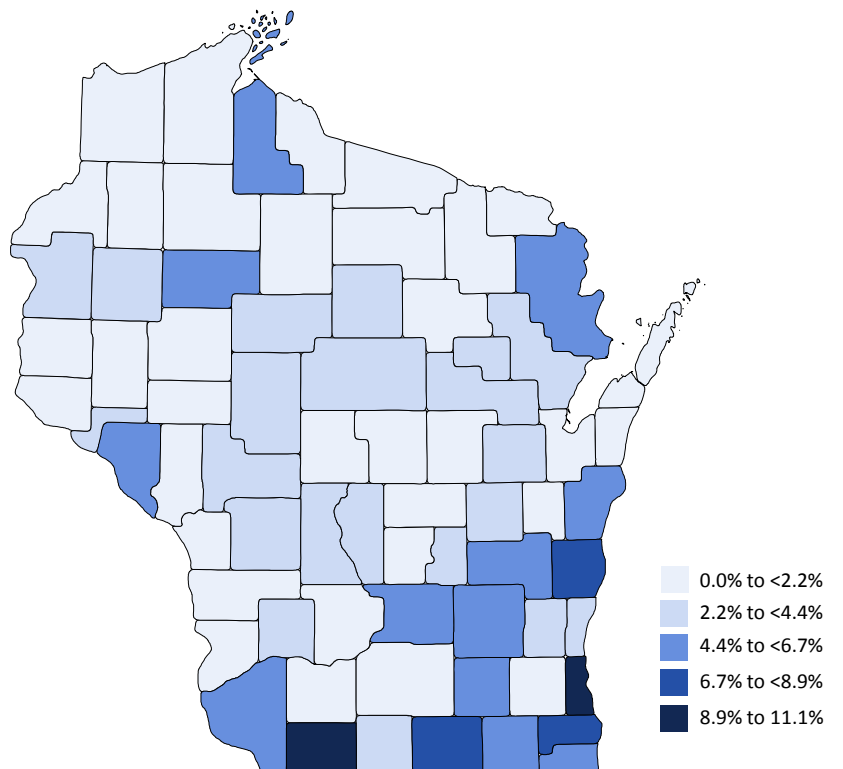
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE EAU CLAIRE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

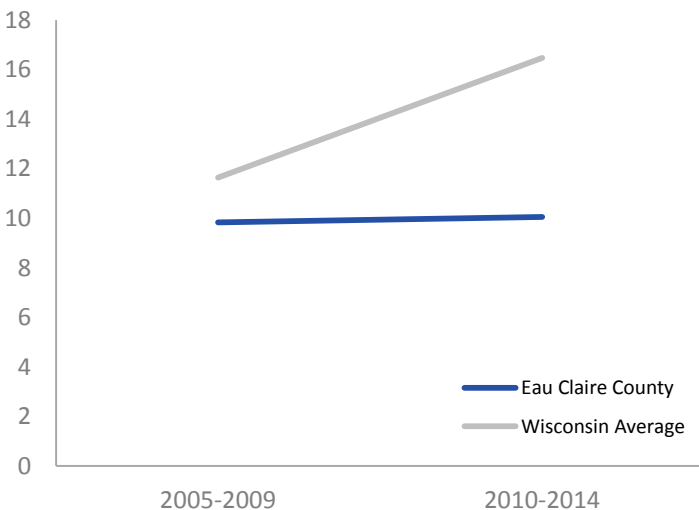
✔ **10.0**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

⚠ **38.2**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✔ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

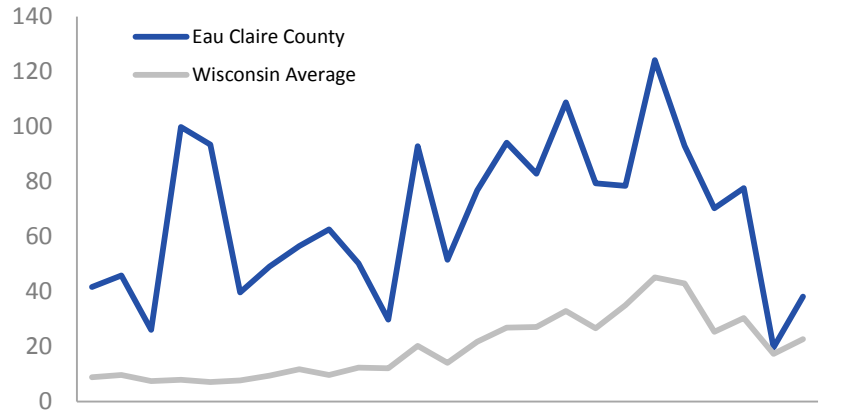
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

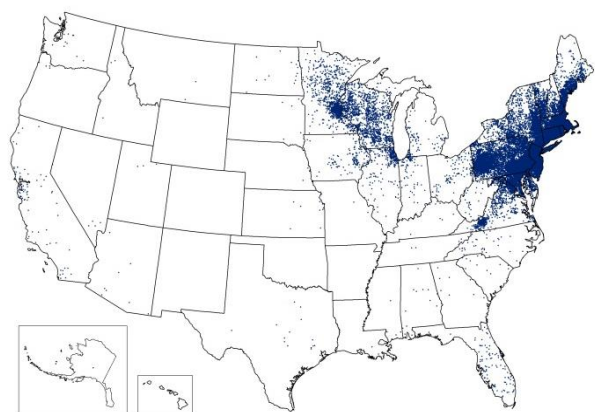
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

EAU CLAIRE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **26.1**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

ⓘ **25.8**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

✓ **57.4**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

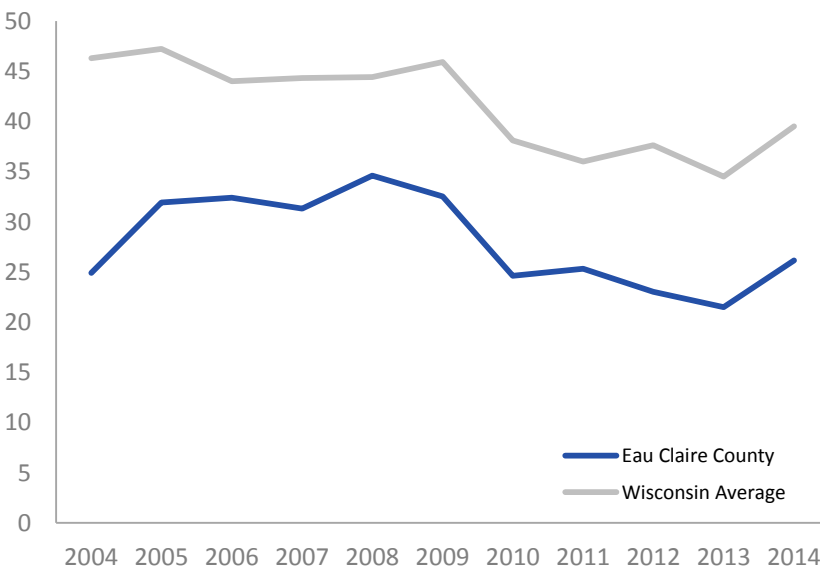
✓ **26.9**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

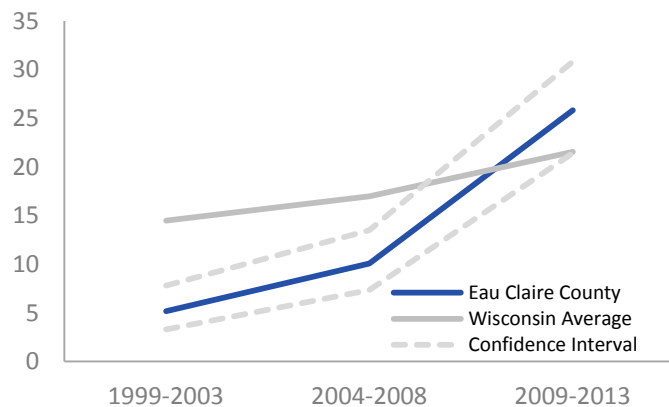
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

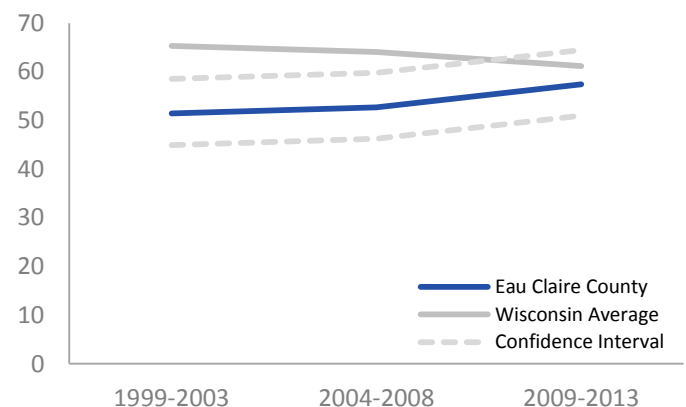
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

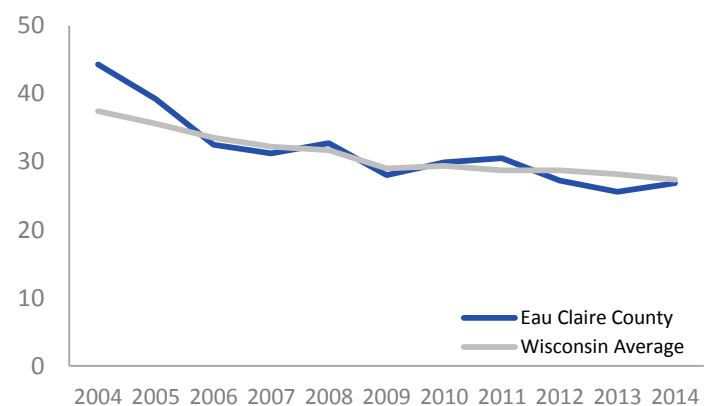
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY EAU CLAIRE COUNTY

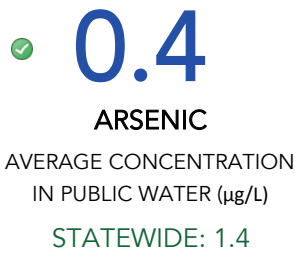
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

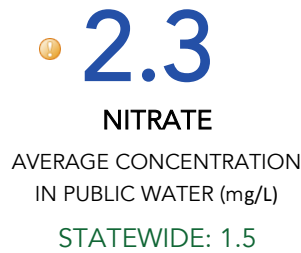
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

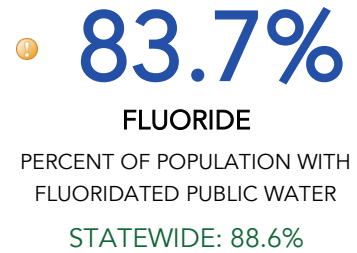
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



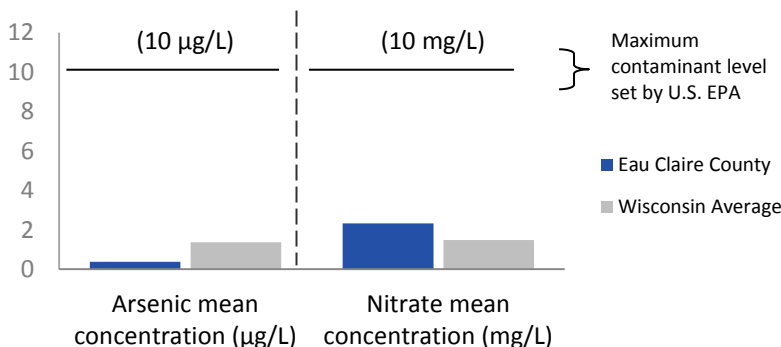
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY EAU CLAIRE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

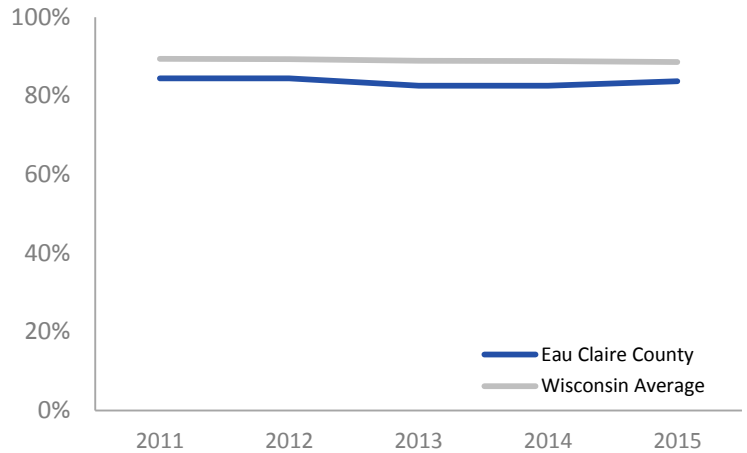
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

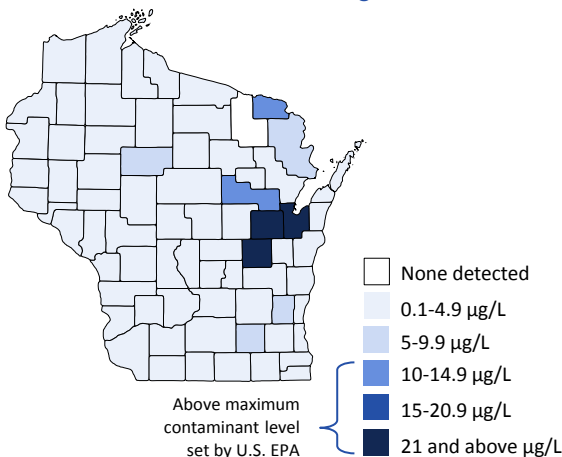
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

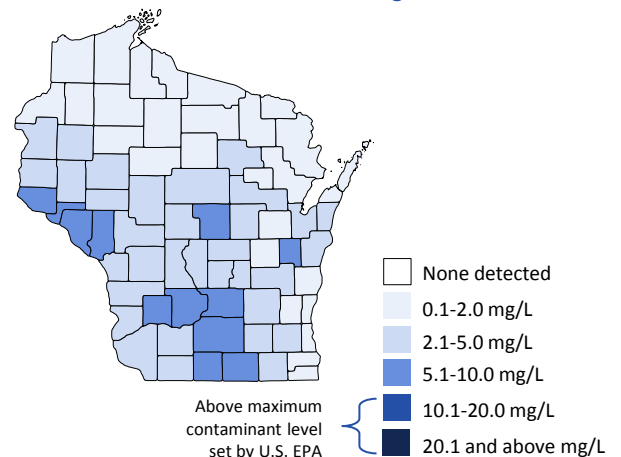
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





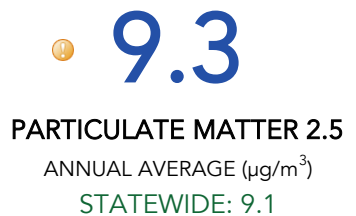
AIR QUALITY

EAU CLAIRE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

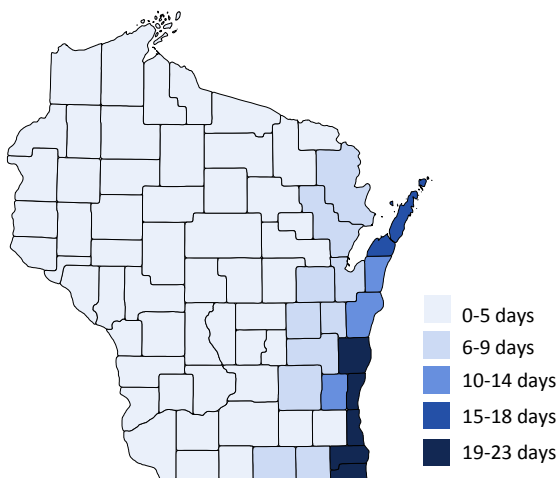
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

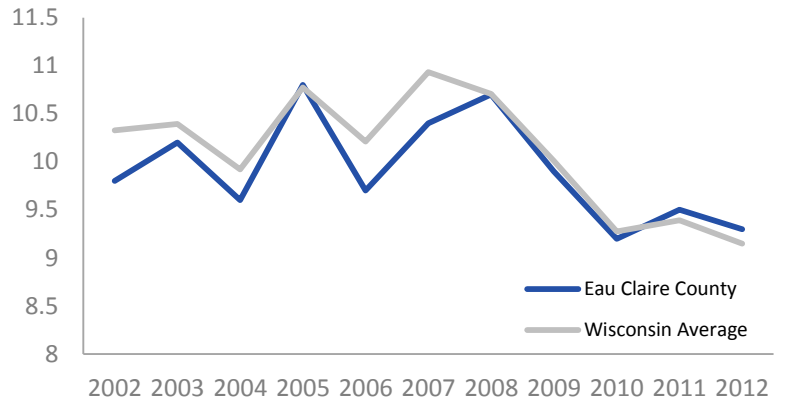


AIR QUALITY EAU CLAIRE COUNTY

PARTICULATE MATTER 2.5

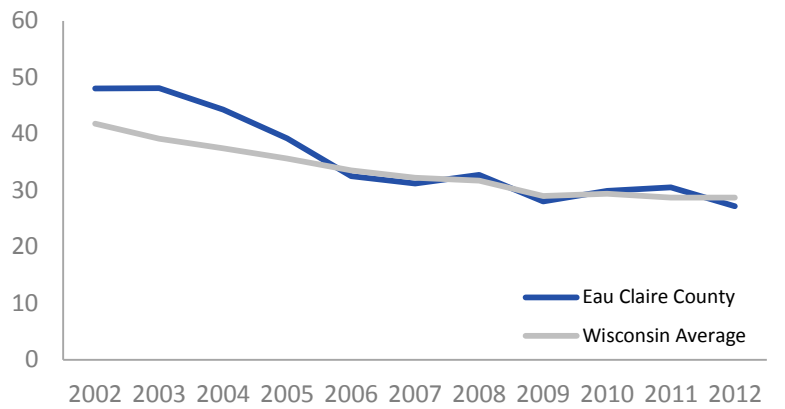
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



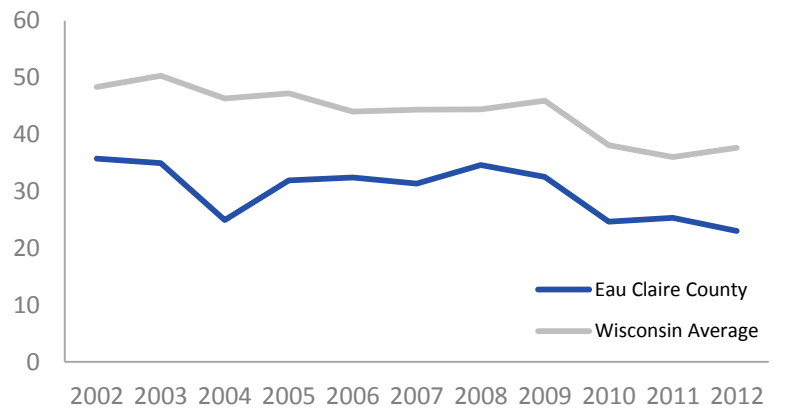
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



FLORENCE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

FLORENCE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 0.0 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 0.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 22.4 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 0.0 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

^ | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 15.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.0 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 100.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 2 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS FLORENCE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **0.0**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **0.0%**

CHILDHOOD LEAD POISONING

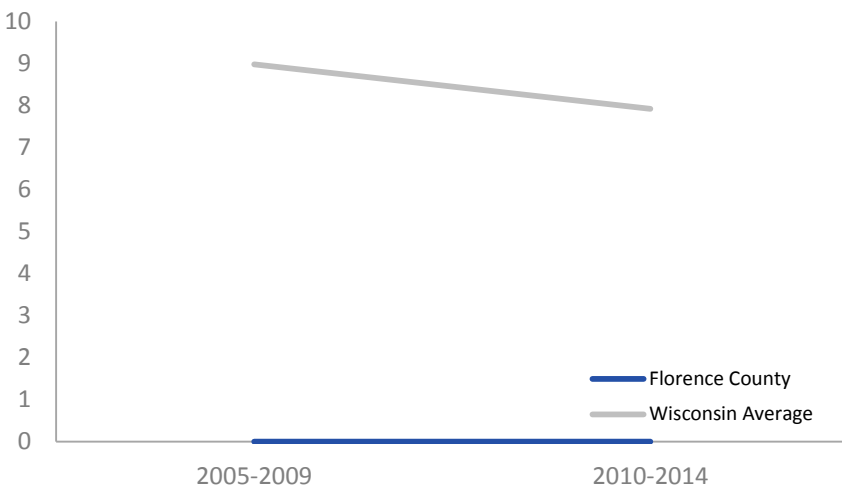
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS FLORENCE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

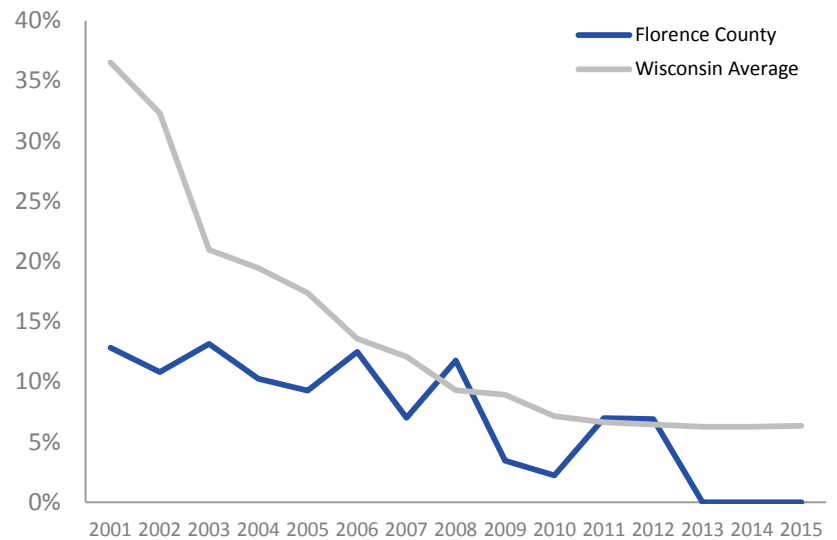
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

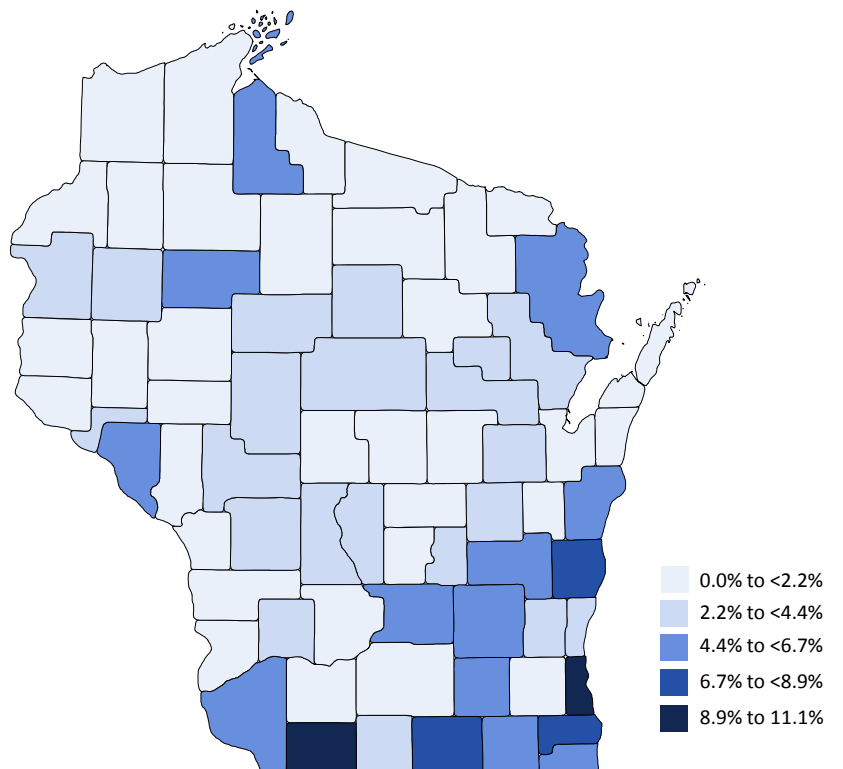
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE FLORENCE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

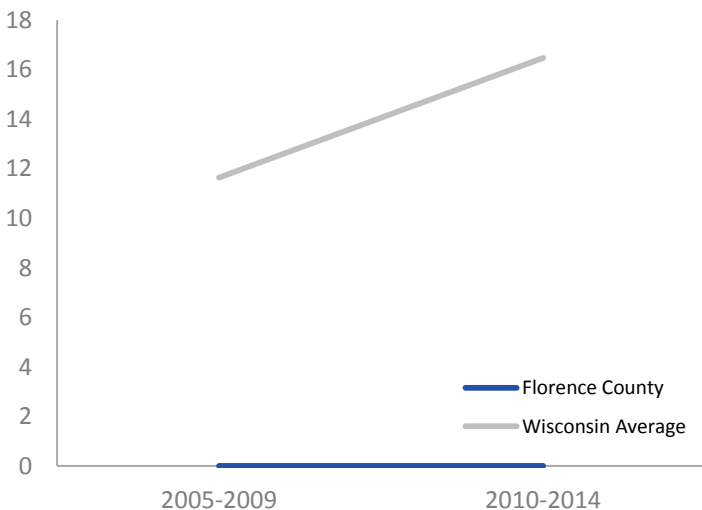
✓ **0.0**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✓ **22.4**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⬆ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

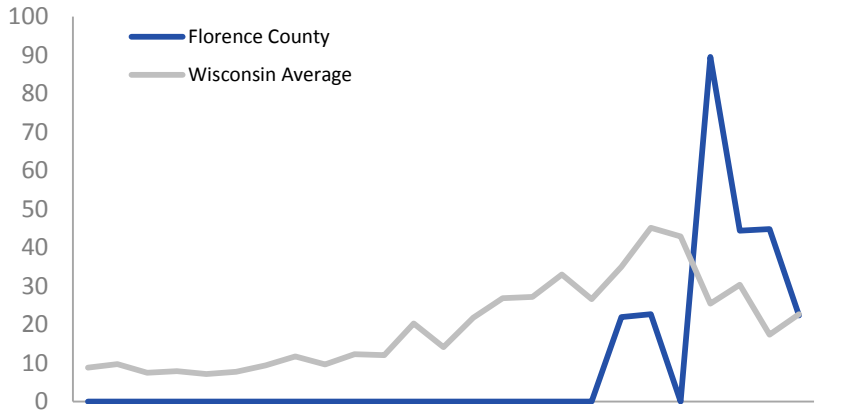
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

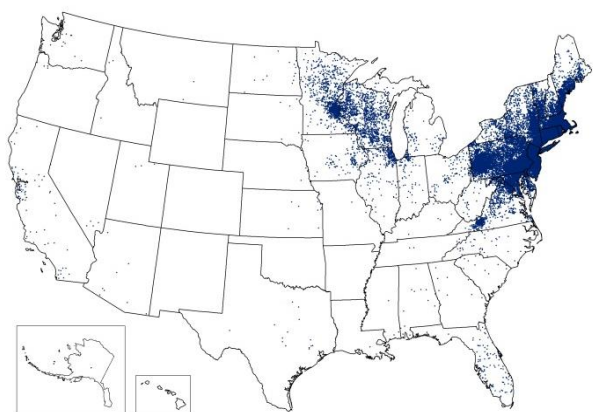
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

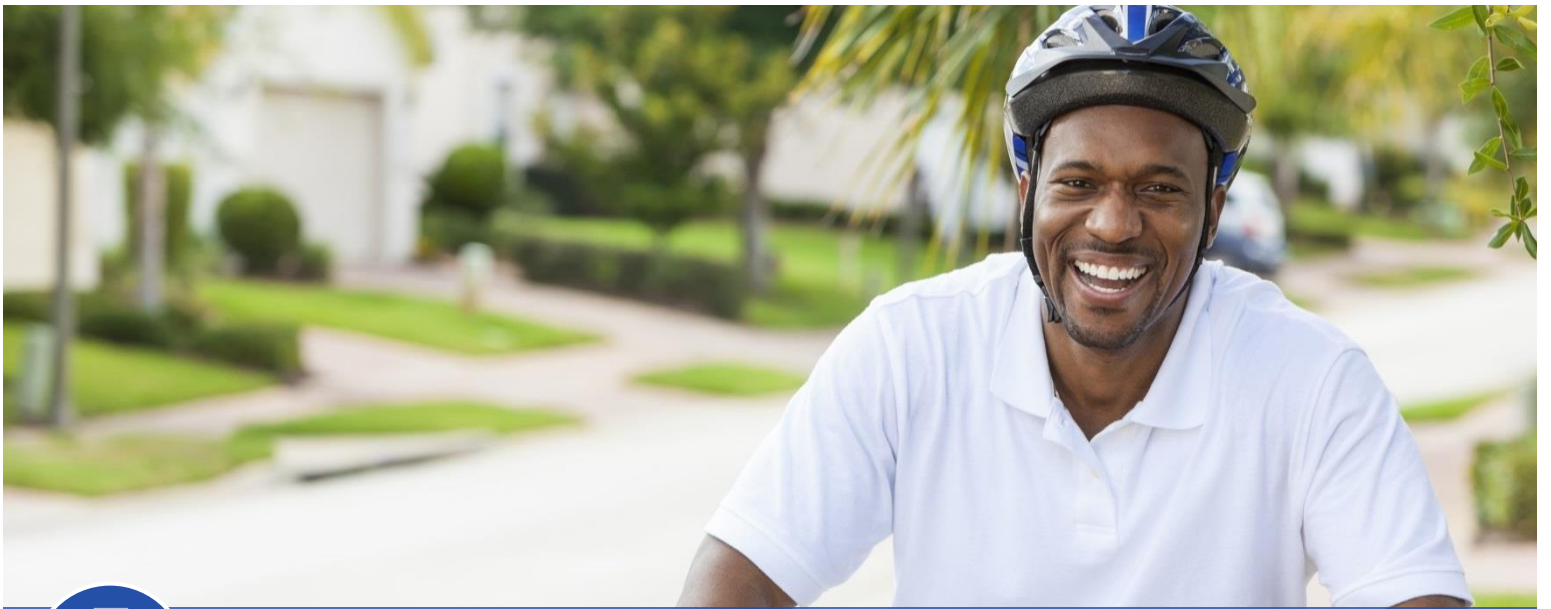


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES FLORENCE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **0.0**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

^
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

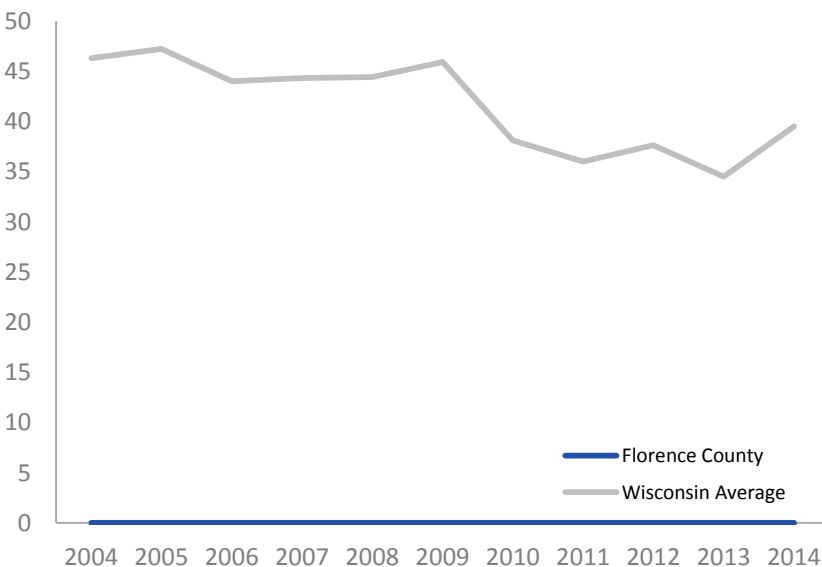
⬆️ **66.6**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **15.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬆️ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

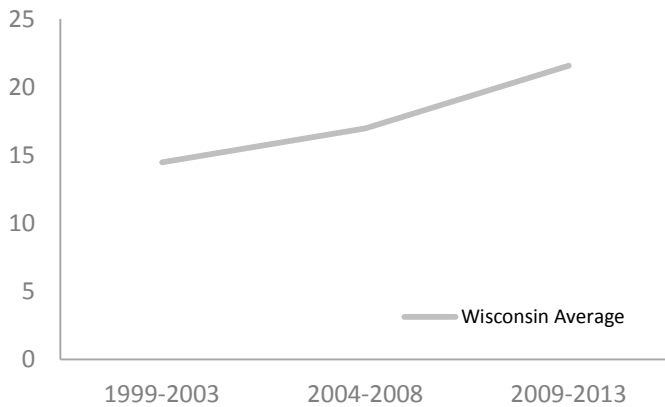
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

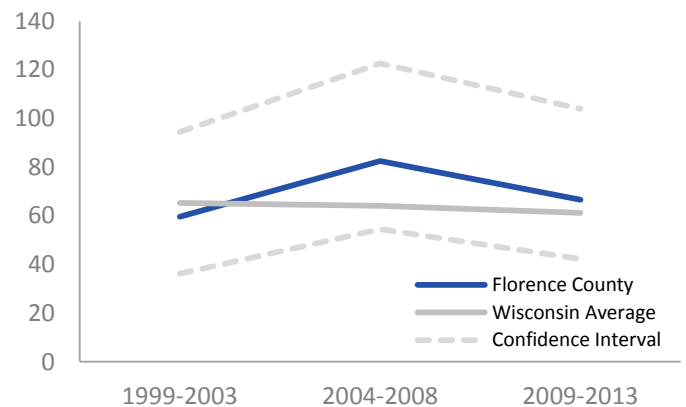
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

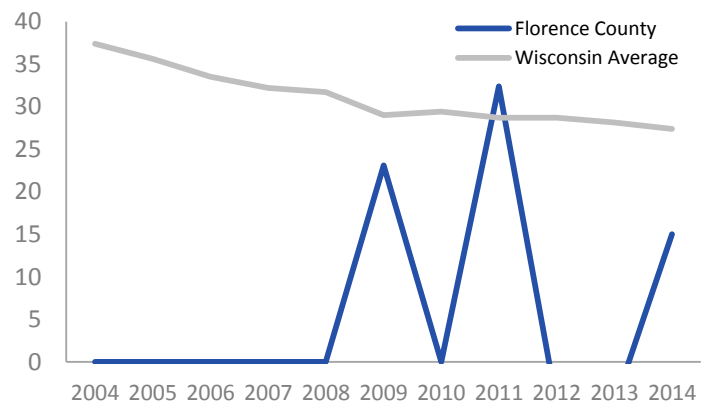
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY FLORENCE COUNTY

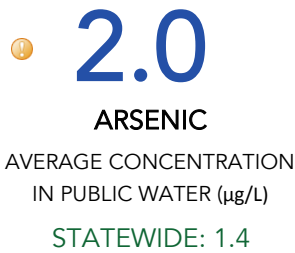
BACKGROUND


Water piped into your home, school, or workplace comes from either a public water system or a private well.

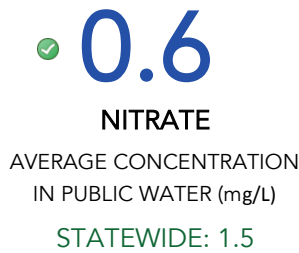
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with


high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

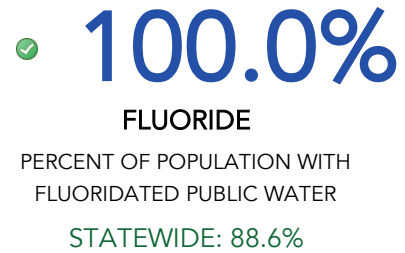
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.




 Above state value (with exception of fluoride where below state value is not preferred)



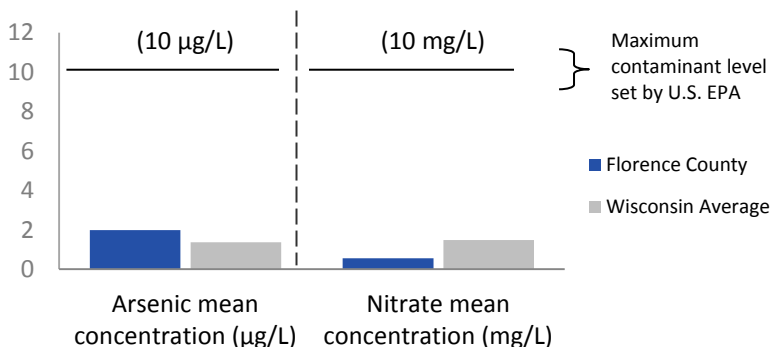
 At or below state value (with exception of fluoride where above state value is preferred)



 Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY FLORENCE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

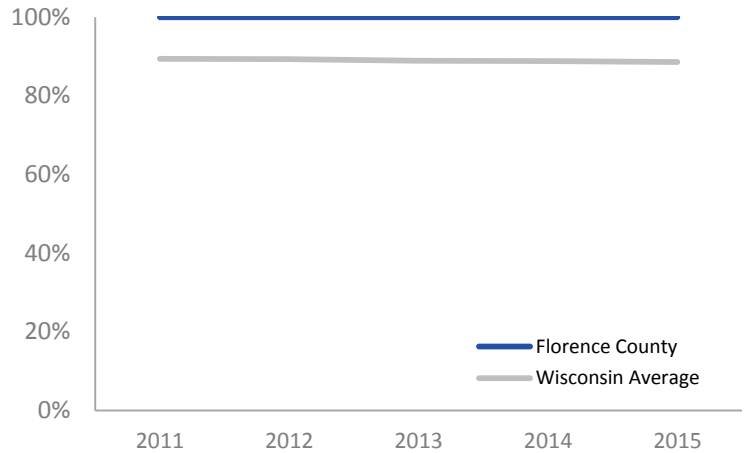
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

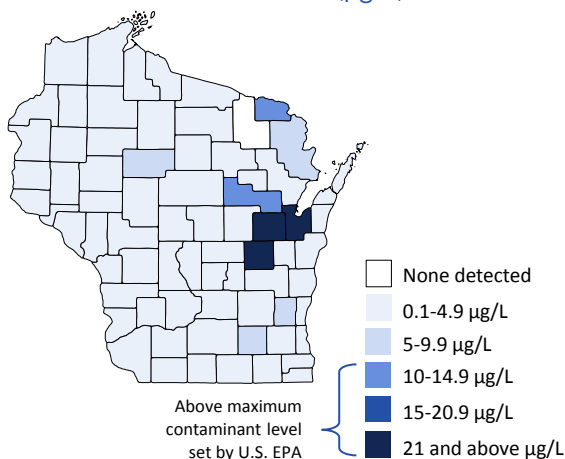
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

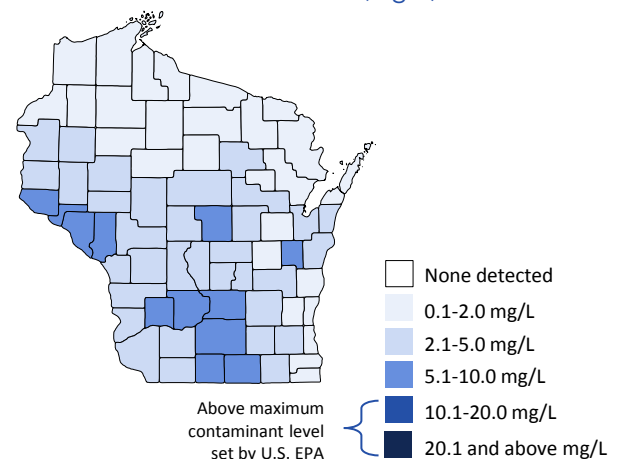
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



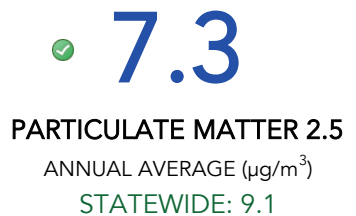
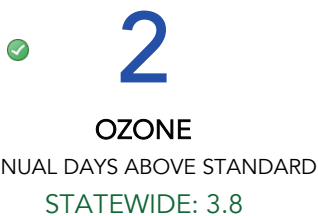


AIR QUALITY FLORENCE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

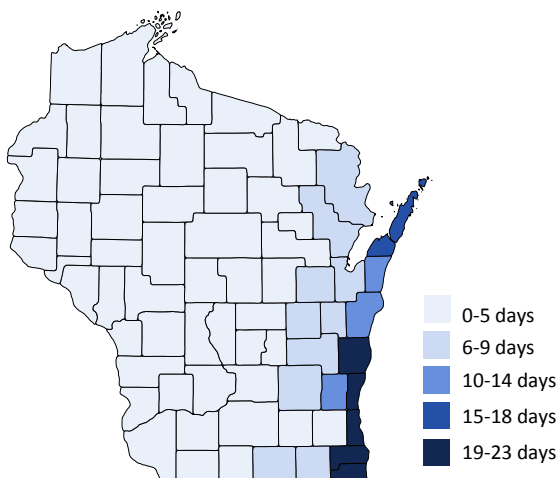
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

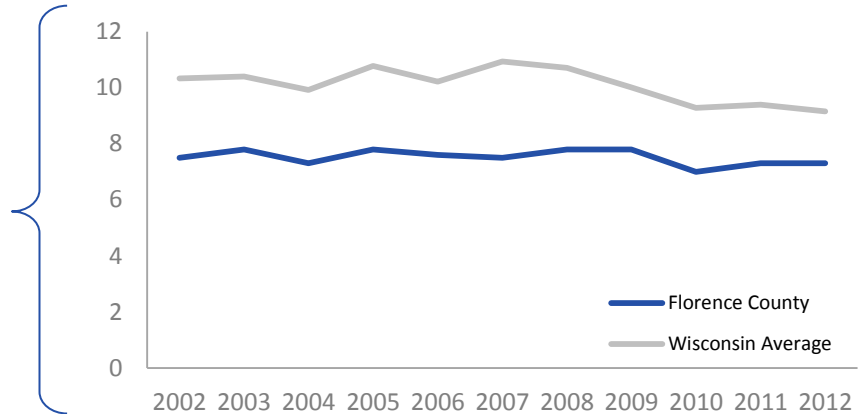


AIR QUALITY FLORENCE COUNTY

PARTICULATE MATTER 2.5

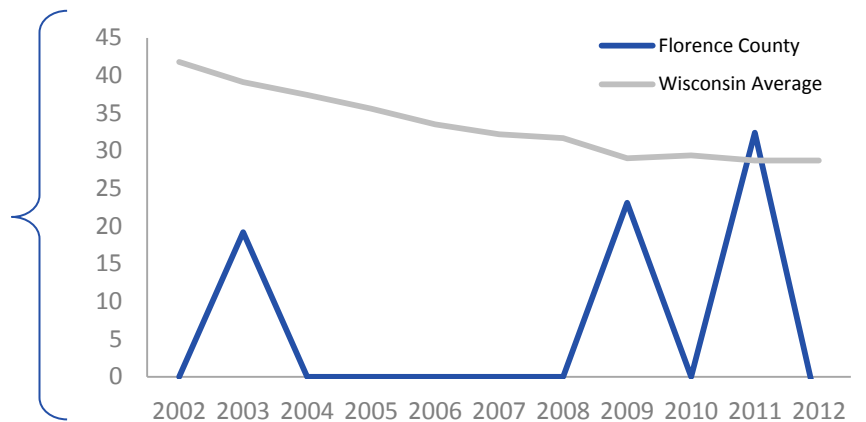
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



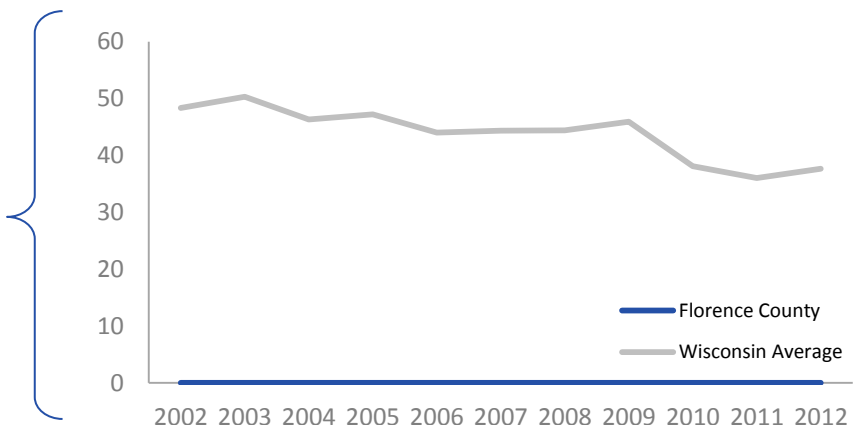
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education,
University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



FOND DU LAC COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

FOND DU LAC COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 6.2% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 3.9 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 20.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 8.8 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 22.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 31.3 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 29.9 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 88.9% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 6 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS FOND DU LAC COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.9**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **6.2%**

CHILDHOOD LEAD POISONING

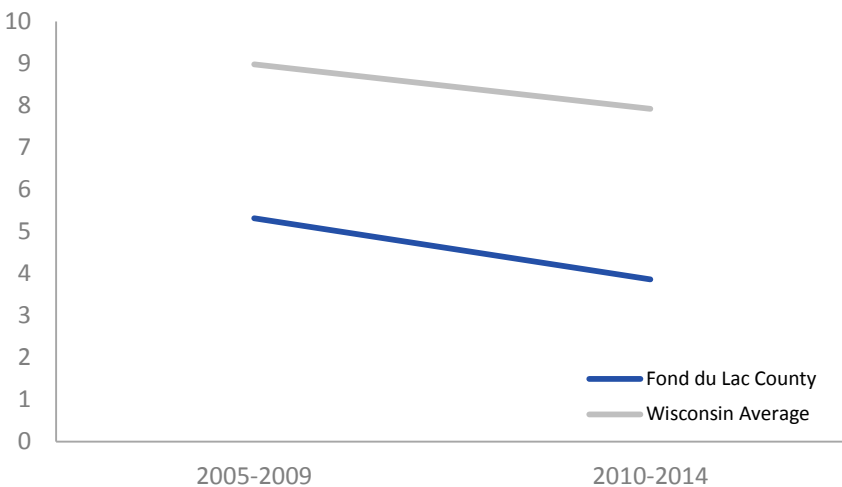
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS FOND DU LAC COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

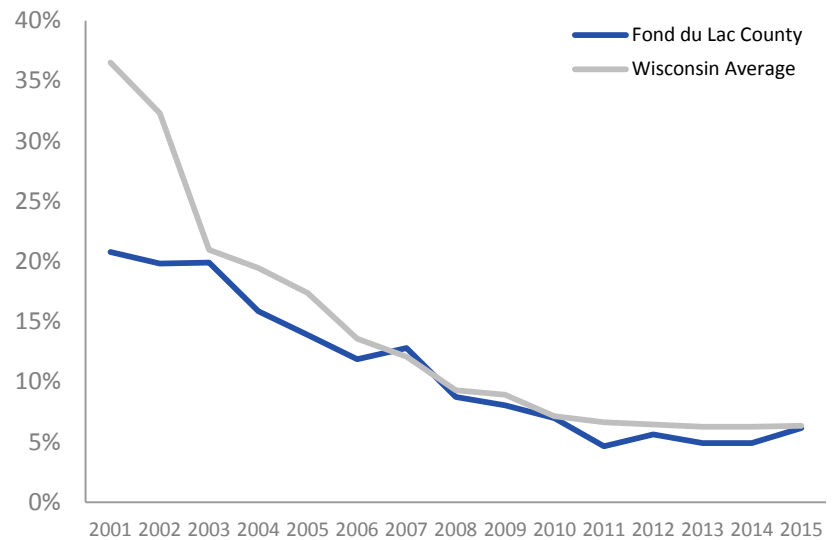
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

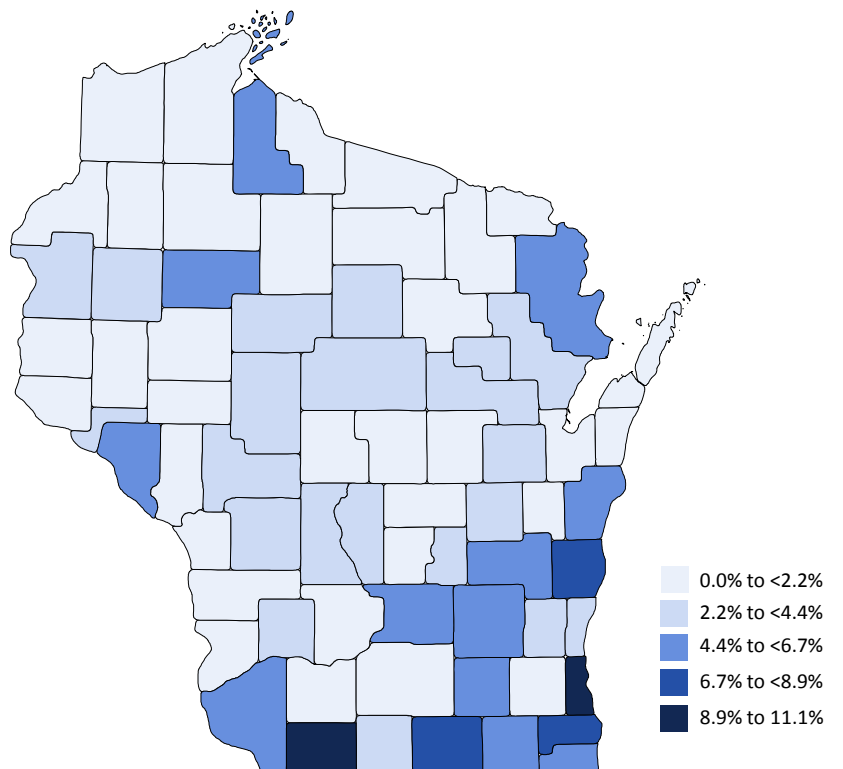
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE FOND DU LAC COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

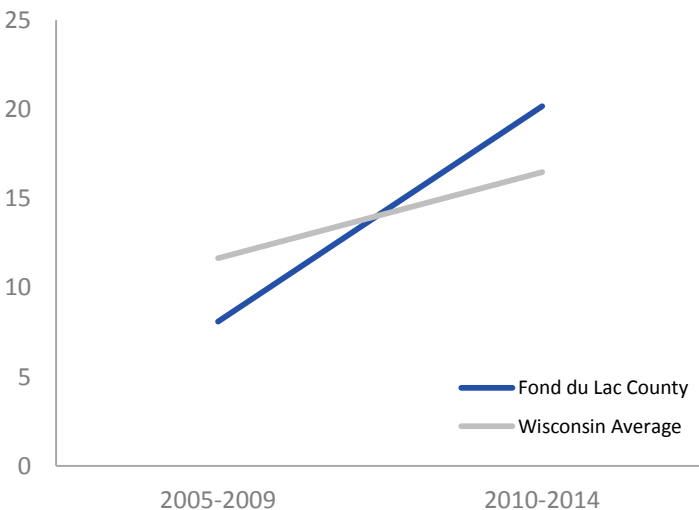
⚠ **20.2**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✓ **8.8**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✓ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

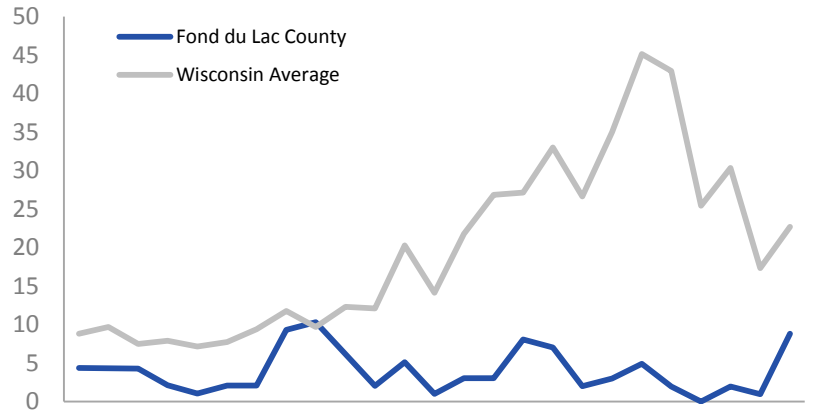
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

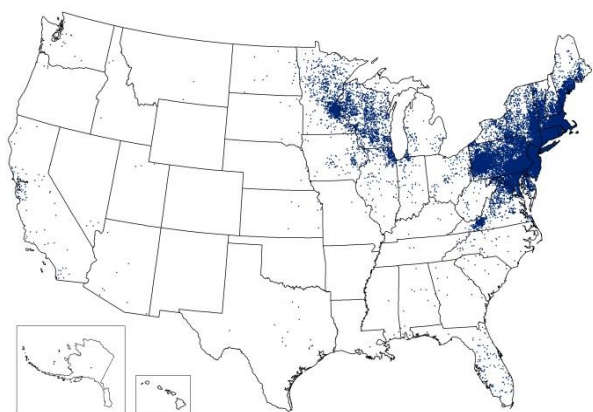
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

FOND DU LAC COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **22.5**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

⚠ **31.3**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

✓ **60.7**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

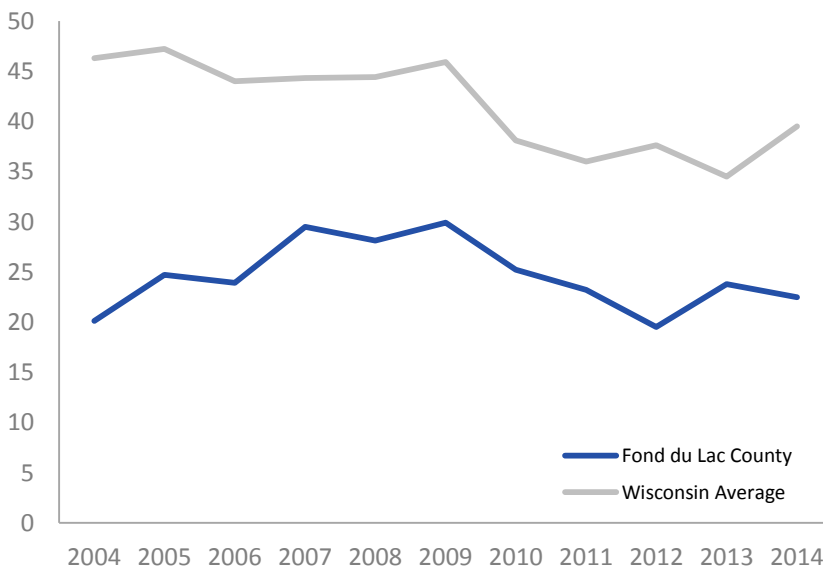
⚠ **29.9**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

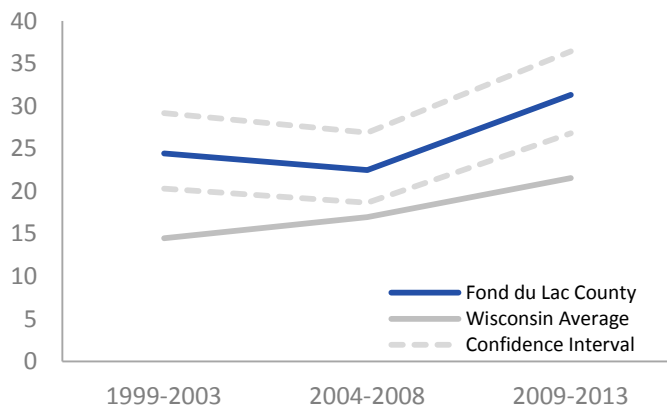
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

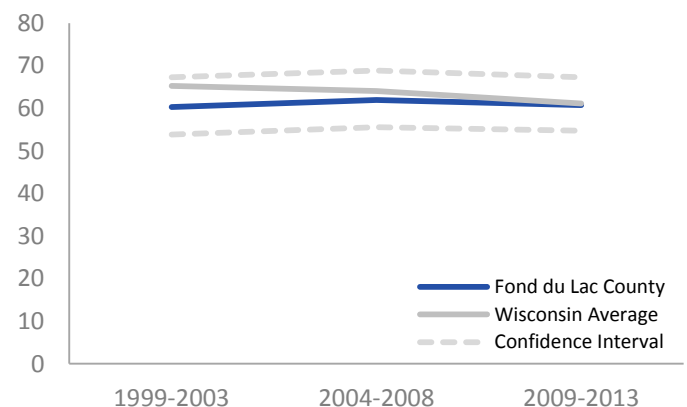
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

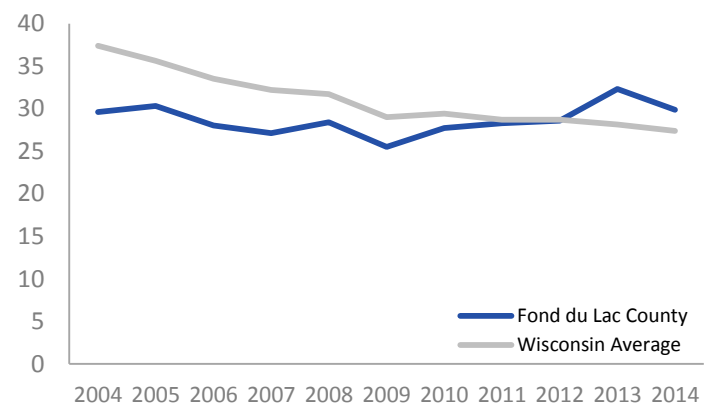
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY FOND DU LAC

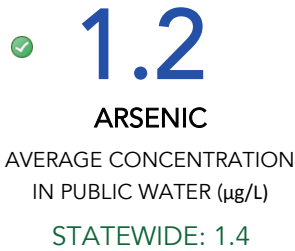
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

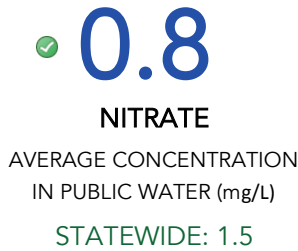
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

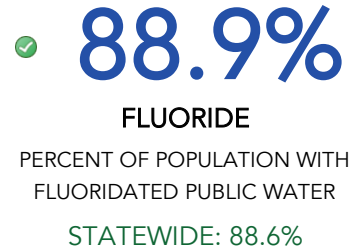
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



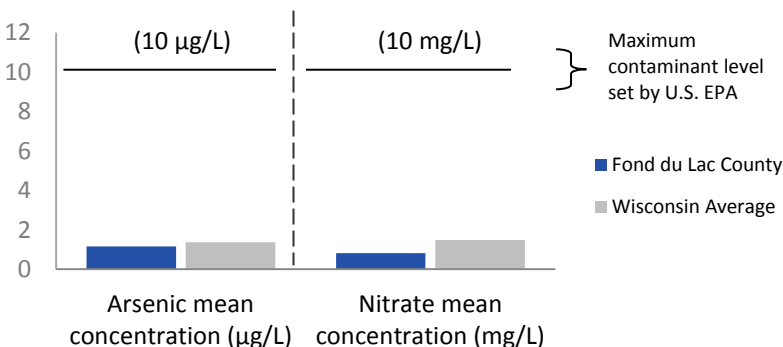
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY FOND DU LAC COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

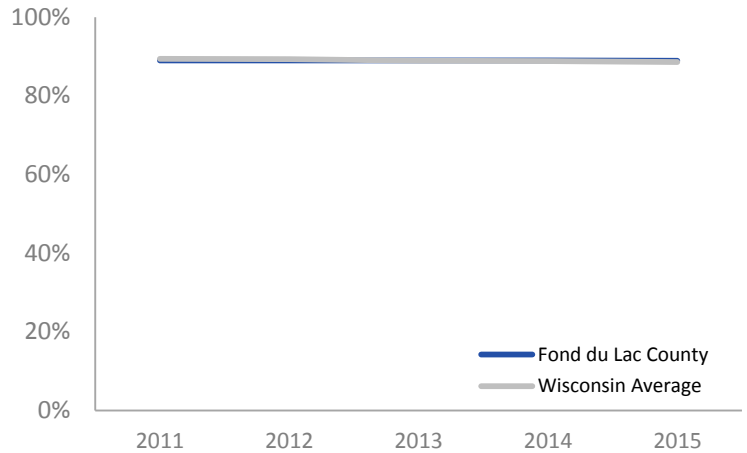
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

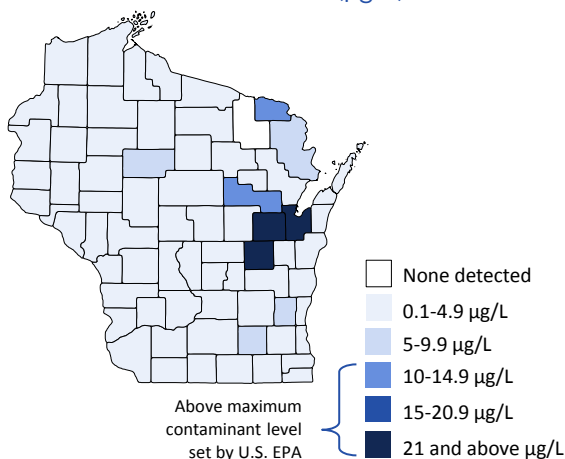
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

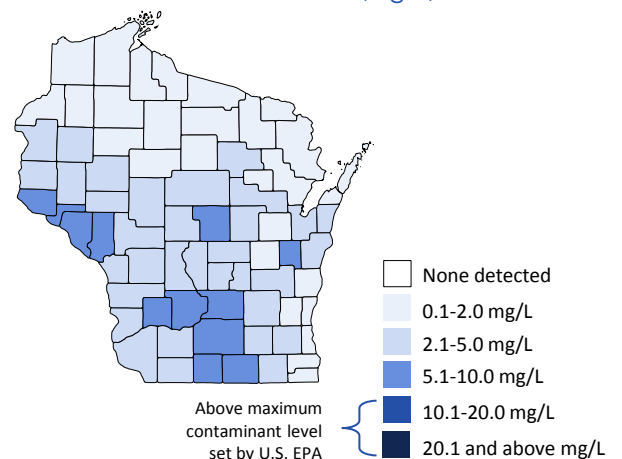
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



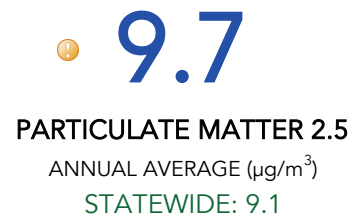


AIR QUALITY FOND DU LAC COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

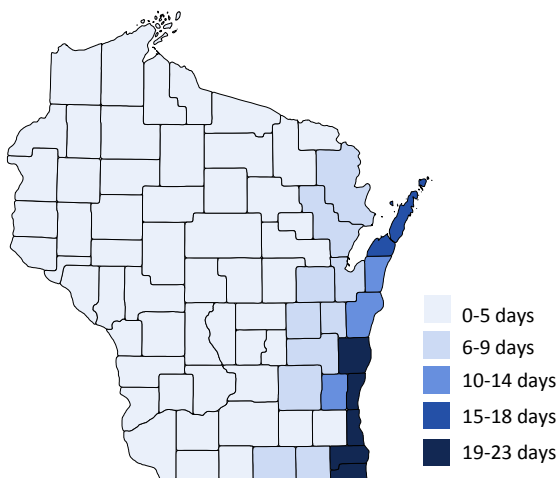
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

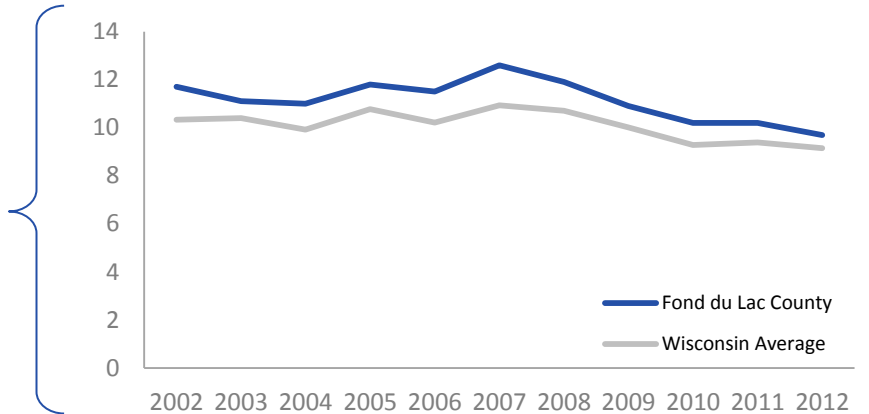
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

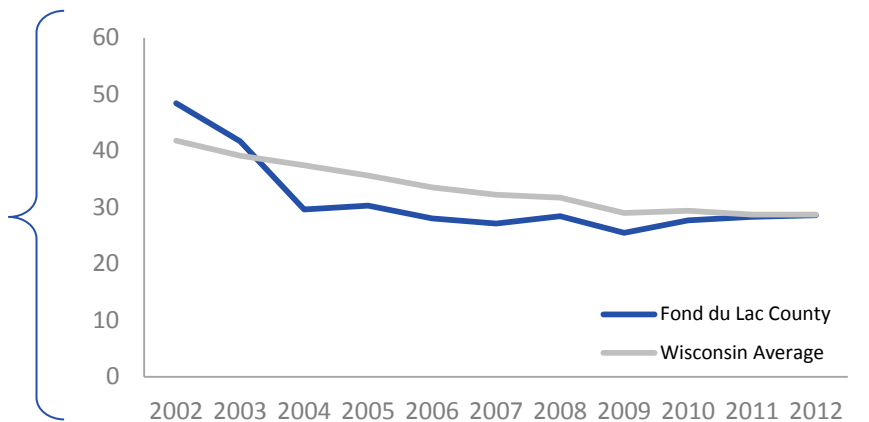
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



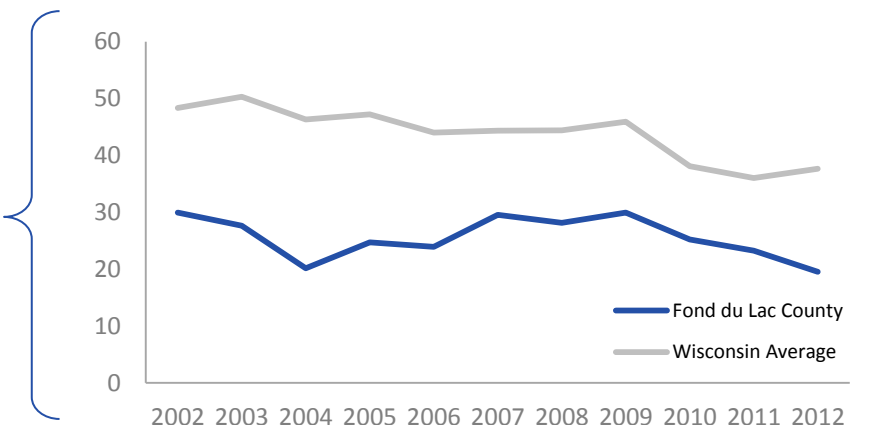
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



FOREST COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

FOREST COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.1% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 9.0 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 14.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 55.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 26.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 10.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 53.6 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.0 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 4 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS FOREST COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **9.0**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.1%**

CHILDHOOD LEAD POISONING

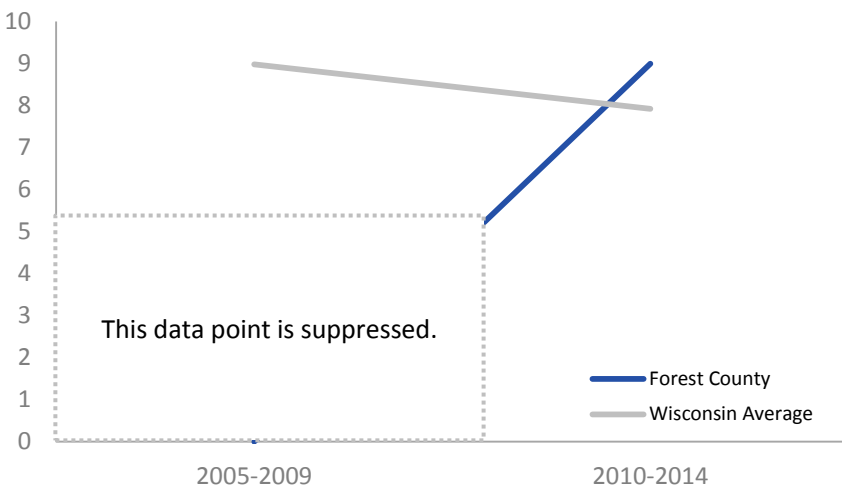
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS FOREST COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

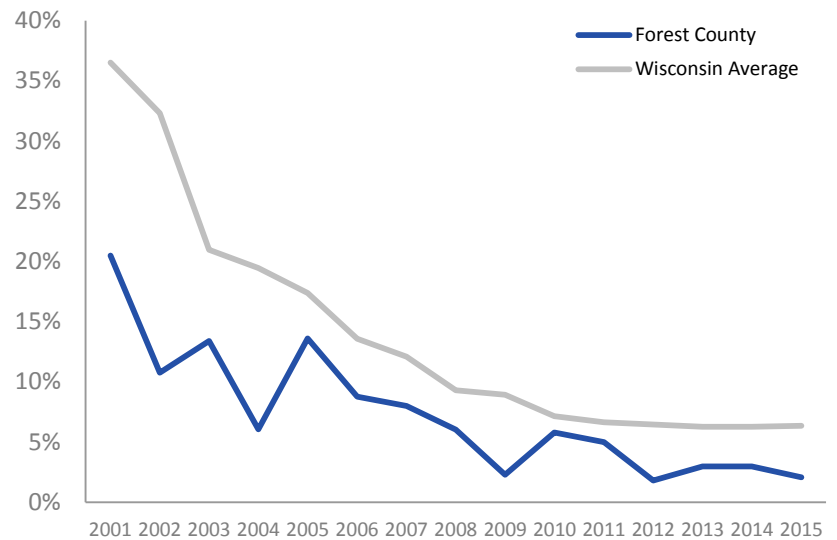
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

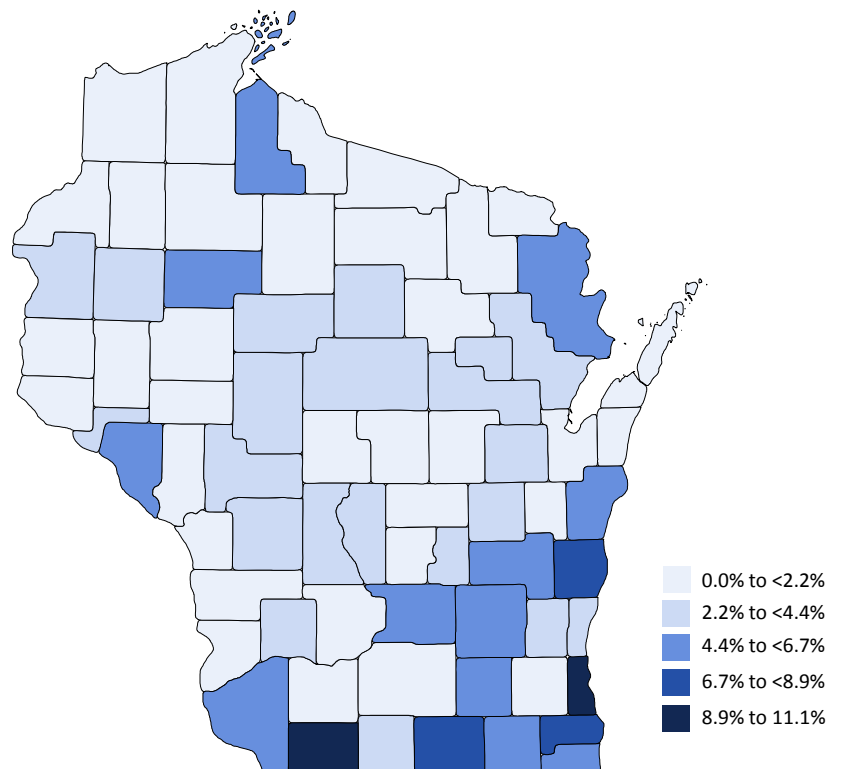
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE FOREST COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **14.3**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

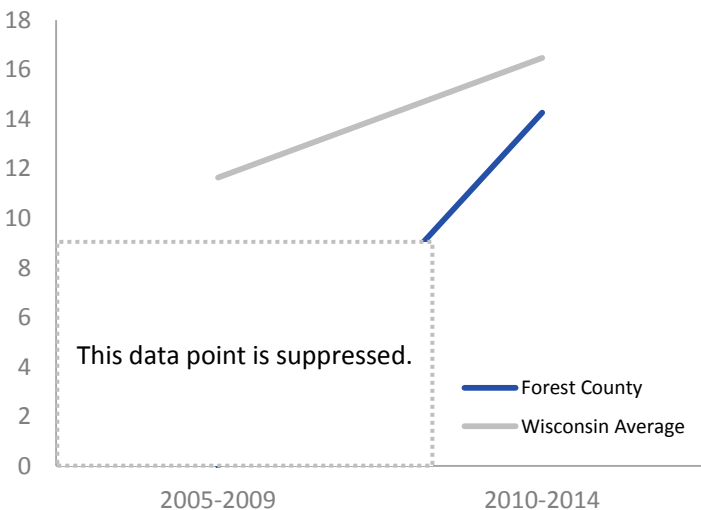
⚠ **55.2**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

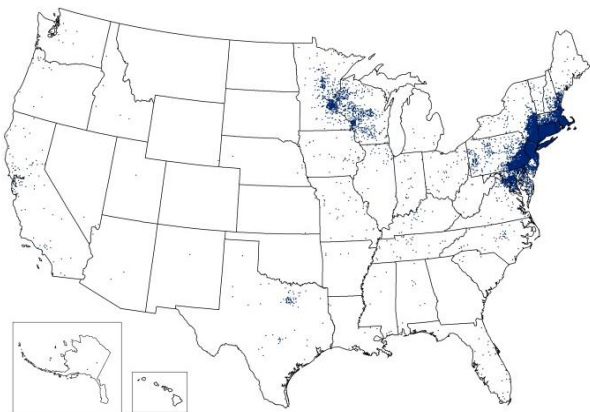
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

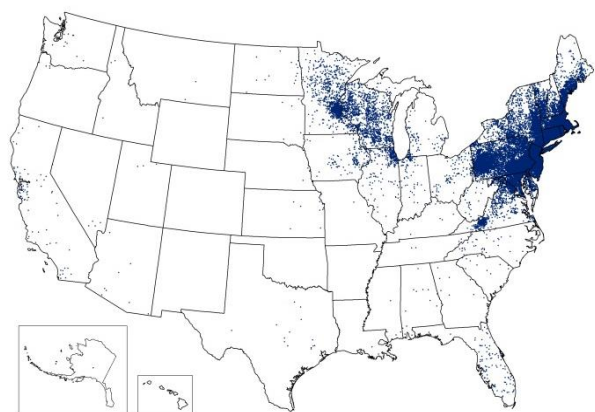
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

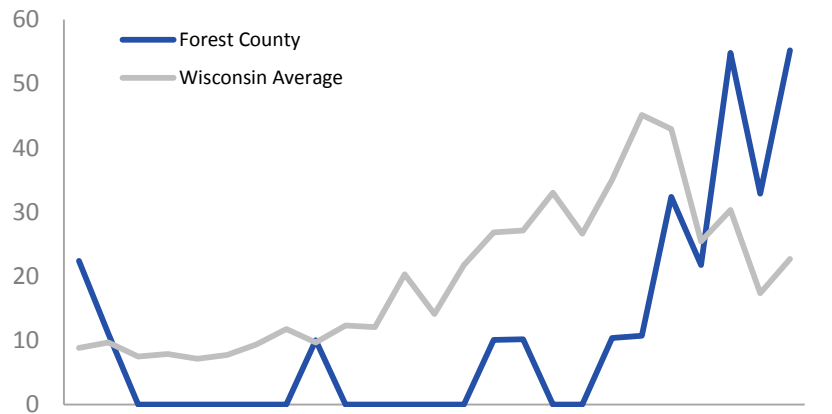


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES FOREST COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **26.1**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **10.4**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

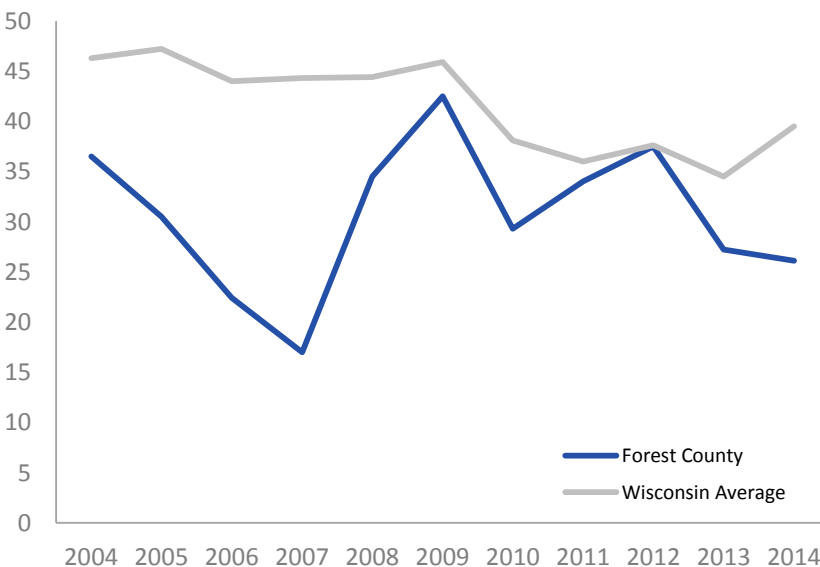
⚠ **94.5**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **53.6**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

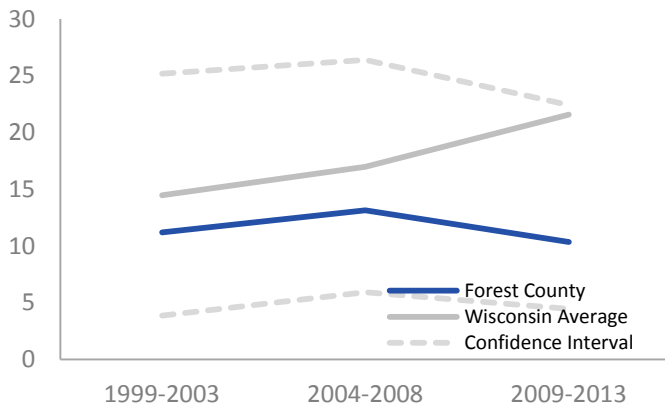
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

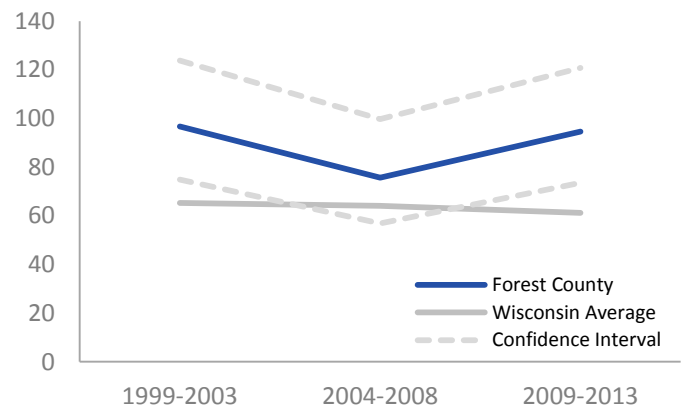
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

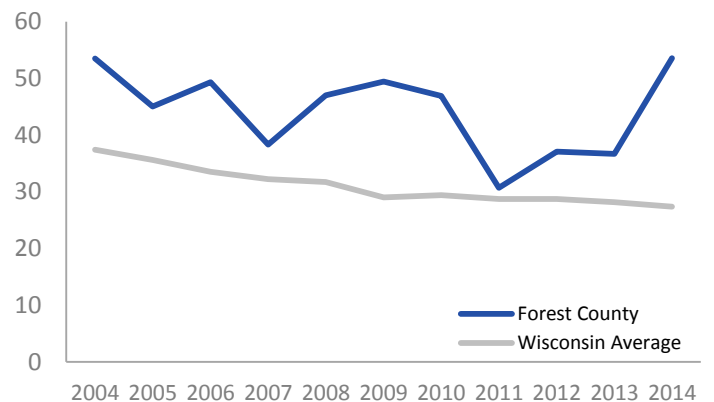
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY FOREST COUNTY

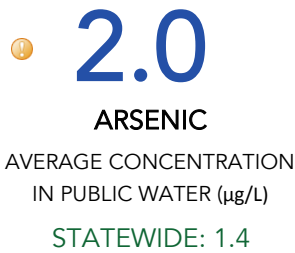
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

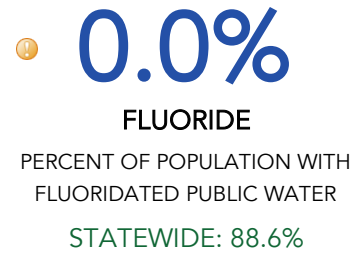
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



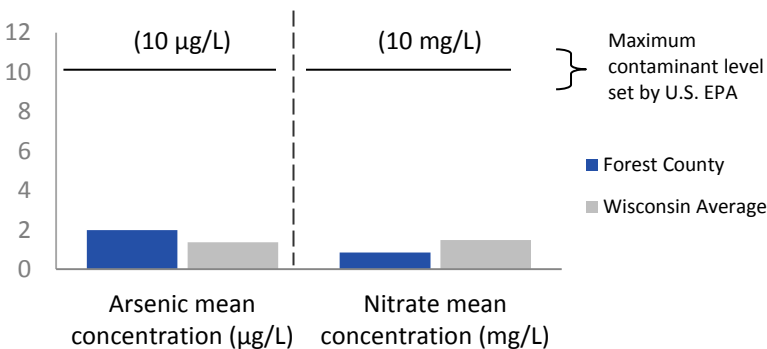
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY FOREST COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

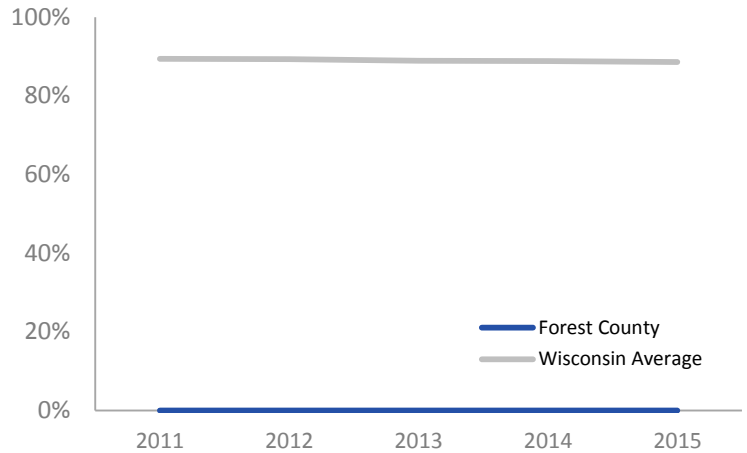
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

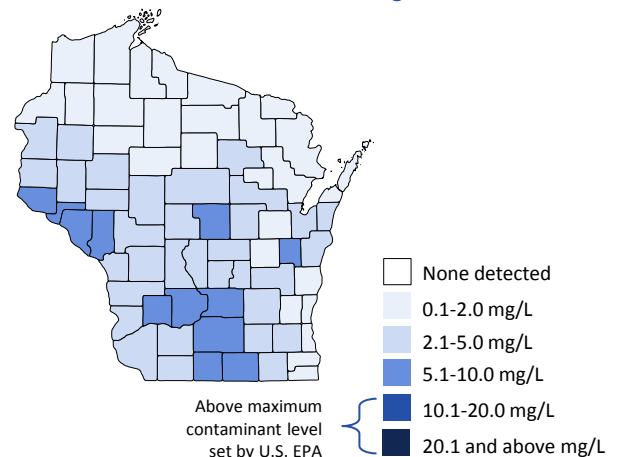
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY FOREST COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



4

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



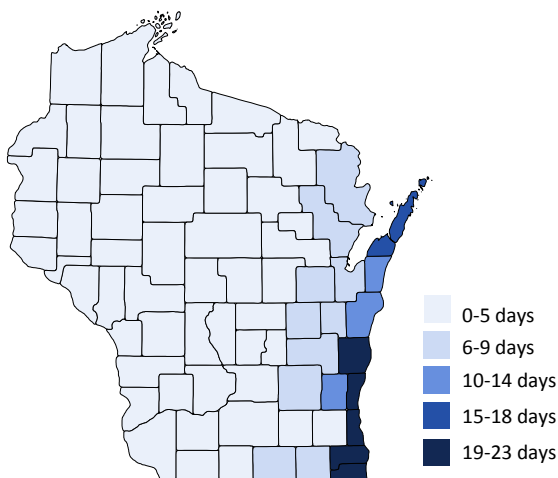
7.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

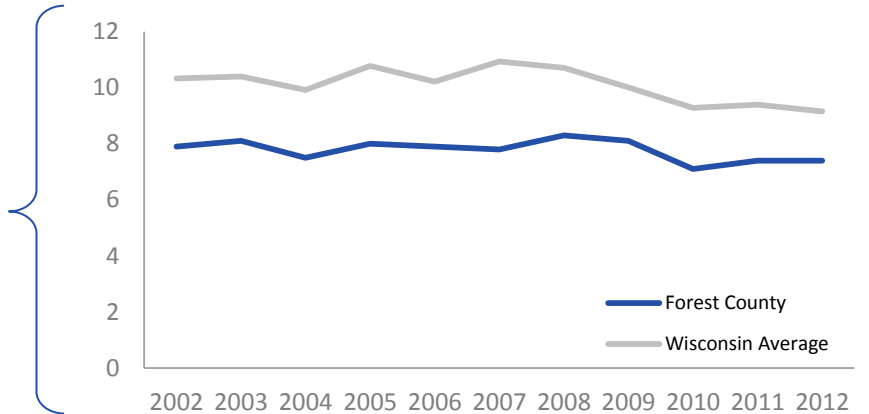


AIR QUALITY FOREST COUNTY

PARTICULATE MATTER 2.5

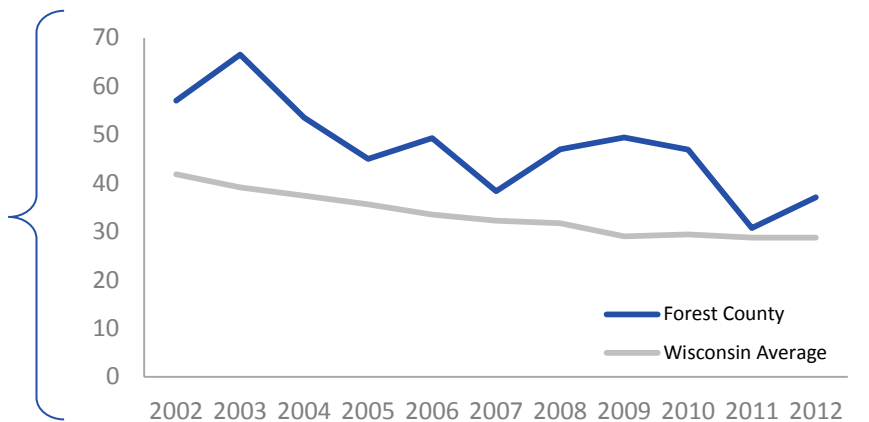
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



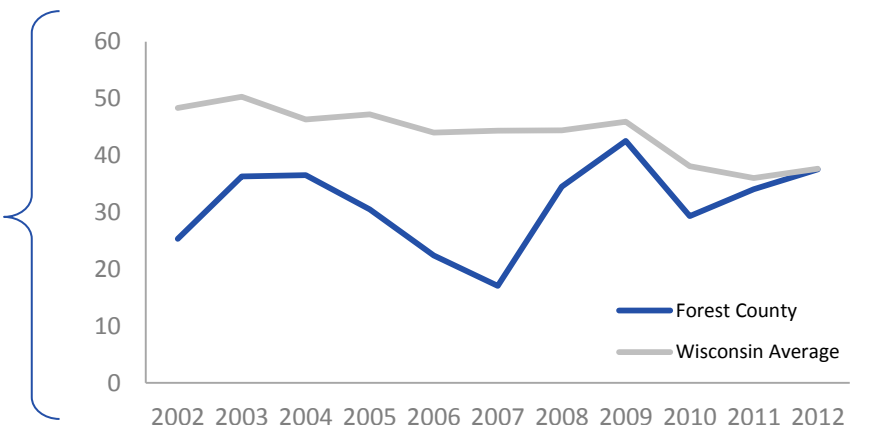
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



GRANT COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

GRANT COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 4.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.9 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 30.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 28.7 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 31.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 20.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 19.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 1.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 87.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 1 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS GRANT COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **8.9**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **4.6%**

CHILDHOOD LEAD POISONING

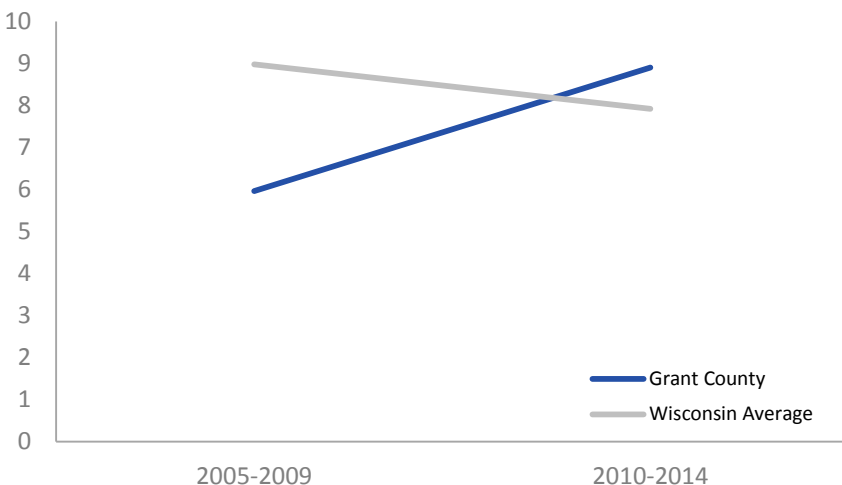
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS GRANT COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

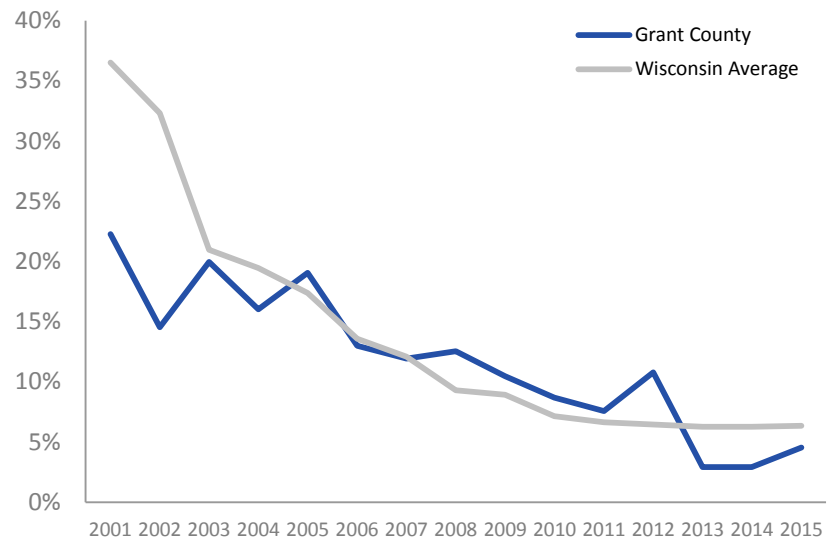
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

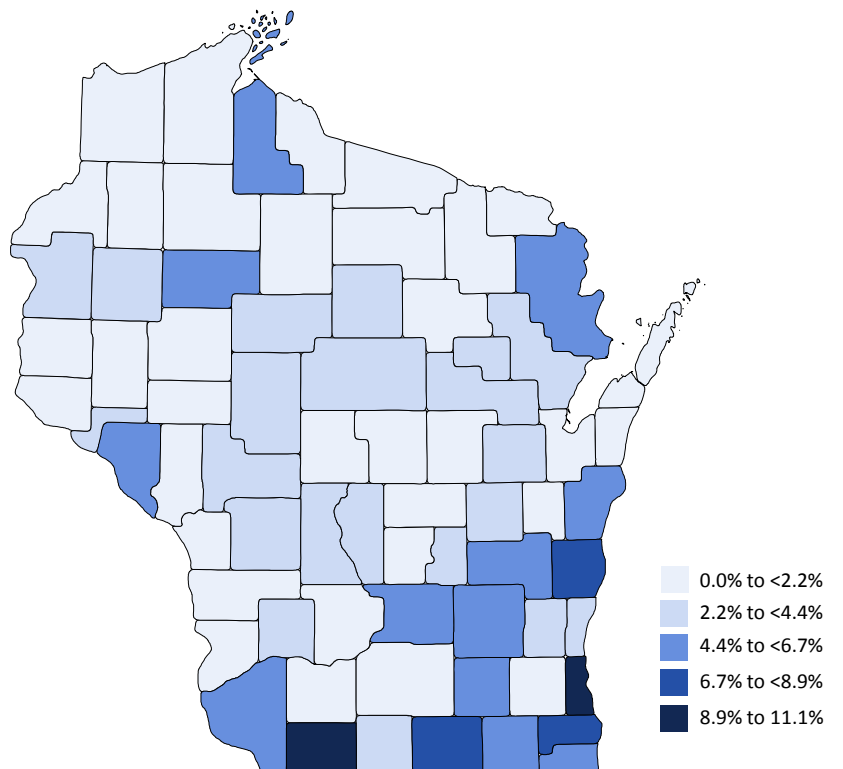
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE GRANT COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

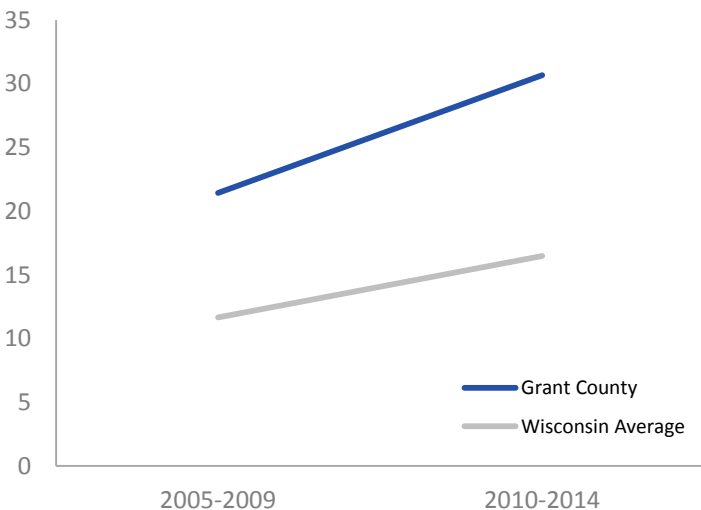
30.7
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

28.7
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

Above state value At or below state value Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

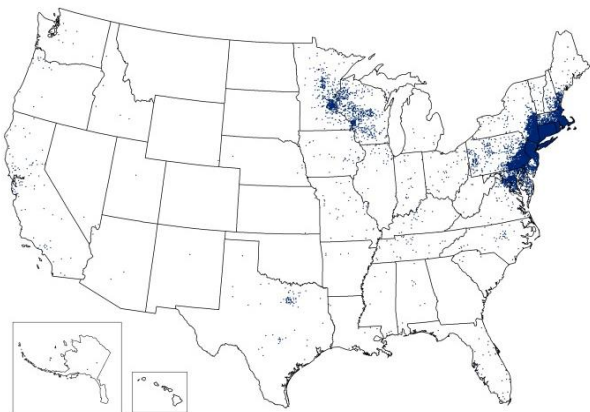
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

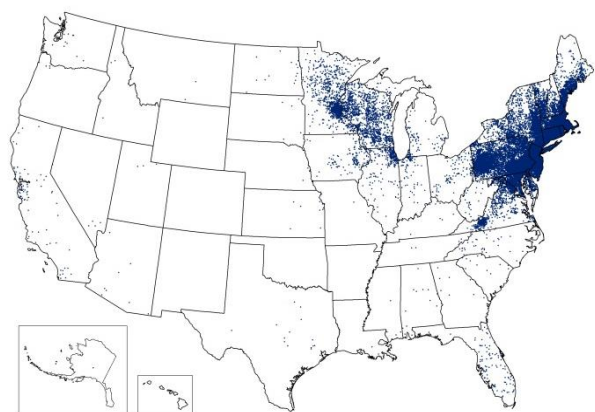
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

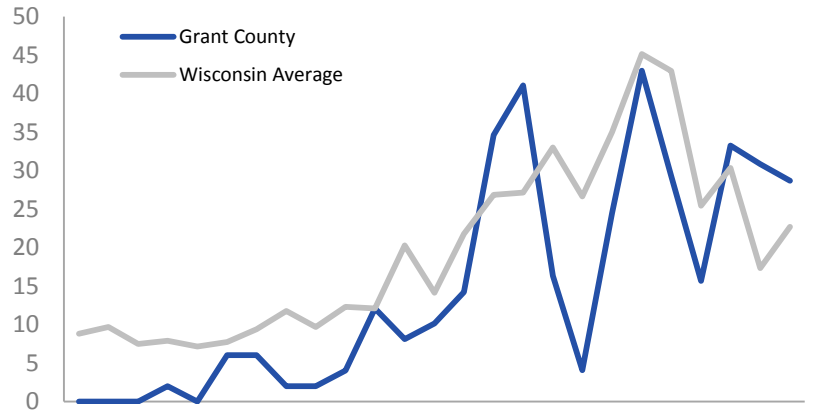


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES GRANT COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **31.3**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **20.8**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

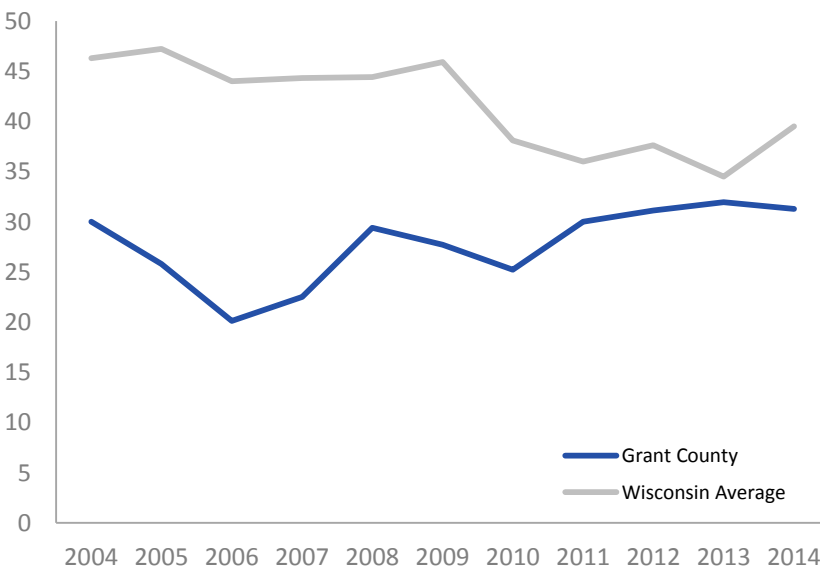
✓ **51.5**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **19.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

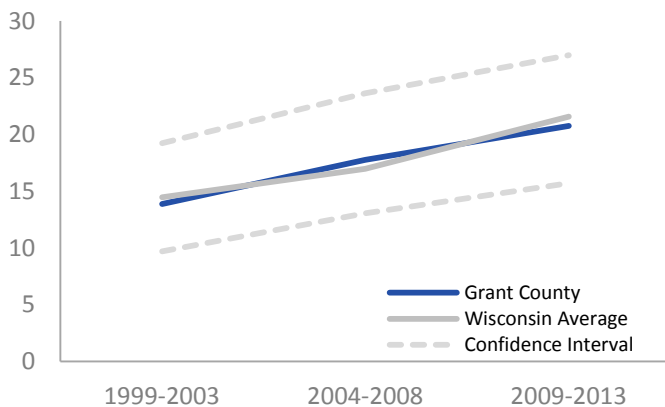
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

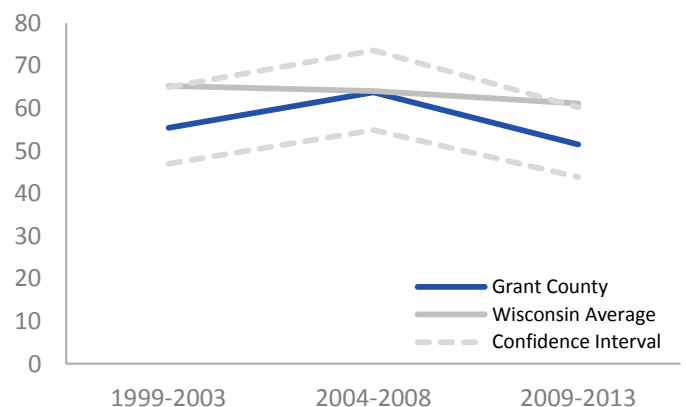
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

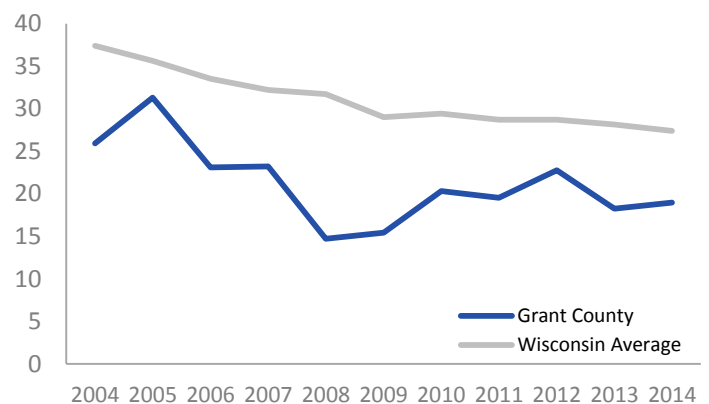
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY GRANT COUNTY

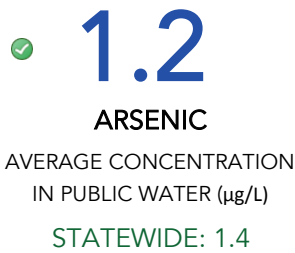
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

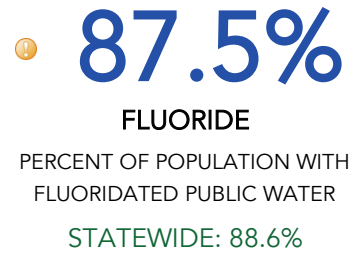
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



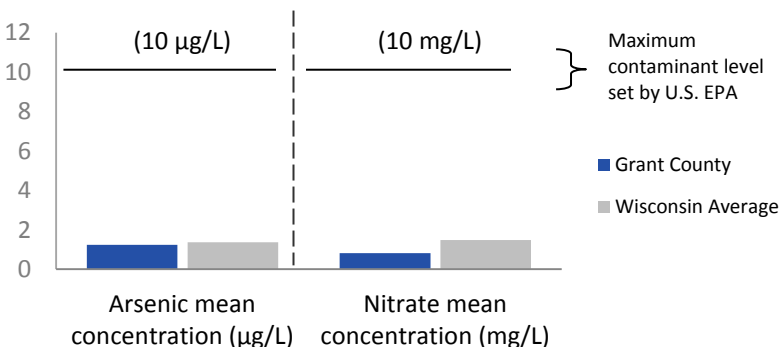
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY GRANT COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

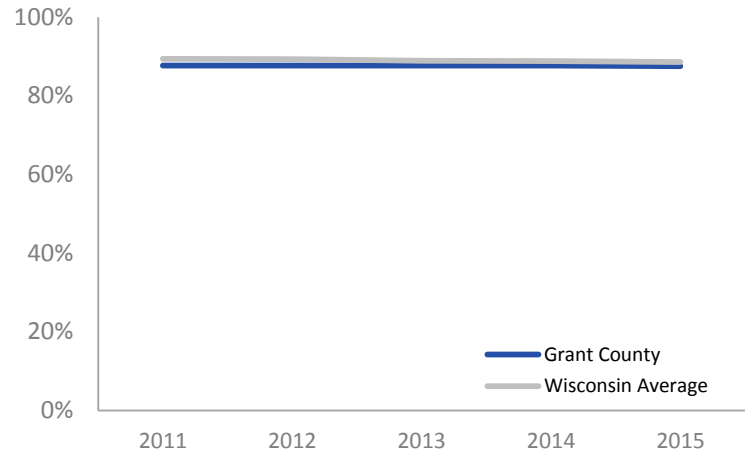
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

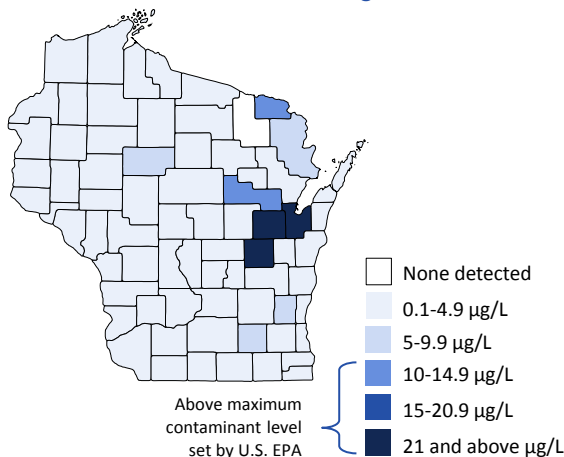
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

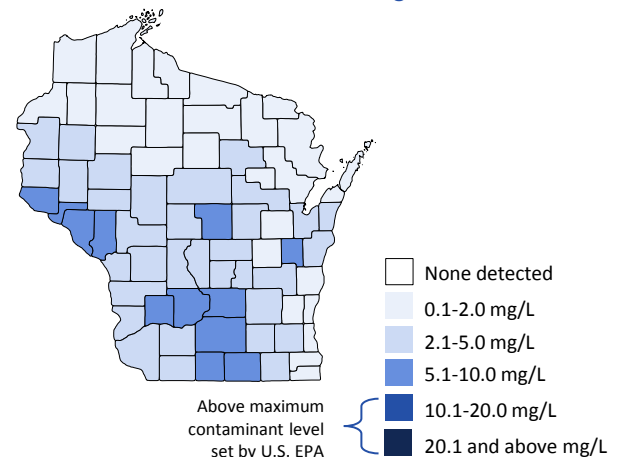
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY GRANT COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



1

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



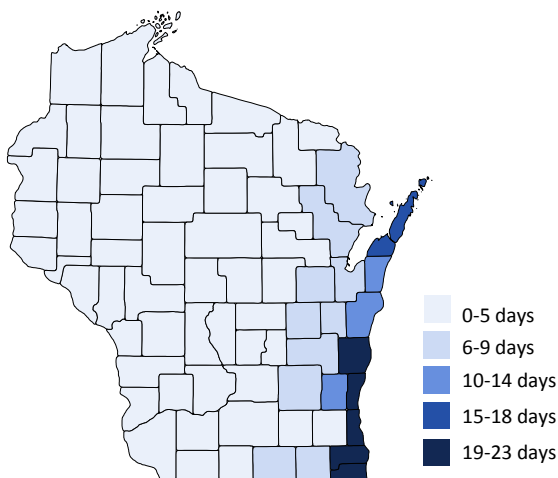
9.9

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

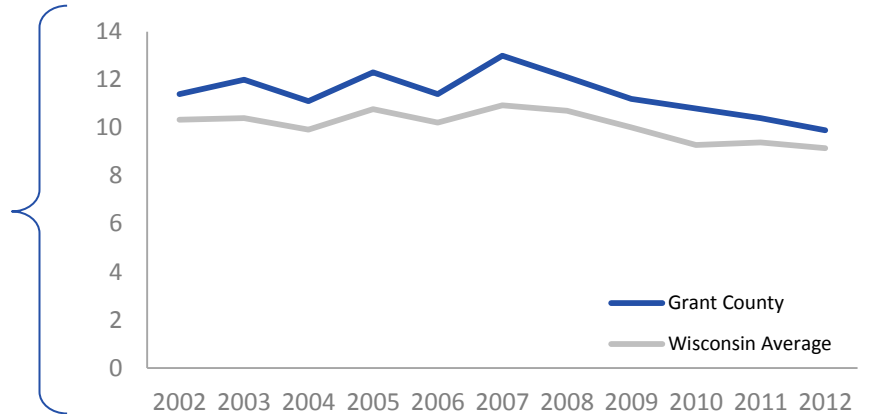


AIR QUALITY GRANT COUNTY

PARTICULATE MATTER 2.5

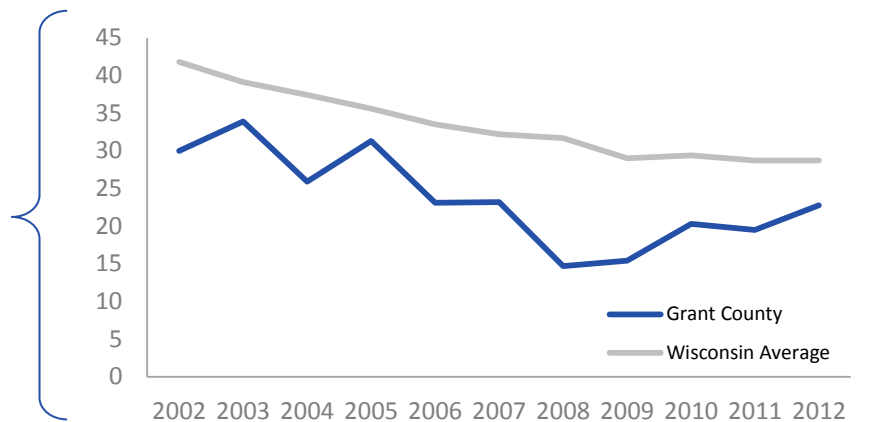
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



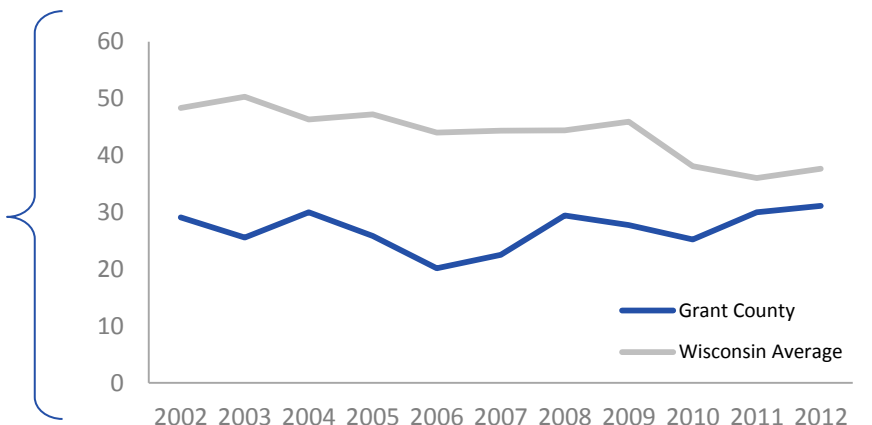
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



GREEN LAKE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

GREEN LAKE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 3.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 14.8 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 19.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 31.8 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 26.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 26.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 35.7 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 4.4 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 56.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

⚠ 4 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS GREEN LAKE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **14.8**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **3.6%**

CHILDHOOD LEAD POISONING

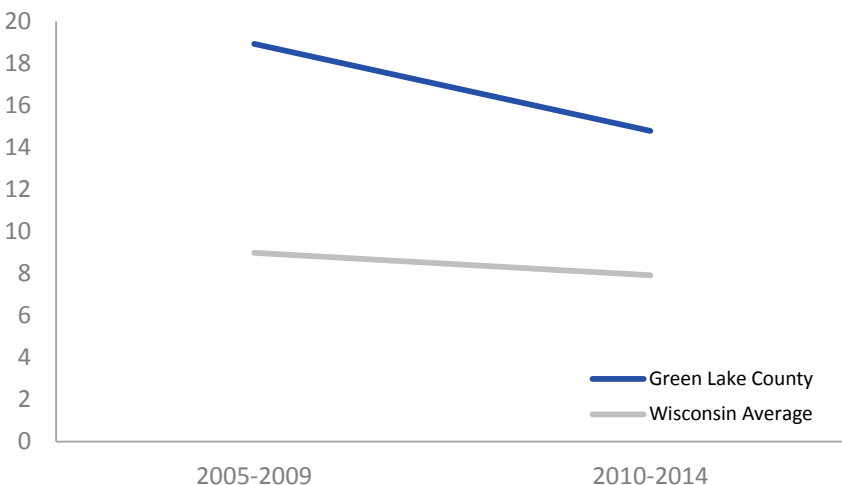
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS GREEN LAKE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

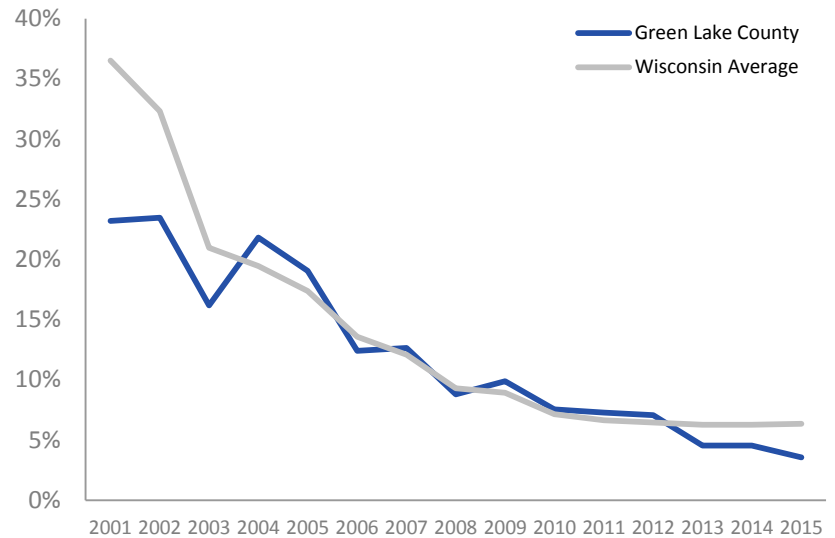
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

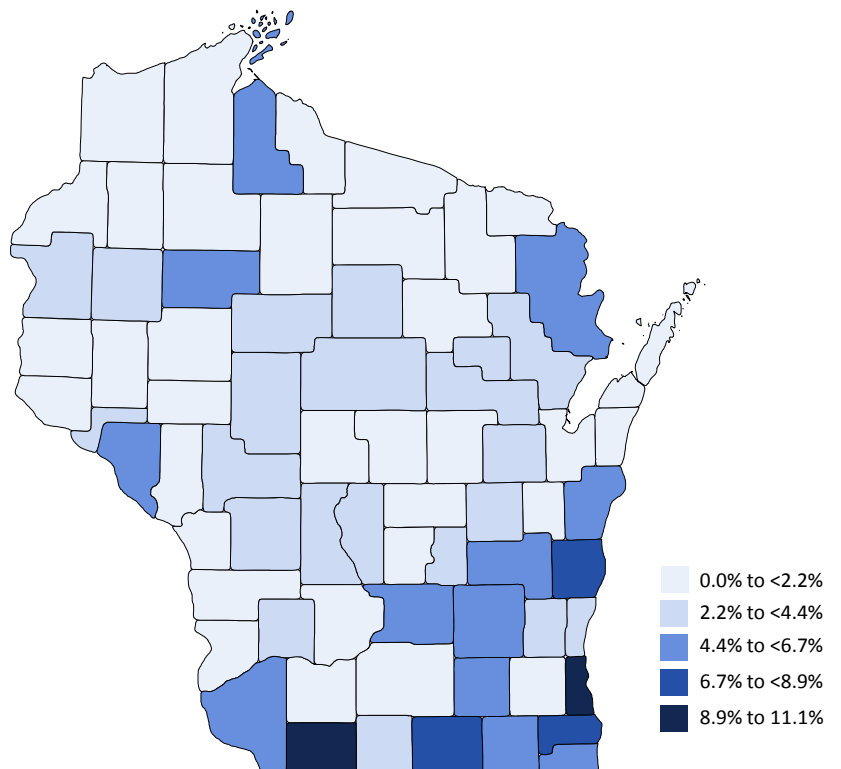
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE GREEN LAKE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

19.3

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

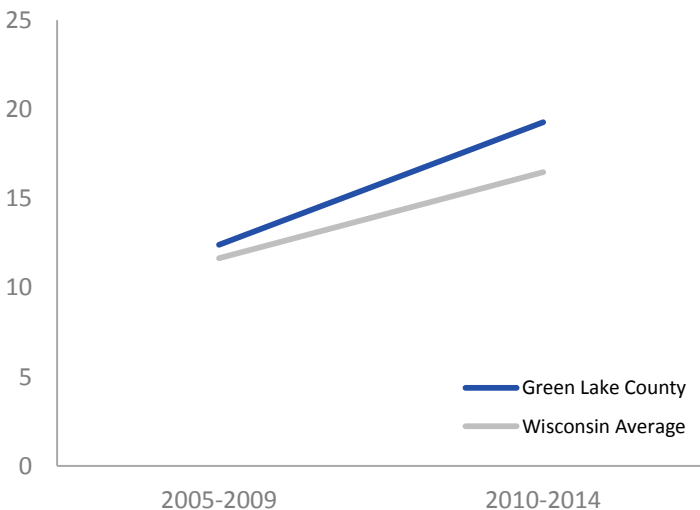
31.8

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht

Wisconsin Environmental Public Health Tracking | 7



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

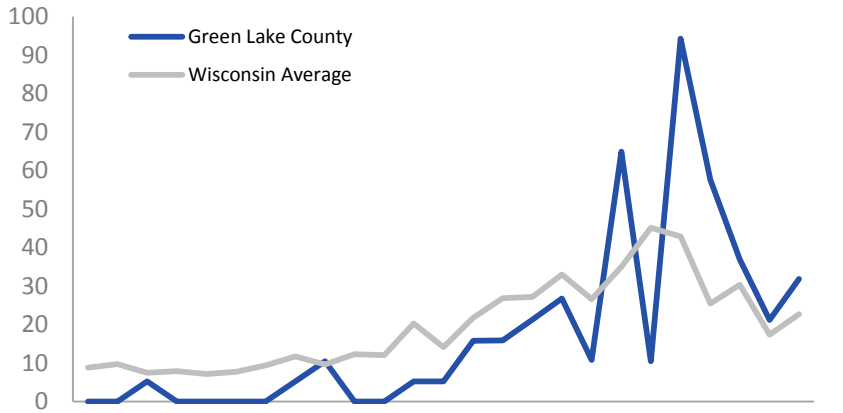
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

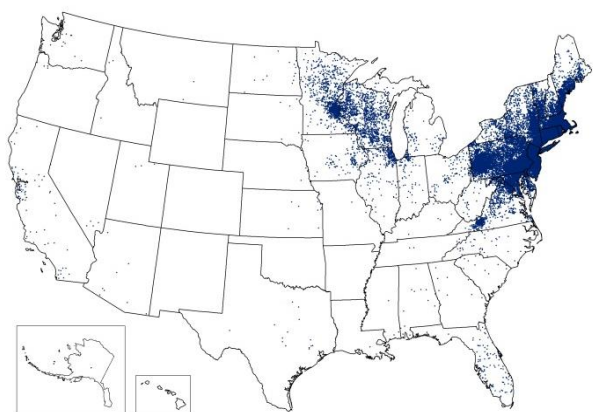
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

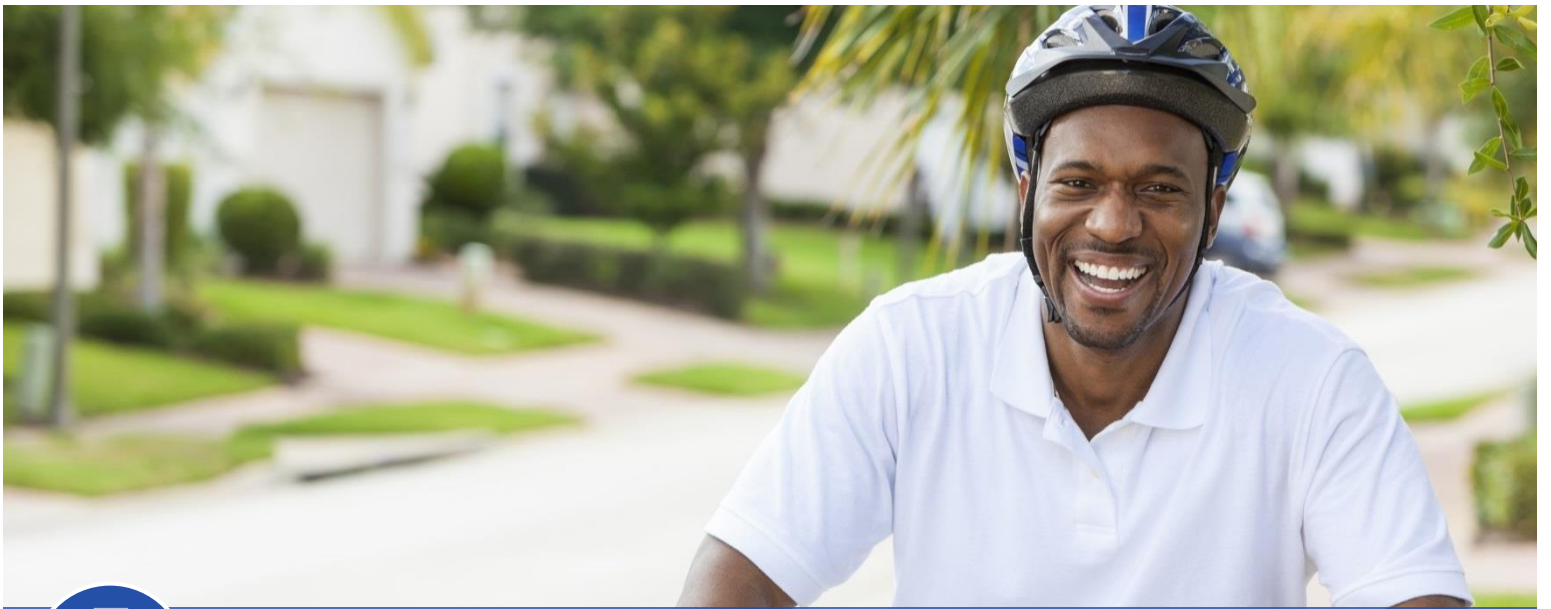


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

GREEN LAKE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **26.1**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

⚠ **26.2**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

✓ **53.7**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

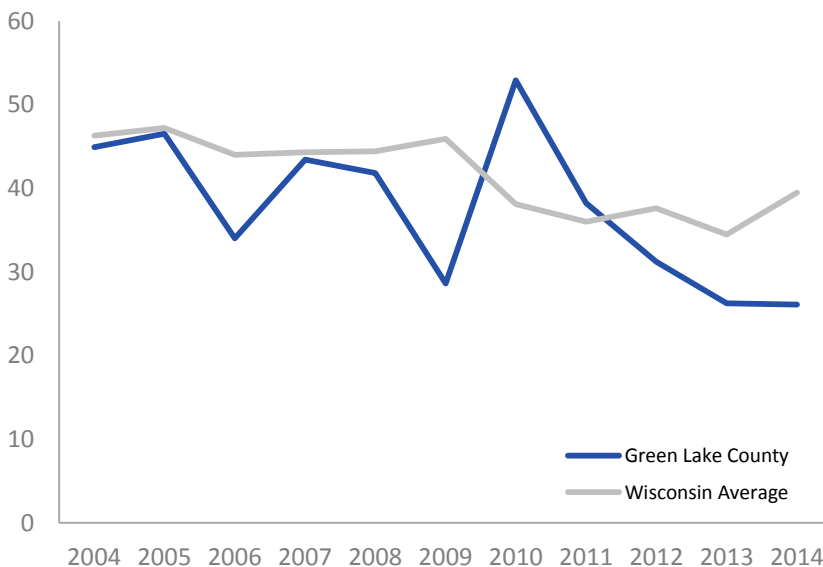
⚠ **35.7**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

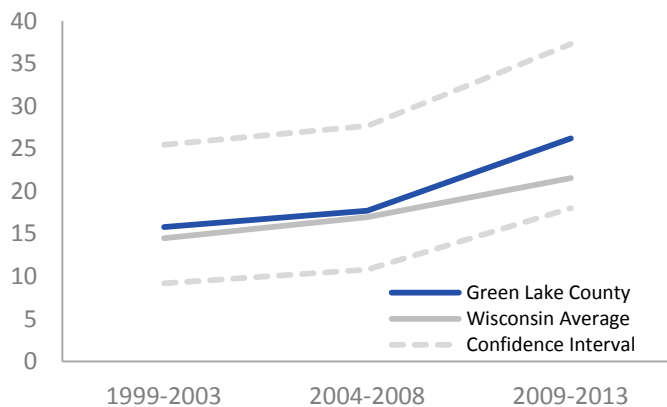
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

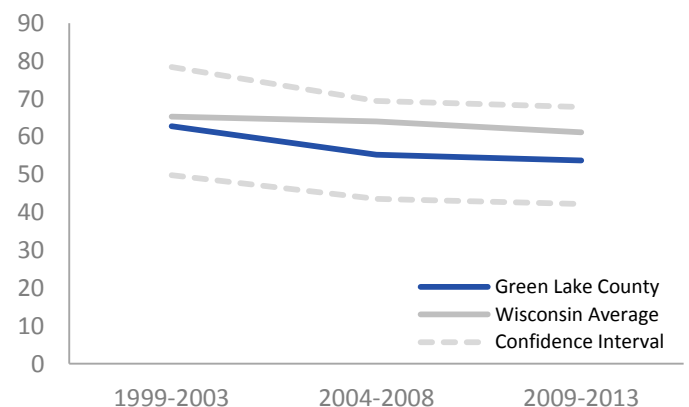
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

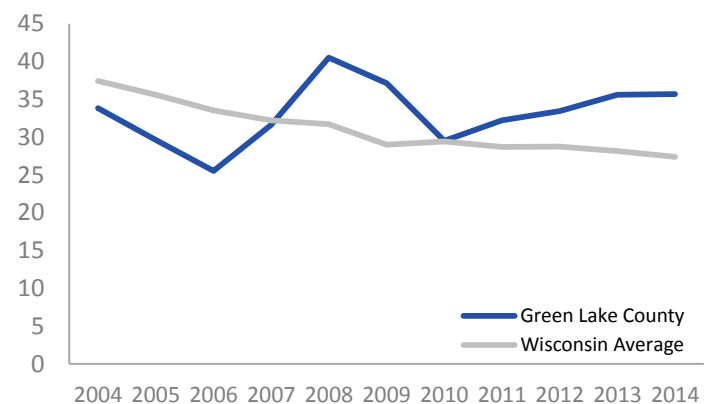
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY GREEN LAKE

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

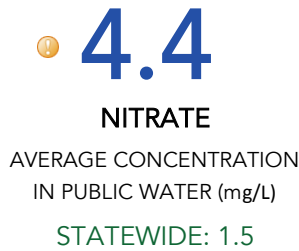
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

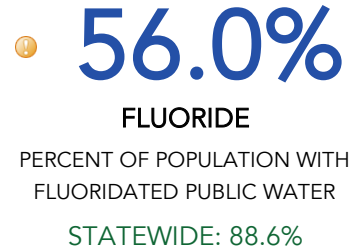
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



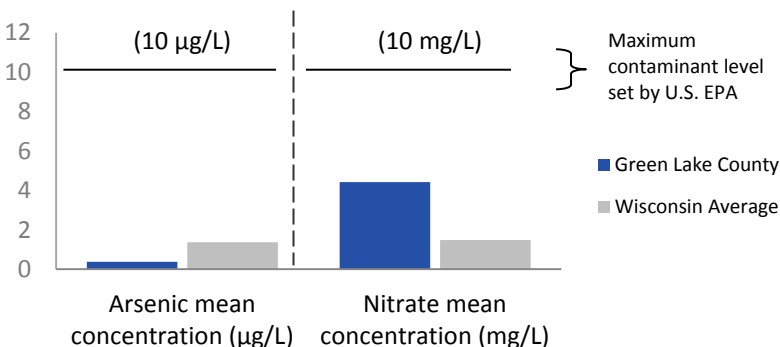
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY GREEN LAKE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

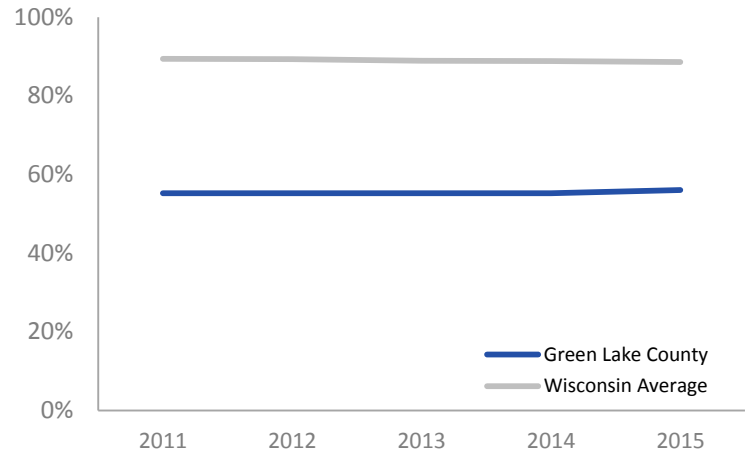
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

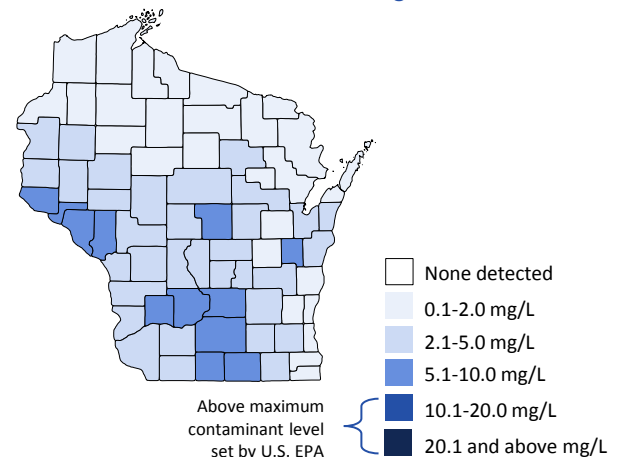
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



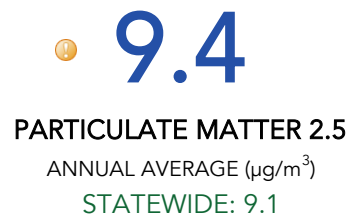
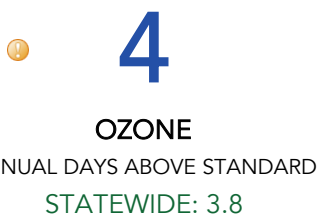


AIR QUALITY GREEN LAKE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

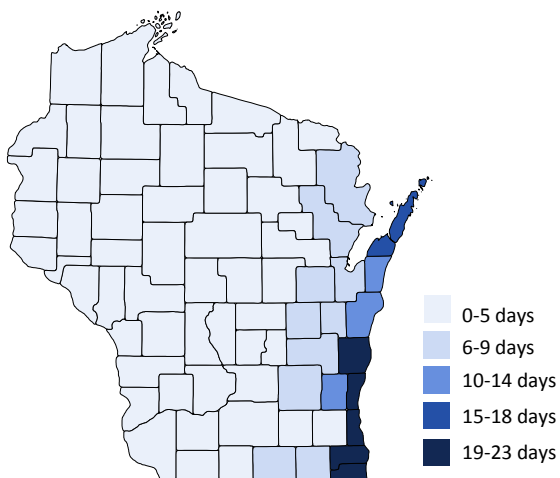
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

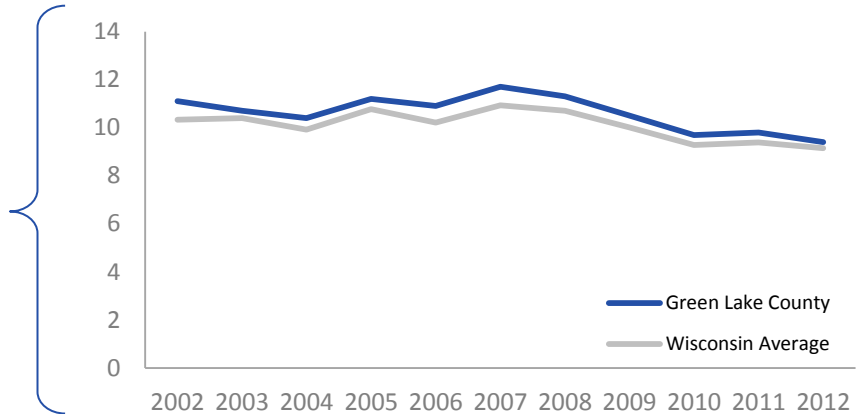


AIR QUALITY GREEN LAKE COUNTY

PARTICULATE MATTER 2.5

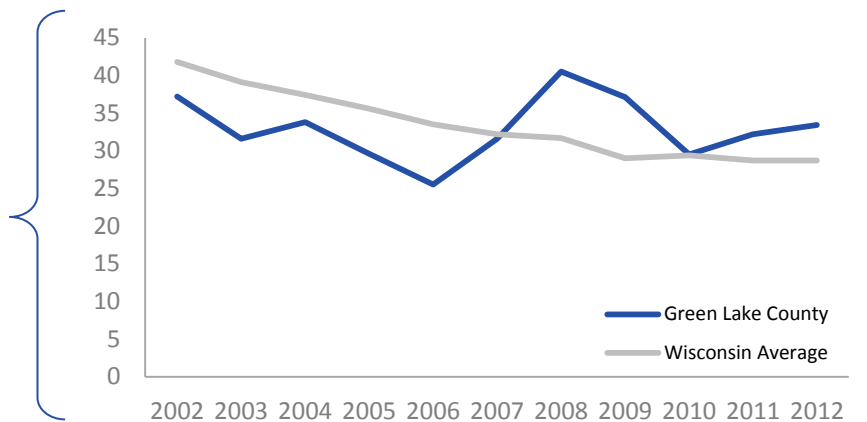
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



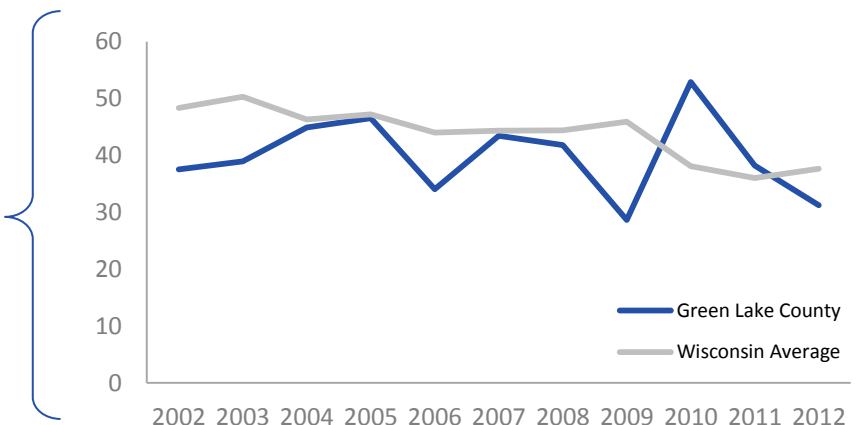
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



GREEN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



GREEN COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 3.7% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 5.3 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 19.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 18.8 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 30.7 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 18.5 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 26.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.5 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 96.9% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

⚠ 4 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS GREEN COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **5.3**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **3.7%**

CHILDHOOD LEAD POISONING

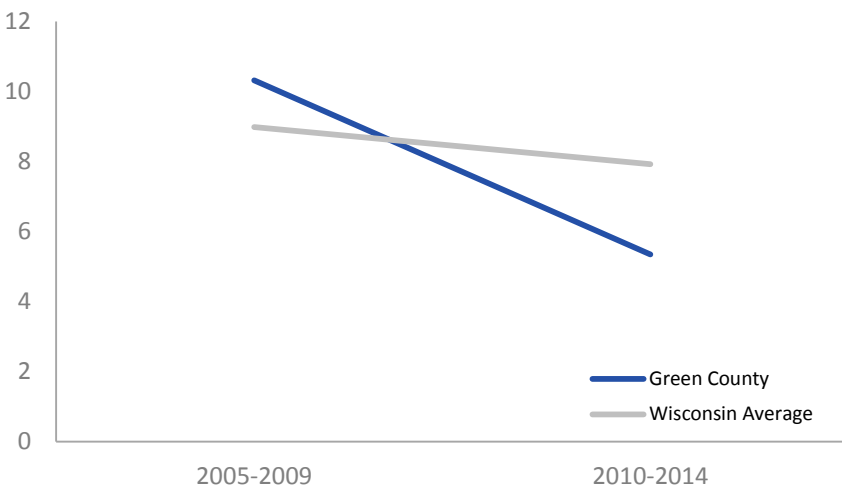
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS GREEN COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

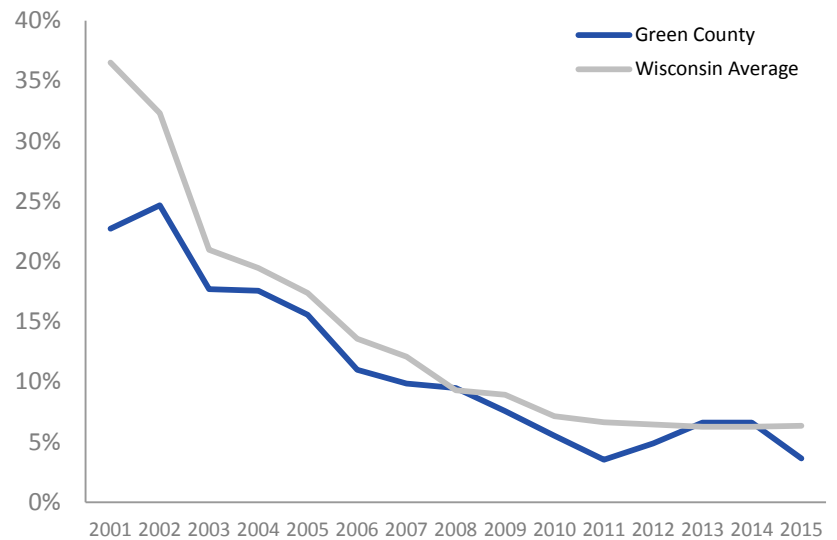
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

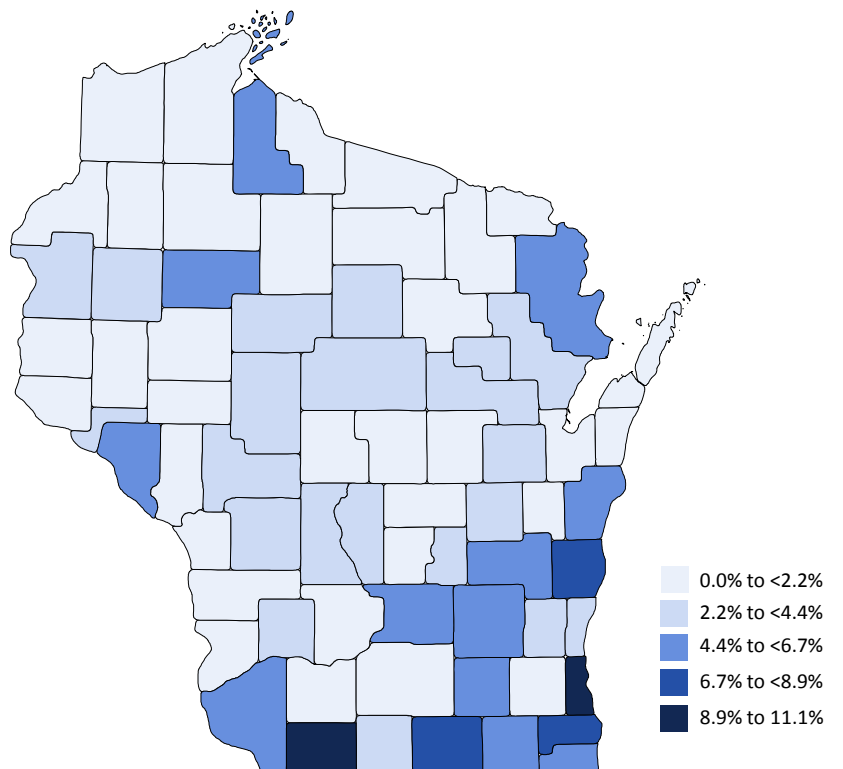
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE GREEN COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

19.3

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

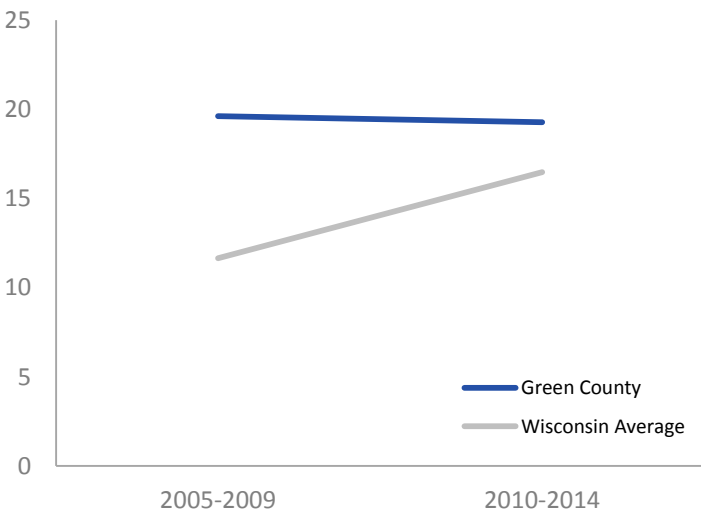
18.8

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

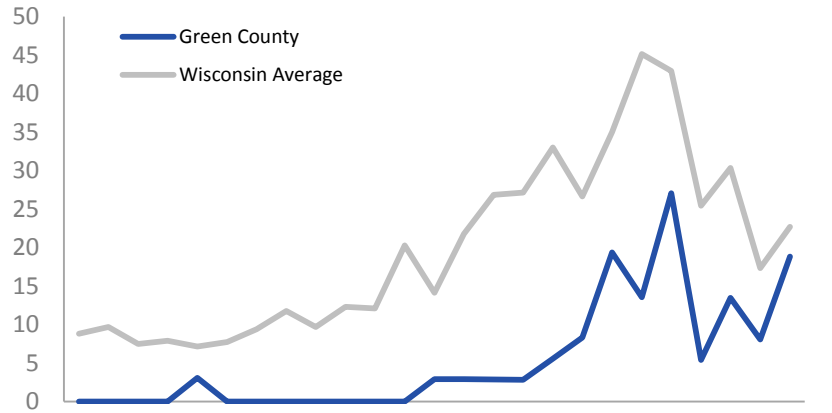
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

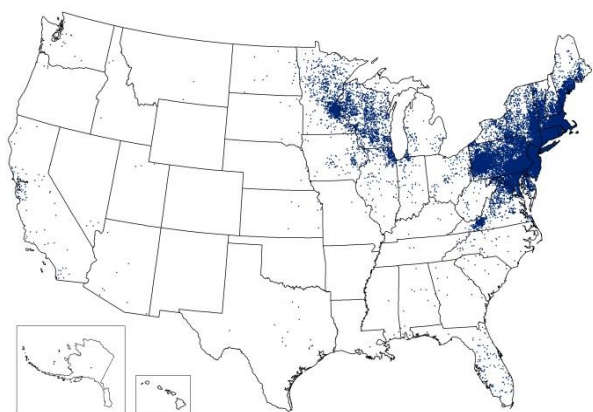
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES GREEN COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **30.7**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **18.5**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

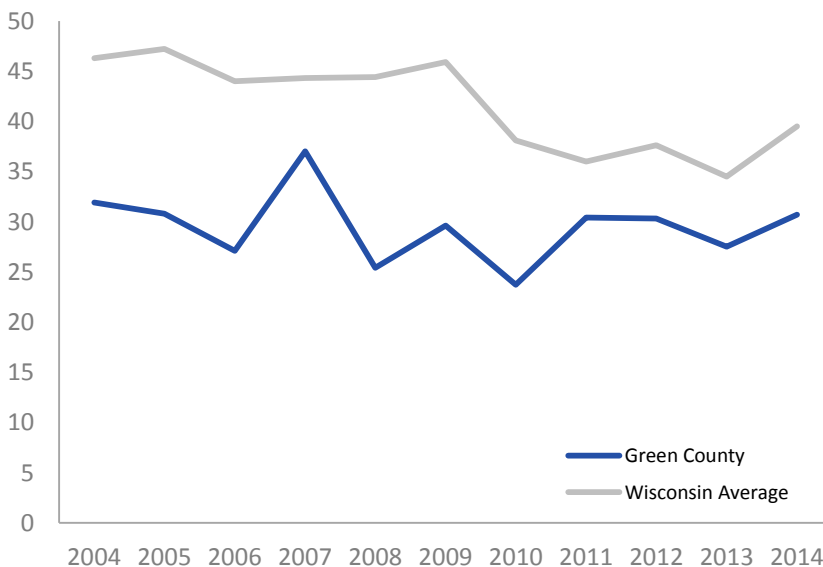
✓ **58.5**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **26.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

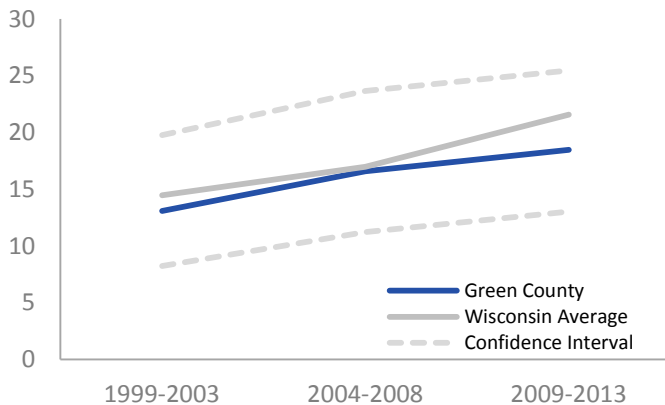
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

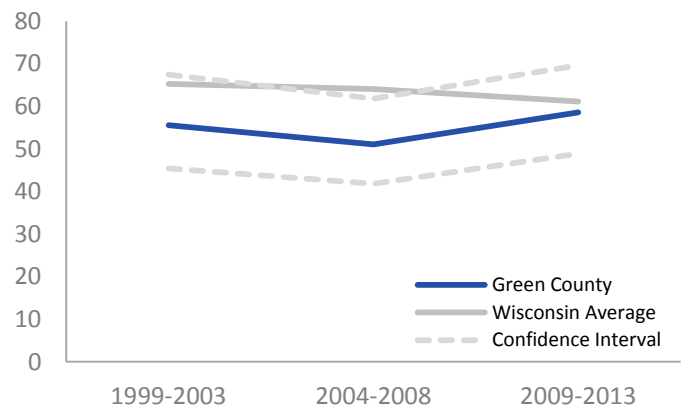
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

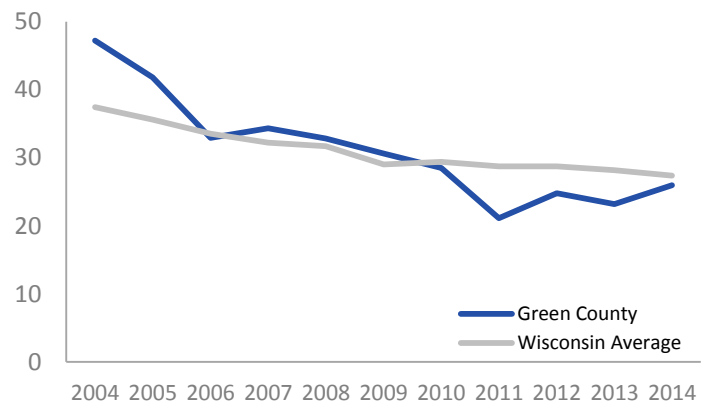
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY GREEN COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

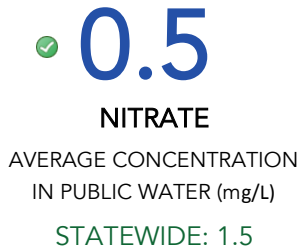
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

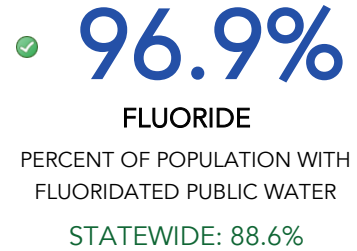
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



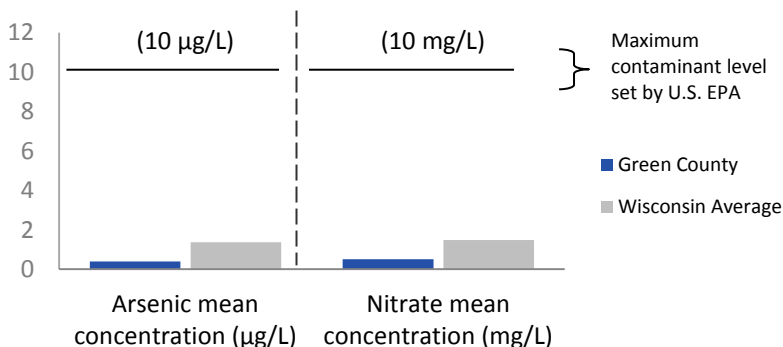
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY GREEN COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

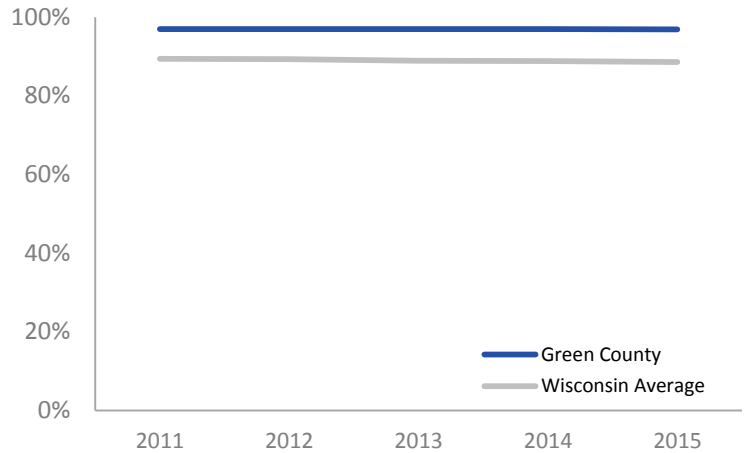
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

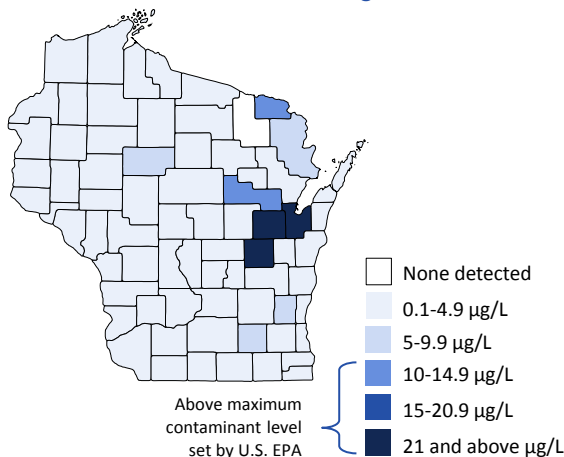
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

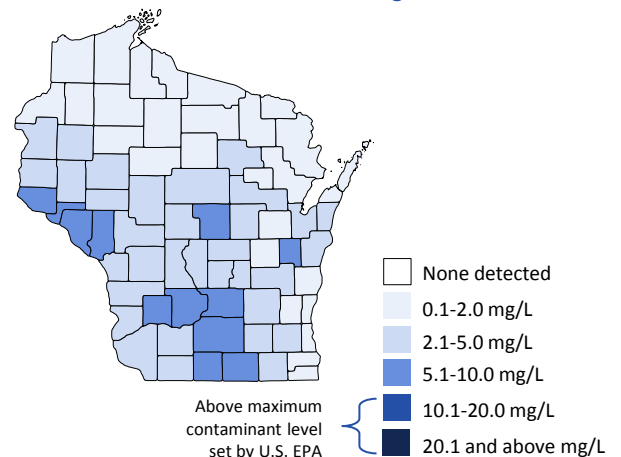
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



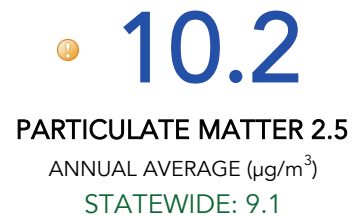
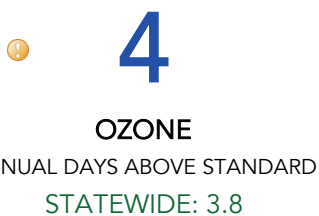


AIR QUALITY GREEN COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

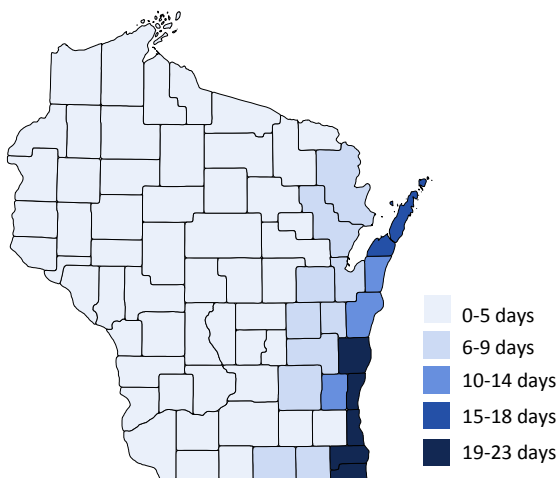
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

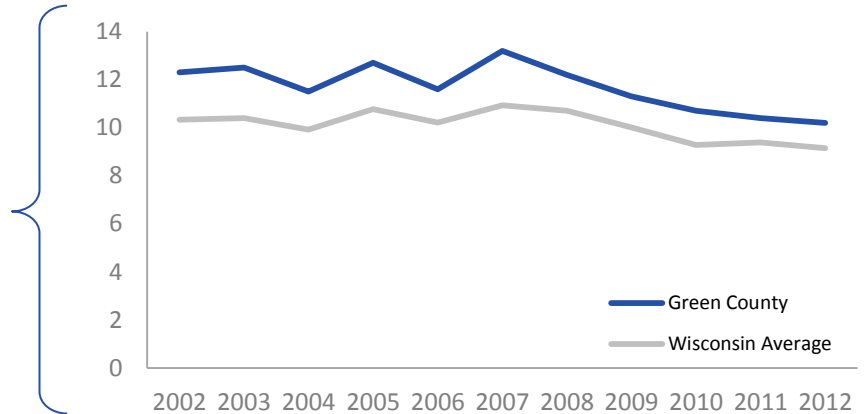
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

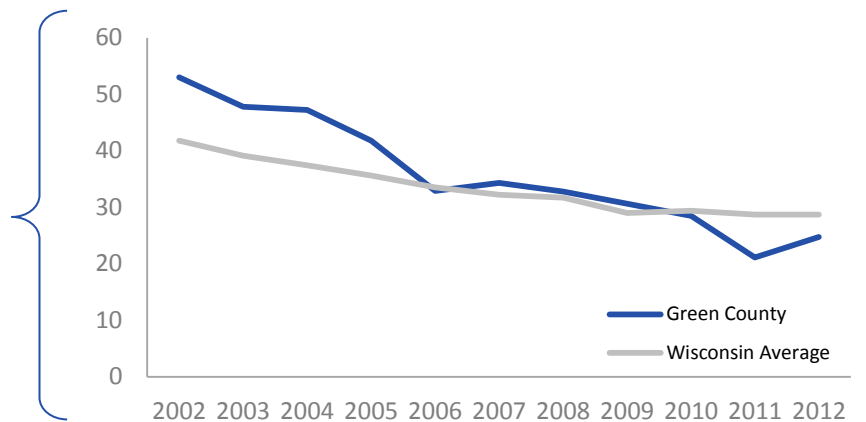
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



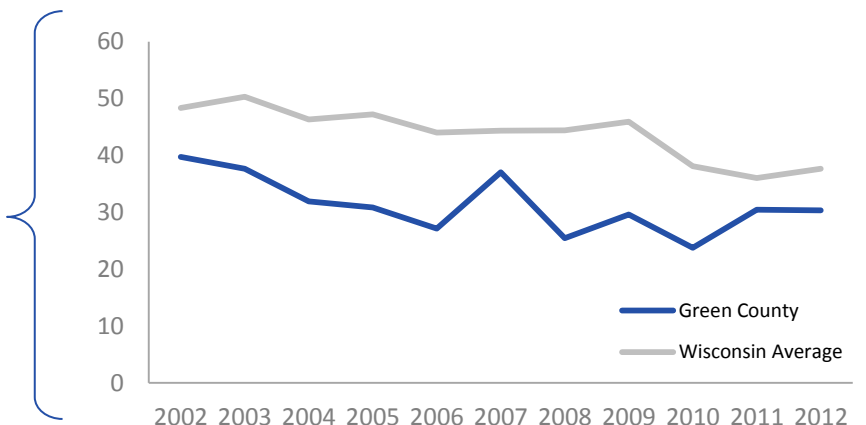
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



IOWA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
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IOWA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 16.3 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 32.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 29.4 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 29.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 22.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 28.9 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 0.6 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.9 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 73.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 3 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS IOWA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **16.3**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **0.0%**

CHILDHOOD LEAD POISONING

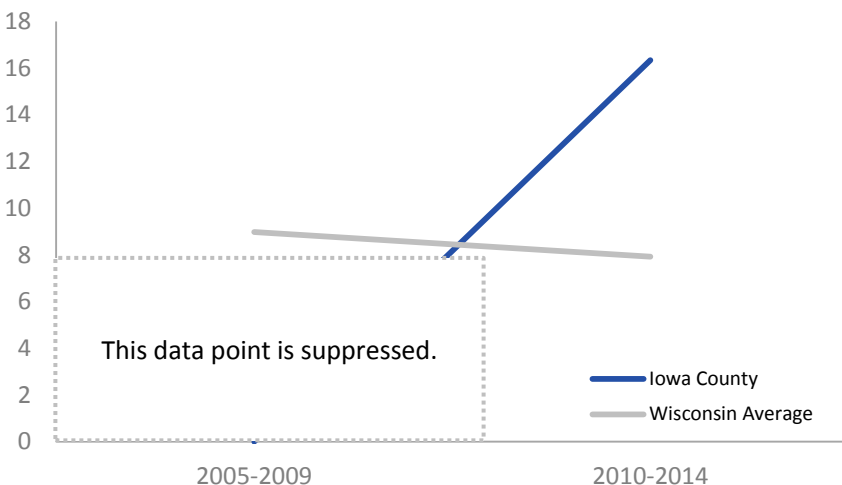
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS IOWA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

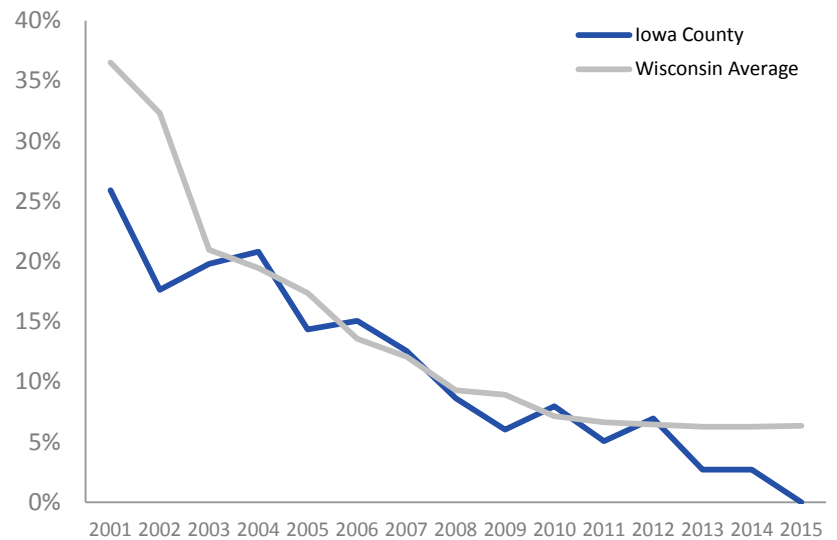
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

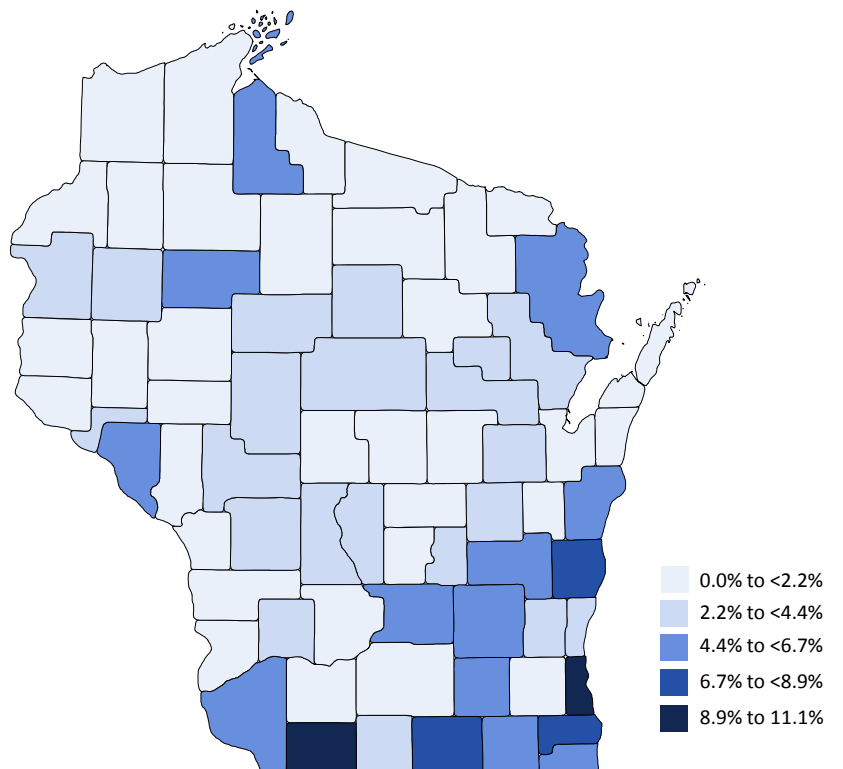
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE IOWA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

32.2

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

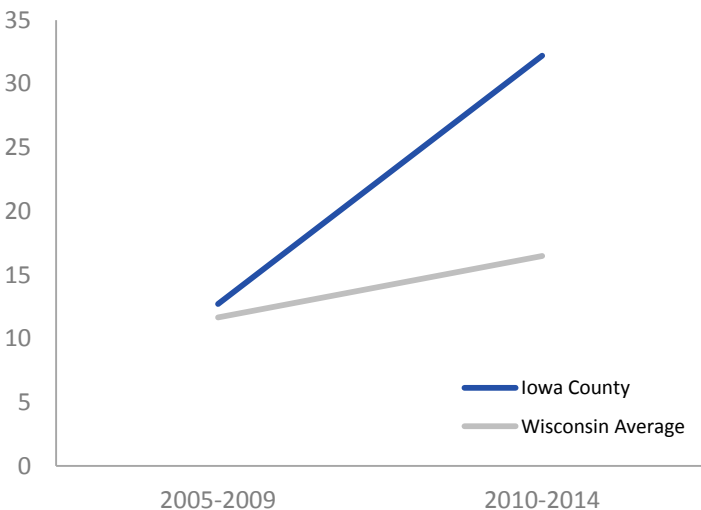
29.4

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

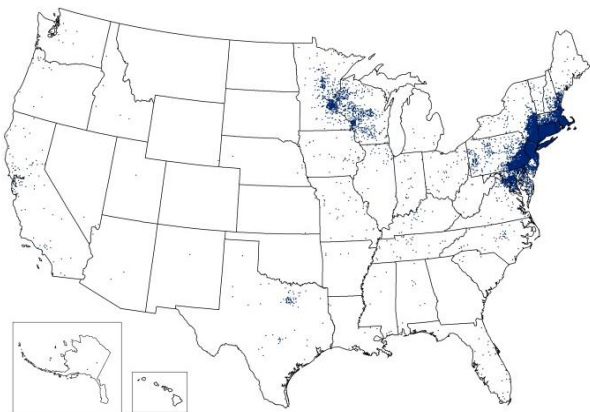
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

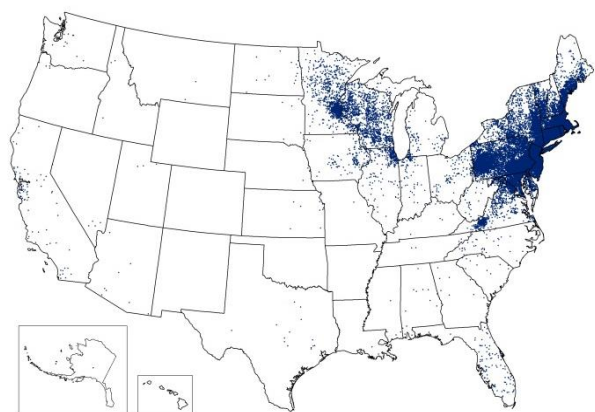
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

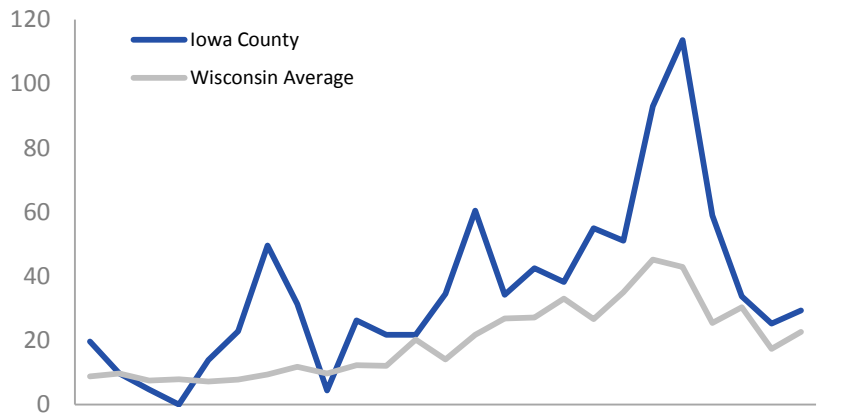


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES IOWA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **29.9**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **22.8**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

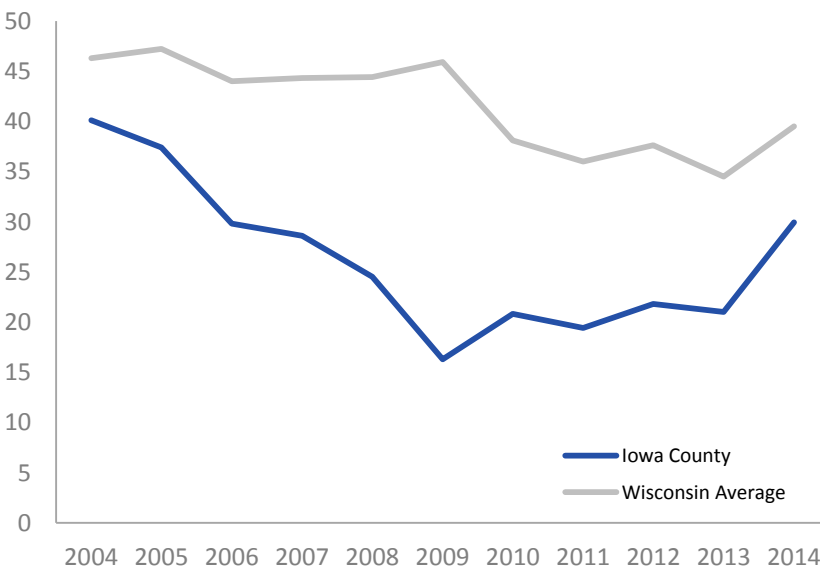
✓ **56.0**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **28.9**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

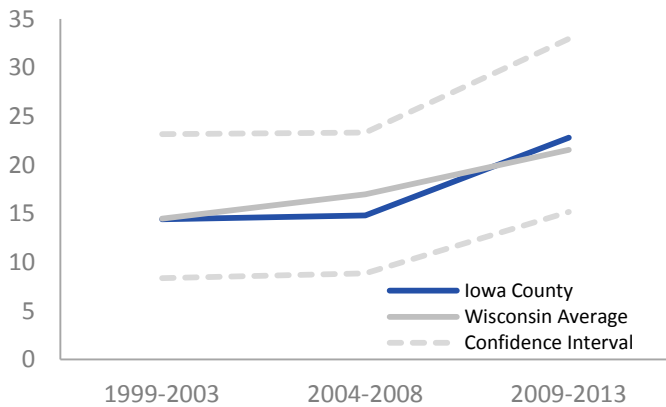
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

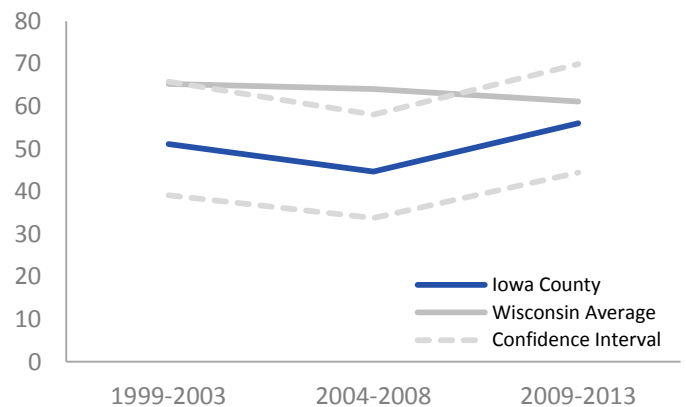
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

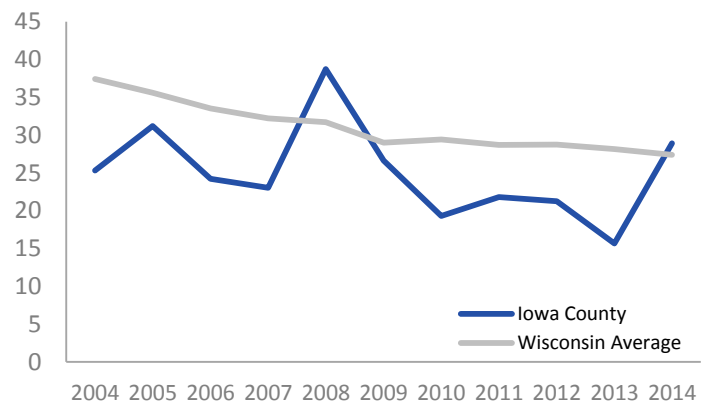
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY IOWA COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

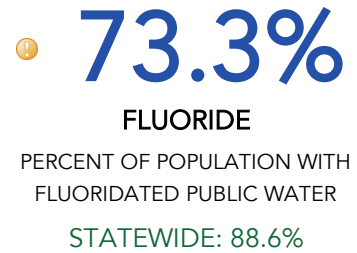
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



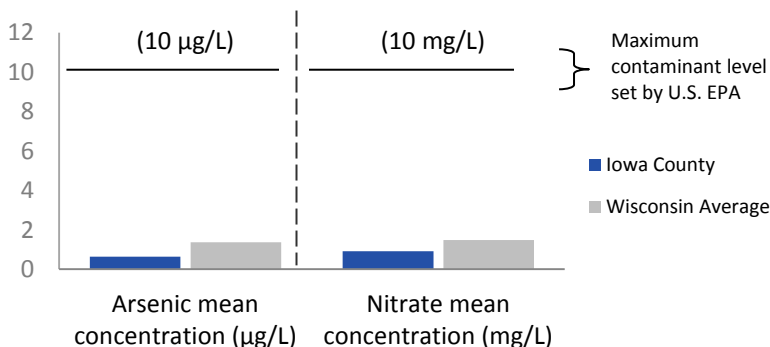
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY IOWA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

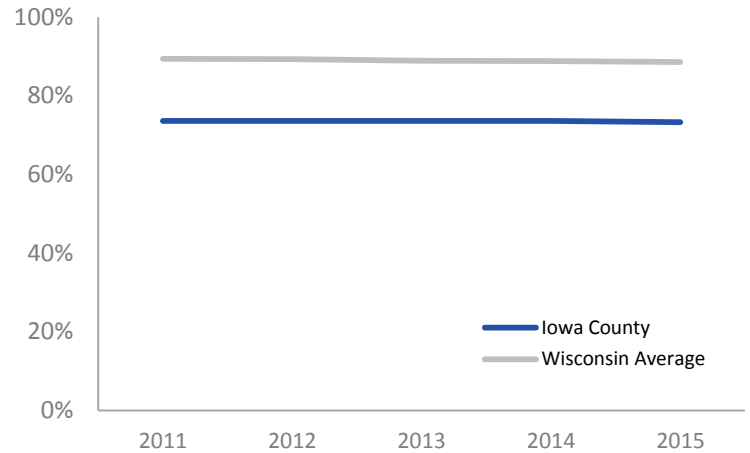
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

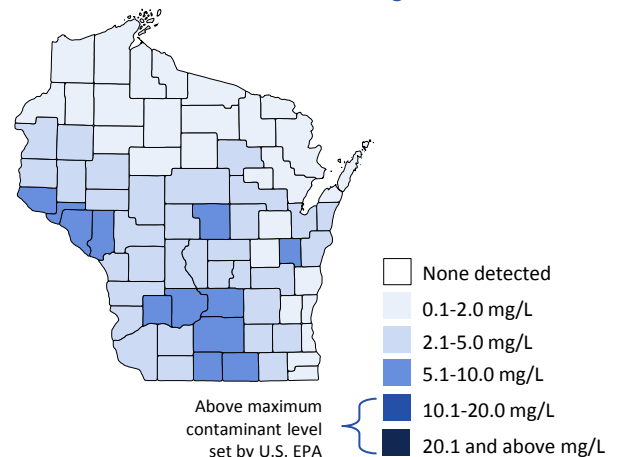
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY IOWA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



3

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



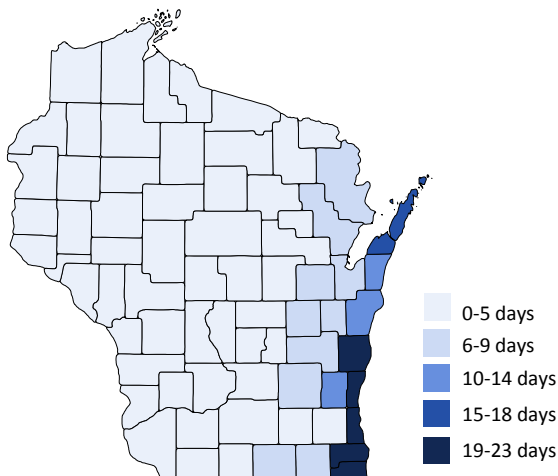
9.7

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

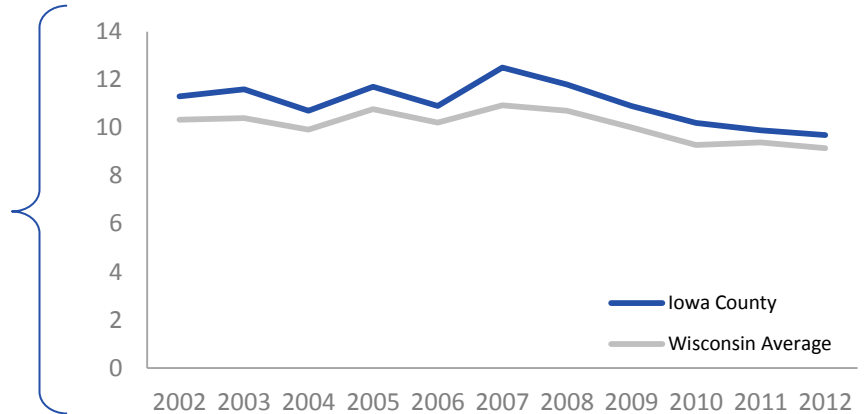


AIR QUALITY IOWA COUNTY

PARTICULATE MATTER 2.5

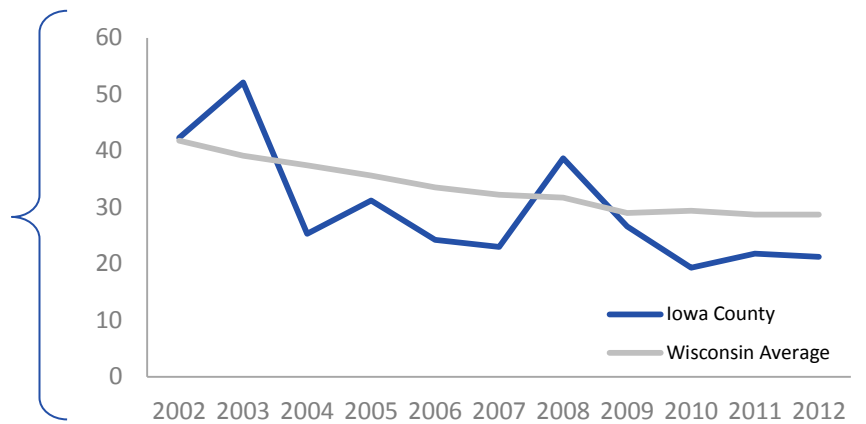
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



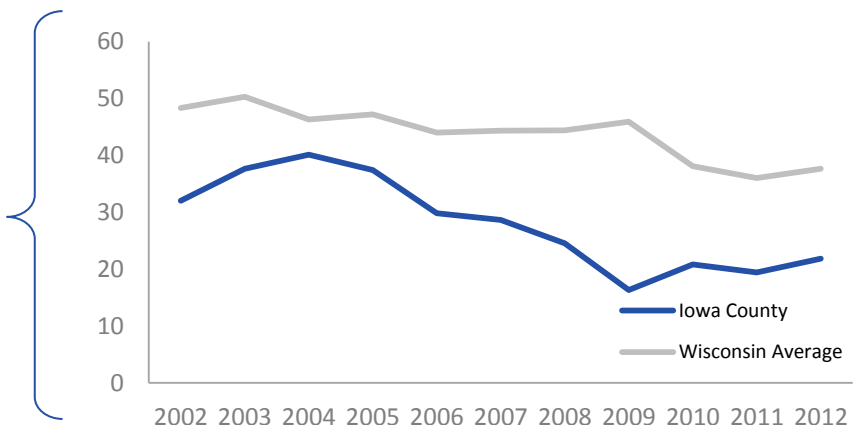
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



IRON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



IRON COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

^ | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

^ | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 0.0 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

^ | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 19.9 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 21.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.0 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014; Note: Iron County suppressed even after aggregating 10 years of data.



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014; Note: Iron County suppressed even after aggregating 10 years of data.



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS IRON COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

Above state value



0.0%

CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g}/\text{dL}$

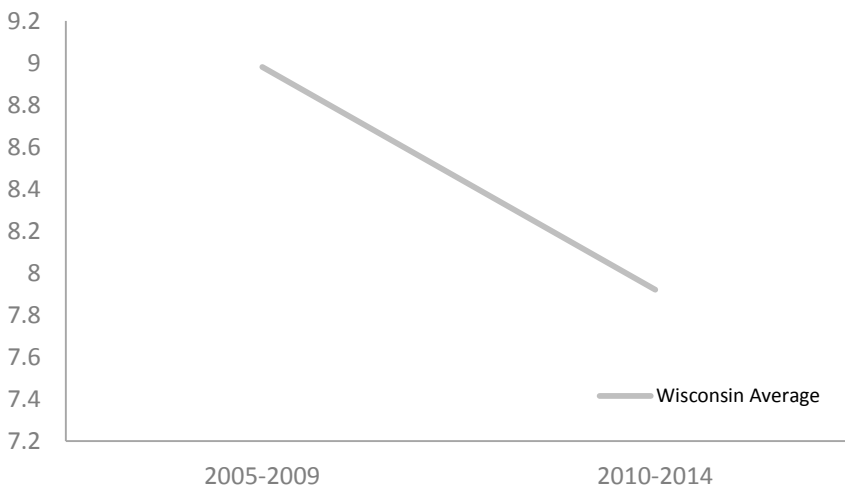
STATEWIDE: 6.4%

At or below state value

Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS IRON COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

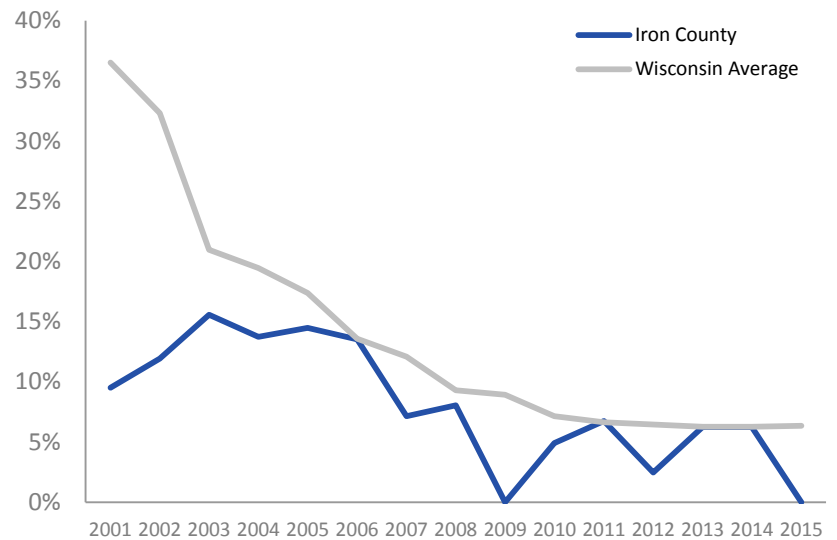
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

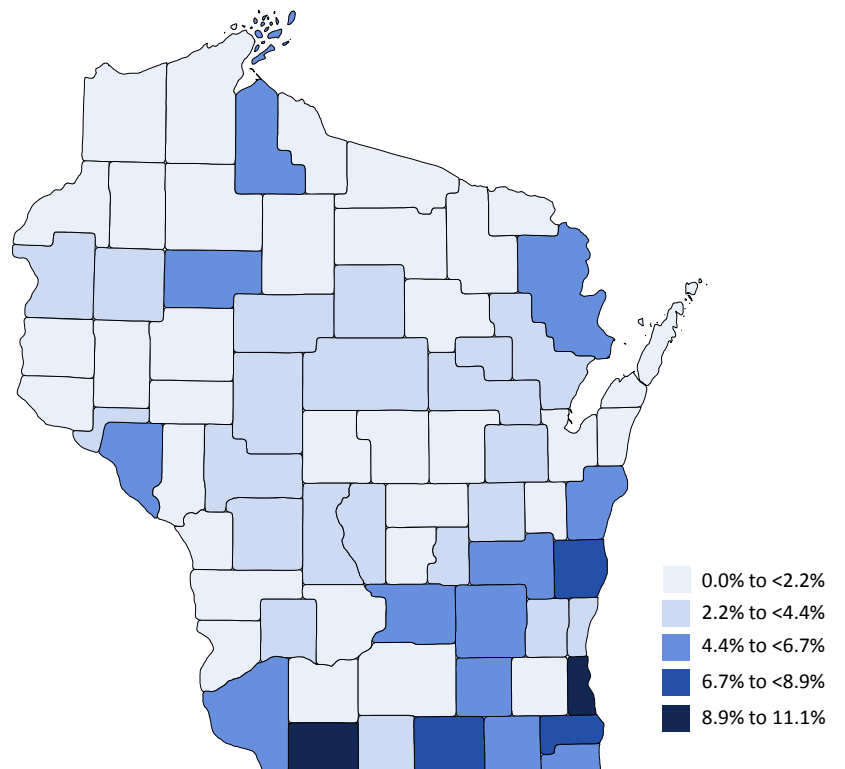
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE IRON COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.



HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

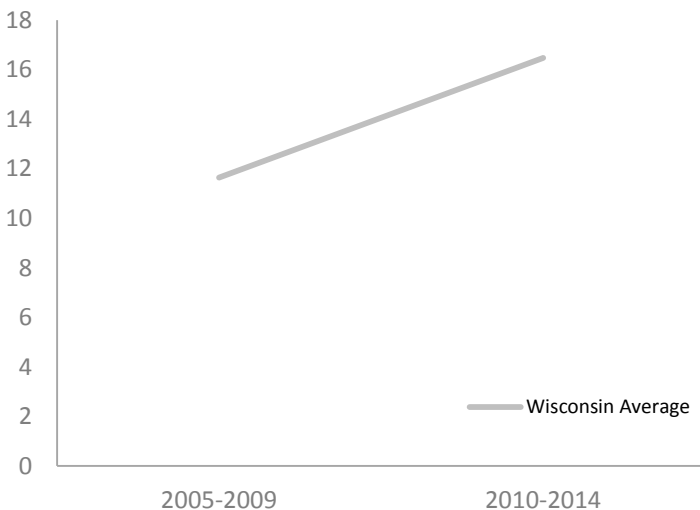
0.0

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

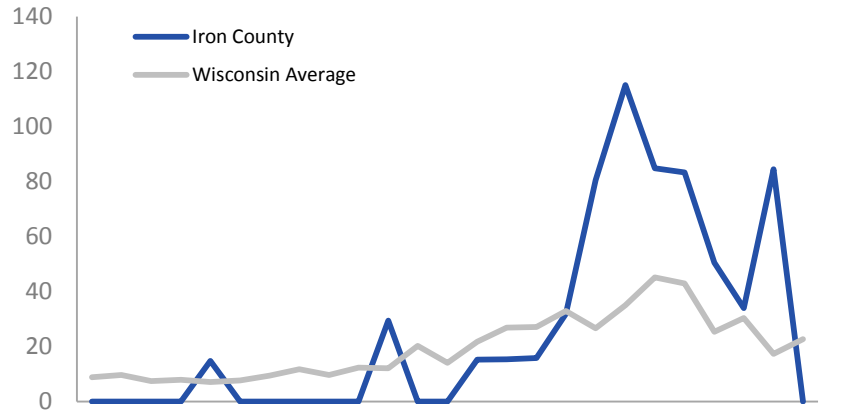
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

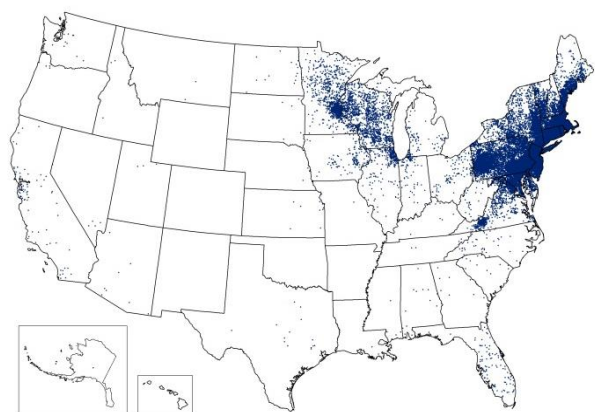
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES IRON COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

^
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **19.9**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

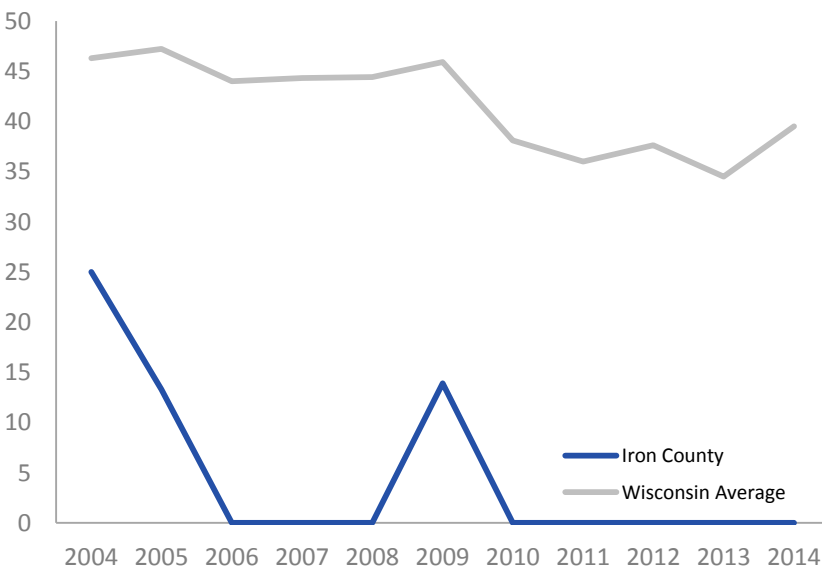
ⓘ **79.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **21.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

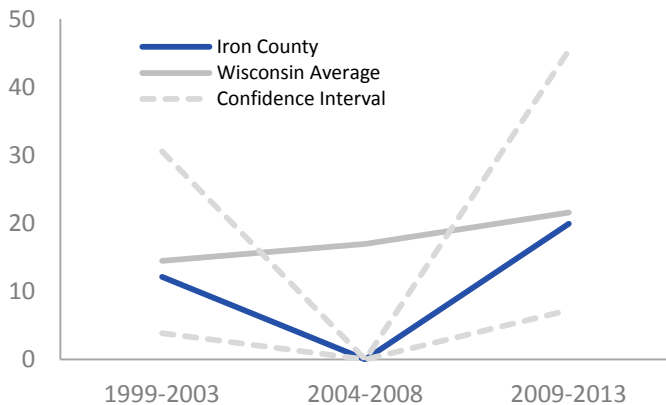
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

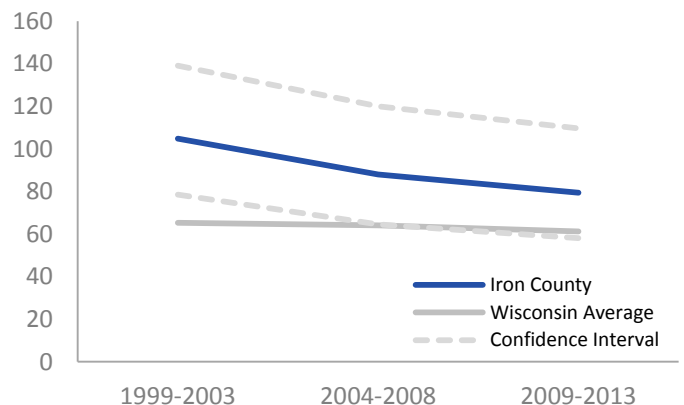
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

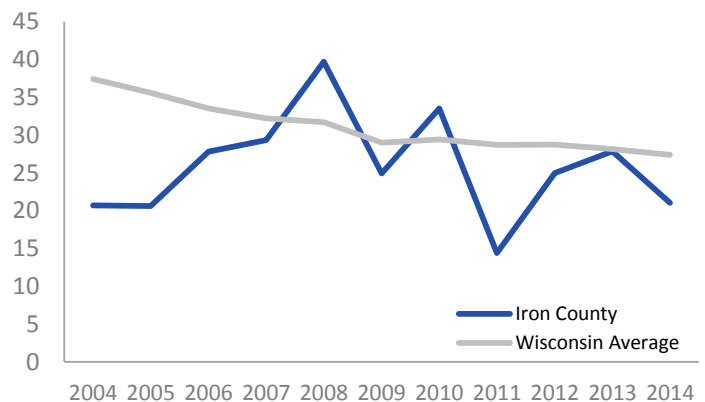
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY IRON COUNTY

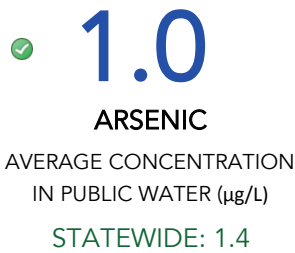
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

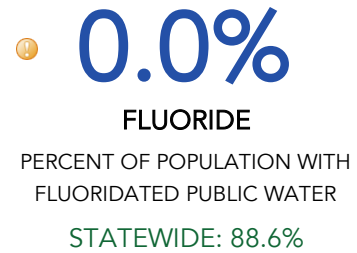
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



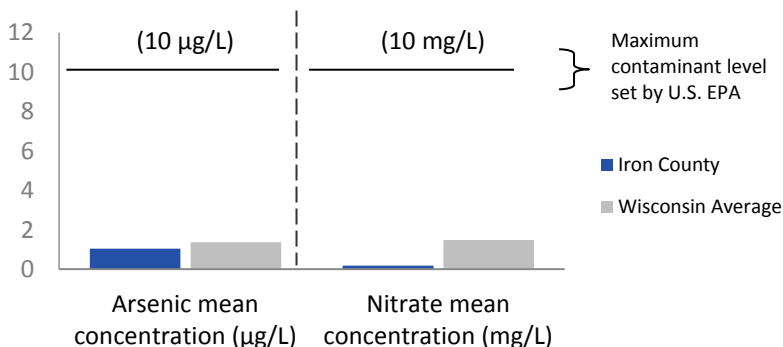
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY IRON COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

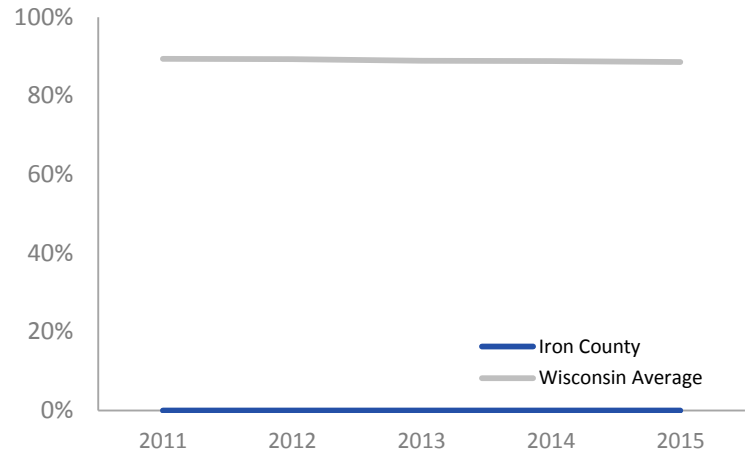
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

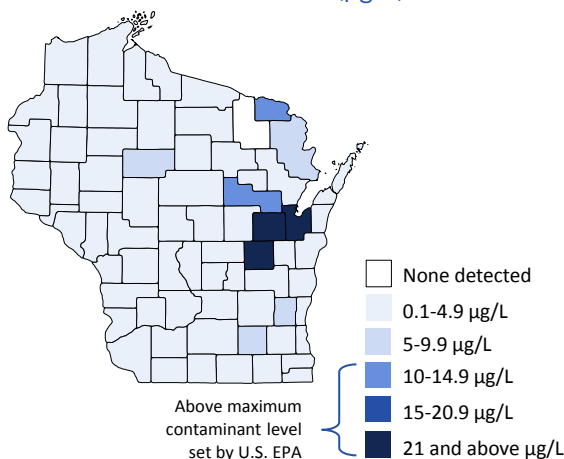
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

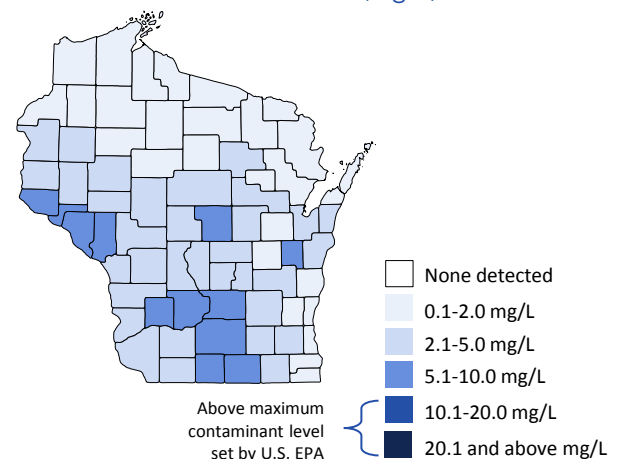
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



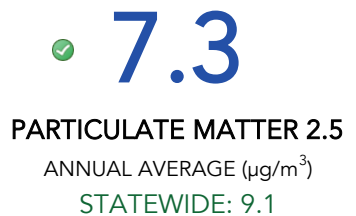


AIR QUALITY IRON COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

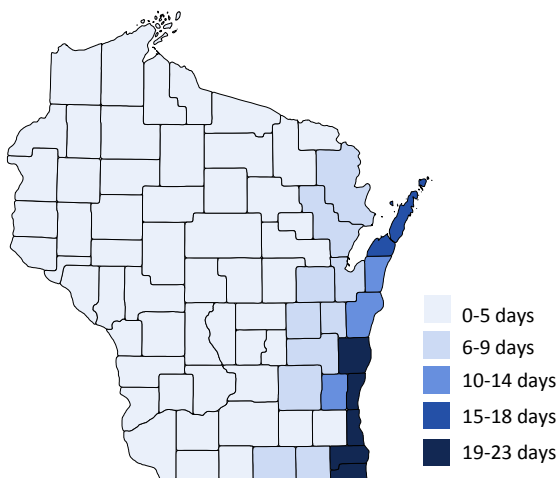
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

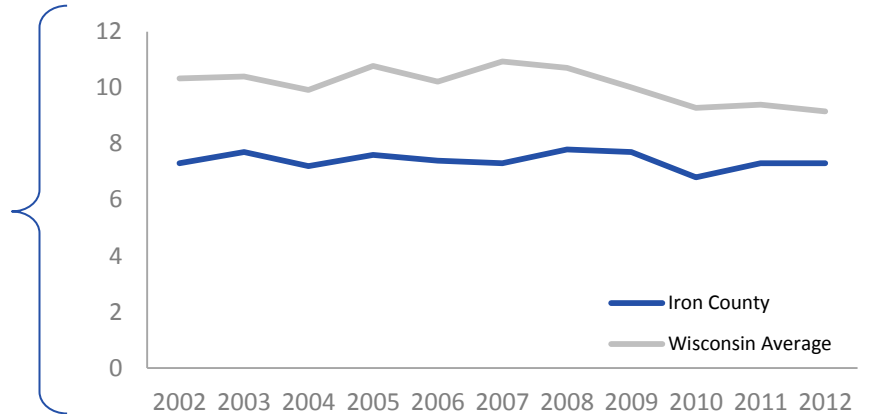


AIR QUALITY IRON COUNTY

PARTICULATE MATTER 2.5

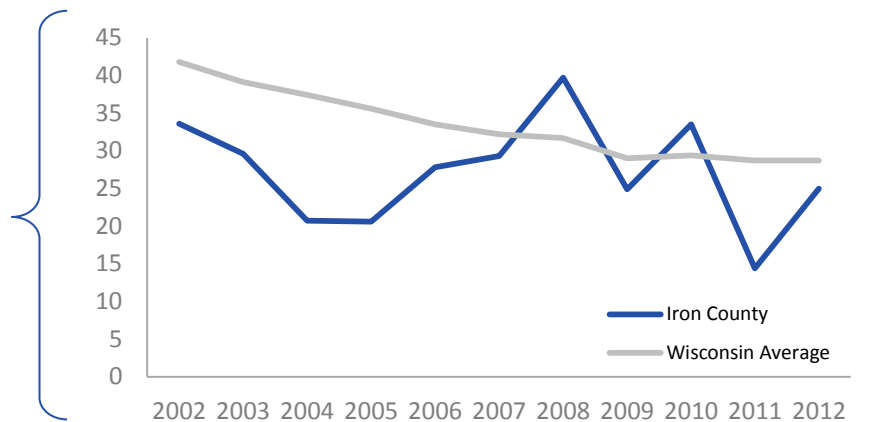
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



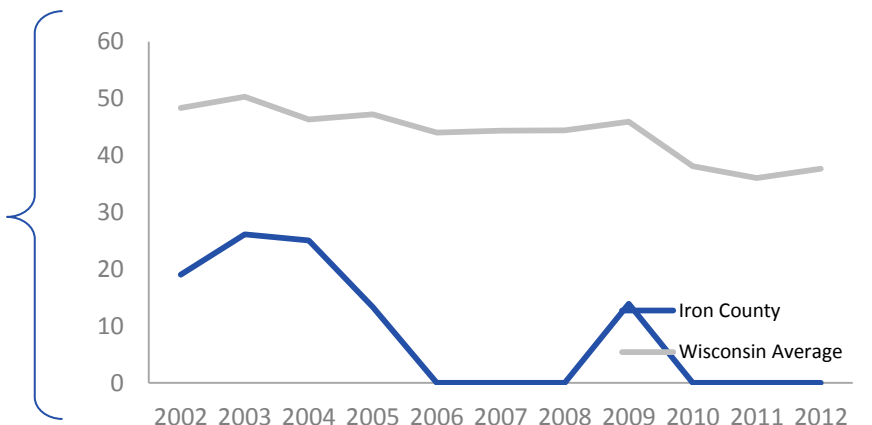
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population. Note: Iron County suppressed even after aggregating 10 years of data.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population. Note: Iron County suppressed even after aggregating 10 years of data.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



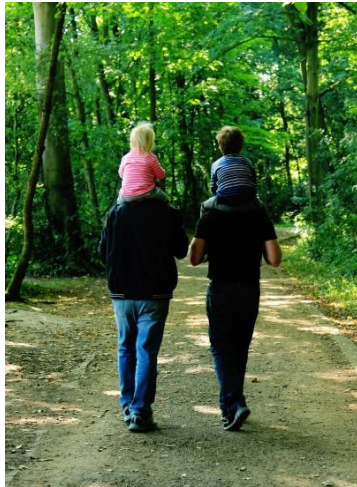
WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



JACKSON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



JACKSON COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning



2.9% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning



25.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress



42.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease



24.3 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma



40.7 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma



11.1 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack



28.3 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic



0.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate



0.7 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride



40.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone



0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5



0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

Above state value (with exception of fluoride where below state value is not preferred)

At or below state value (with exception of fluoride where above state value is preferred)

Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS JACKSON COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **25.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.9%**

CHILDHOOD LEAD POISONING

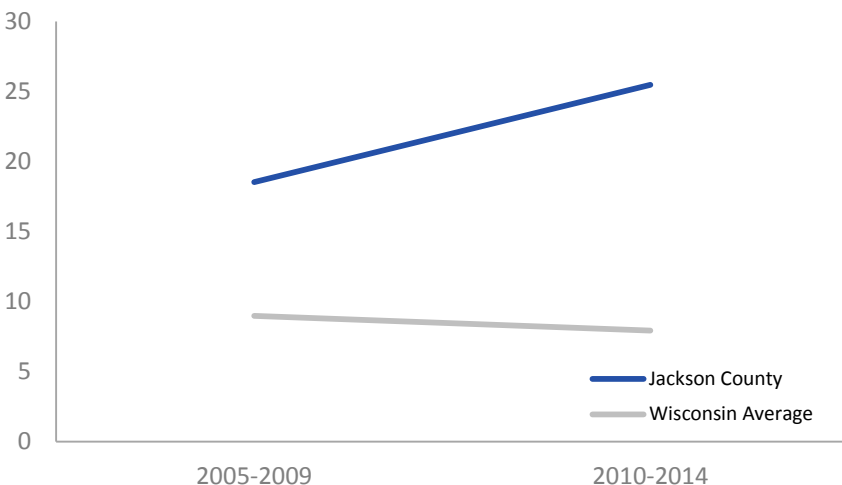
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS JACKSON COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

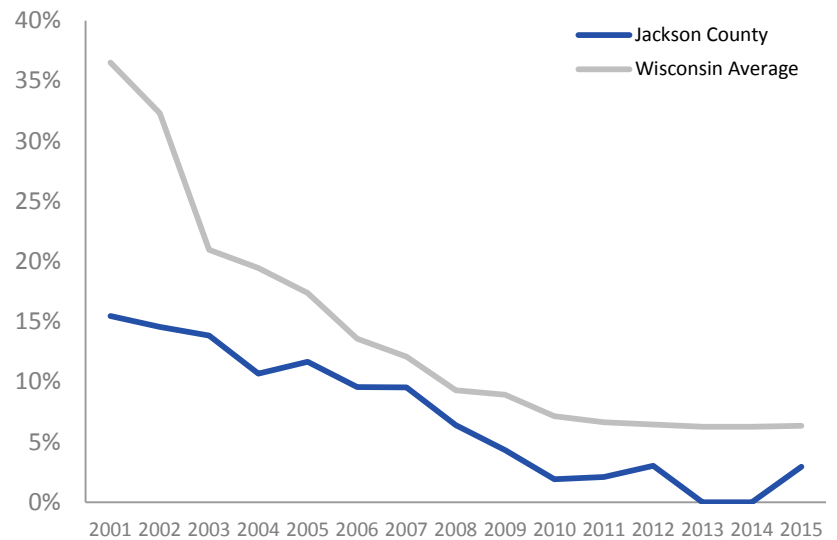
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

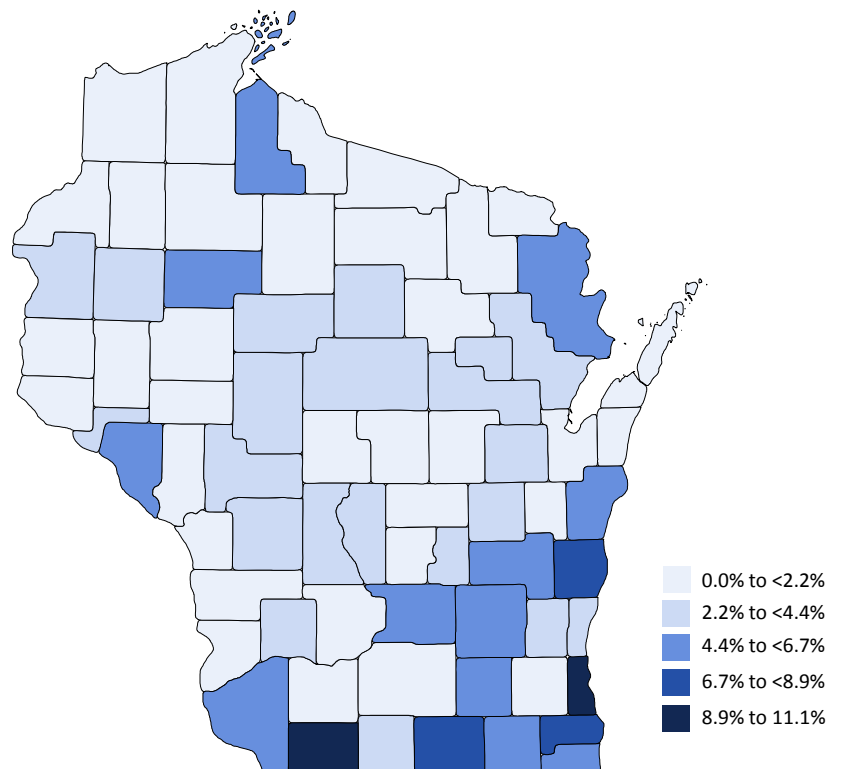
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE JACKSON COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

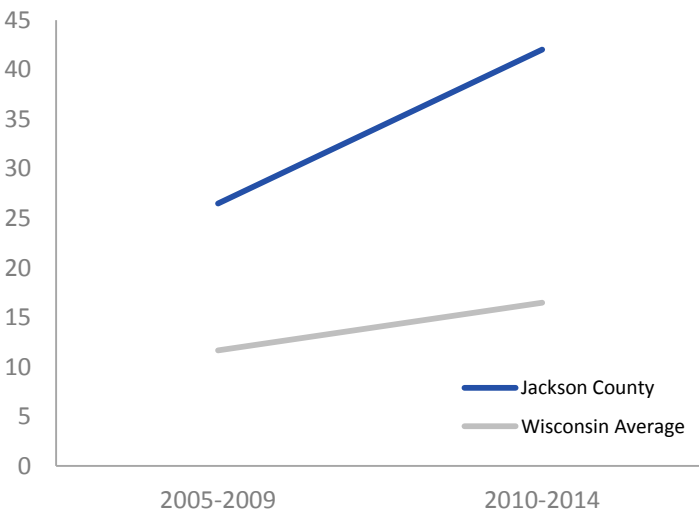
42.0
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

24.3
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

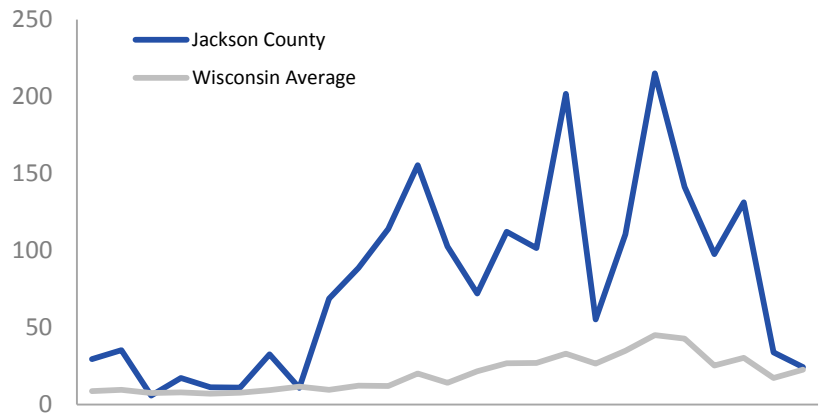
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

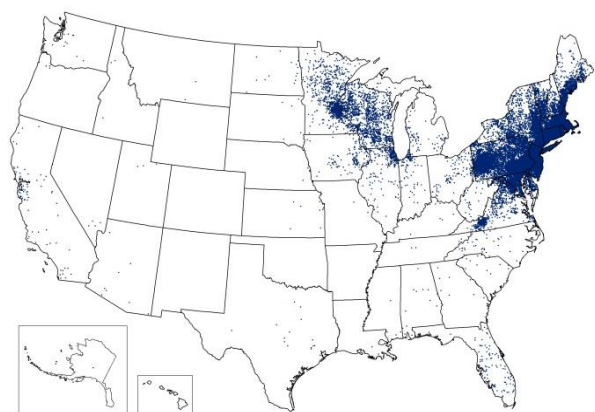
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

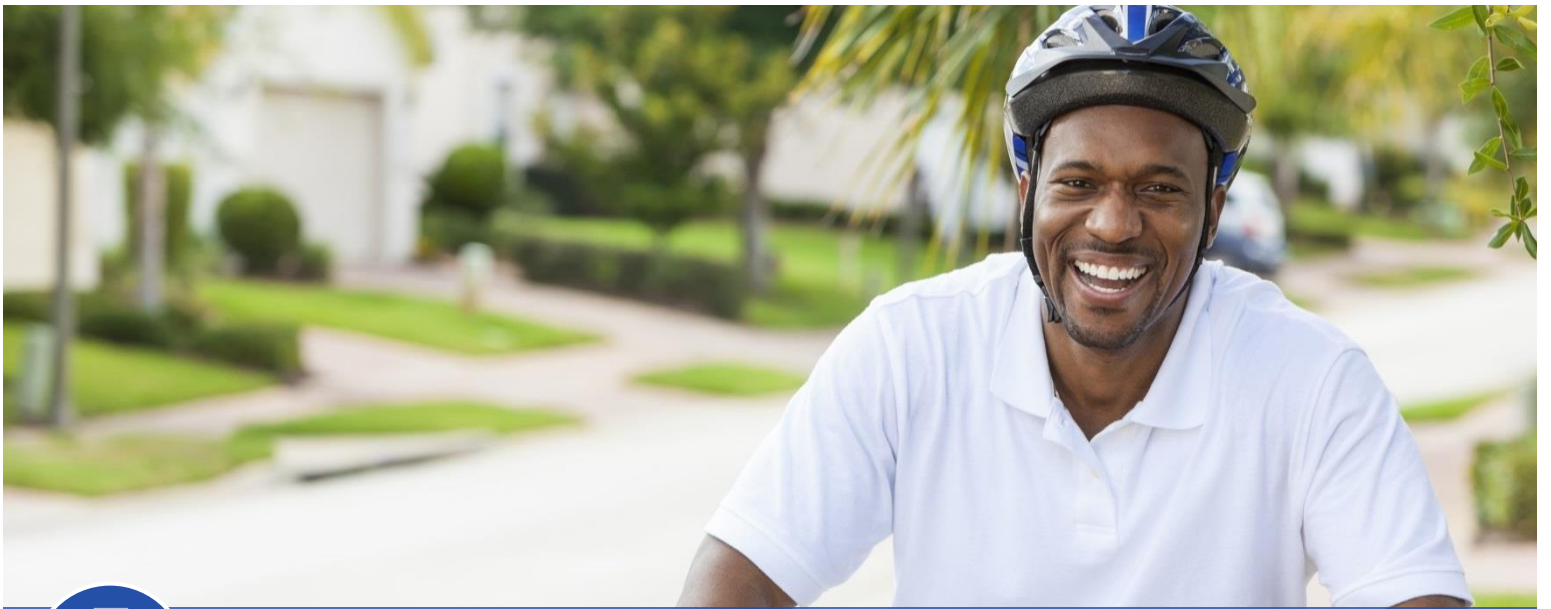


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

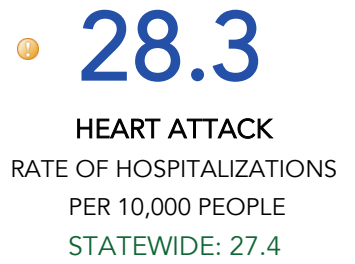
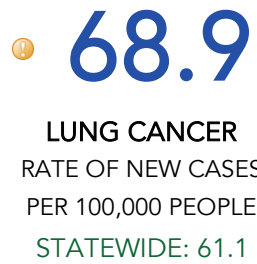
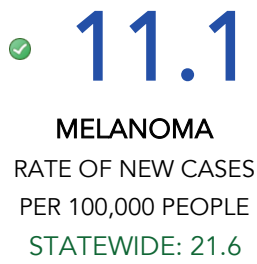


HEALTH OUTCOMES

JACKSON COUNTY

BACKGROUND

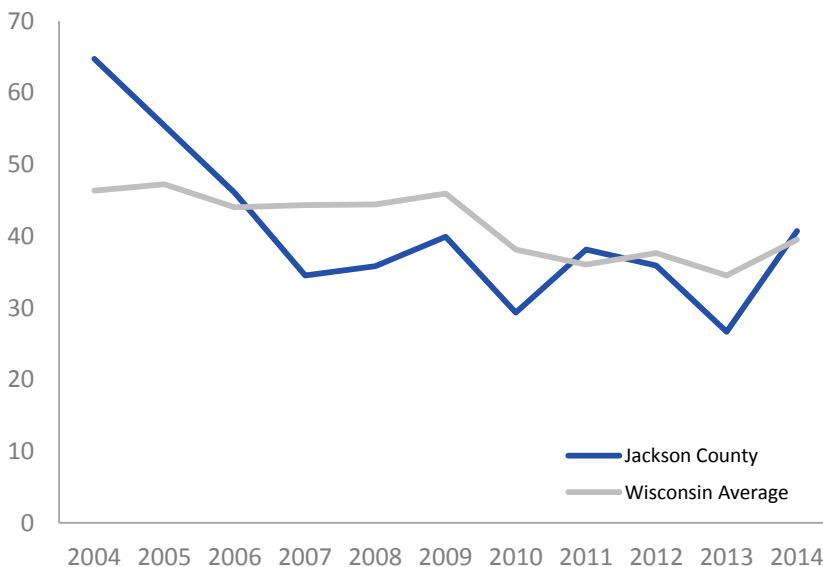
Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.



⬆ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

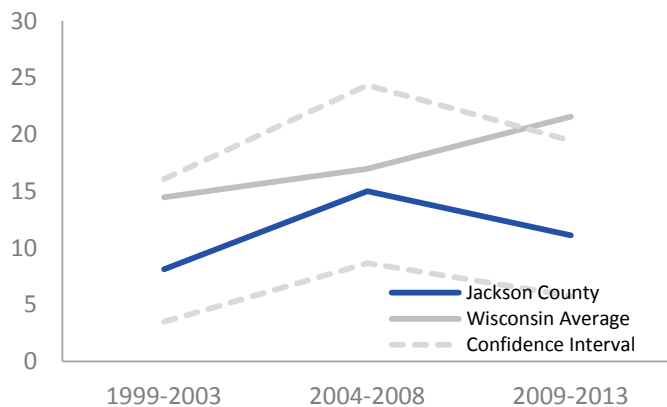
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

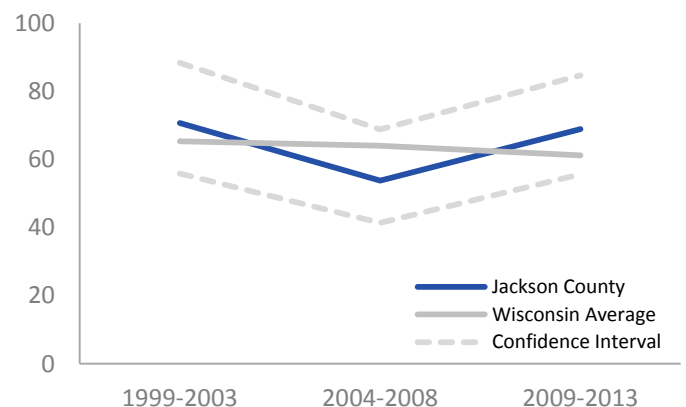
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

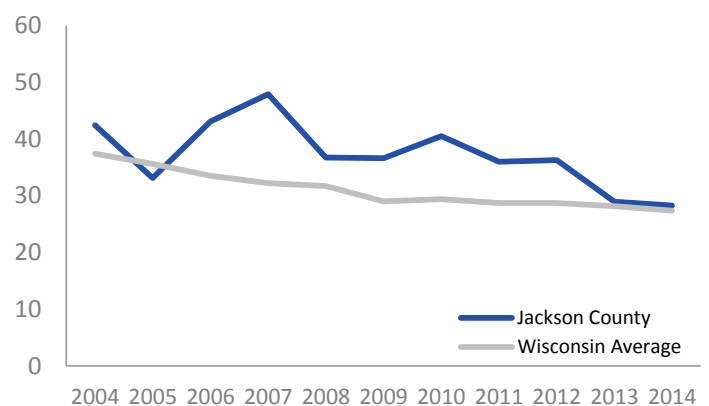
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY JACKSON COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

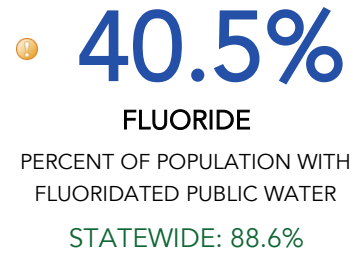
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



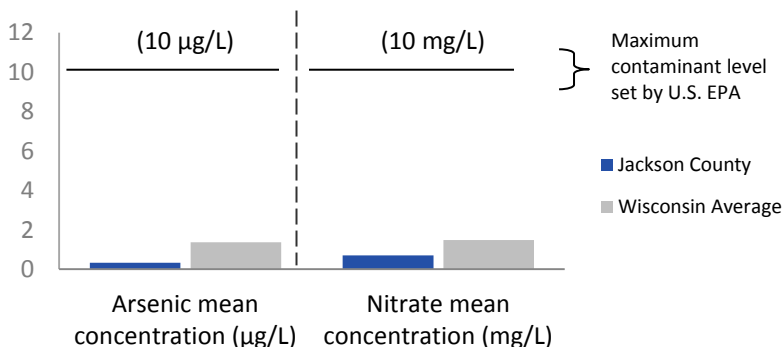
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY JACKSON COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

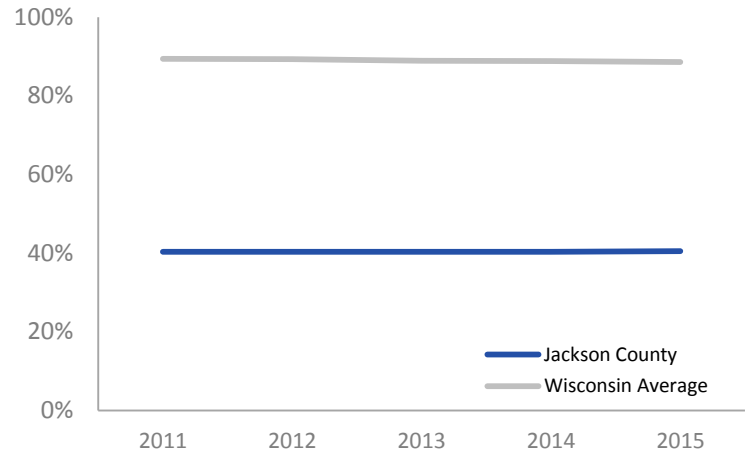
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

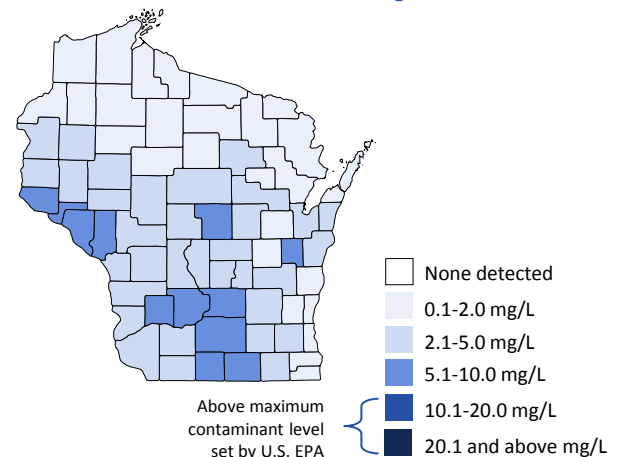
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



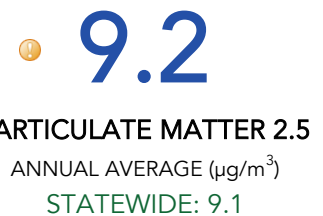
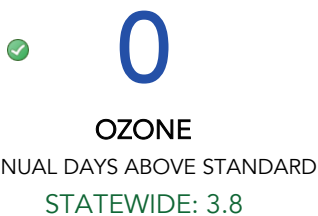


AIR QUALITY JACKSON COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

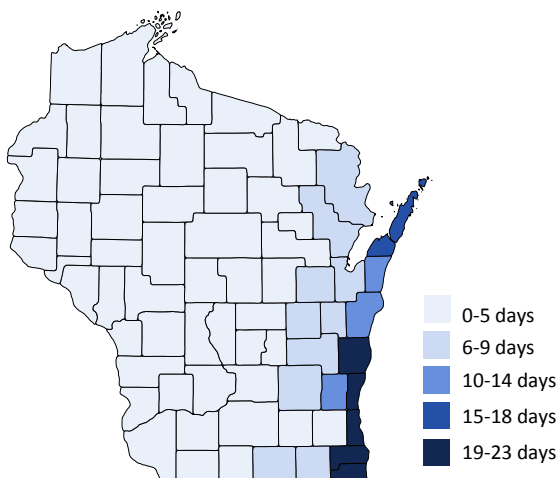
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

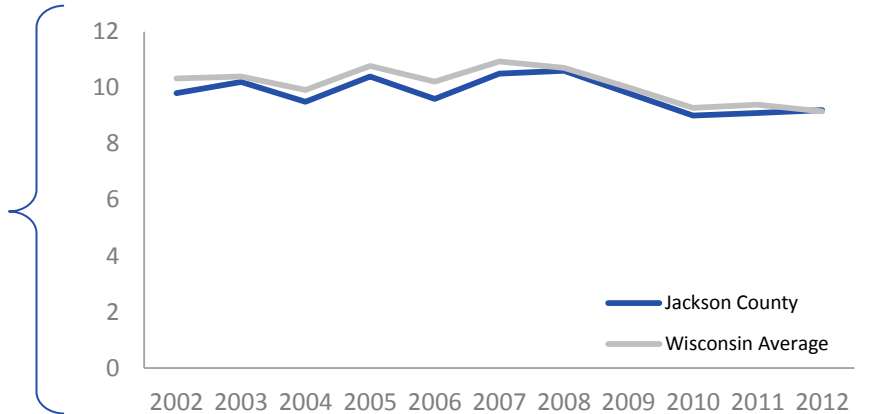


AIR QUALITY JACKSON COUNTY

PARTICULATE MATTER 2.5

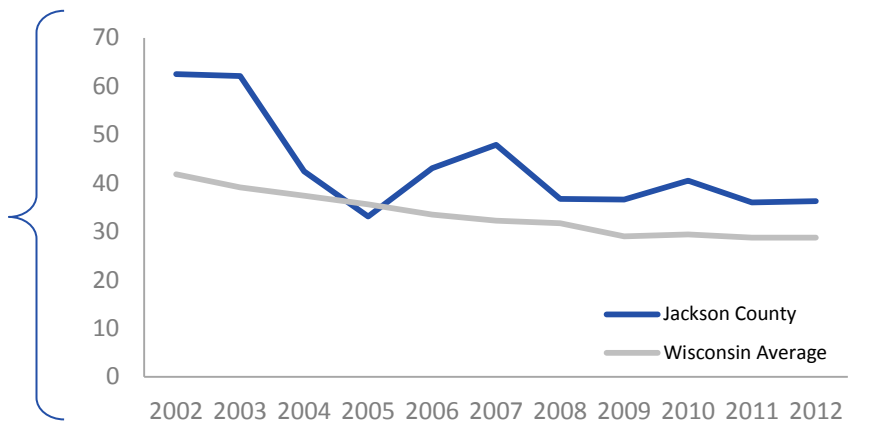
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



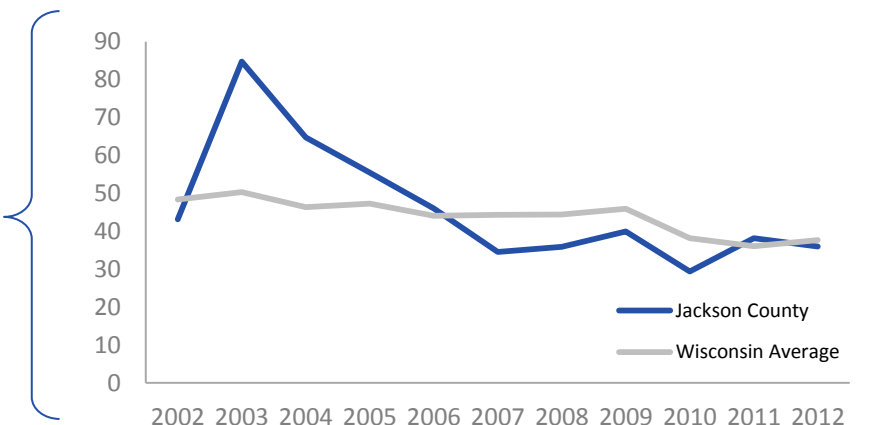
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



JEFFERSON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



JEFFERSON COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 4.7% | Percent with blood lead ≥ 5 $\mu\text{g/dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.1 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 17.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 9.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 36.0 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 17.7 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 24.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.5 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.4

Nitrate

⚠ 1.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 91.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 4 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

JEFFERSON COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **8.1**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **4.7%**

CHILDHOOD LEAD POISONING

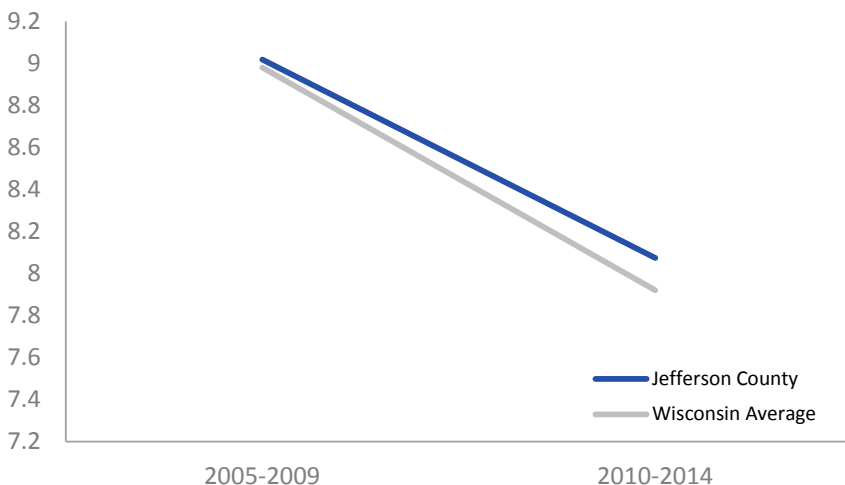
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS JEFFERSON COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

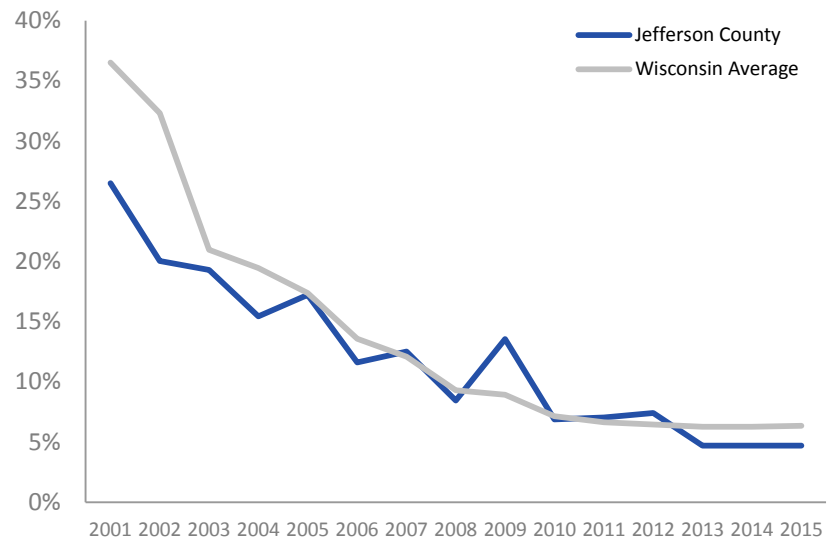
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

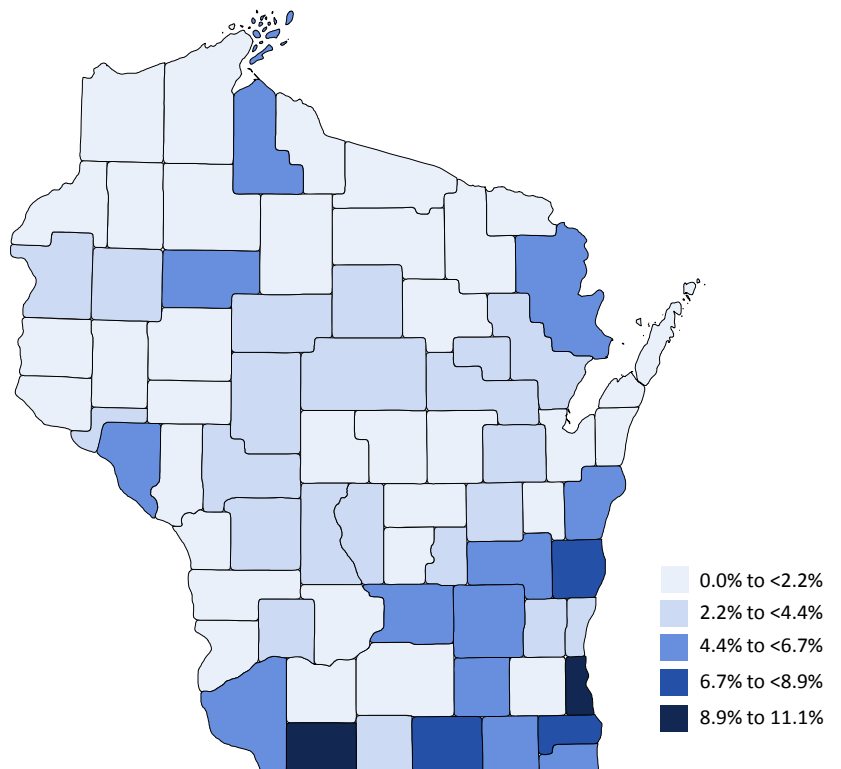
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE JEFFERSON COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

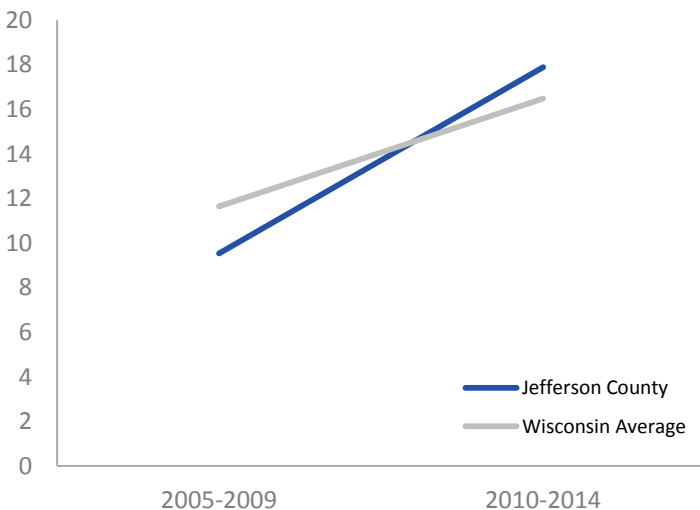
⚠ **17.9**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✓ **9.5**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✓ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

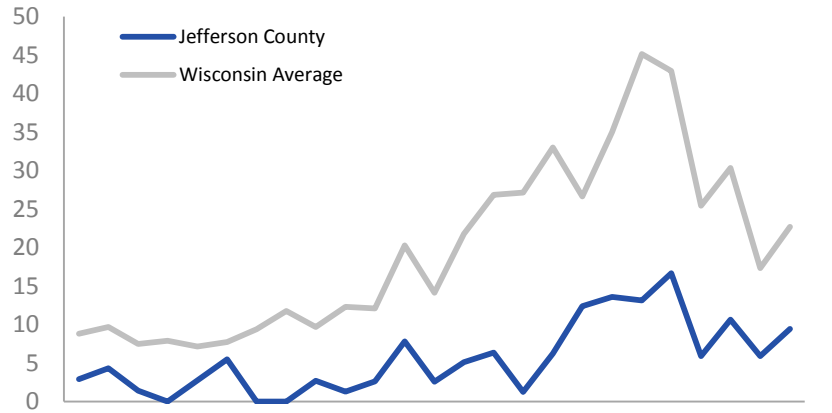
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE

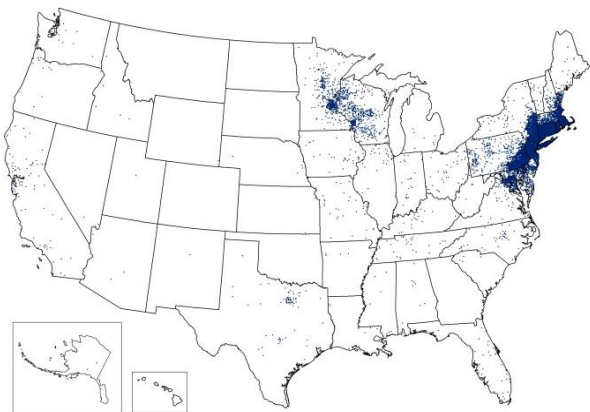


1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

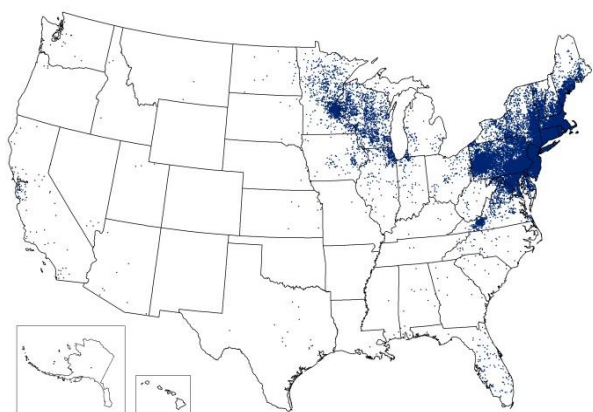
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

JEFFERSON COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **36.0**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **17.7**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

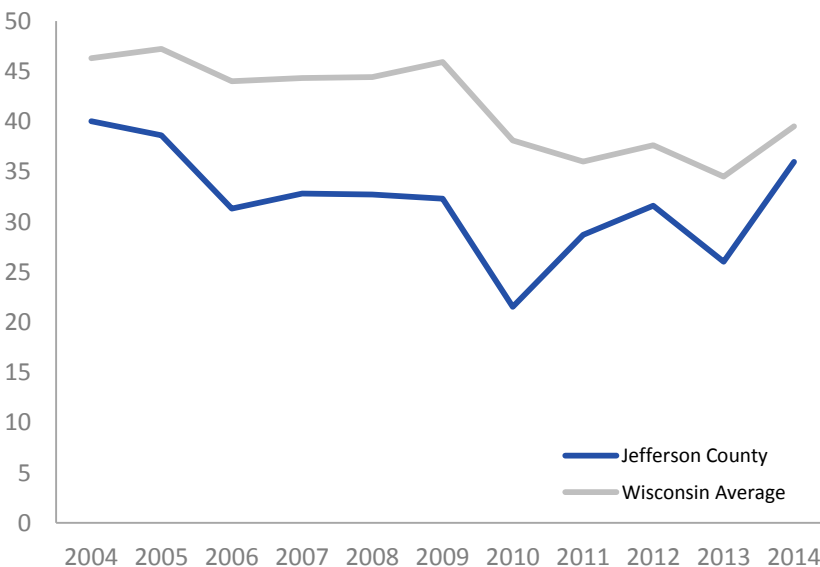
✓ **56.2**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **24.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

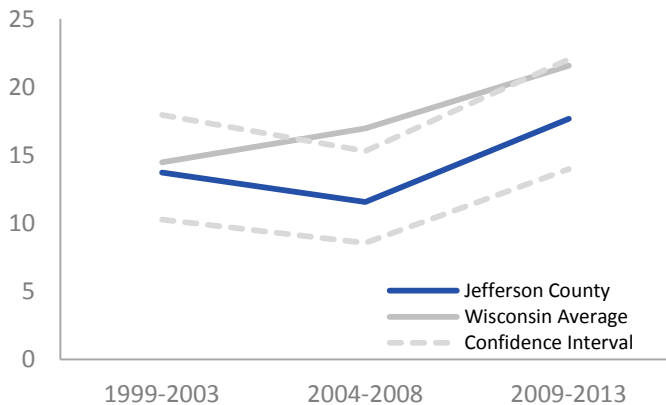
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

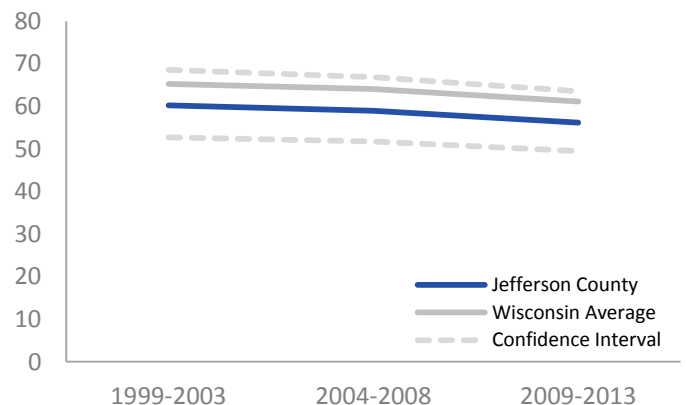
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

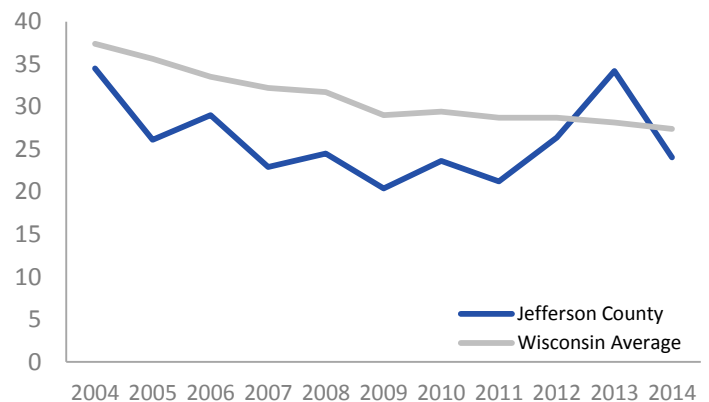
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY JEFFERSON COUNTY

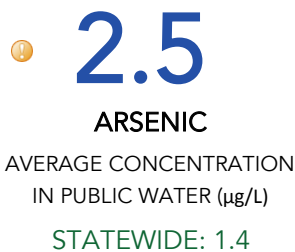
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

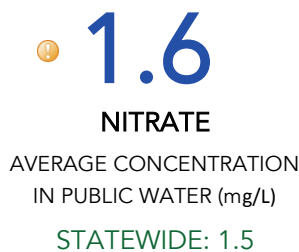
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

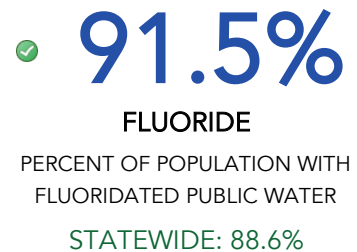
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



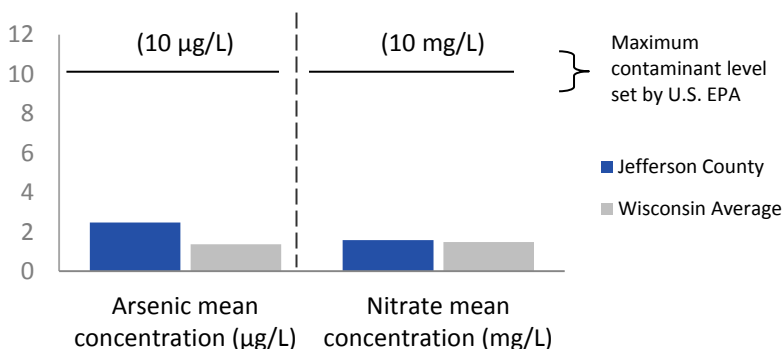
⚠ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY JEFFERSON COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

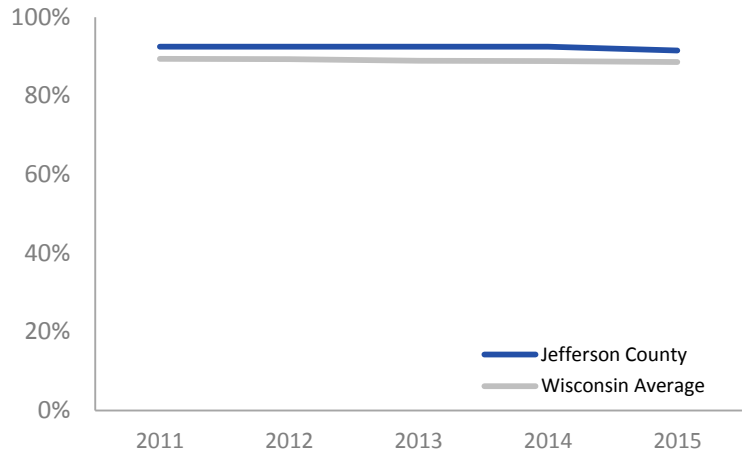
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

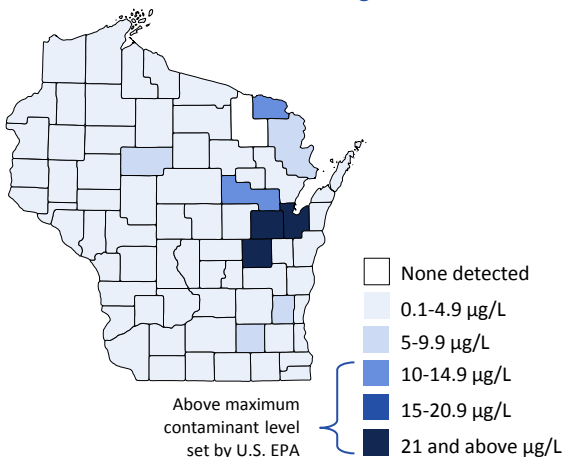
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

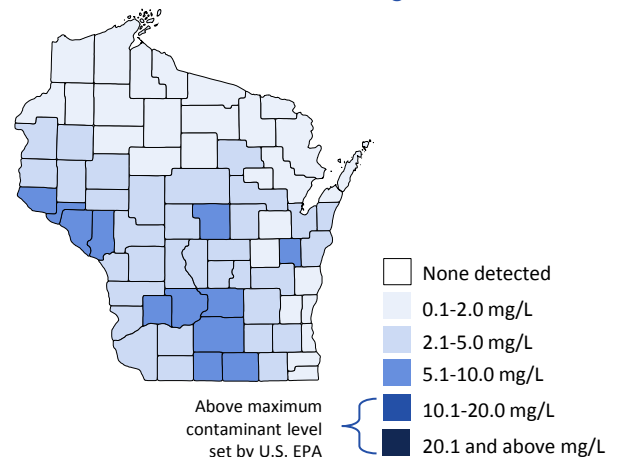
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY

JEFFERSON COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



4

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



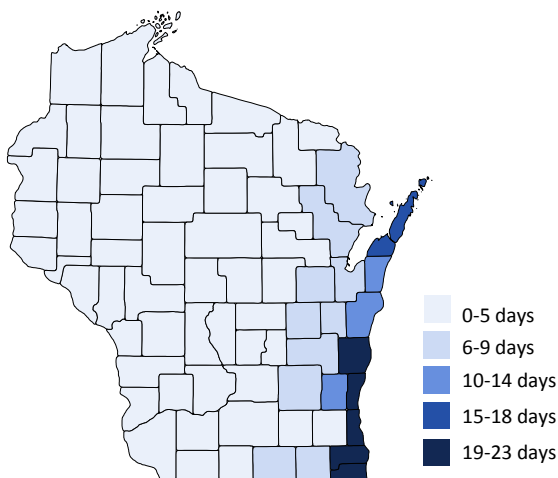
10.5

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value
 ✔ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

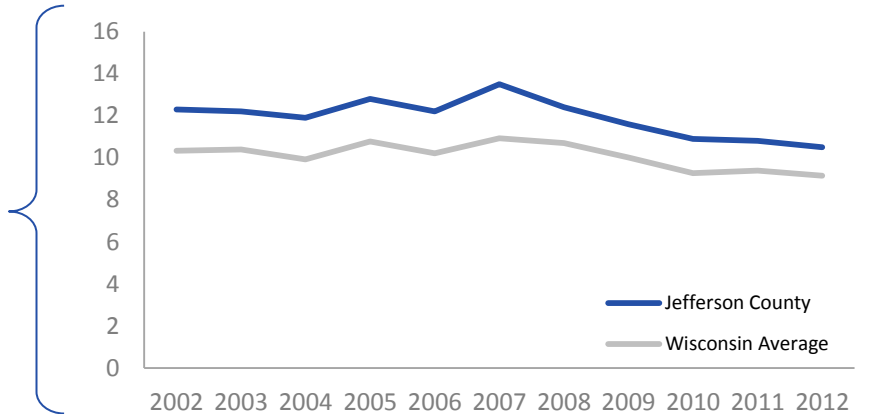
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

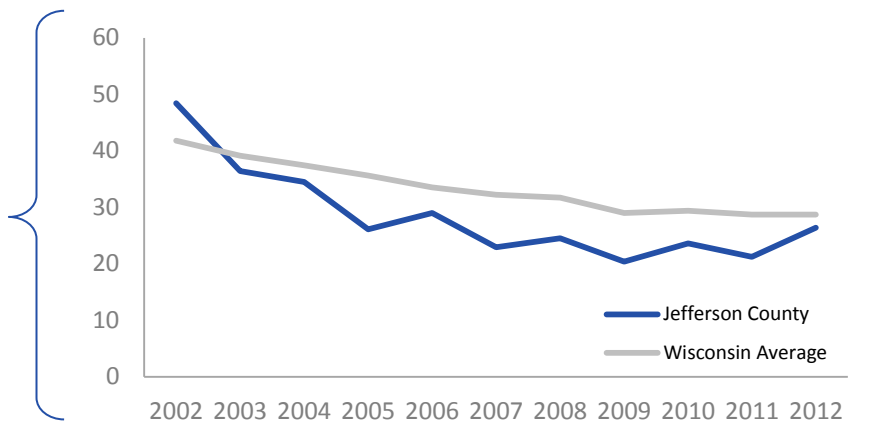
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



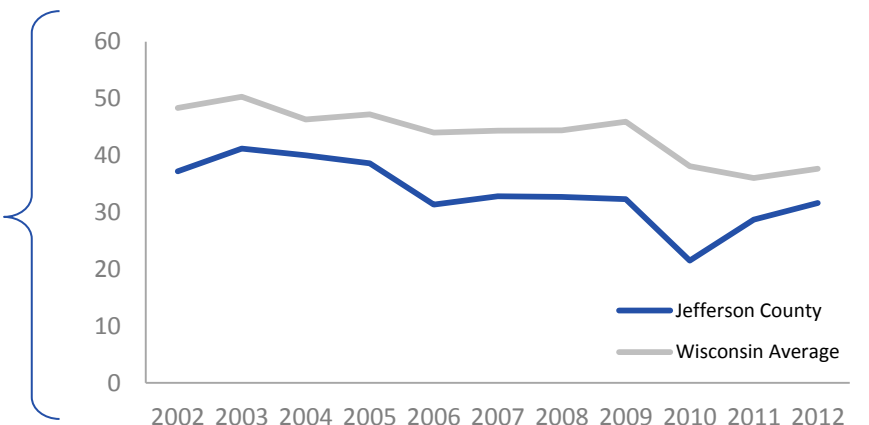
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



JUNEAU COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



JUNEAU COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 13.3 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 49.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 87.7 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 46.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 17.7 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 35.4 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.1 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 54.9% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 1 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS JUNEAU COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **13.3**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.6%**

CHILDHOOD LEAD POISONING

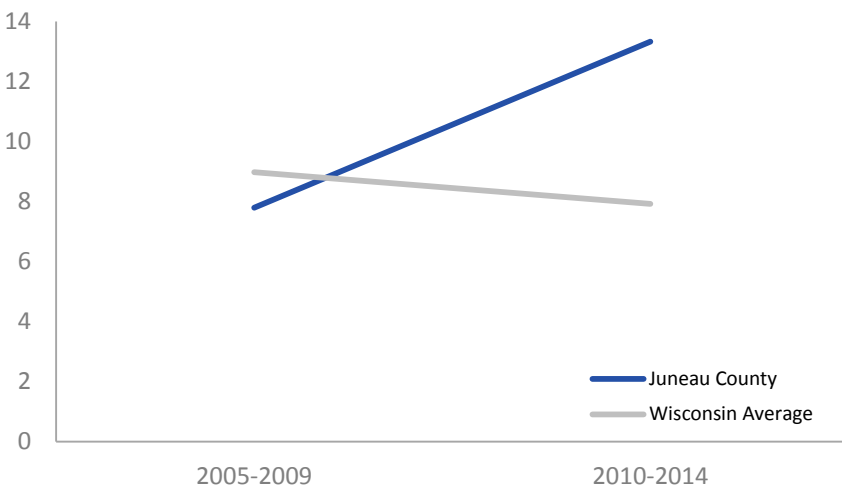
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS JUNEAU COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

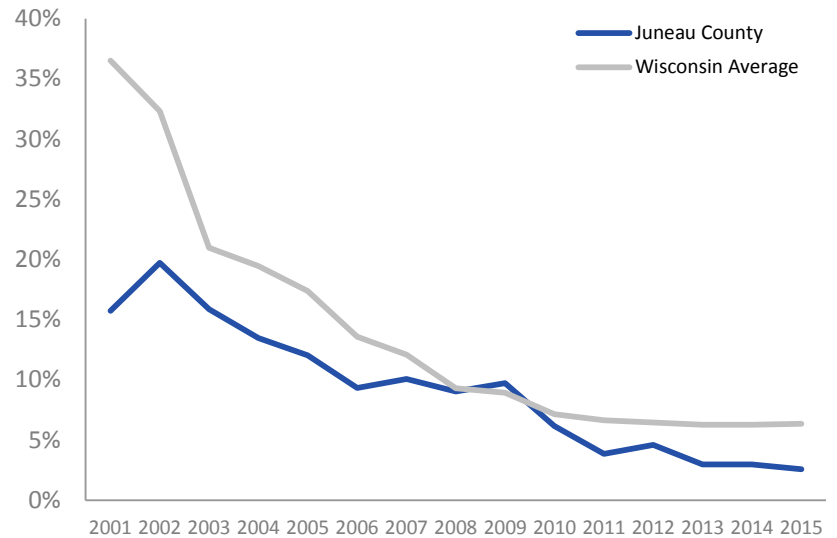
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

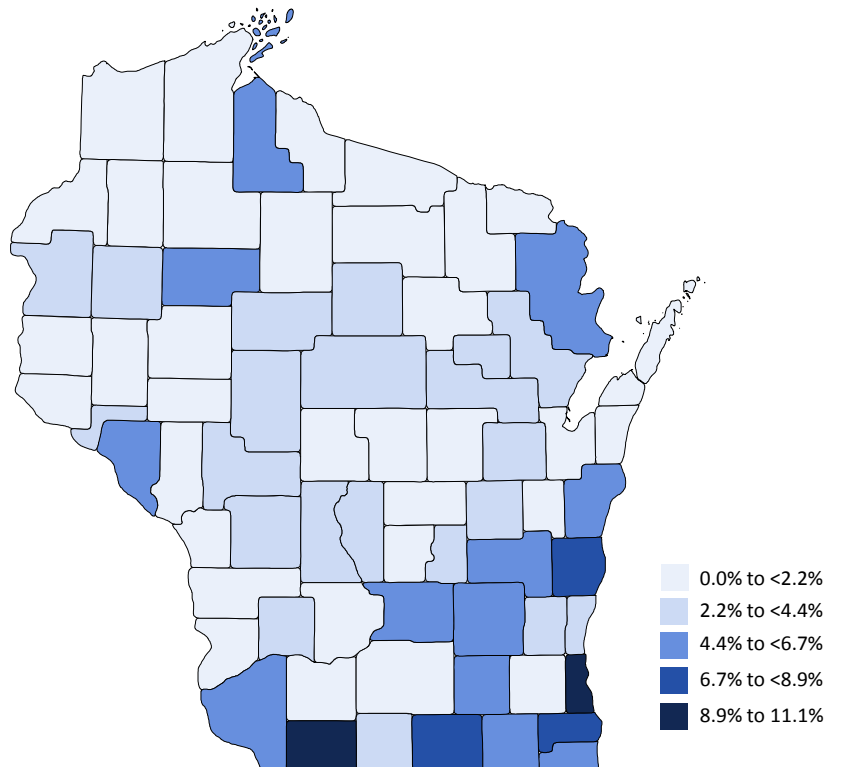
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE JUNEAU COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

49.0

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

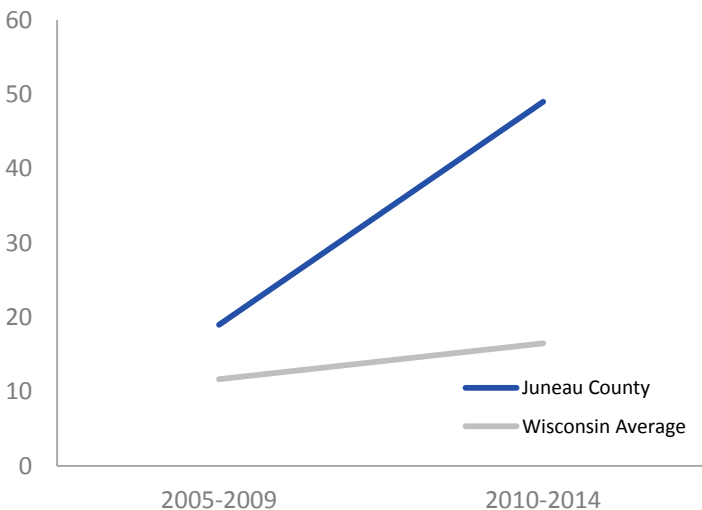
87.7

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

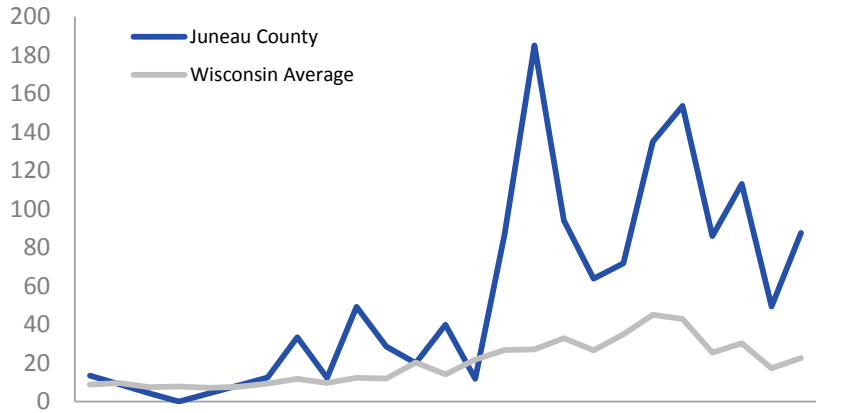
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

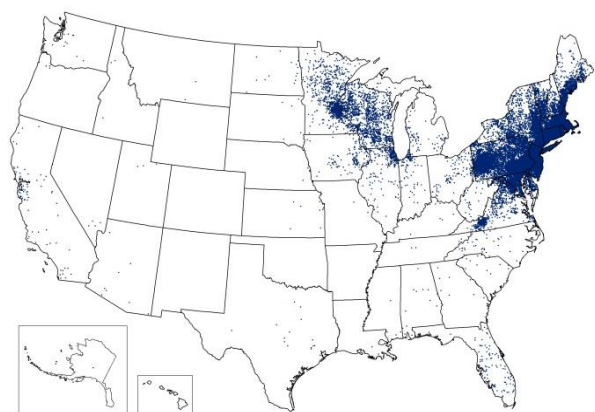
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

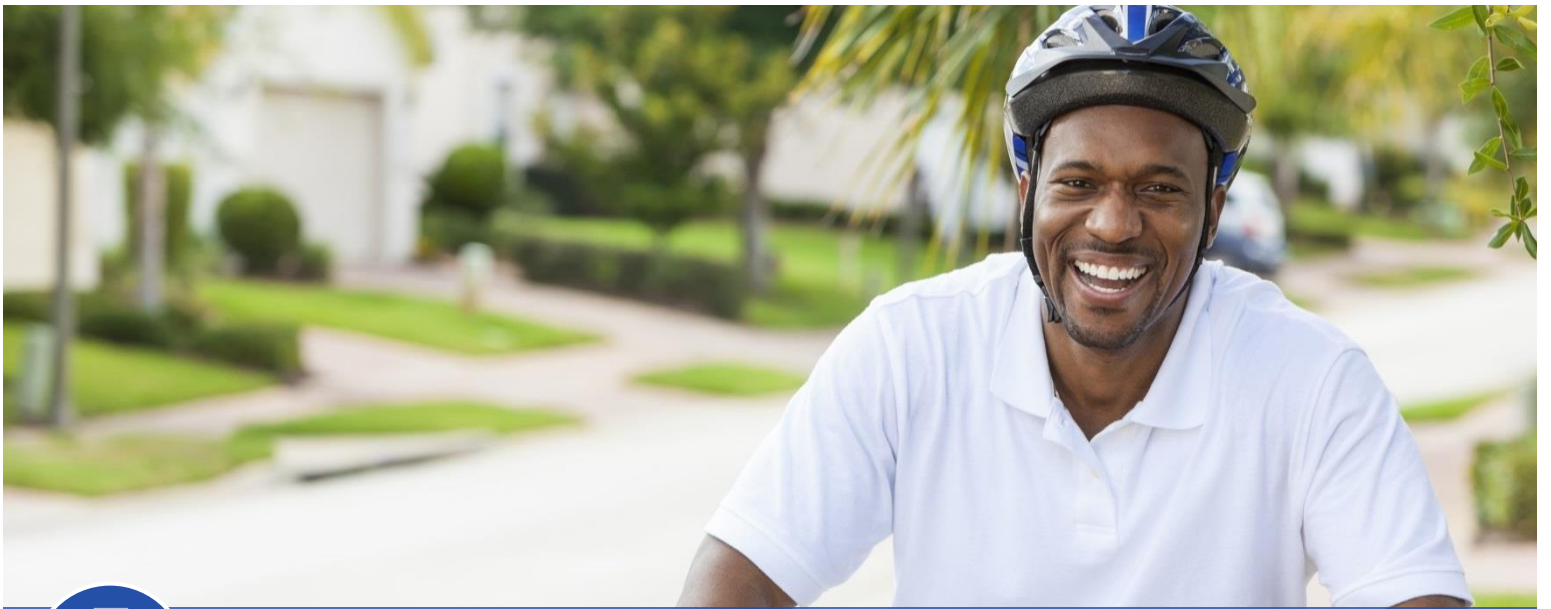


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES JUNEAU COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

46.3
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

17.7
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

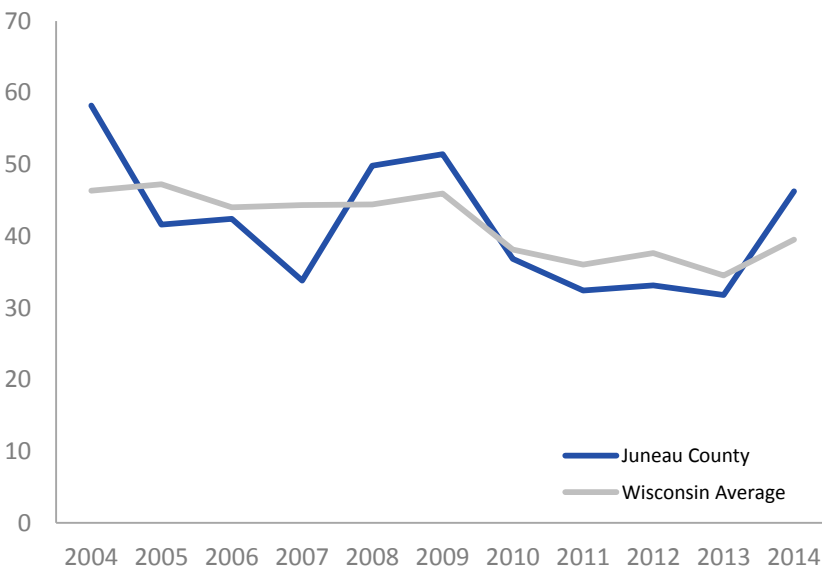
67.4
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

35.4
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬆ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

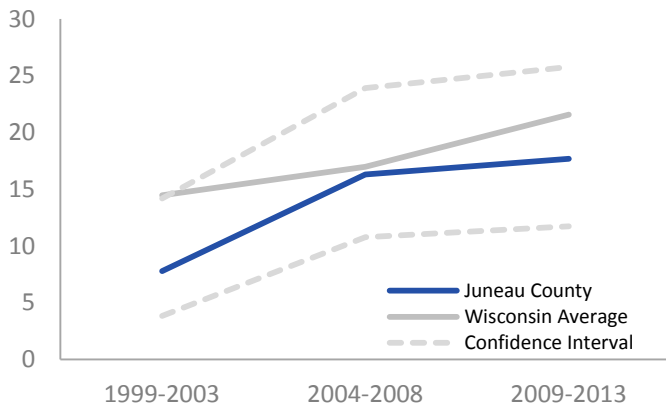
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

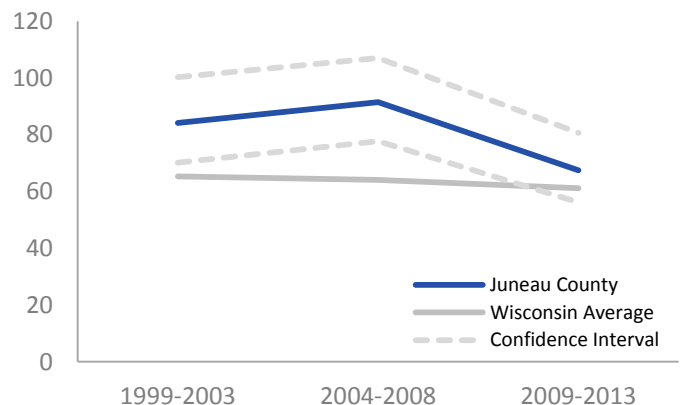
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

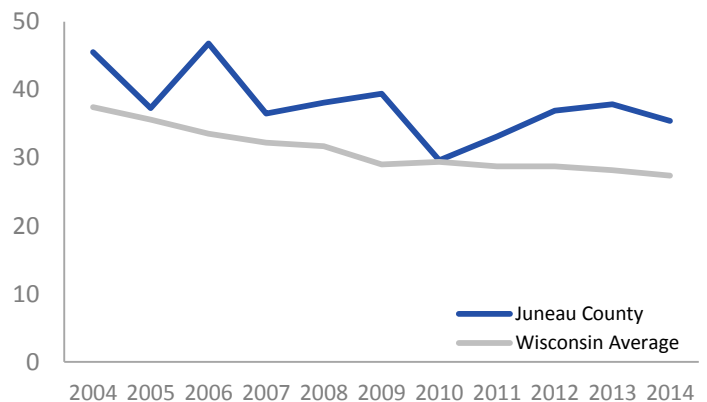
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY JUNEAU COUNTY

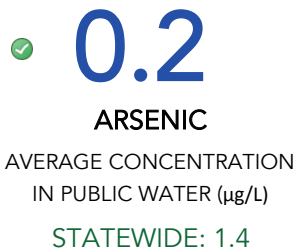
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

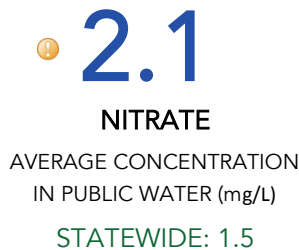
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

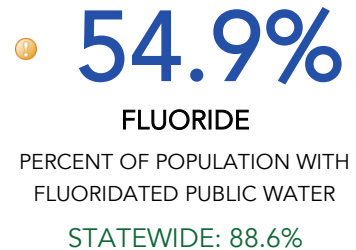
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



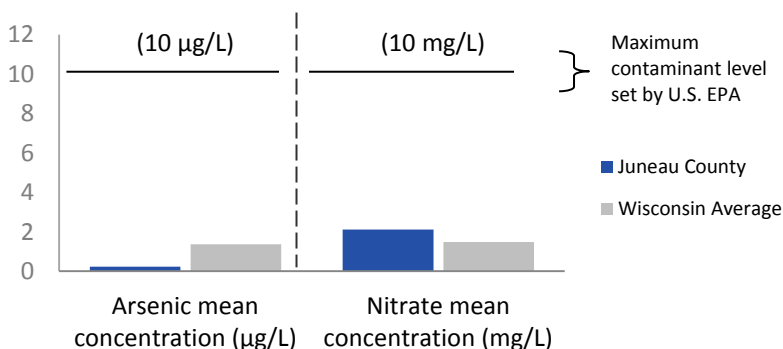
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY JUNEAU COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

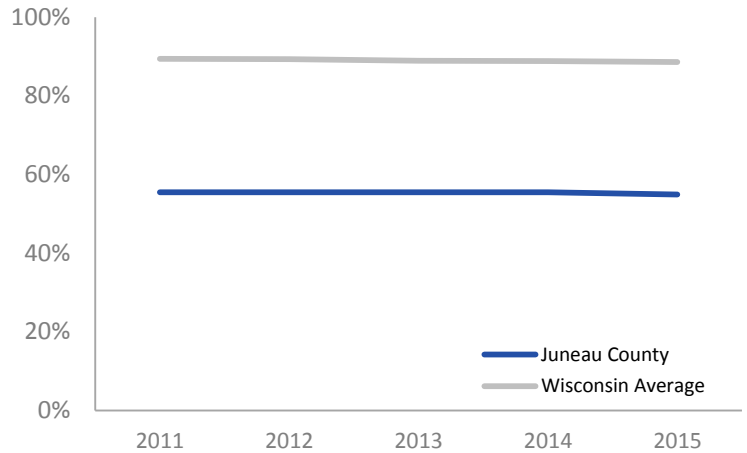
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

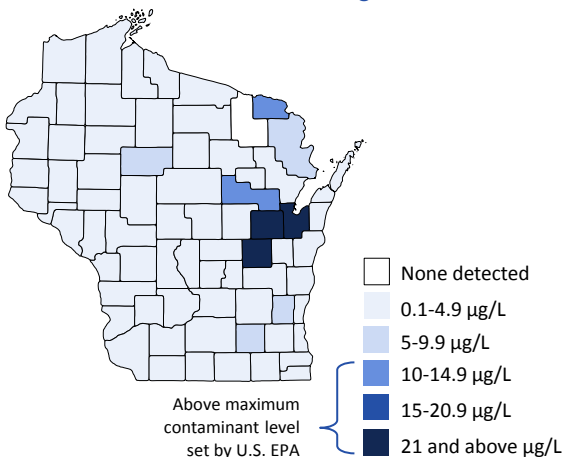
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

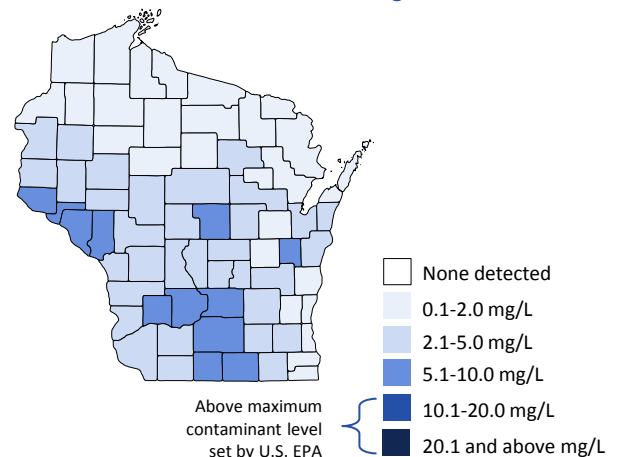
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY

JUNEAU COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



1

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



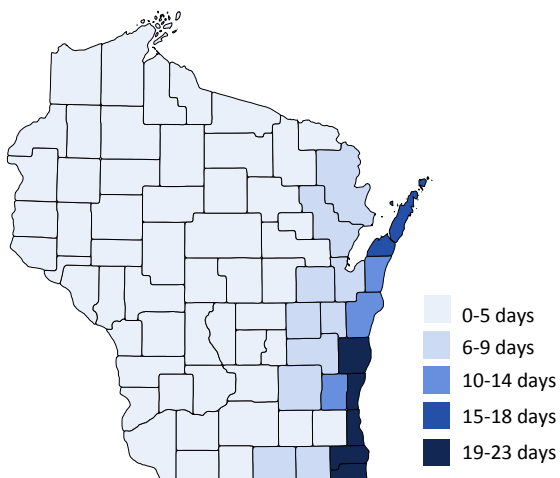
9.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

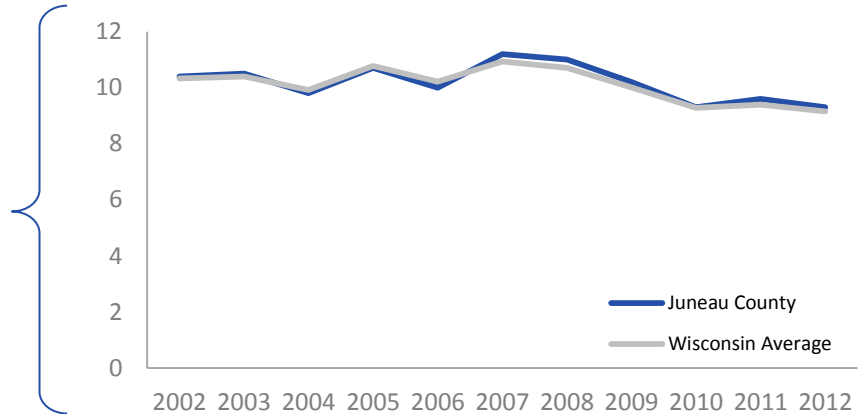


AIR QUALITY JUNEAU COUNTY

PARTICULATE MATTER 2.5

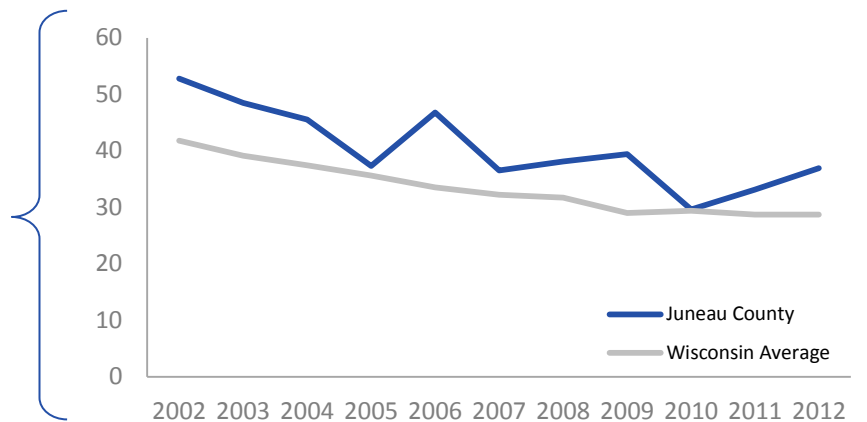
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



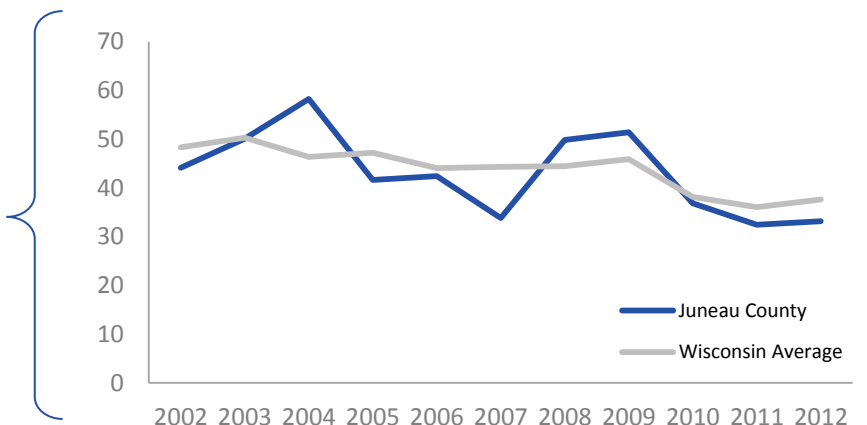
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



KENOSHA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

KENOSHA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 5.3% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 3.9 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 14.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 3.0 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 54.4 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 13.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 25.5 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 1.7 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 98.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 23 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS KENOSHA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.9**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **5.3%**

CHILDHOOD LEAD POISONING

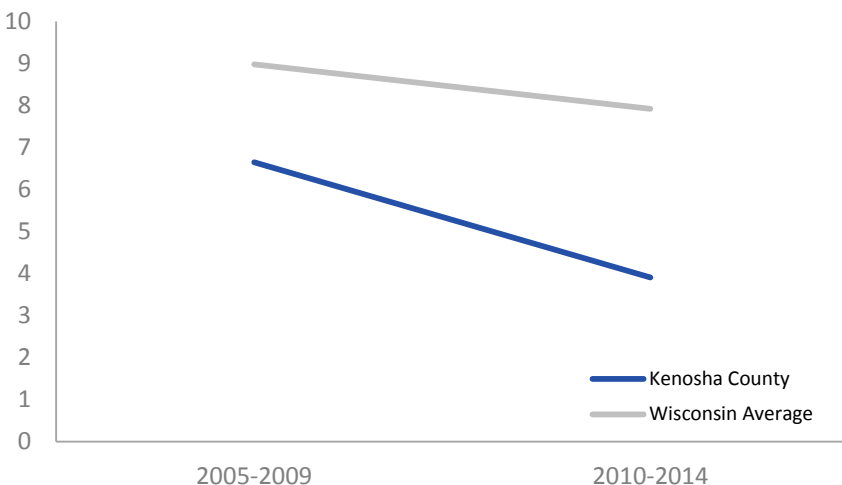
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS KENOSHA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

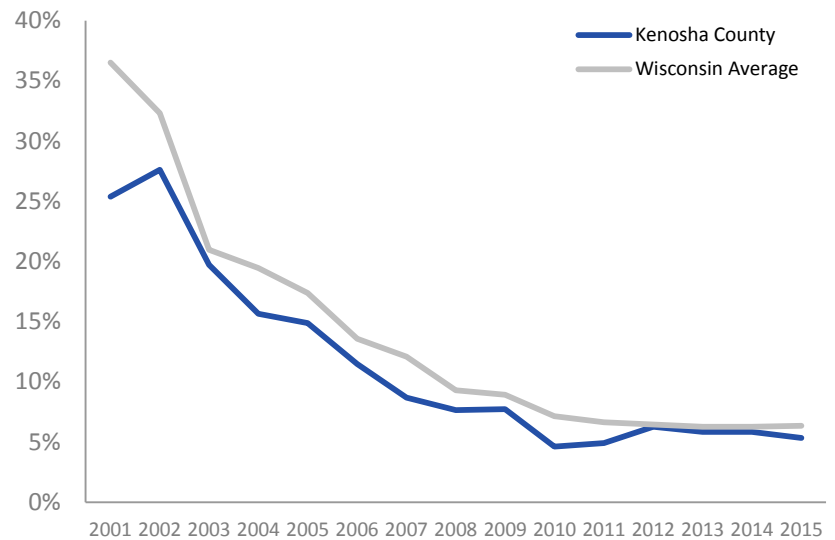
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

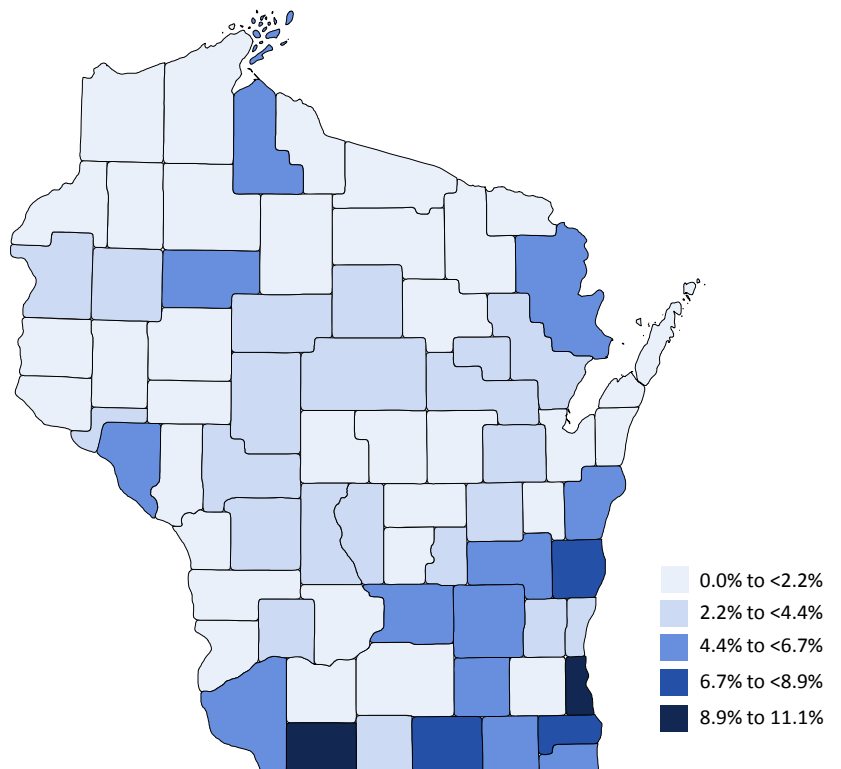
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE KENOSHA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **14.3**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

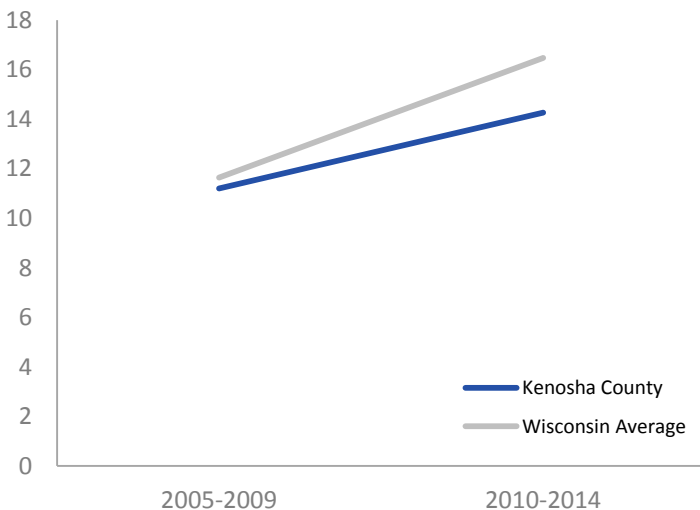
✓ **3.0**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⬆ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht

Wisconsin Environmental Public Health Tracking | 7



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

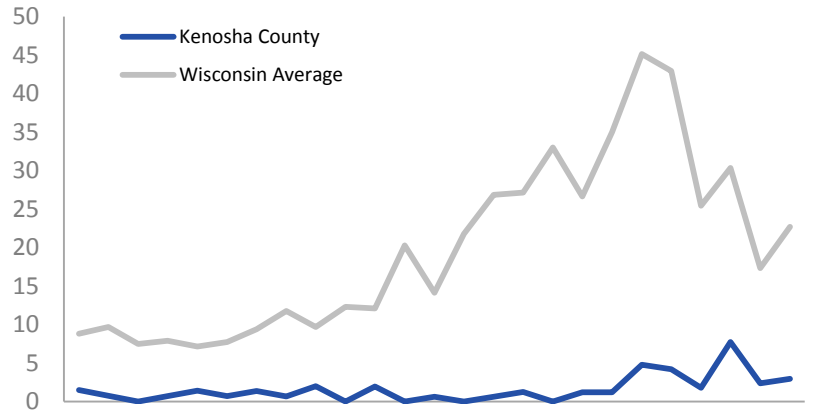
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

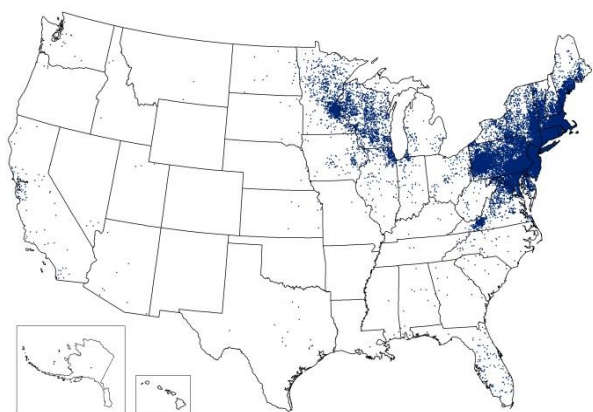
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

KENOSHA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

⬇️ **54.4**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✔️ **13.8**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

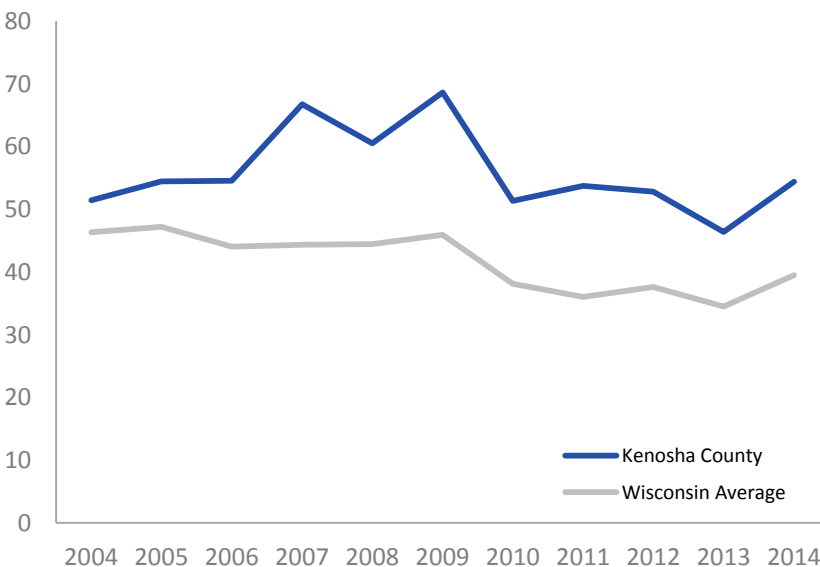
⬇️ **73.1**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✔️ **25.5**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬇️ Above state value
 ✔️ At or below state value
 ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

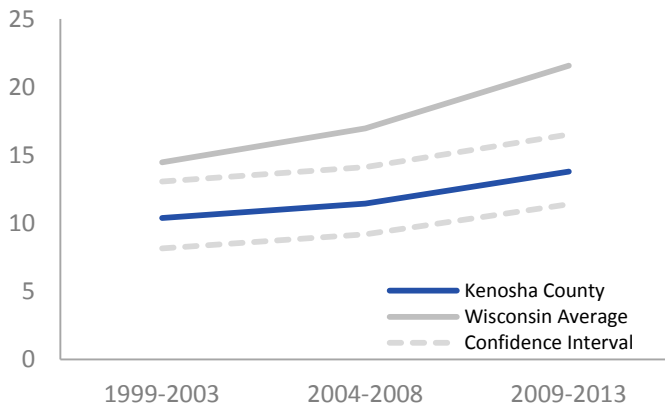
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

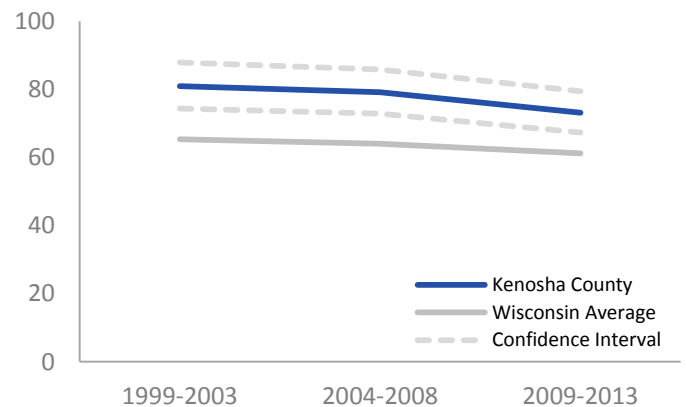
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

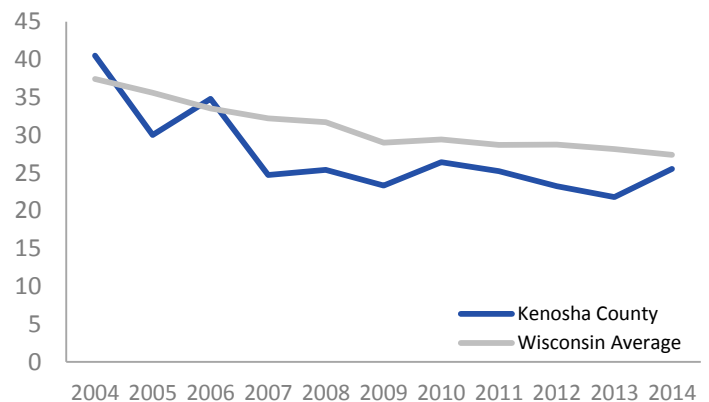
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY KENOSHA COUNTY

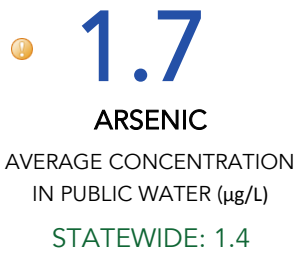
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

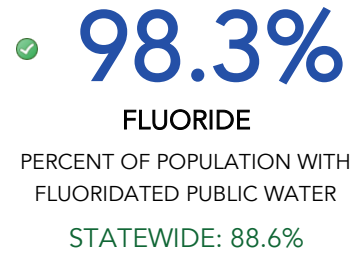
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



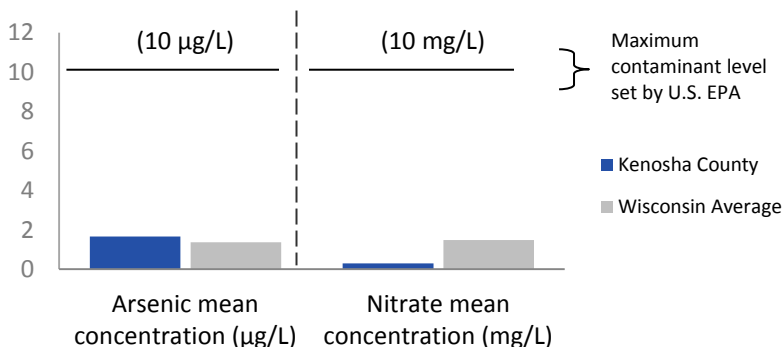
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY KENOSHA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

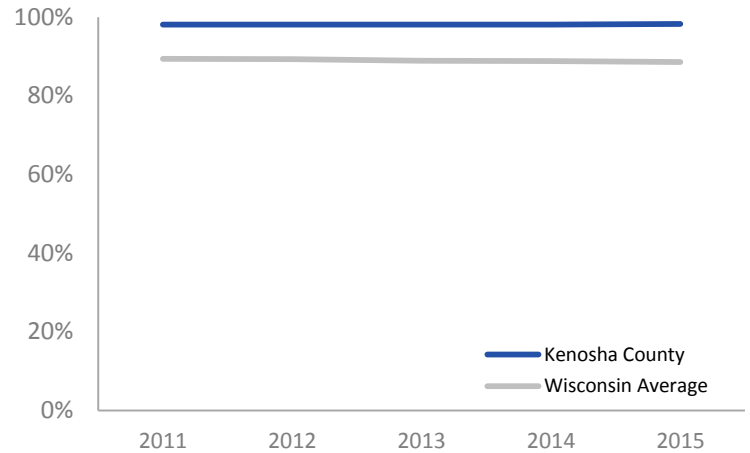
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

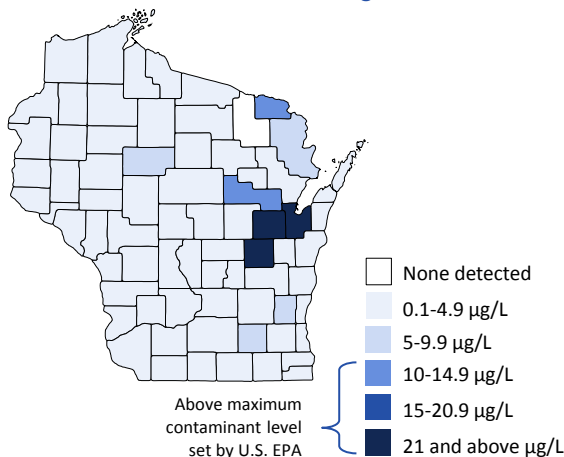
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

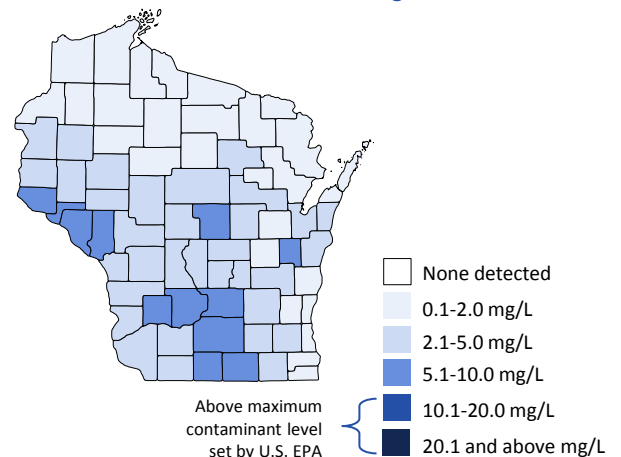
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



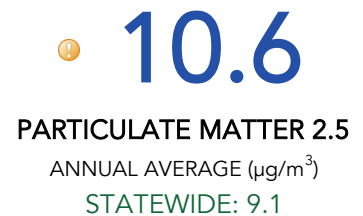
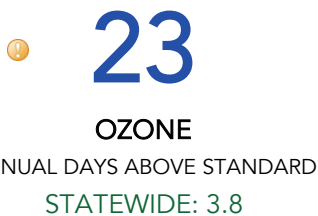


AIR QUALITY KENOSHA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

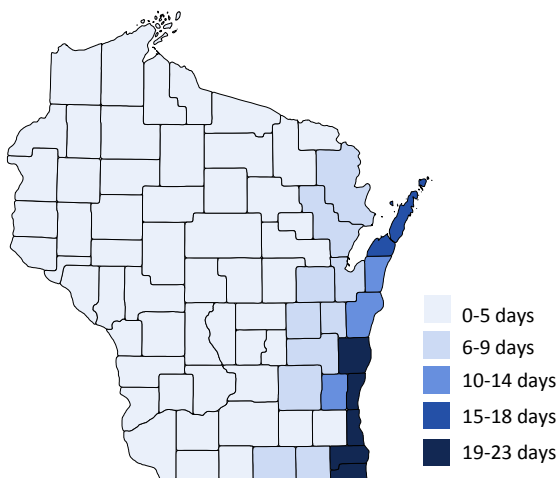
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

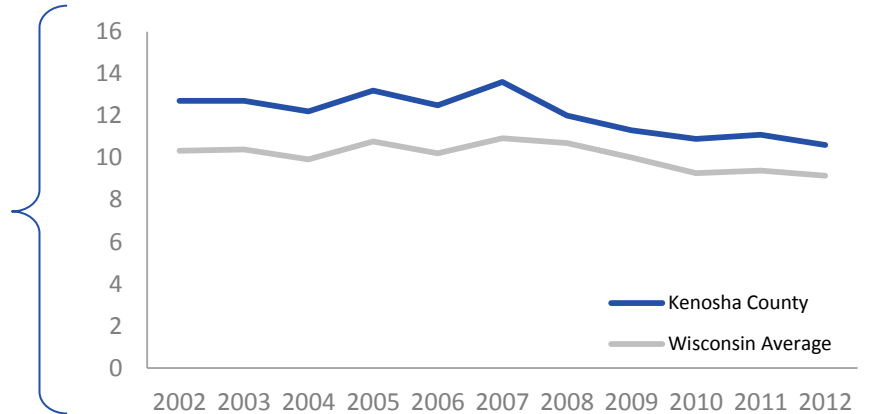


AIR QUALITY KENOSHA COUNTY

PARTICULATE MATTER 2.5

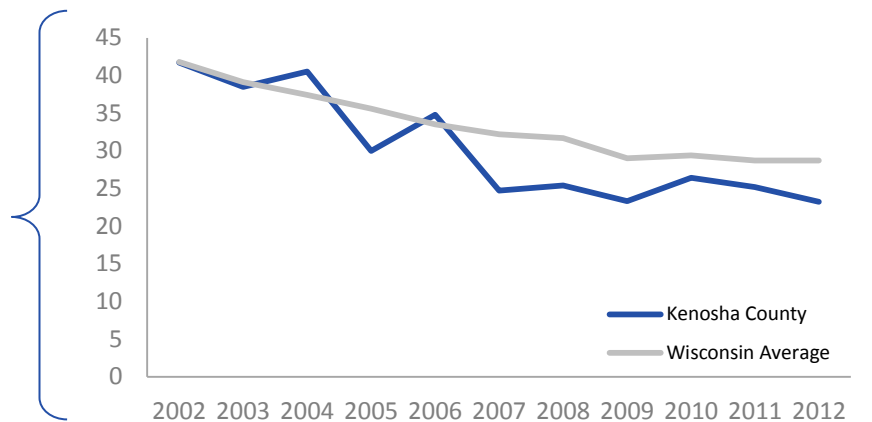
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



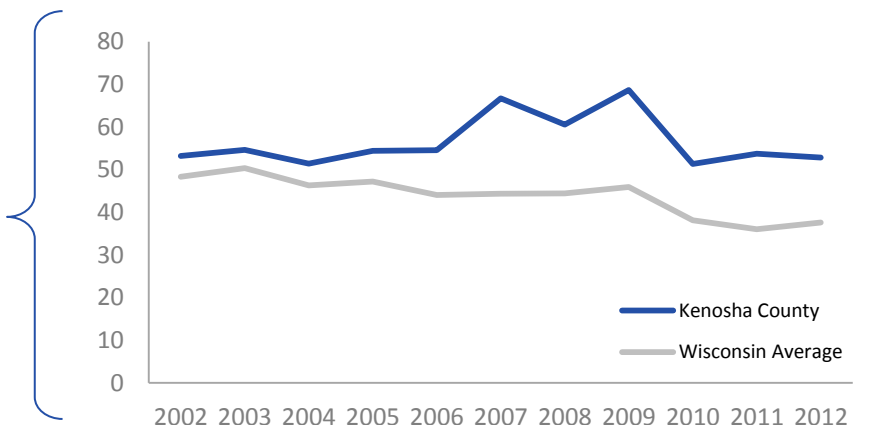
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



KEWAUNEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

KEWAUNEE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 14.0 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 13.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 0.0 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 17.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 30.7 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 33.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.9 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 100.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 11 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS KEWAUNEE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **14.0**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **0.0%**

CHILDHOOD LEAD POISONING

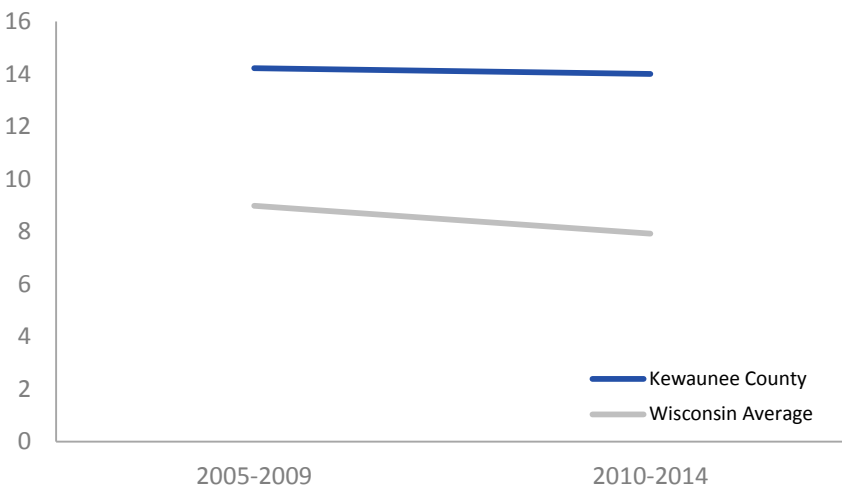
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS KEWAUNEE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

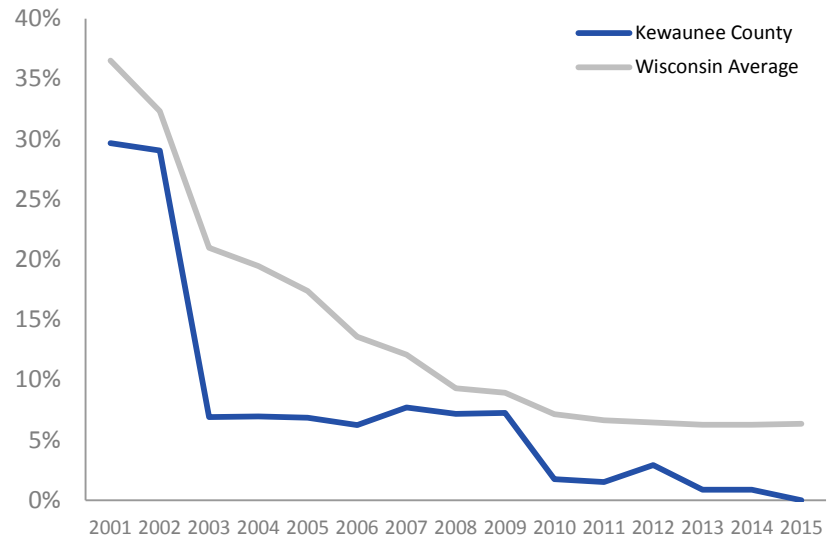
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

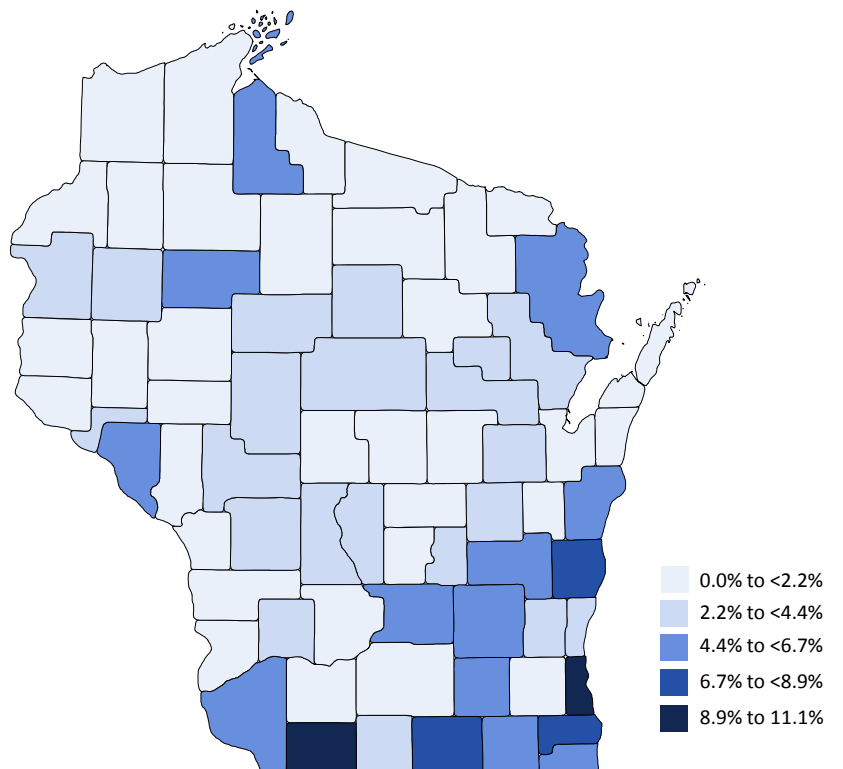
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE KEWAUNEE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

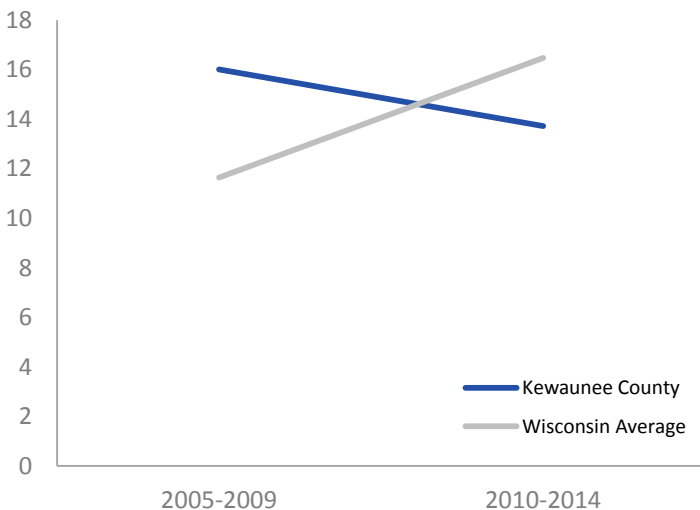
✓ **13.7**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✓ **0.0**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

🔴 Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

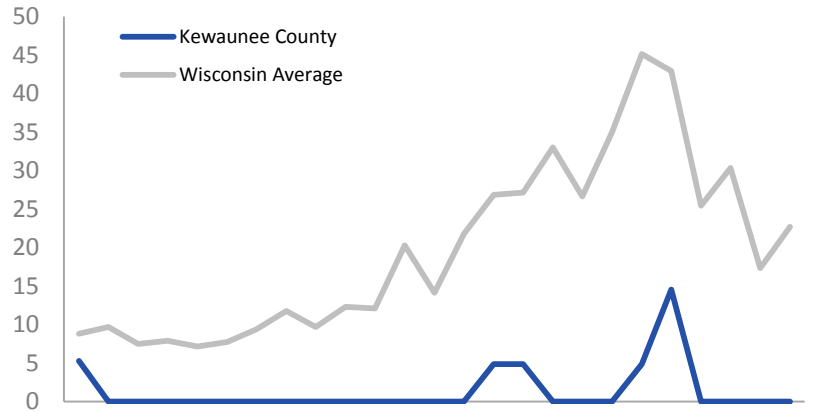
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

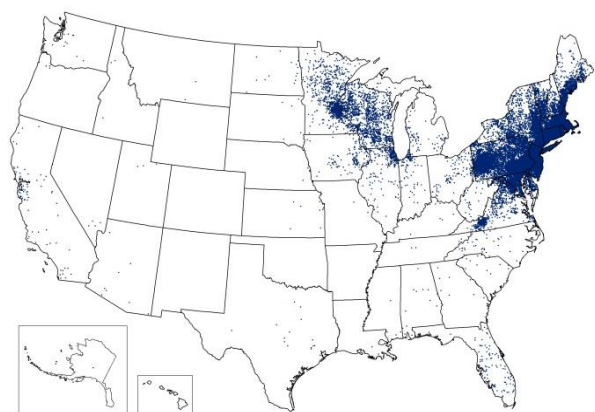
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

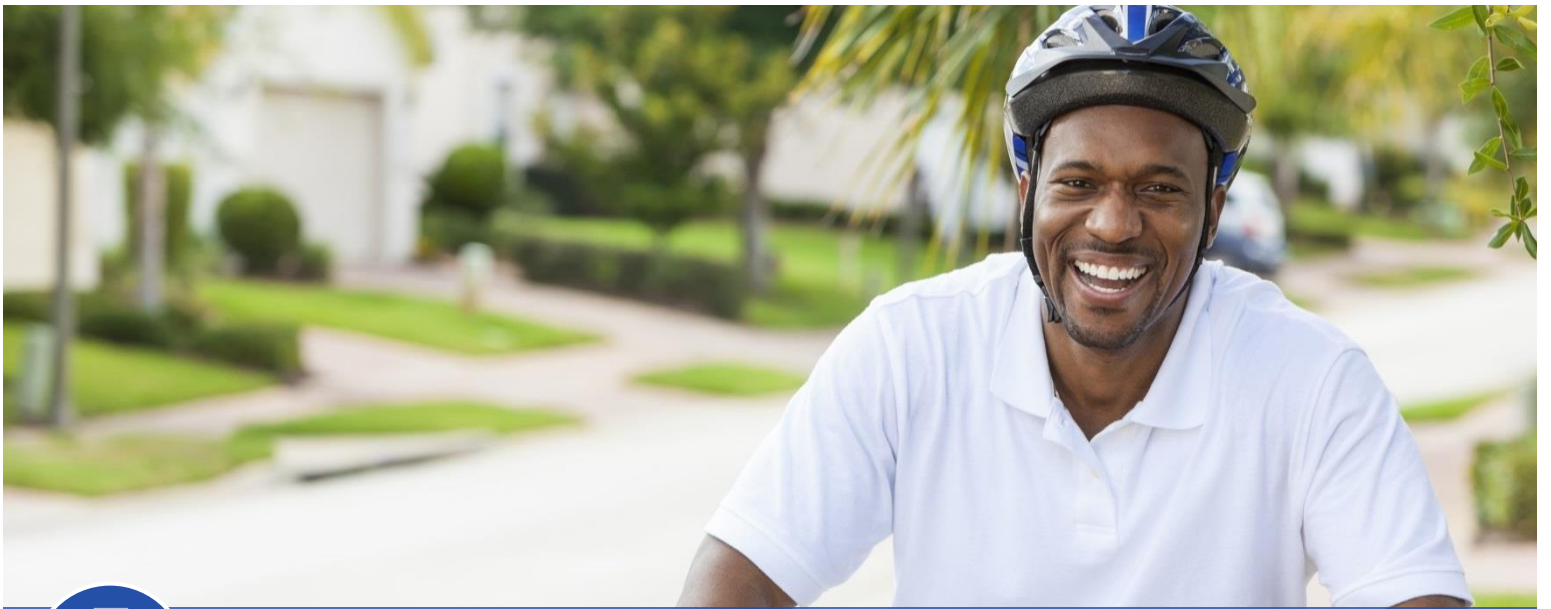


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

KEWAUNEE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **17.5**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **30.7**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

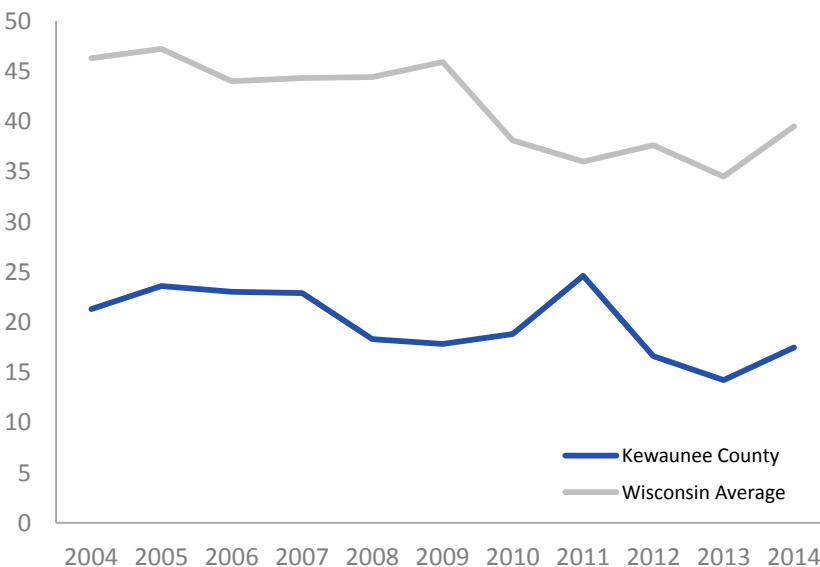
✓ **50.7**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **33.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

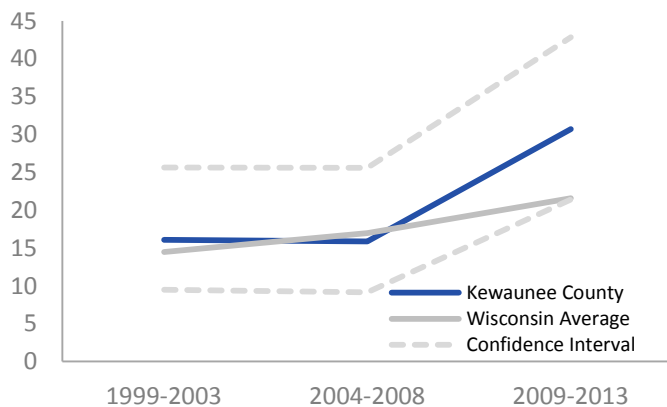
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

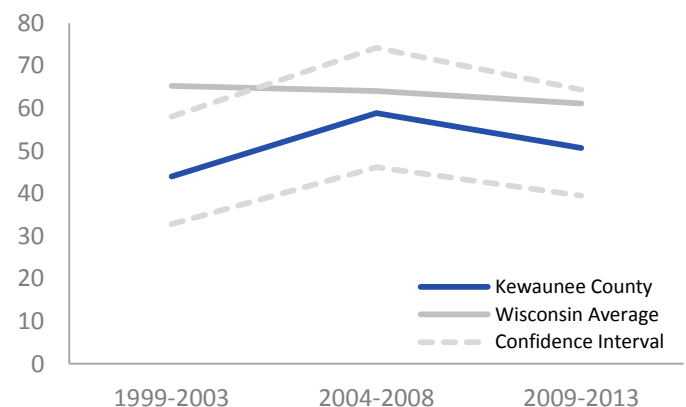
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

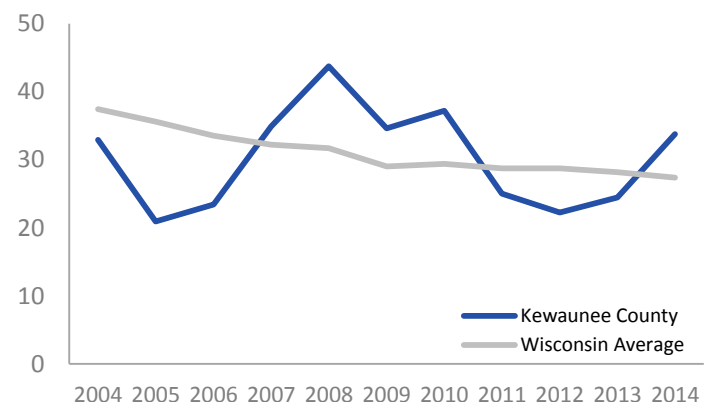
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY KEWAUNEE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.

✓ **0.9**
ARSENIC
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (µg/L)
 STATEWIDE: 1.4

⊕ Above state value (with exception of fluoride where below state value is not preferred)

✓ **0.2**
NITRATE
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (mg/L)
 STATEWIDE: 1.5

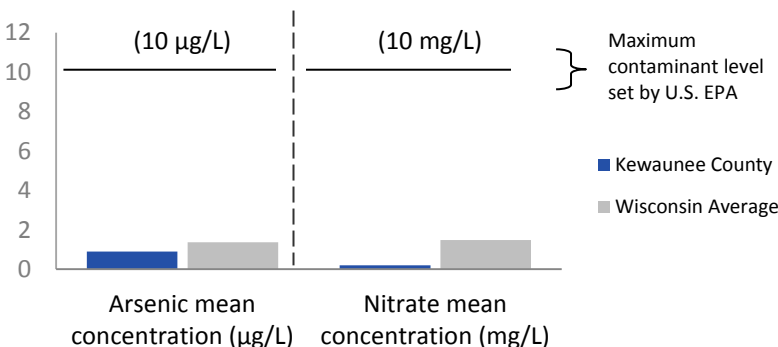
✓ At or below state value (with exception of fluoride where above state value is preferred)

✓ **100.0%**
FLUORIDE
 PERCENT OF POPULATION WITH
 FLUORIDATED PUBLIC WATER
 STATEWIDE: 88.6%

^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY KEWAUNEE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

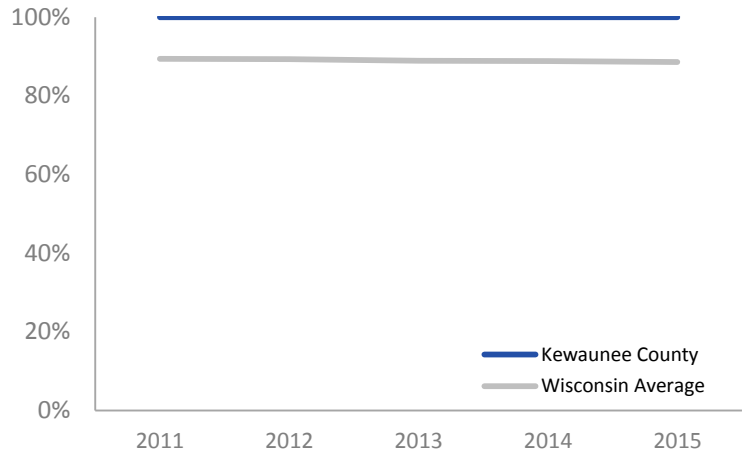
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

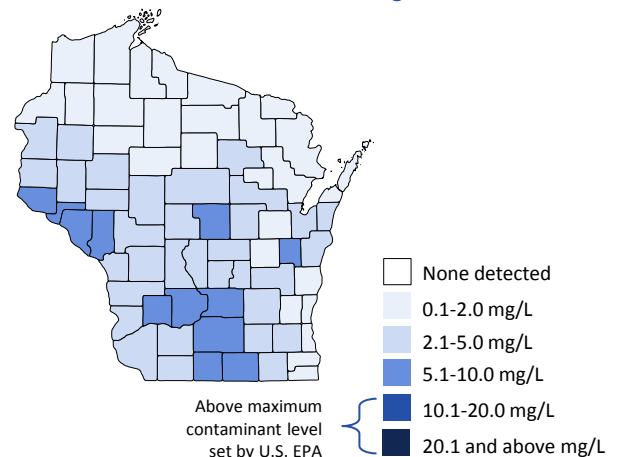
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



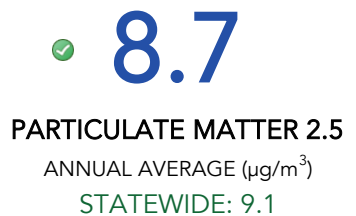


AIR QUALITY KEWAUNEE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

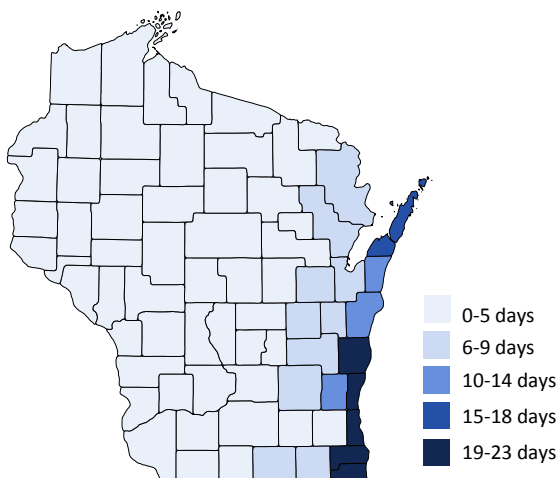
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



⬇ Above state value ⬆ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

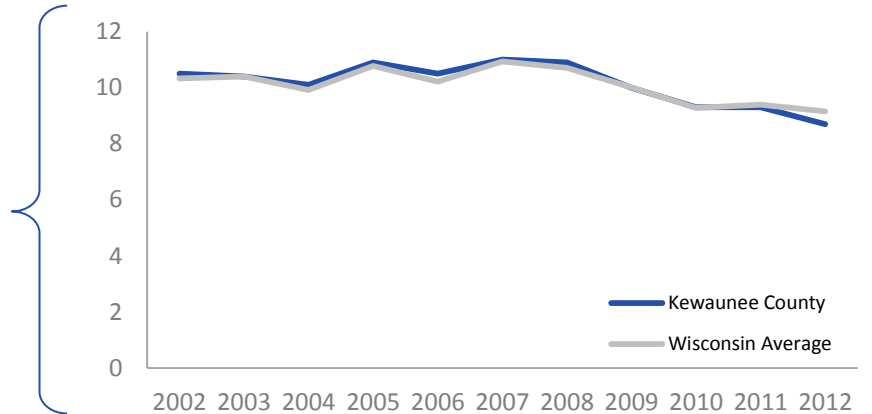
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

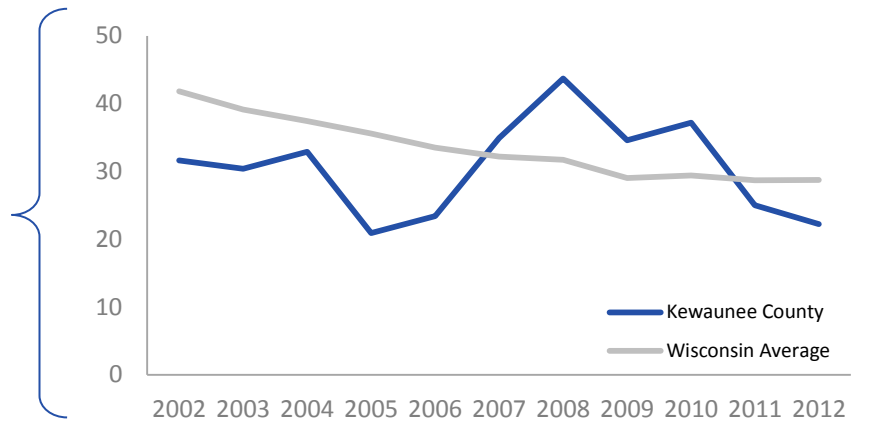
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



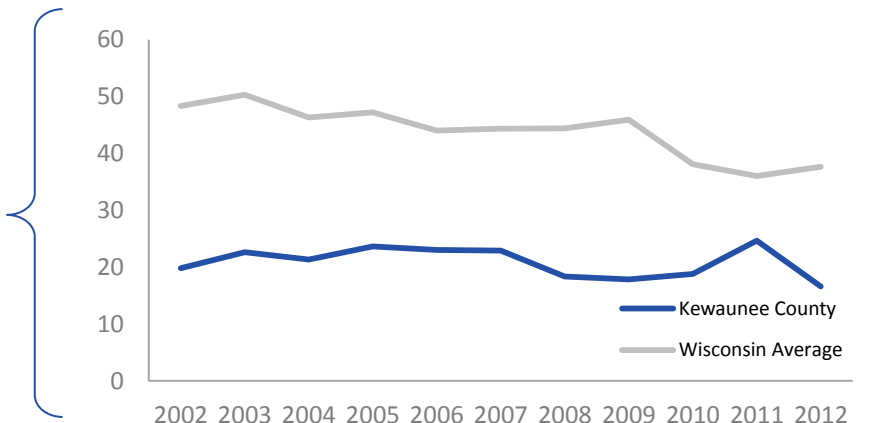
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

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MAY 2017 | P-00719 (Rev. 05/2017)



LA CROSSE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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LA CROSSE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.1% | Percent with blood lead ≥ 5 $\mu\text{g/dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 3.7 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 14.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 32.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 18.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 27.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 21.6 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.6 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.4

Nitrate

✓ 1.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 94.9% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS LA CROSSE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.7**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **2.1%**

CHILDHOOD LEAD POISONING

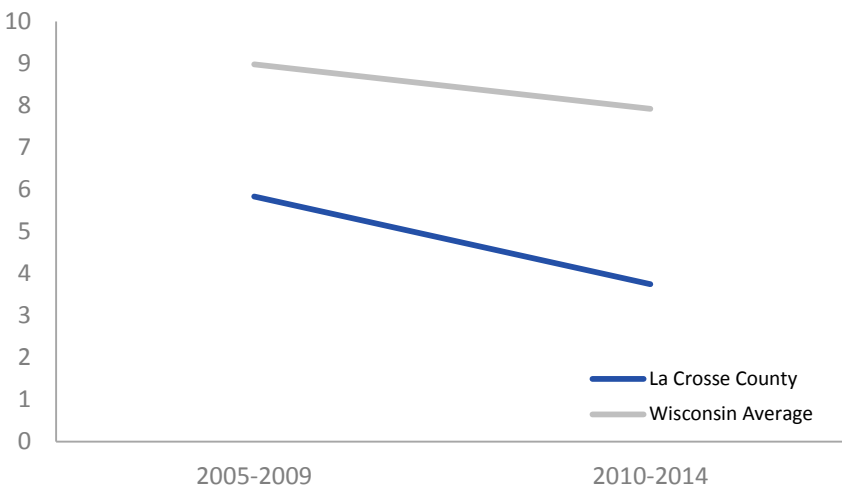
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS LA CROSSE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

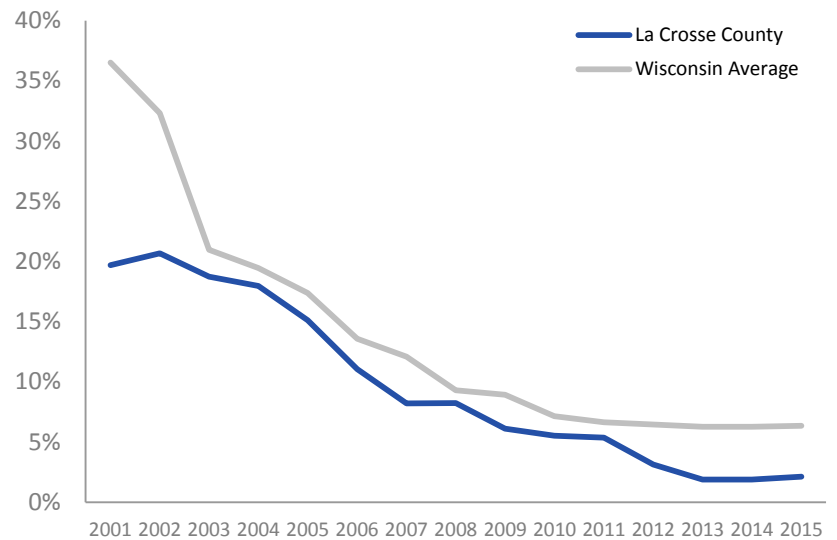
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

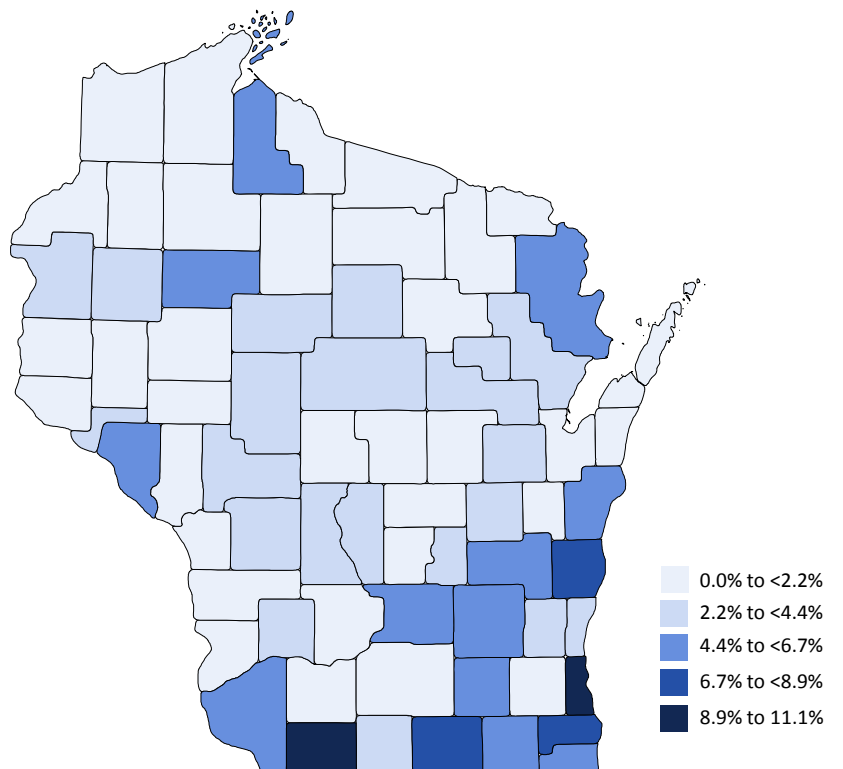
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE LA CROSSE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

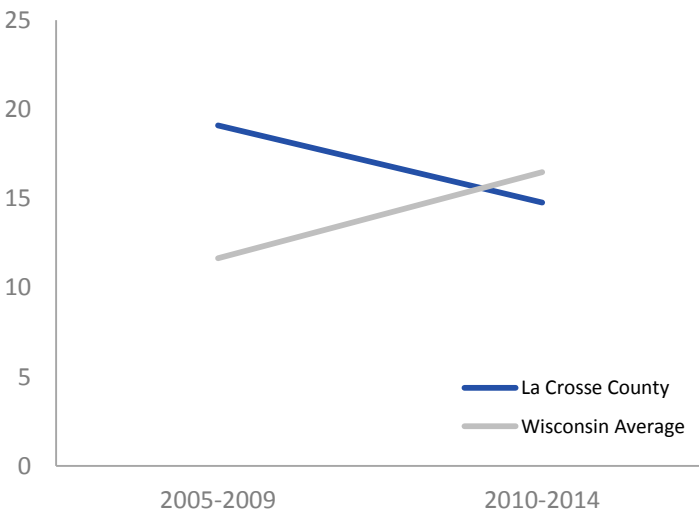
✓ **14.8**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

⚠ **32.2**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

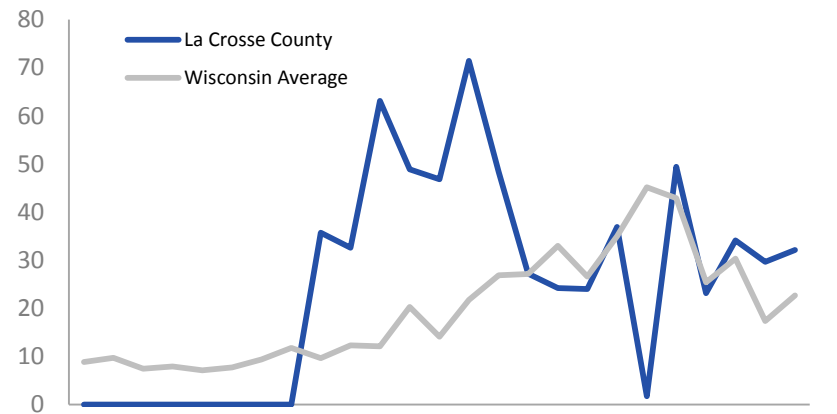
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

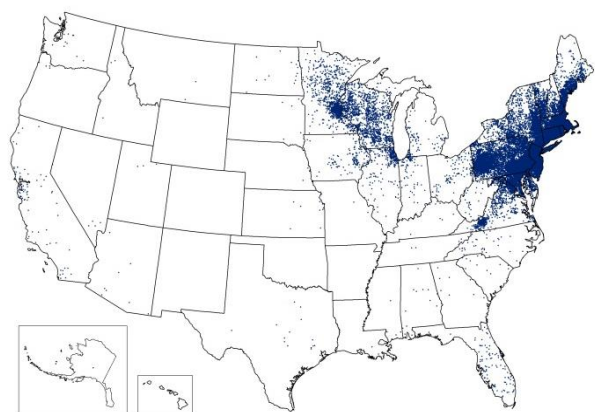
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES LA CROSSE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **18.3**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **27.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

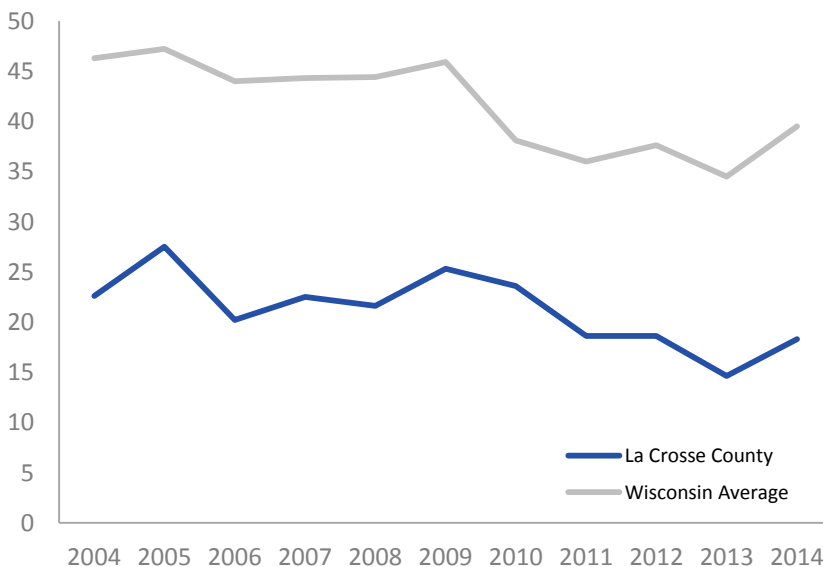
✓ **60.4**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **21.6**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

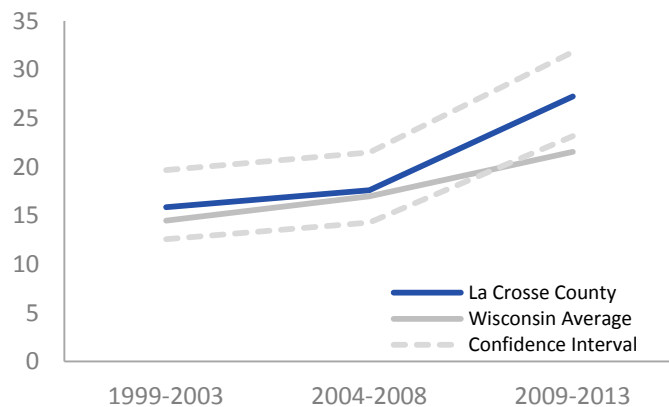
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

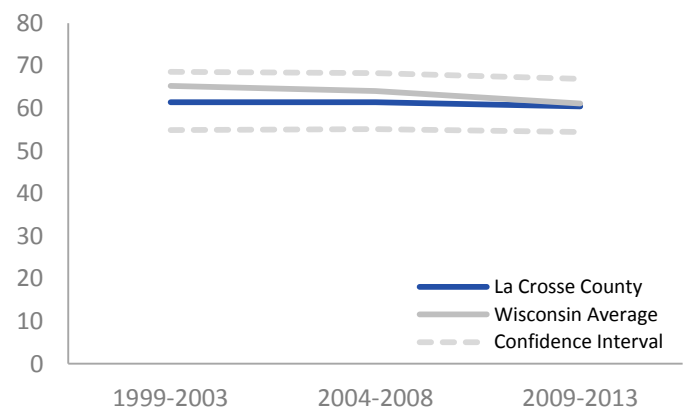
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

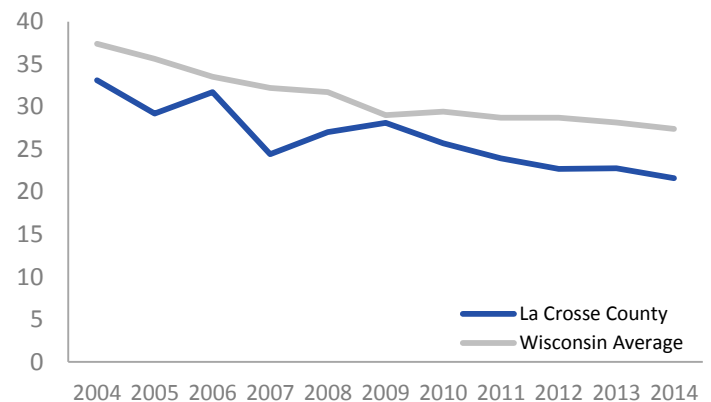
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY LA CROSSE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.

✓ **0.6**
ARSENIC
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (µg/L)
 STATEWIDE: 1.4

⊕ Above state value (with exception of fluoride where below state value is not preferred)

✓ **1.2**
NITRATE
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (mg/L)
 STATEWIDE: 1.5

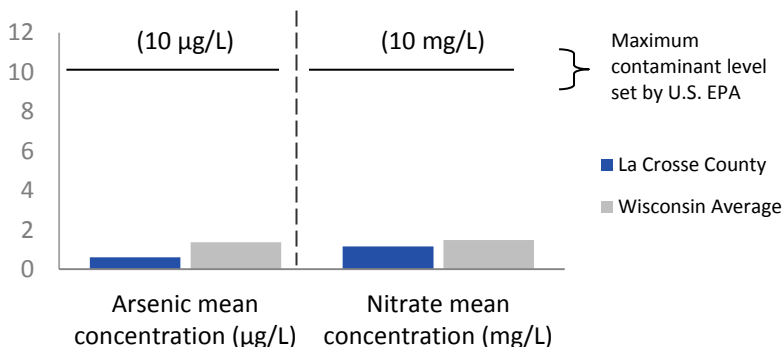
✓ At or below state value (with exception of fluoride where above state value is preferred)

✓ **94.9%**
FLUORIDE
 PERCENT OF POPULATION WITH
 FLUORIDATED PUBLIC WATER
 STATEWIDE: 88.6%

^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY LA CROSSE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

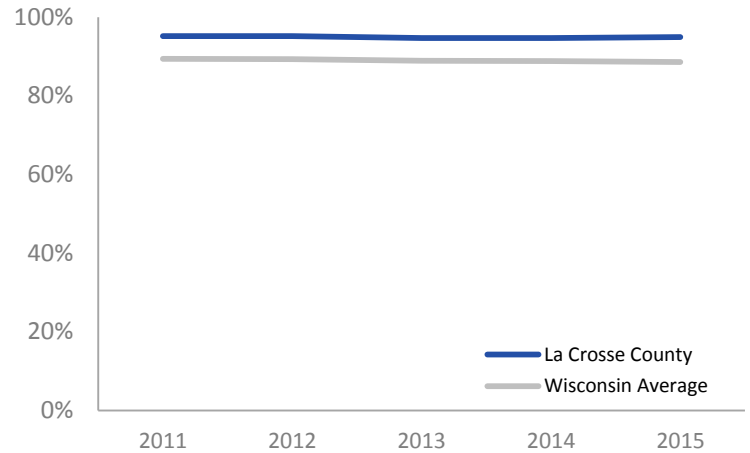
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

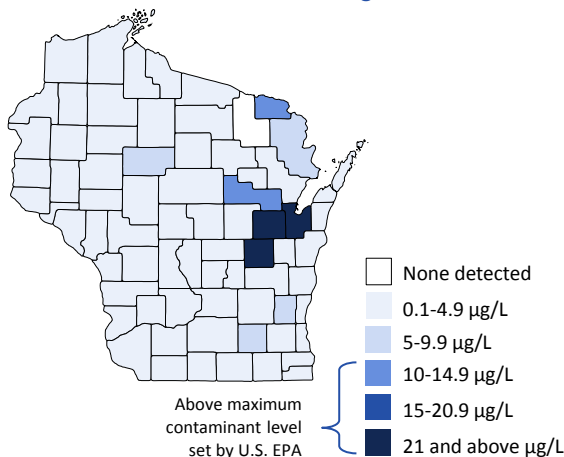
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

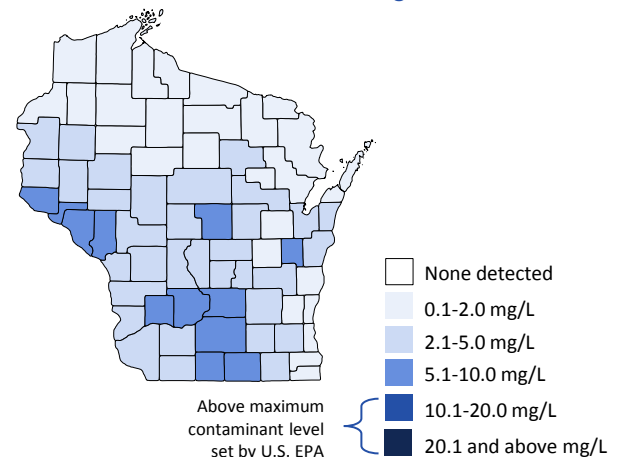
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



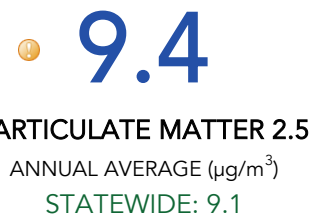


AIR QUALITY LA CROSSE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

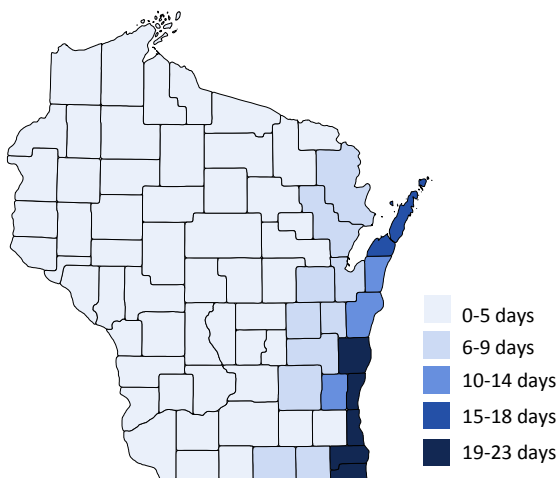
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



⬇️ Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

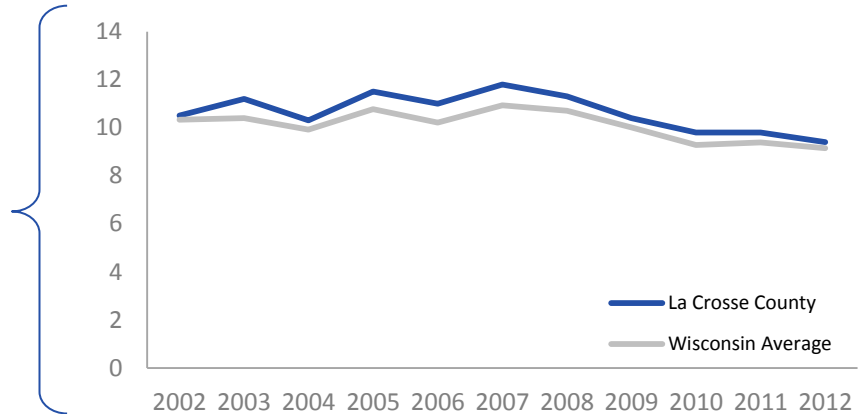
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

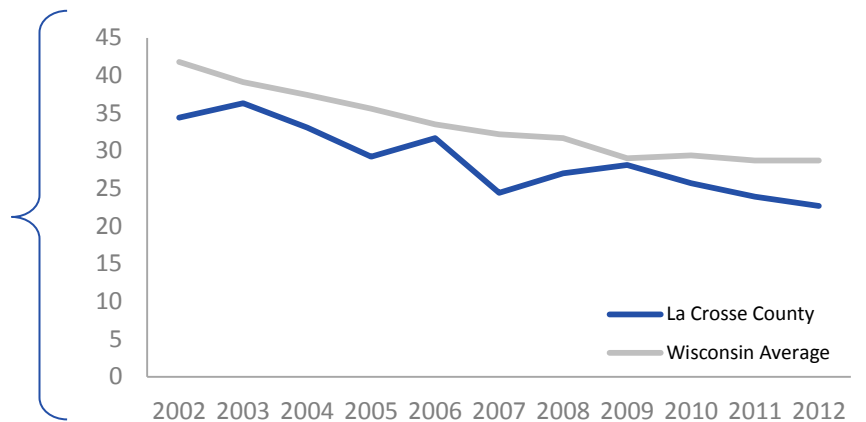
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



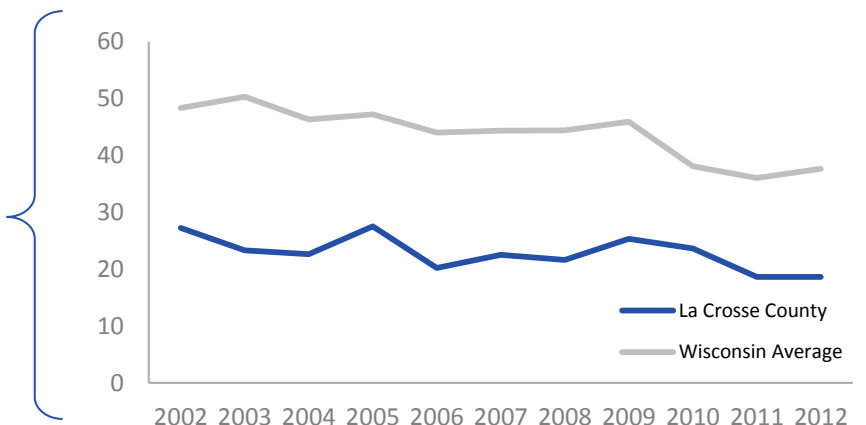
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



LAFAYETTE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)


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LAFAYETTE COUNTY


DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning


 11.1% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning


 9.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.5

CLIMATE

Heat Stress


 28.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease


 11.9 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES


Asthma

 22.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma


 20.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack


 16.7 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY


Arsenic

 5.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate


 0.5 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride


 74.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY


Ozone


 3 | Annual days above standard
Wisconsin: 3.8


Particulate Matter (PM) 2.5

 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

 Above state value (with exception of fluoride where below state value is not preferred)

 At or below state value (with exception of fluoride where above state value is preferred)

 Data are suppressed [Data details on next page](#)

DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2005-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS LAFAYETTE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

9.5

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.5

11.1%

CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value 🟢 At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE (2005-2014)



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS LAFAYETTE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

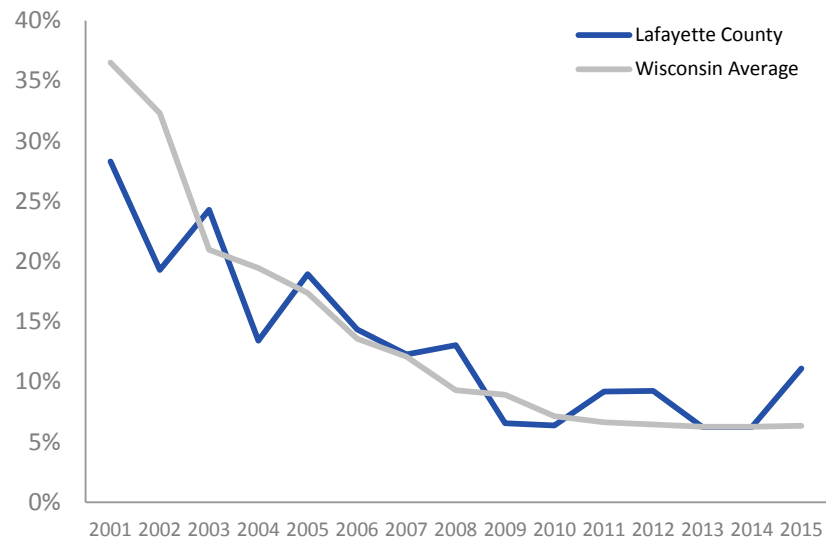
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

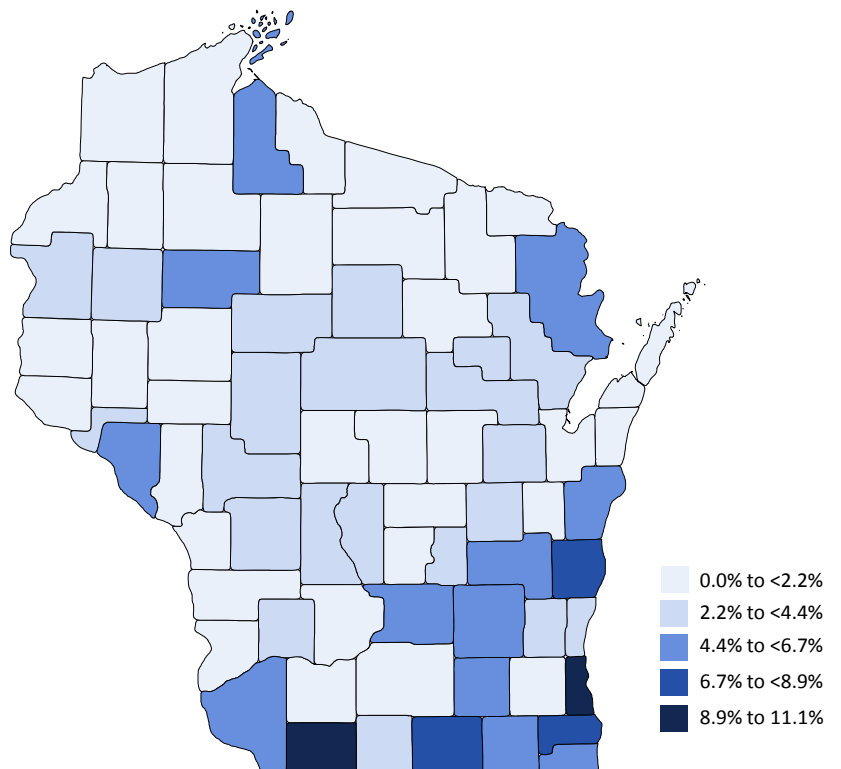
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE LAFAYETTE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

28.9

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

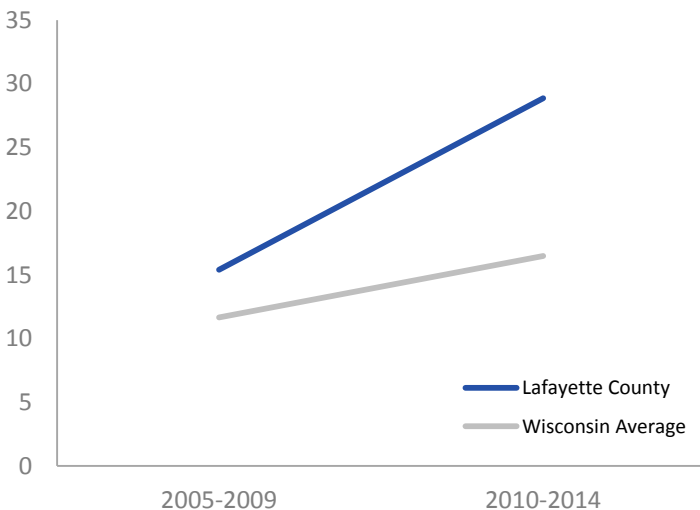
11.9

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

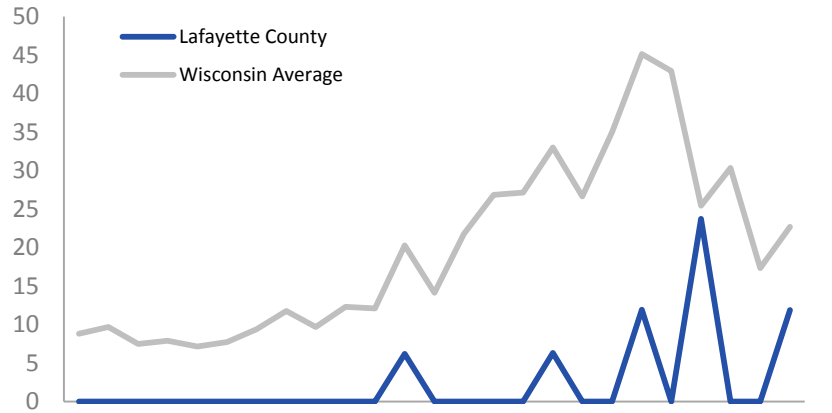
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

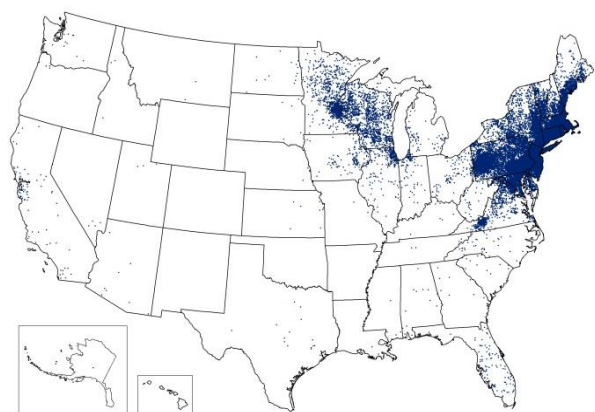
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES LAFAYETTE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **22.5**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **20.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

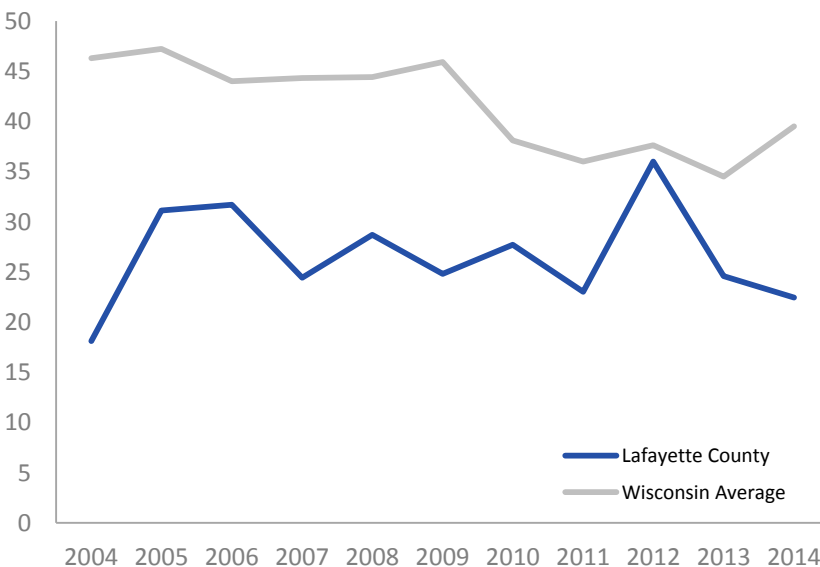
✓ **47.5**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **16.7**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

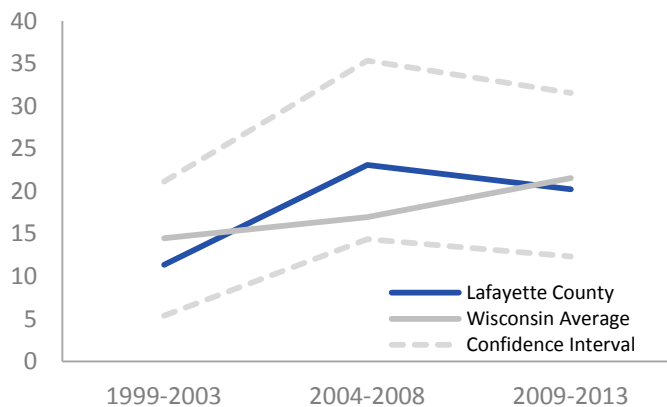
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

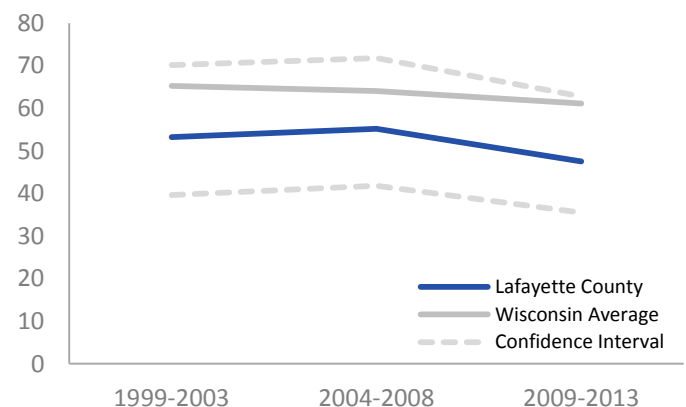
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

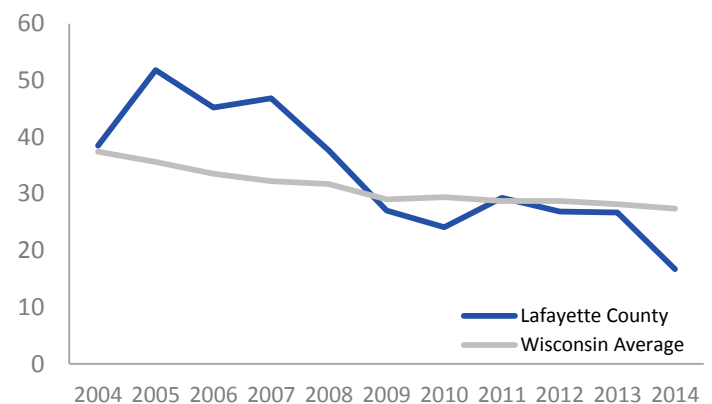
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY LAFAYETTE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

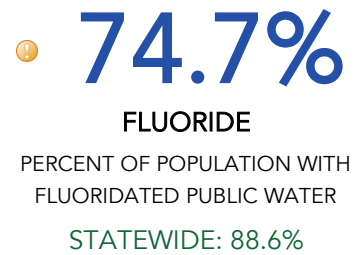
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



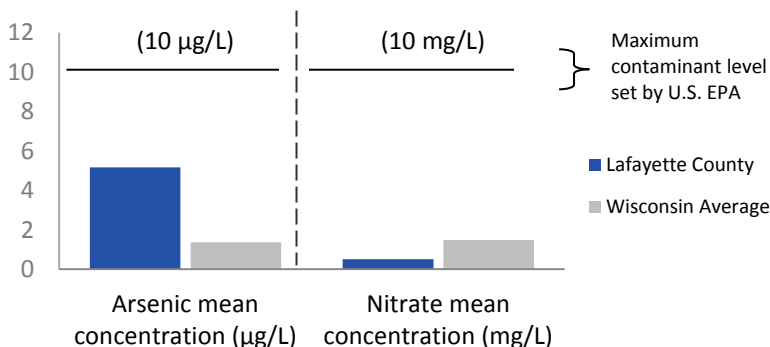
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY LAFAYETTE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

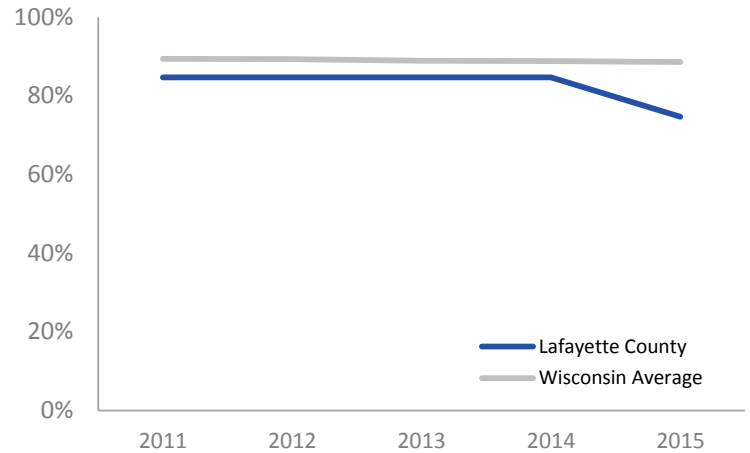
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

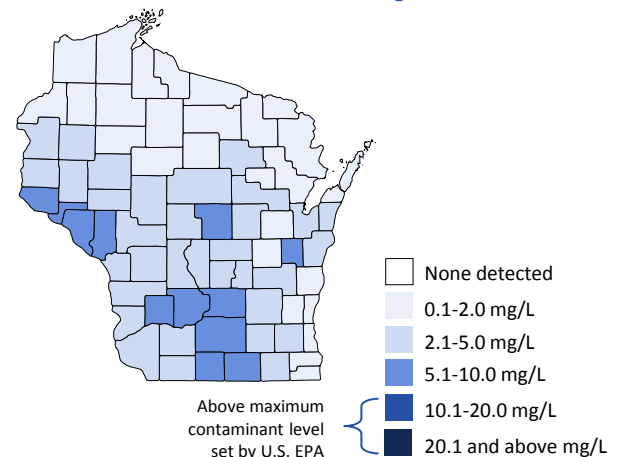
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY LAFAYETTE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



3

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



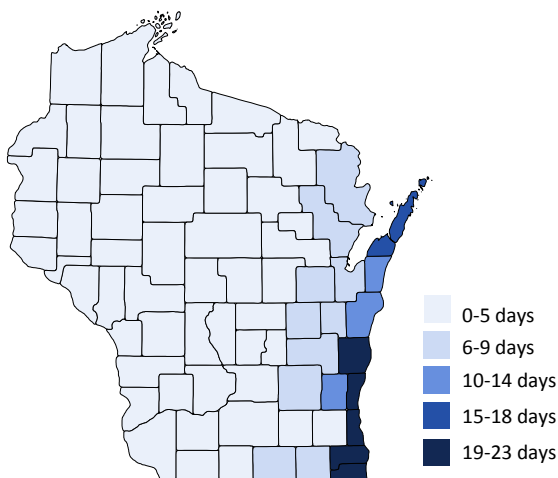
10.0

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

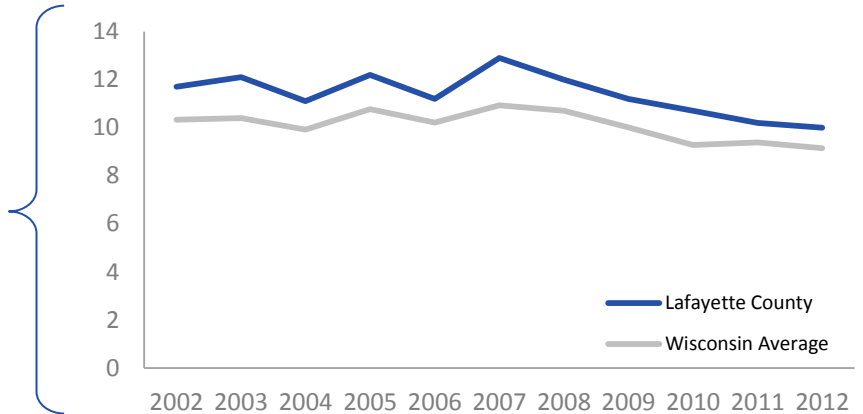
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

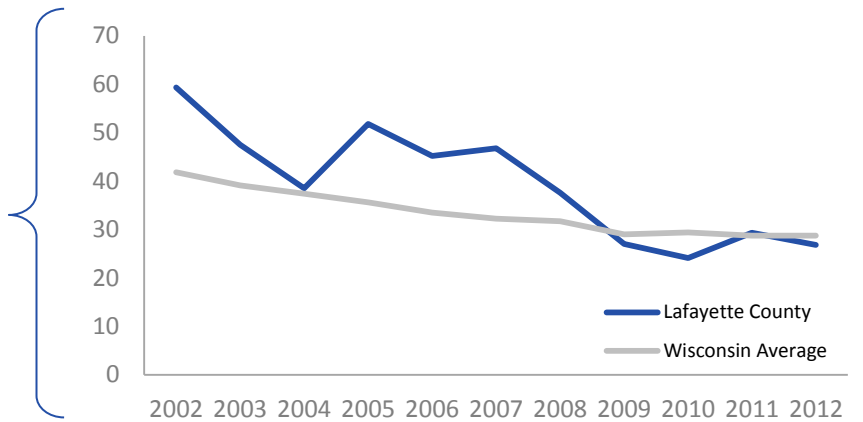
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



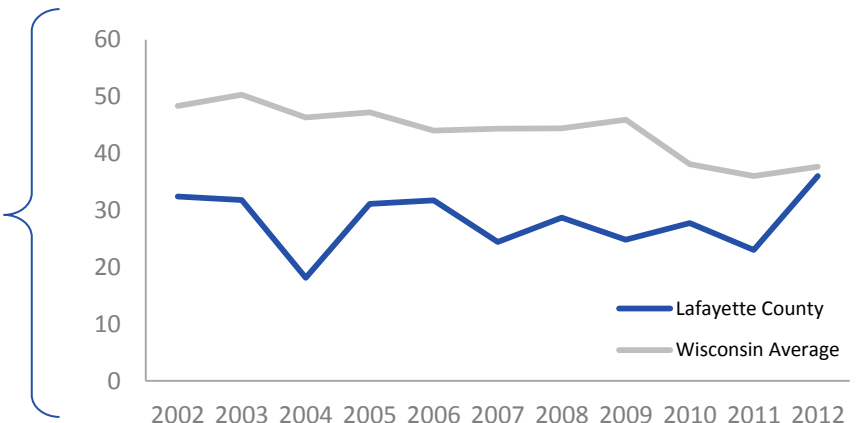
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: Averaged data from 2005-2014

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population. These data were averaged over ten years for five counties in order to minimize suppression.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



LANGLADE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

LANGLADE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.2% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 17.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 36.4 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 45.8 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 15.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 26.4 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.9 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 1.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 91.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 1 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

LANGLADE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **8.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.2%**

CHILDHOOD LEAD POISONING

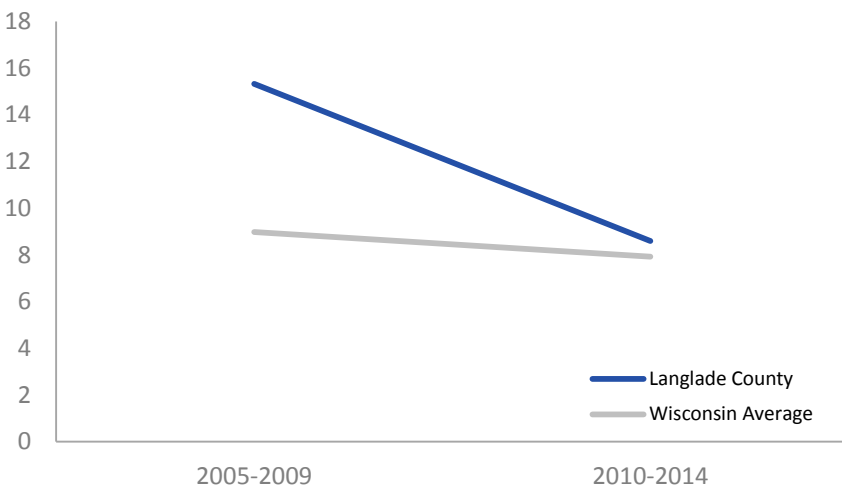
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS

LANGLADE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

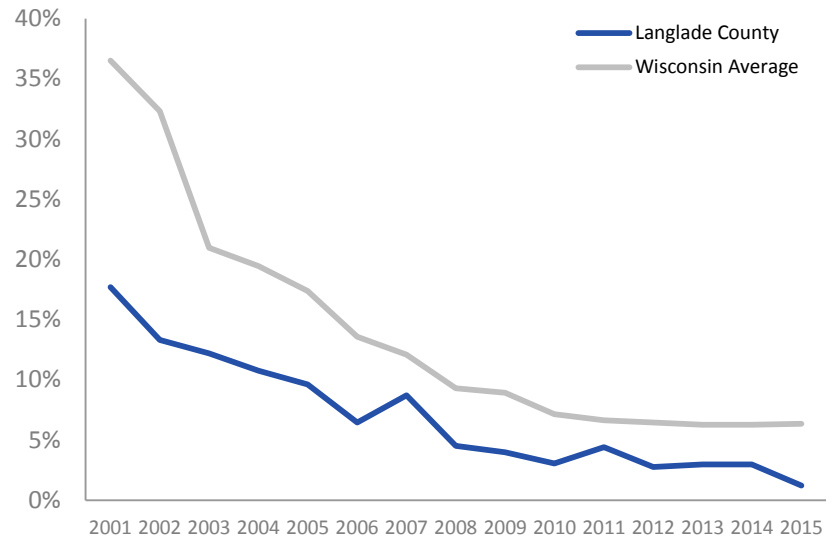
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

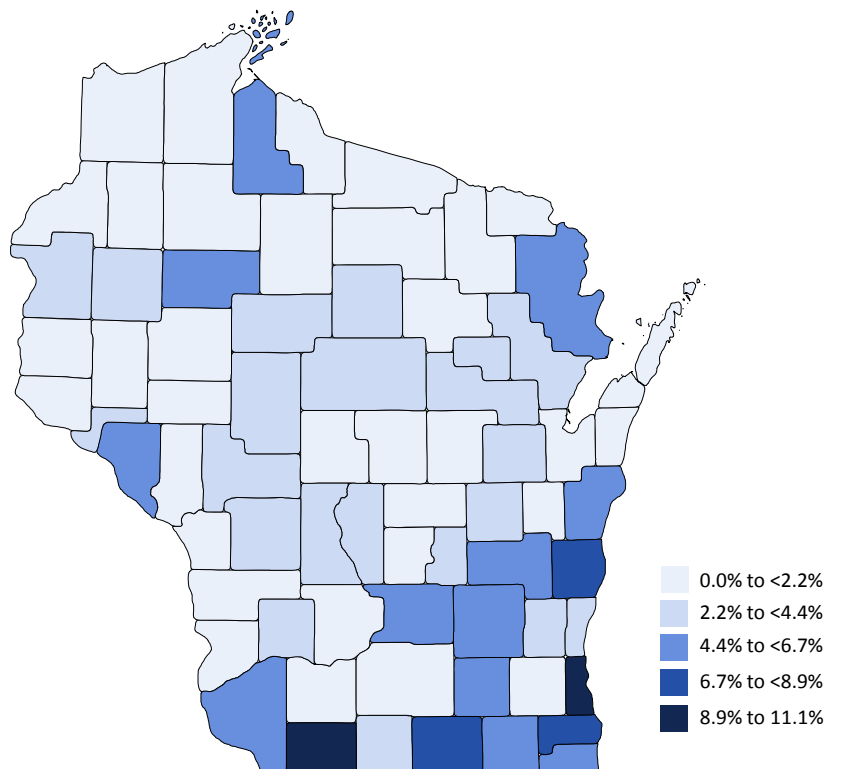
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE

LANGLADE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

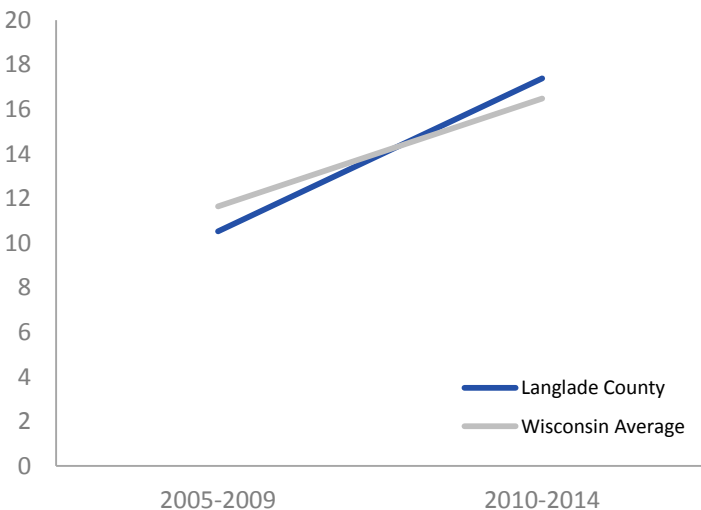
17.4
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

36.4
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

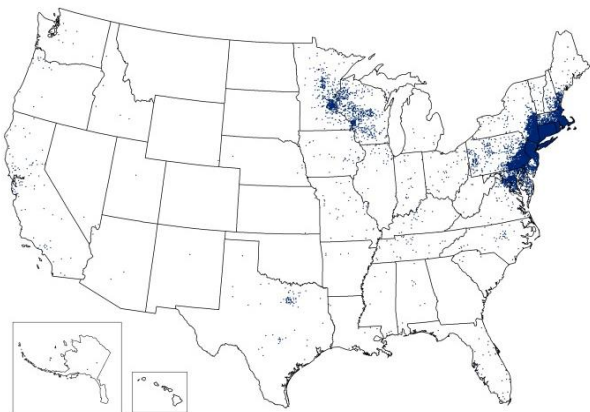
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

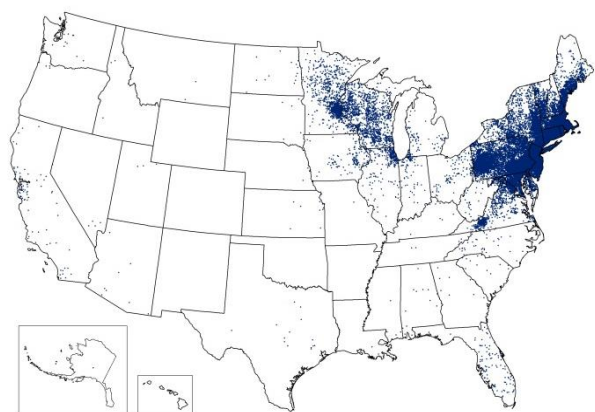
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

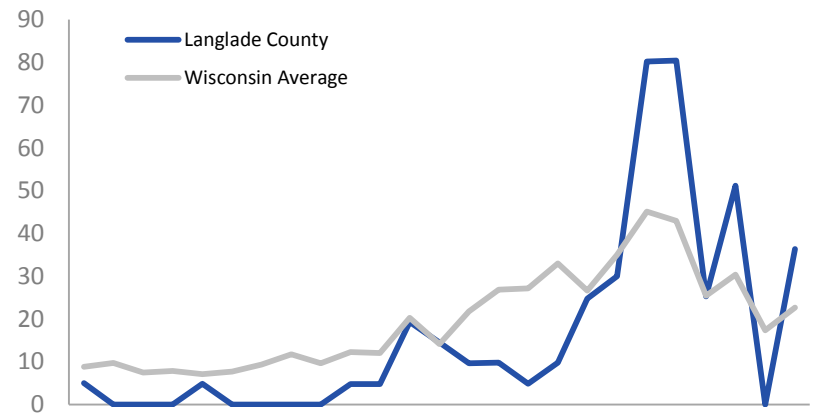


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES

LANGLADE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

45.8
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

15.0
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

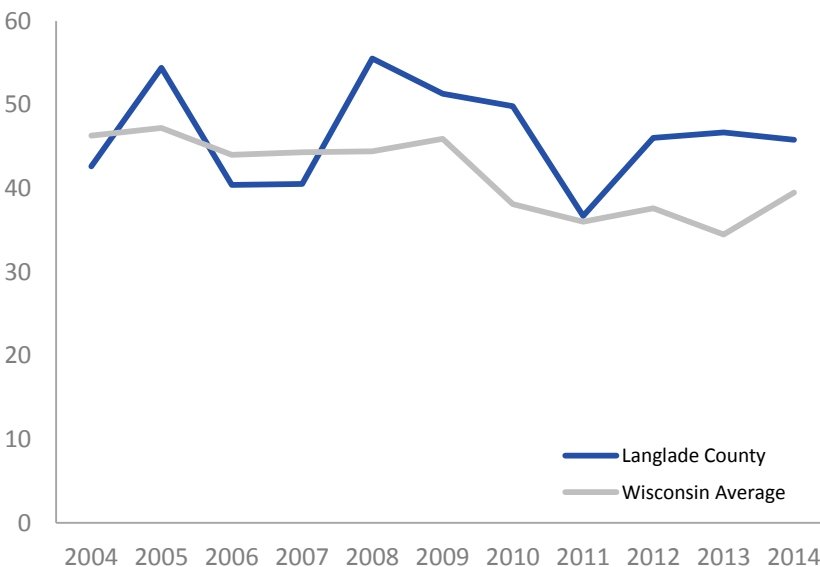
64.2
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

26.4
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

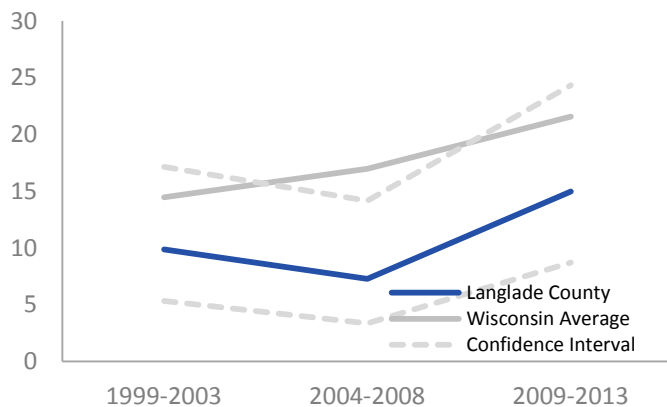
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

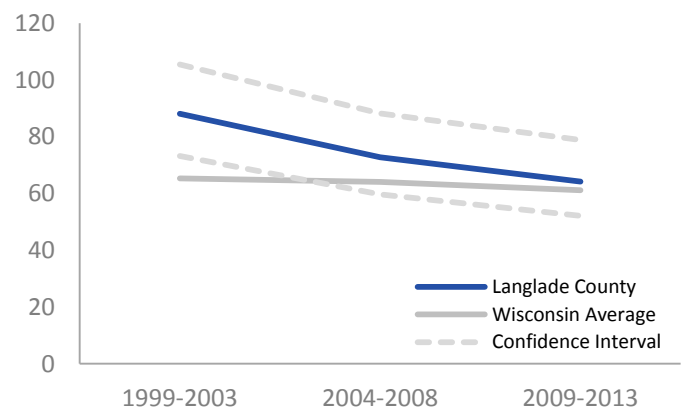
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

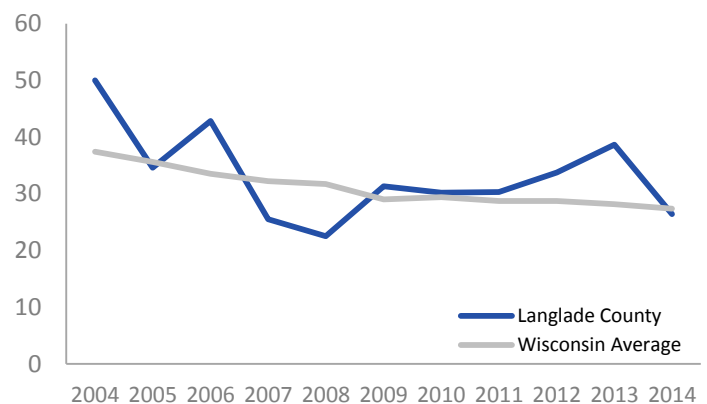
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY LANGLADE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

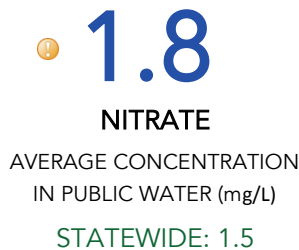
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

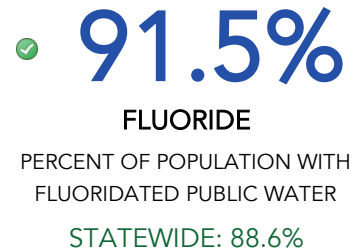
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



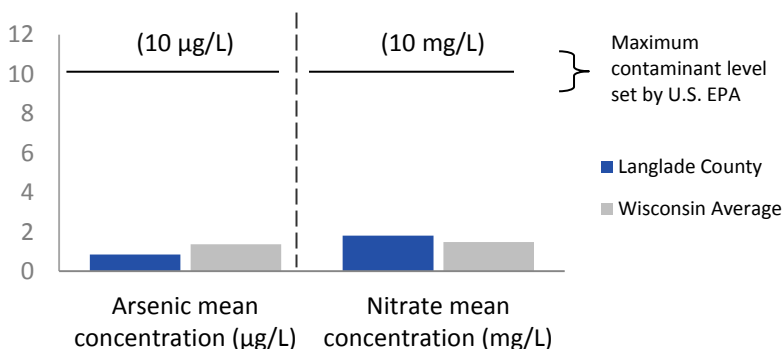
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY

LANGLADE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

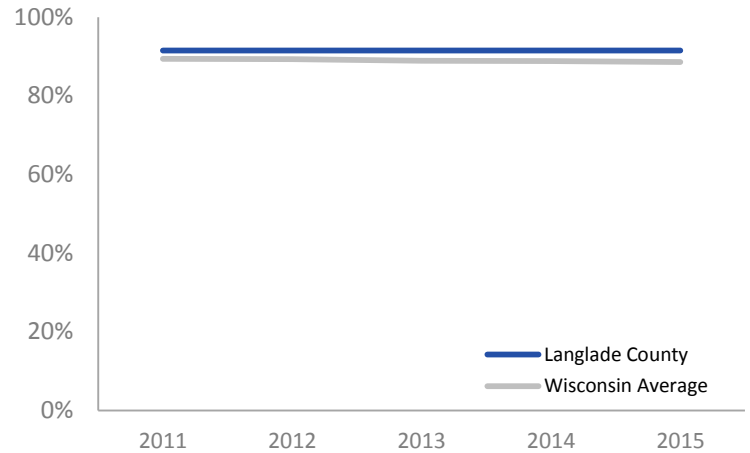
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

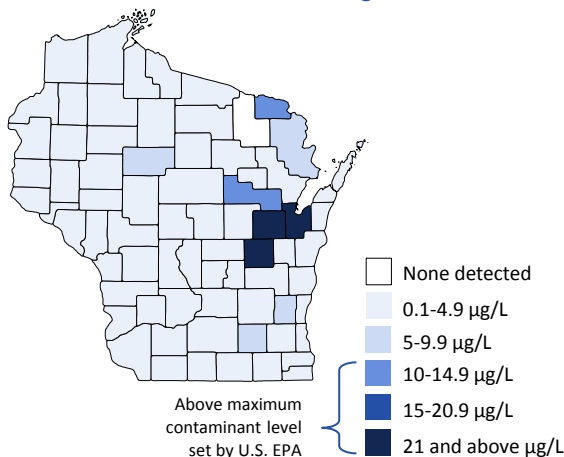
Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

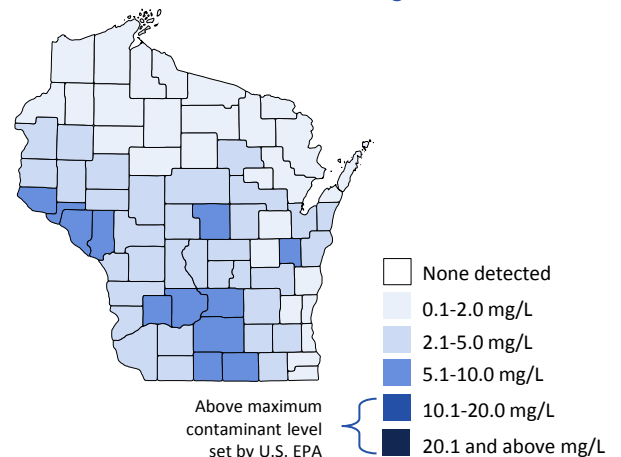
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)





AIR QUALITY LANGLADE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



1

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



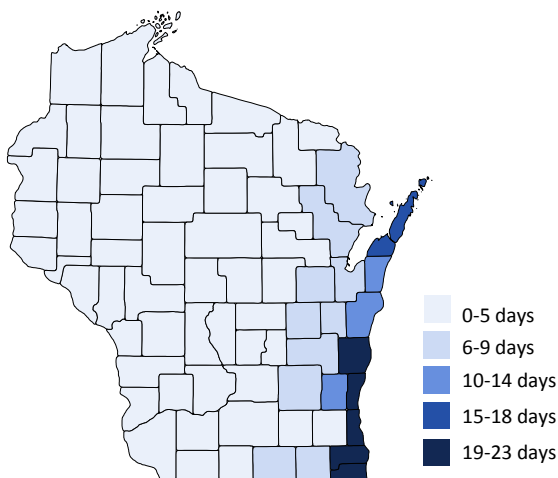
8.1

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

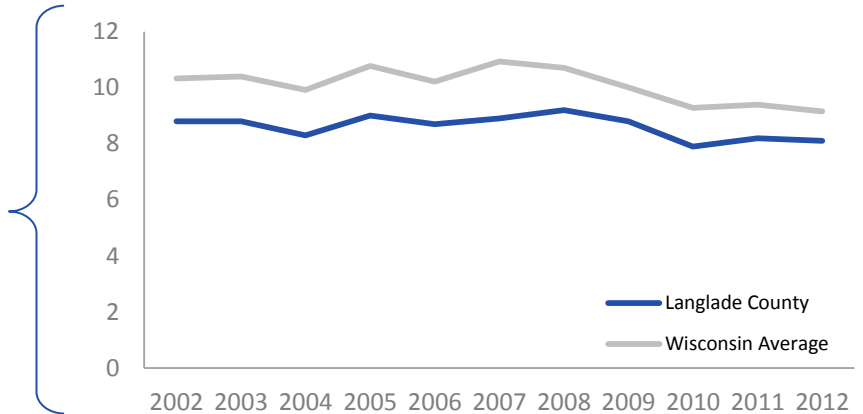
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

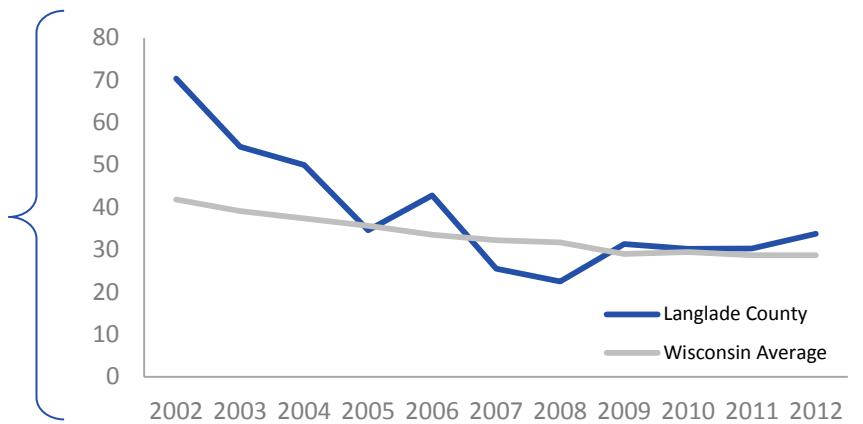
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



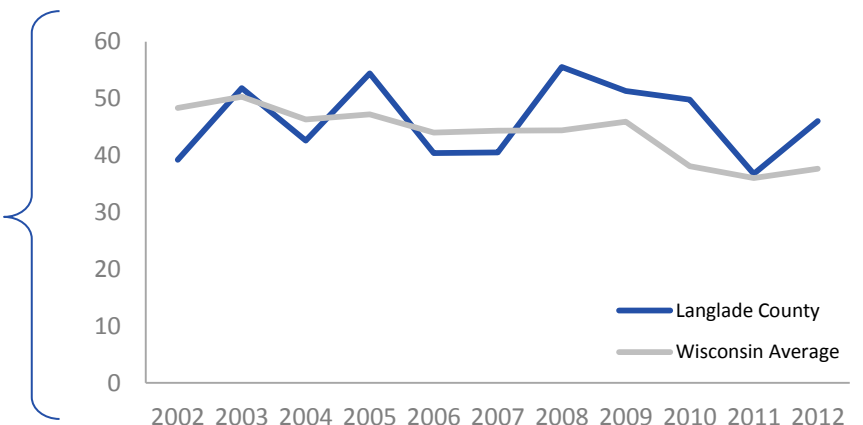
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education,
University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



LINCOLN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

LINCOLN COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 3.4% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 12.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 19.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 82.2 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 28.8 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 22.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 39.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 94.4% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS LINCOLN COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **12.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **3.4%**

CHILDHOOD LEAD POISONING

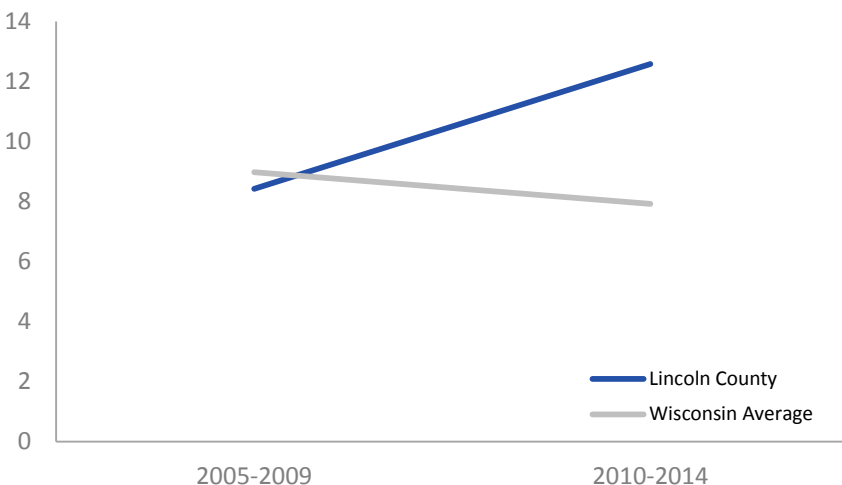
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS LINCOLN COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

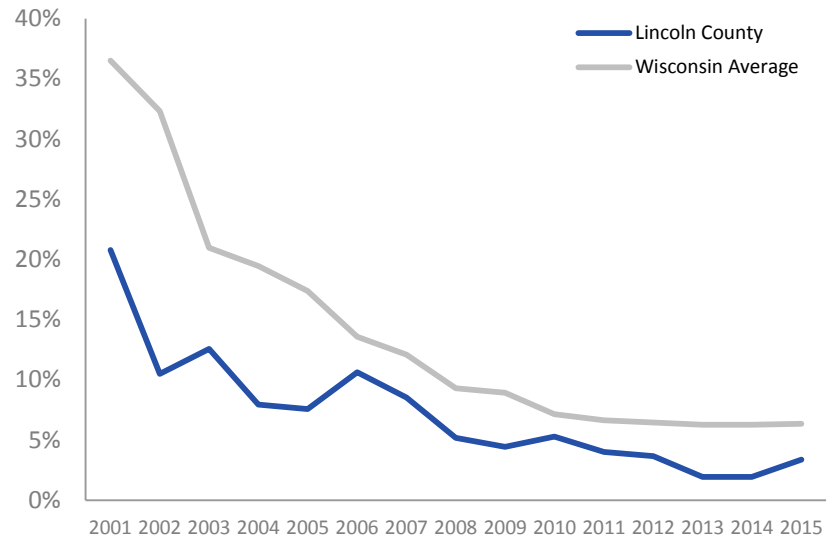
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

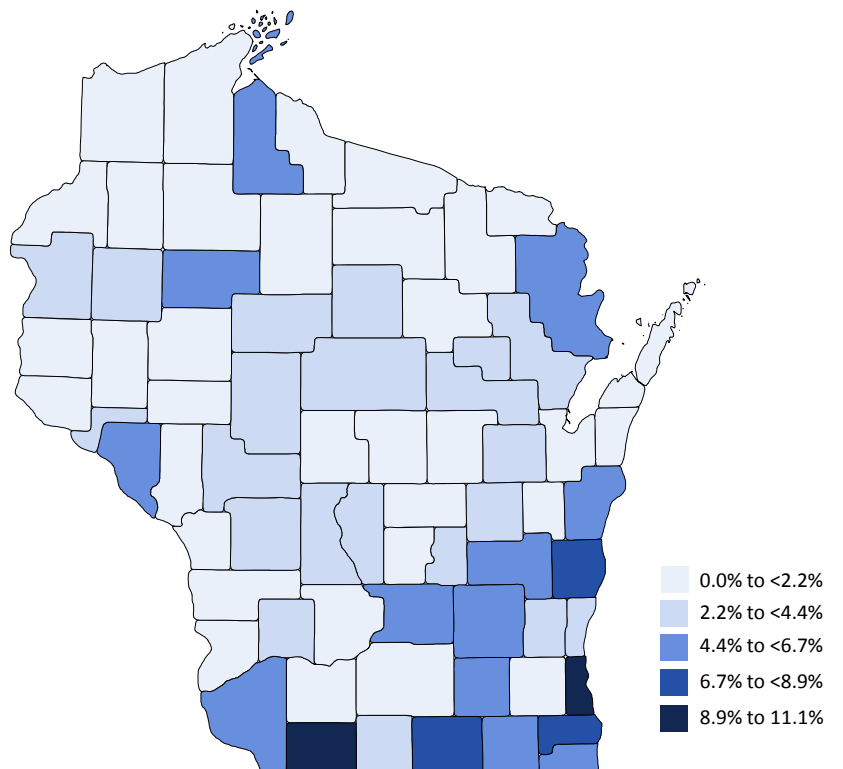
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE LINCOLN COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

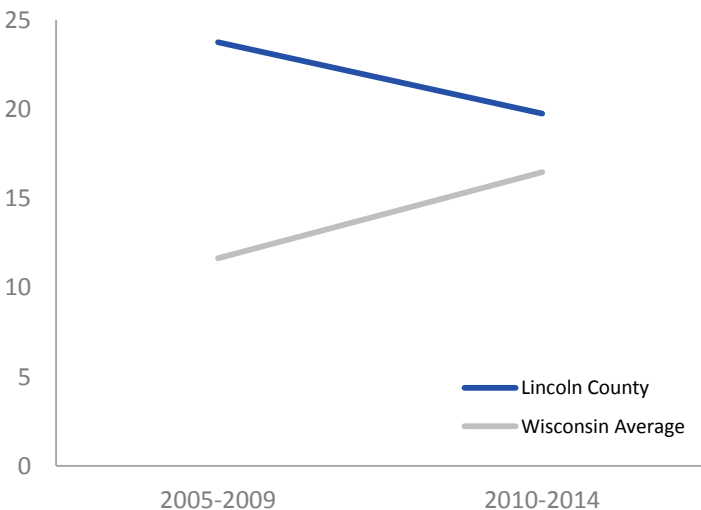
19.7
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

82.2
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

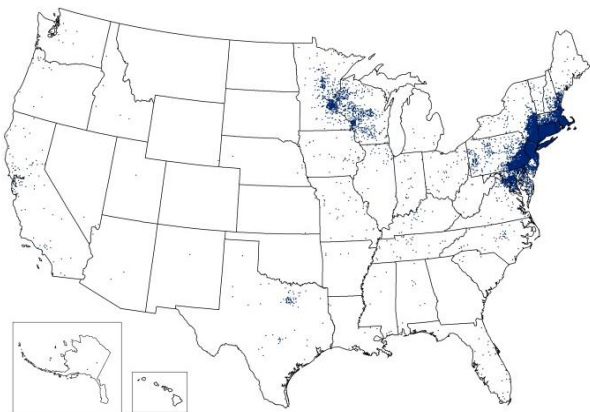
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

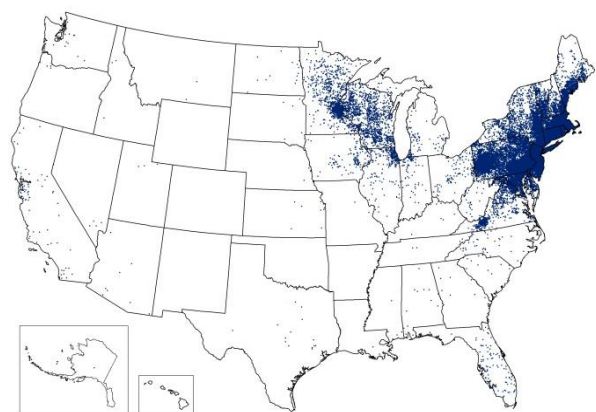
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

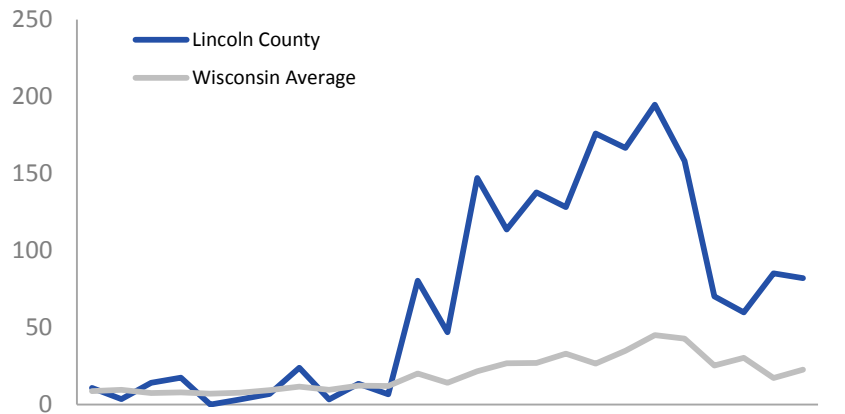


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES LINCOLN COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **28.8**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **22.4**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

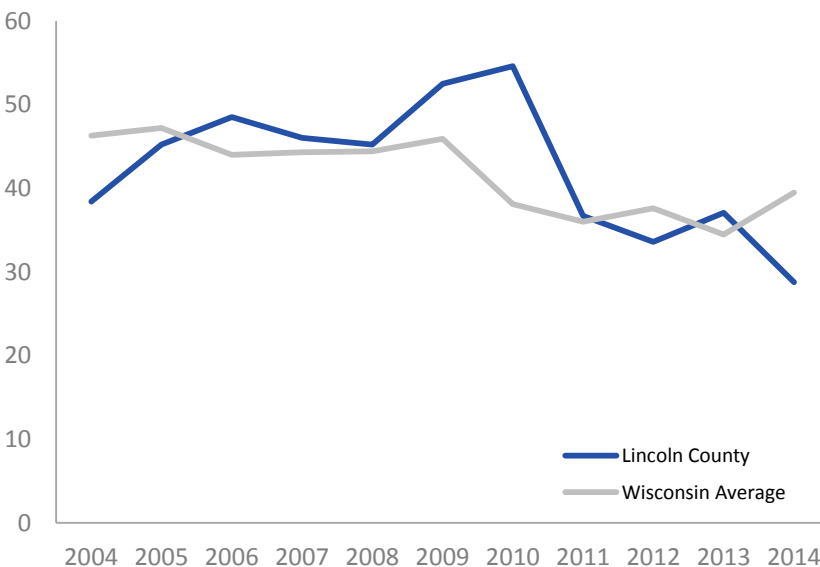
⚠ **64.1**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **39.2**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

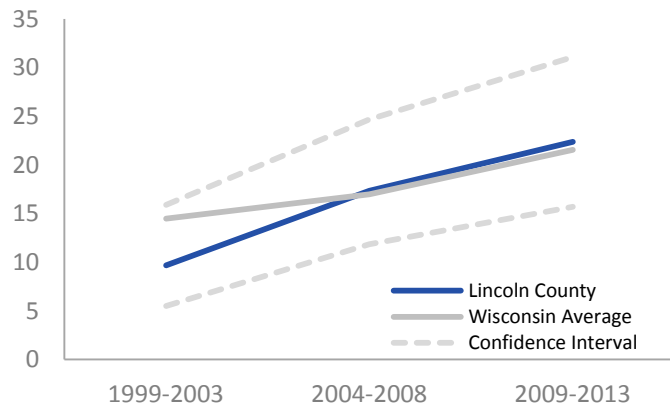
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

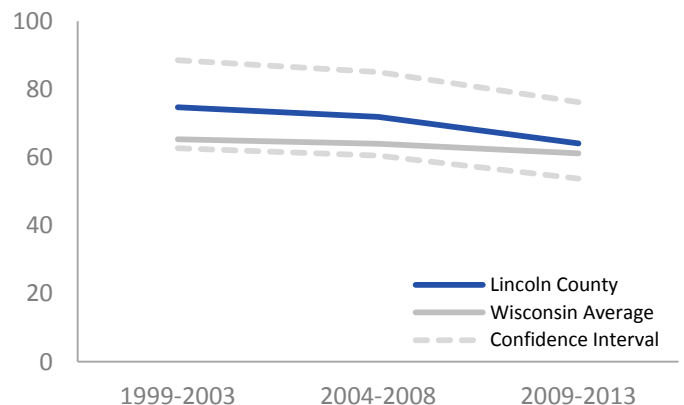
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

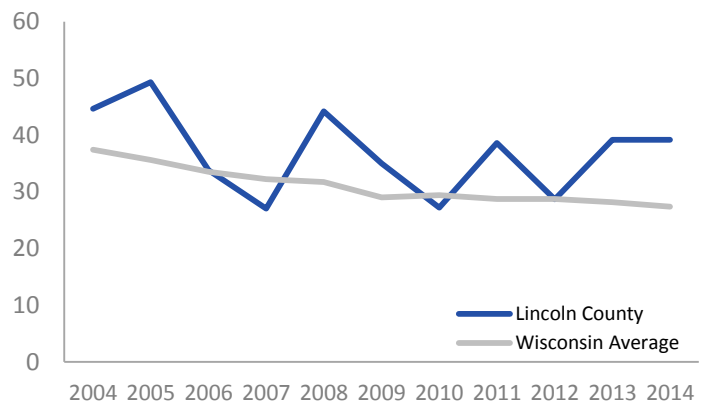
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY LINCOLN COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

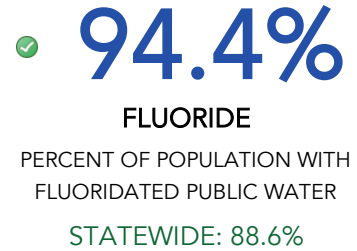
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



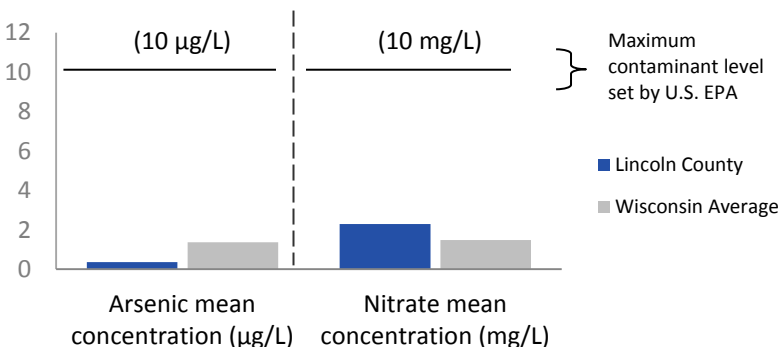
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.



WATER QUALITY LINCOLN COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

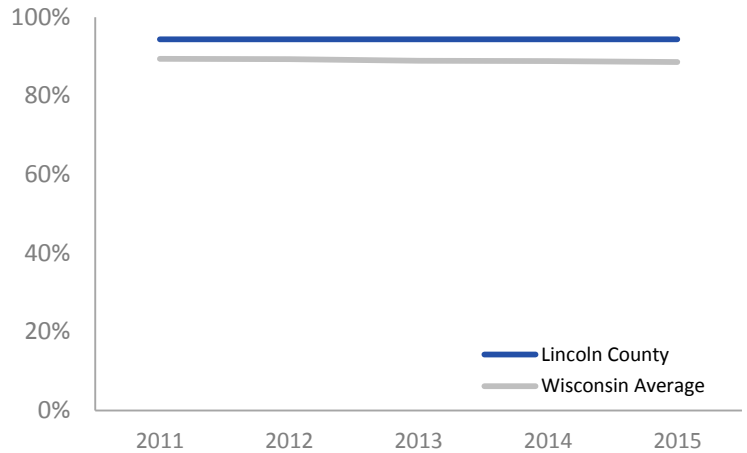
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

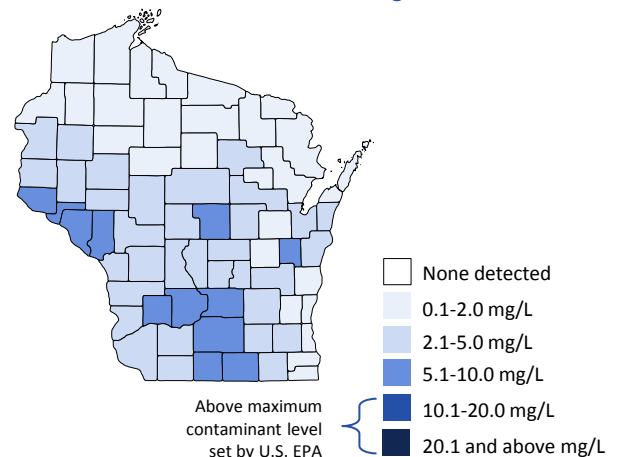
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



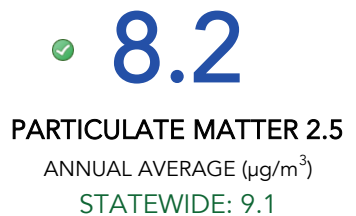
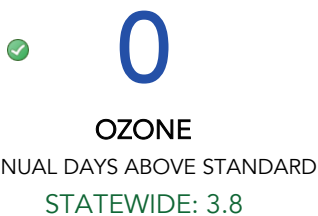


AIR QUALITY LINCOLN COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

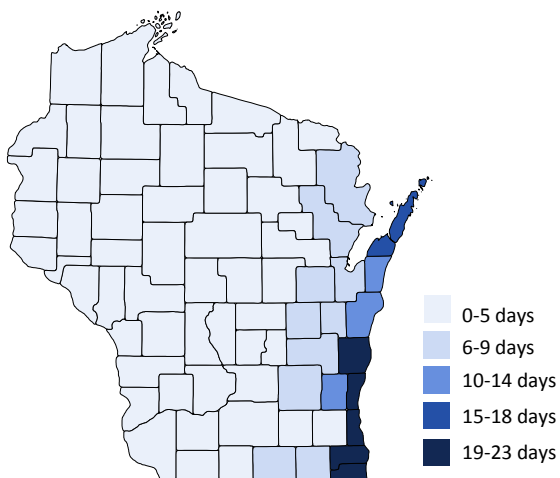
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



⦿ Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

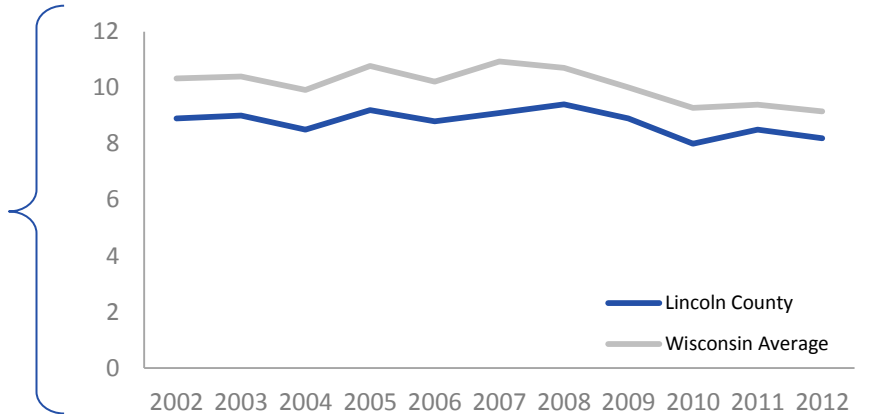
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

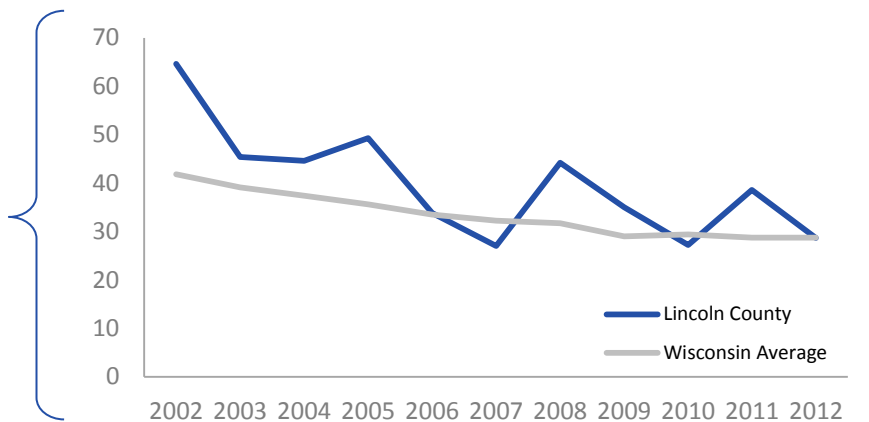
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



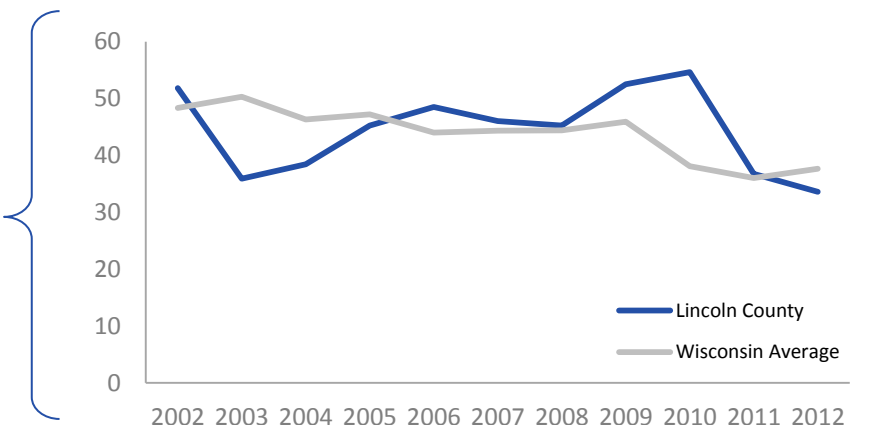
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



MANITOWOC COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MANITOWOC COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 5.1% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 3.1 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 24.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 2.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 45.0 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 29.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 29.4 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.7 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 86.1% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 11 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

MANITOWOC COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.1**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **5.1%**

CHILDHOOD LEAD POISONING

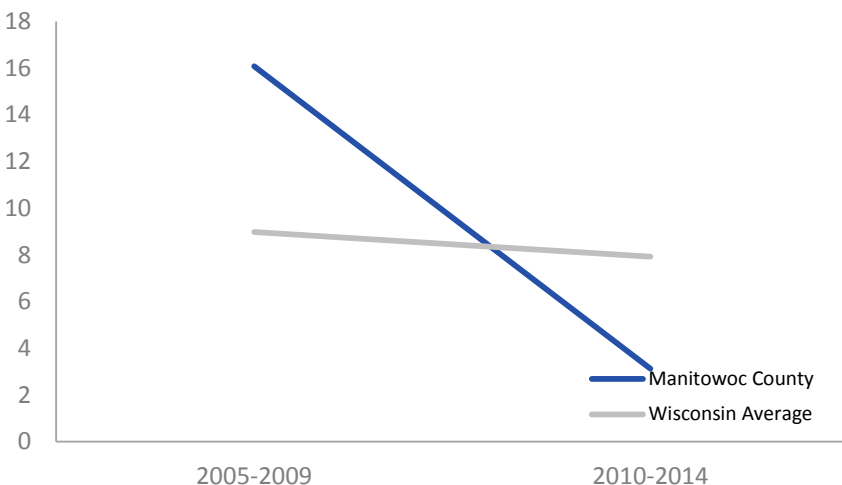
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS MANITOWOC COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

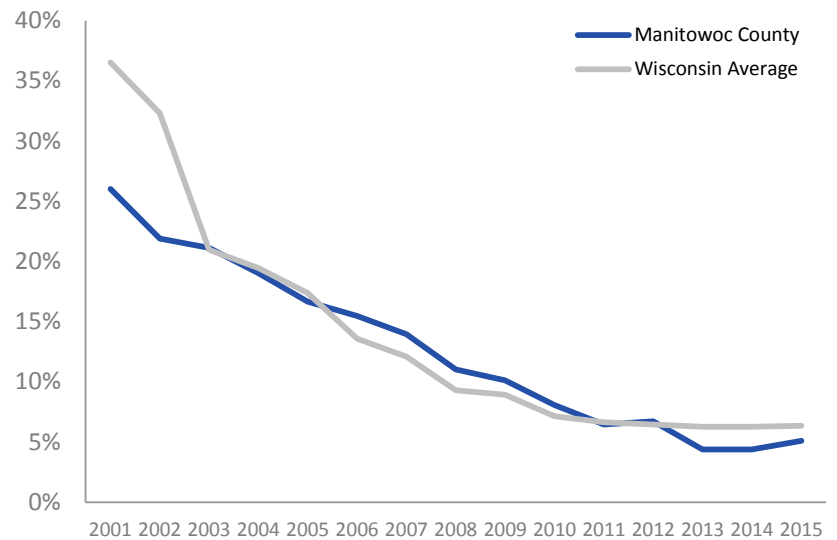
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

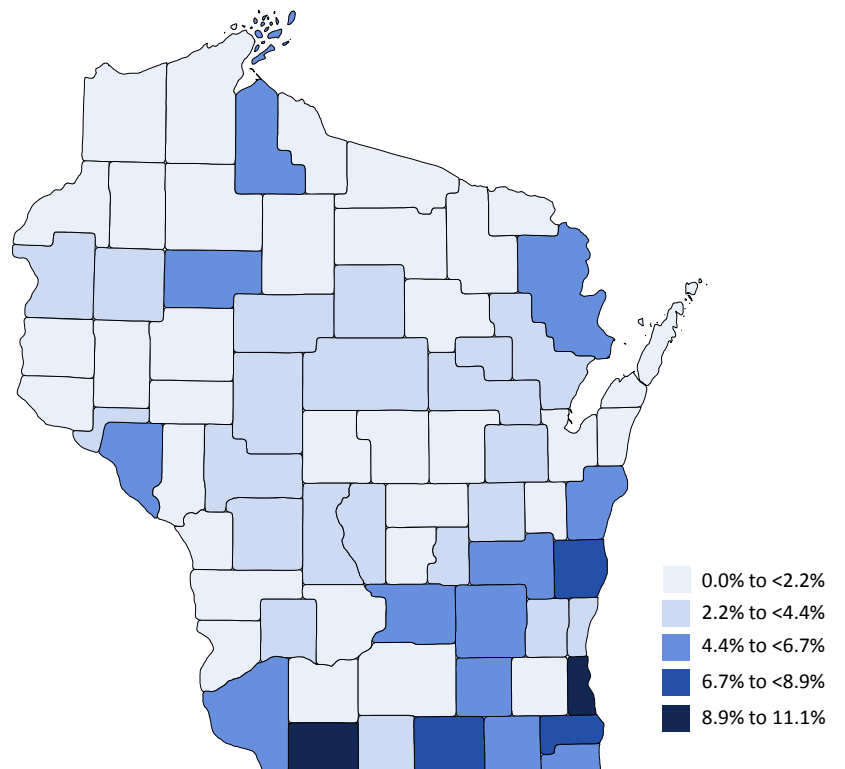
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE MANITOWOC COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

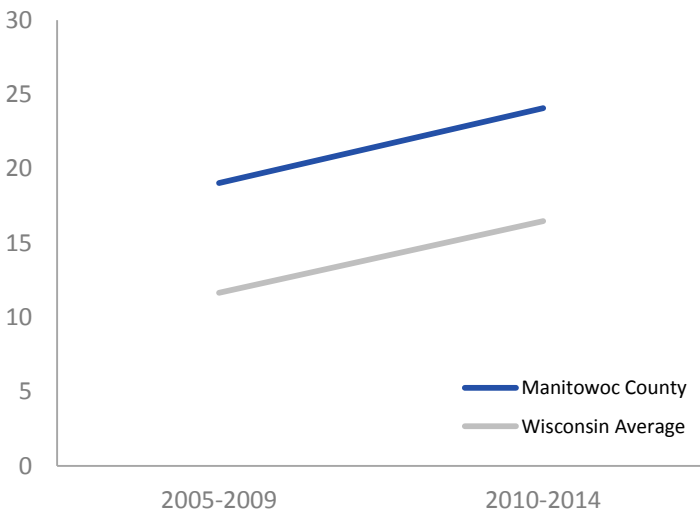
24.1
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

2.5
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

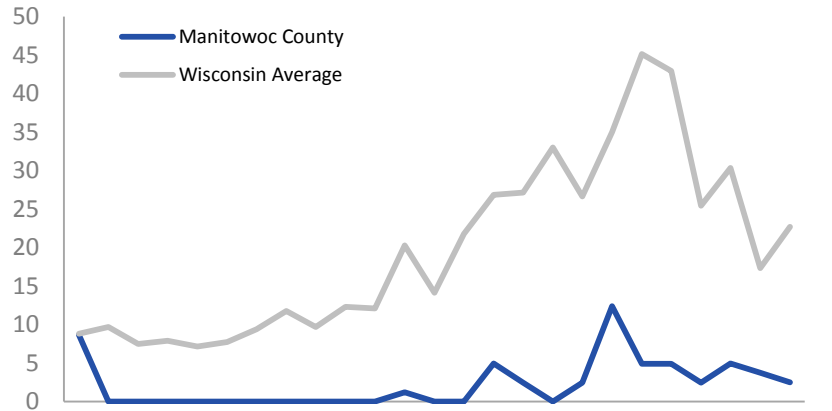
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

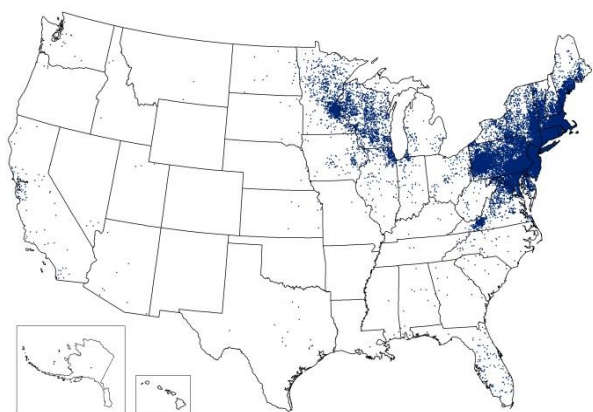
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

MANITOWOC COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

45.0
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

29.4
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

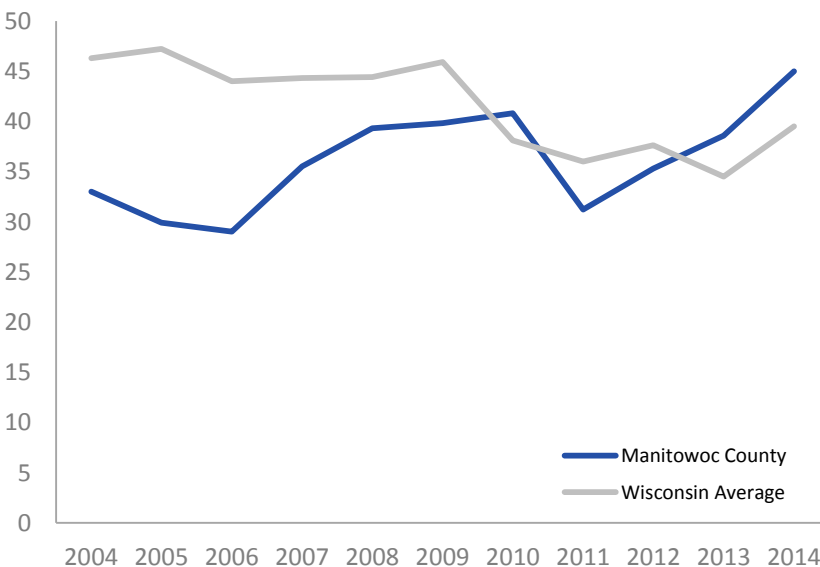
52.2
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

29.4
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

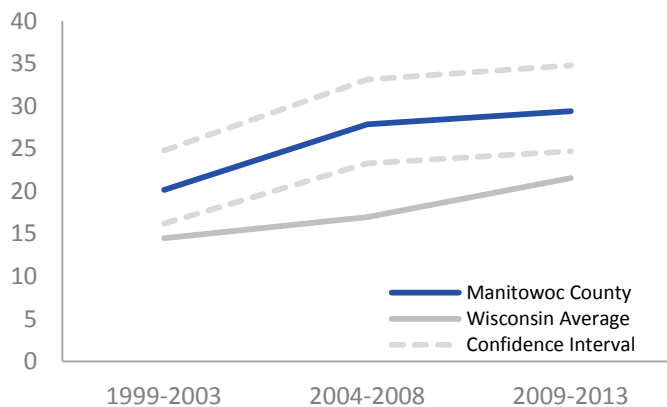
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

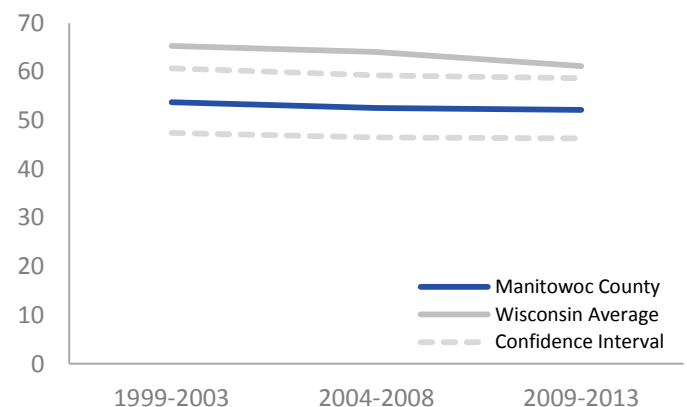
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

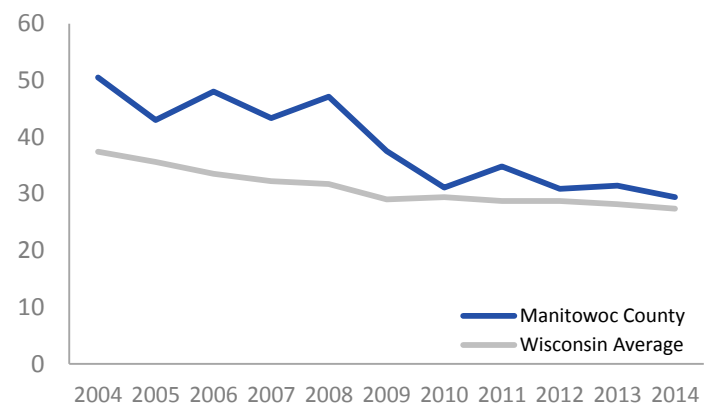
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY MANITOWOC

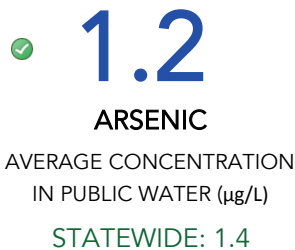
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

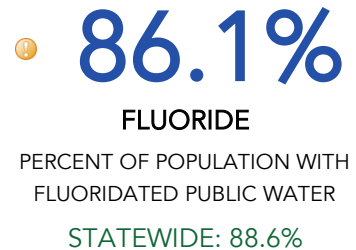
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



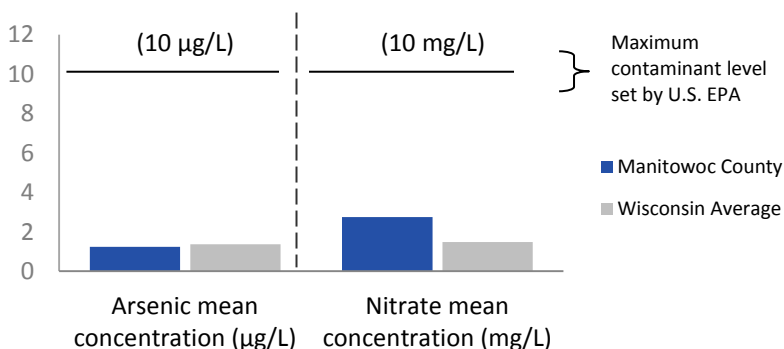
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY MANITOWOC COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

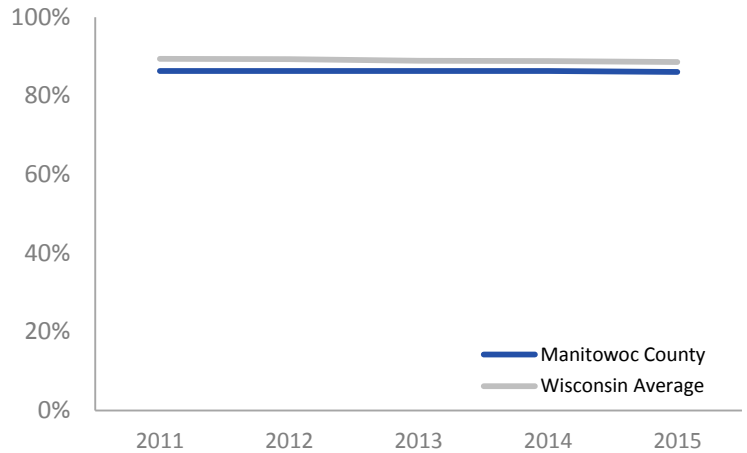
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

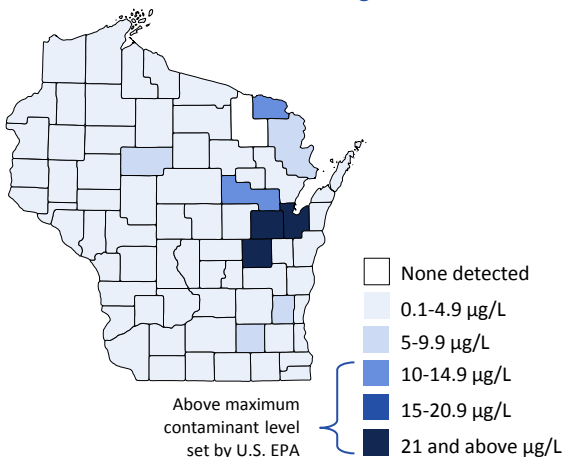
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

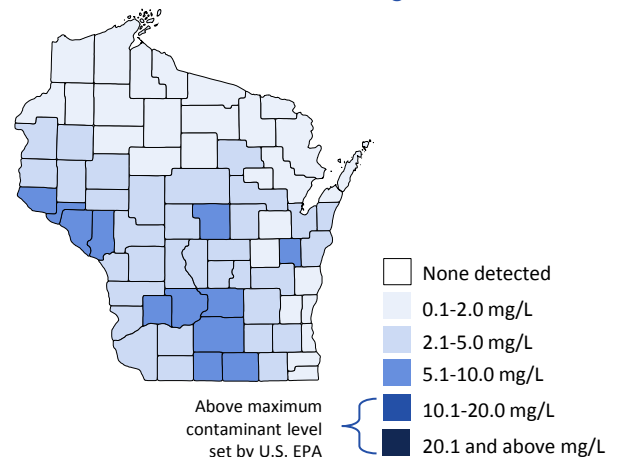
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



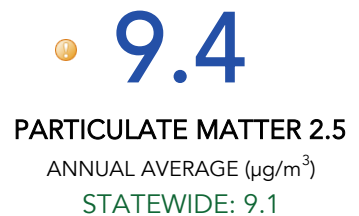


AIR QUALITY MANITOWOC COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

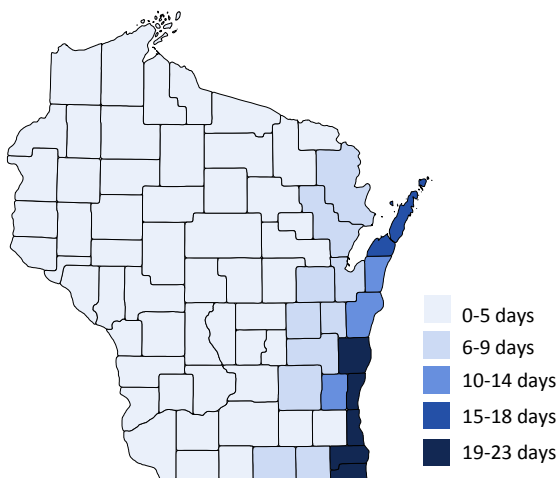
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

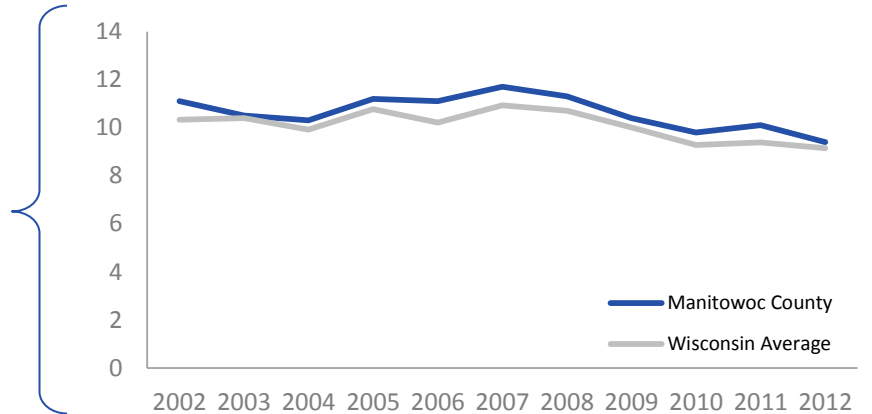


AIR QUALITY MANITOWOC COUNTY

PARTICULATE MATTER 2.5

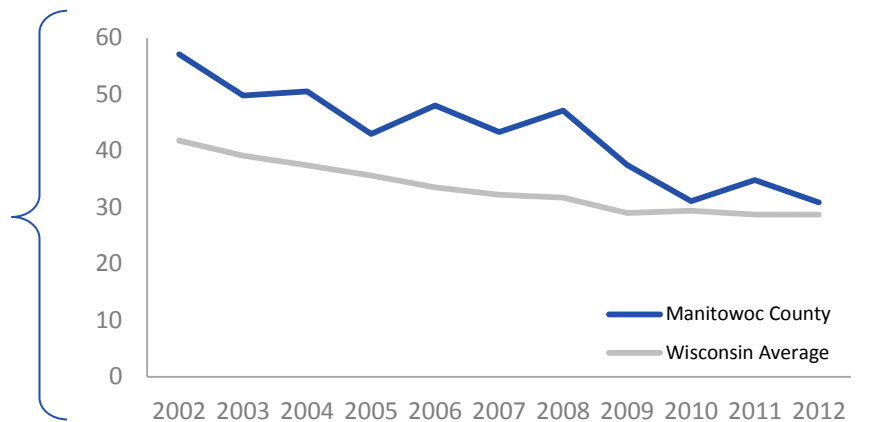
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



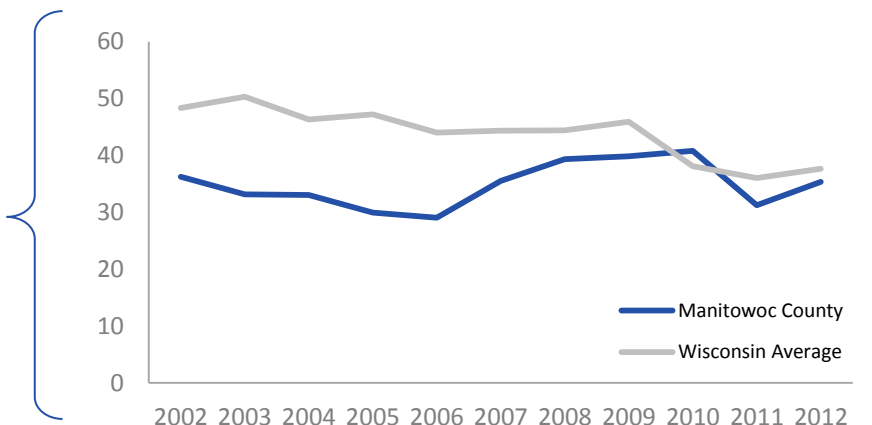
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



MARATHON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MARATHON COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.3% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 14.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 49.3 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 26.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 23.5 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 21.3 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 3.7 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 92.2% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS MARATHON COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **8.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.3%**

CHILDHOOD LEAD POISONING

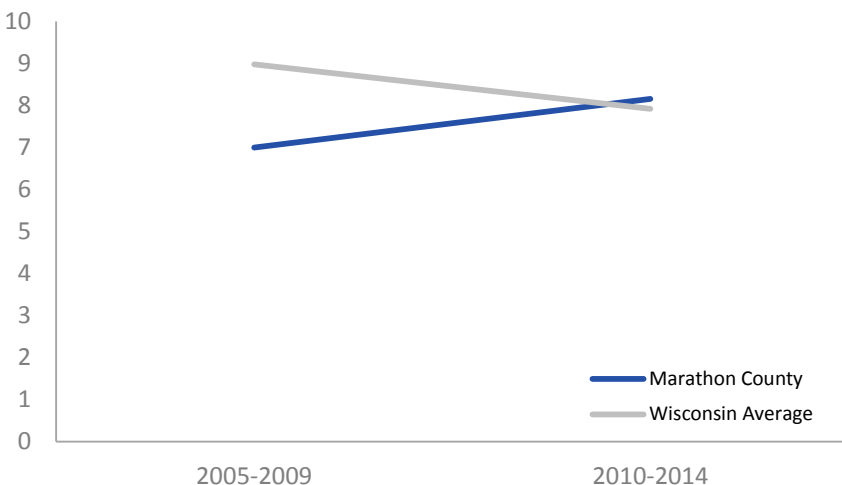
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS MARATHON COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

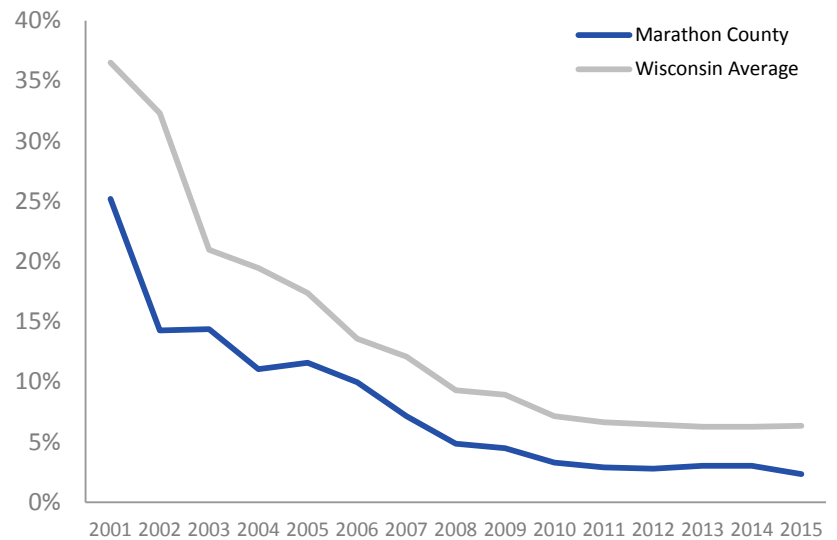
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

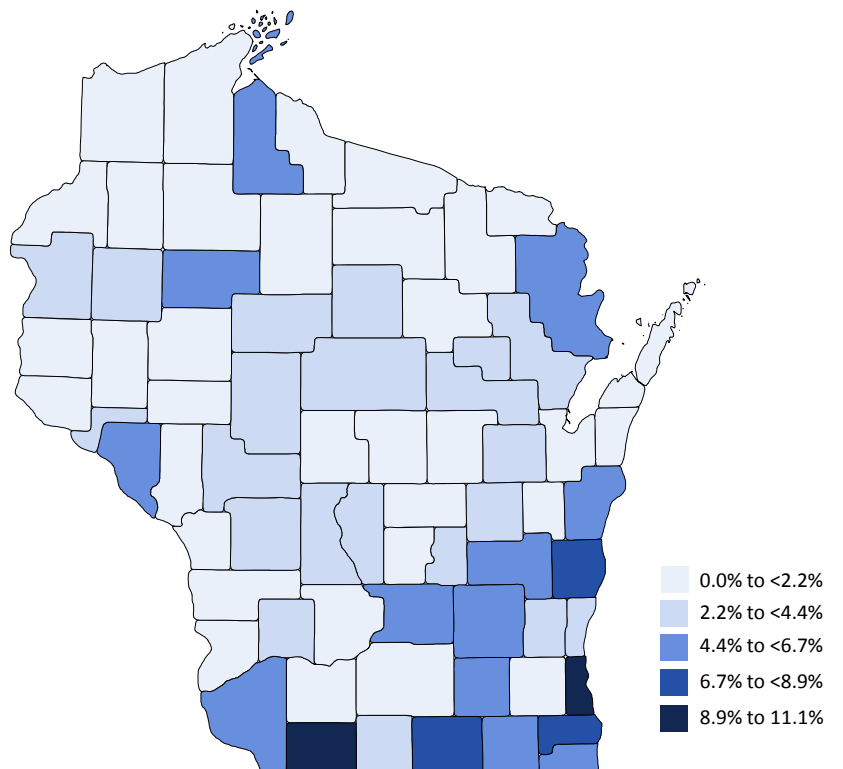
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE MARATHON COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **14.0**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

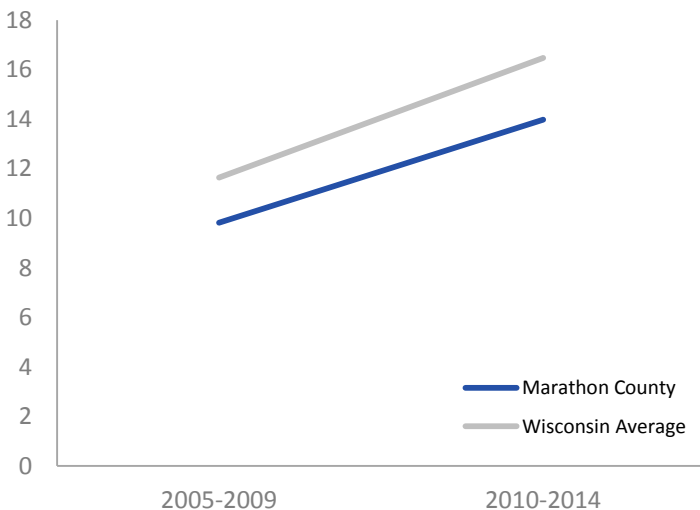
⚠ **49.3**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

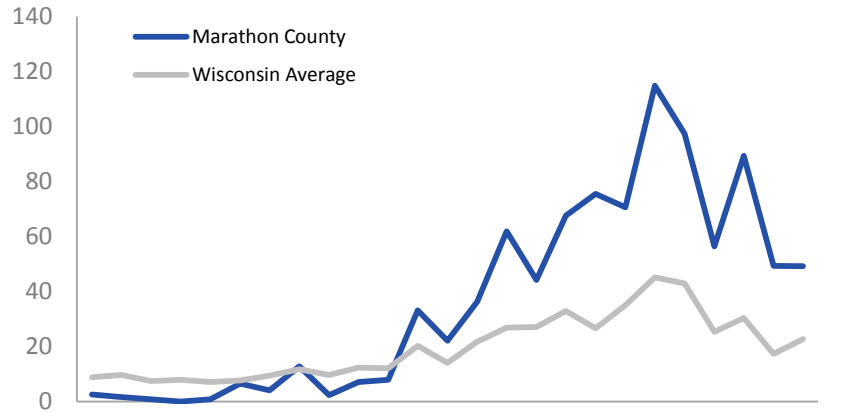
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

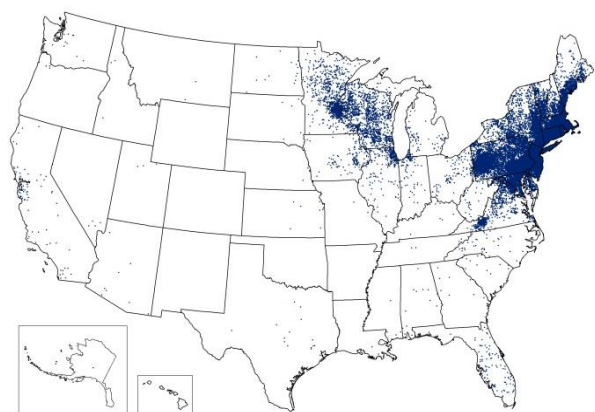
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

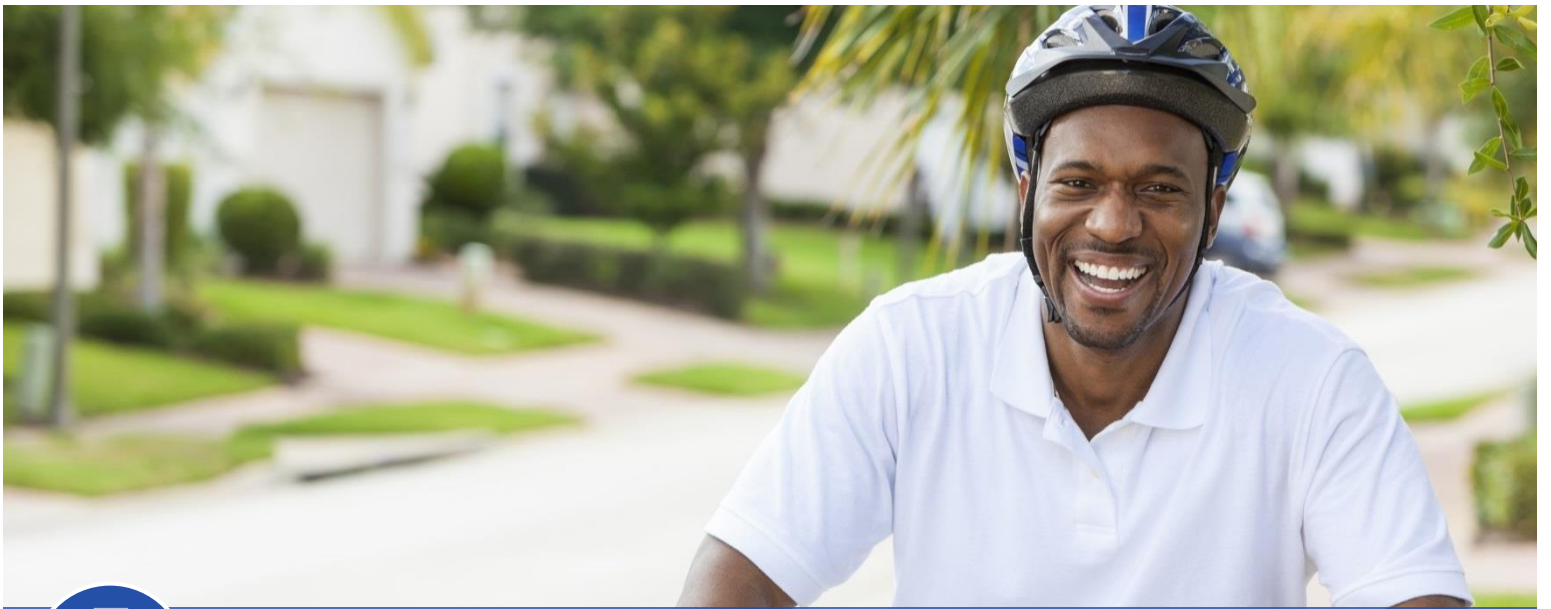


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES MARATHON COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **26.3**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

⚠ **23.5**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

✓ **48.8**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

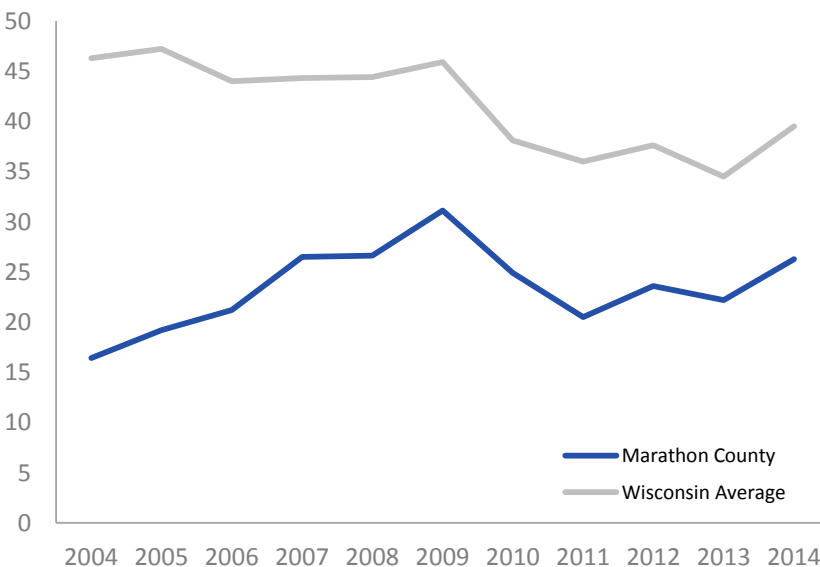
✓ **21.3**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

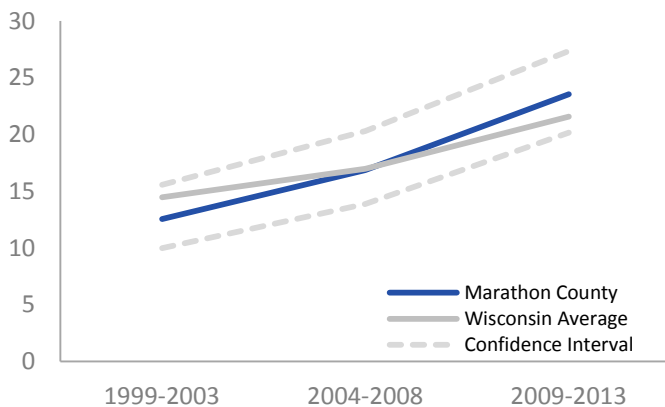
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

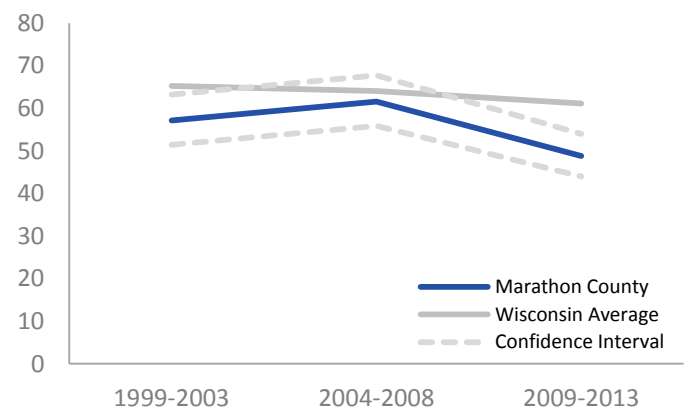
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

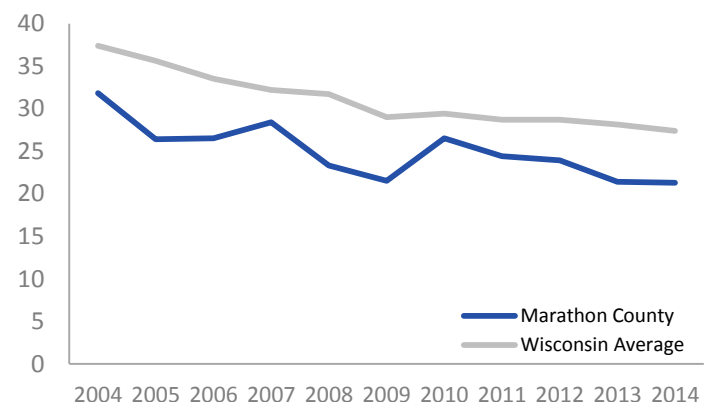
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY MARATHON

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

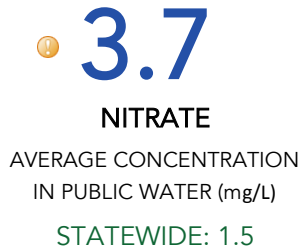
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

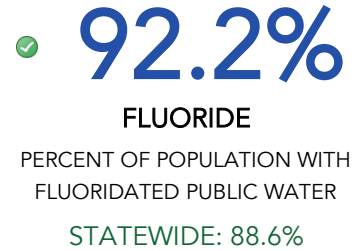
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



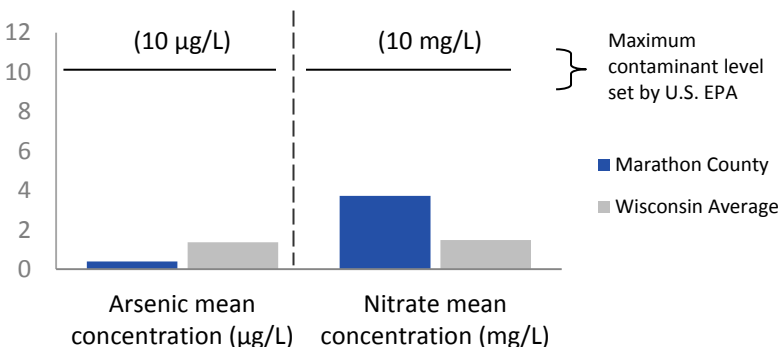
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY MARATHON COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

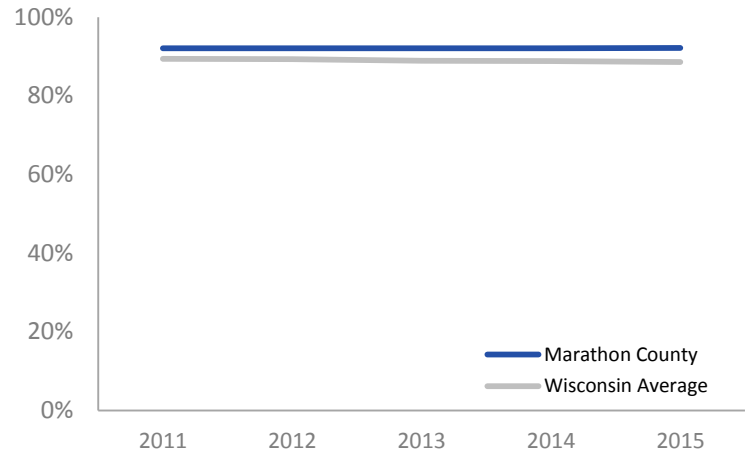
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

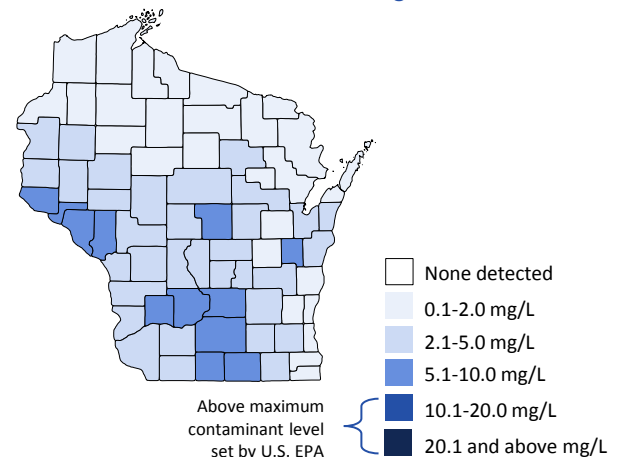
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



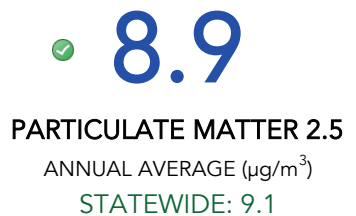
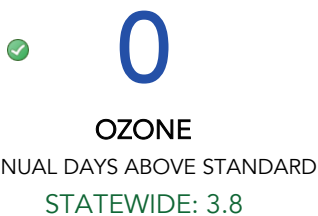


AIR QUALITY MARATHON COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

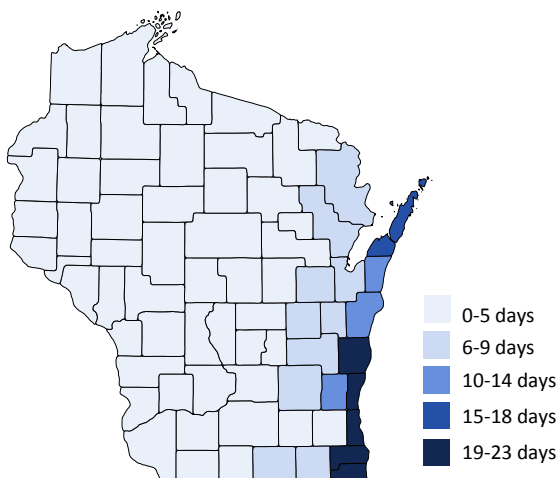
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



⦿ Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

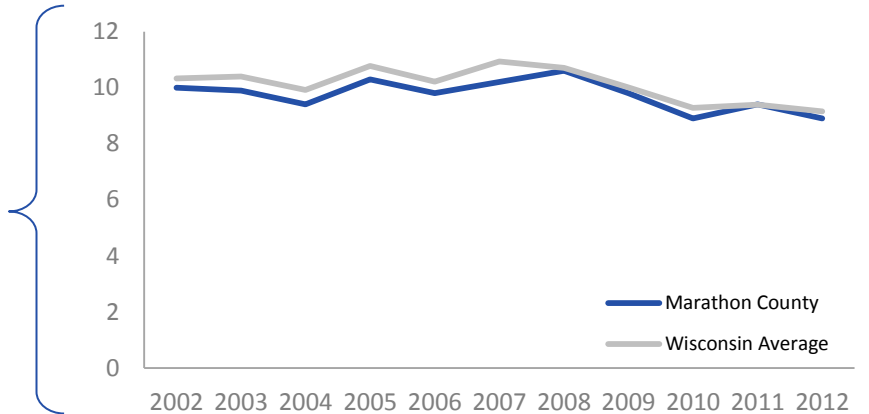
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

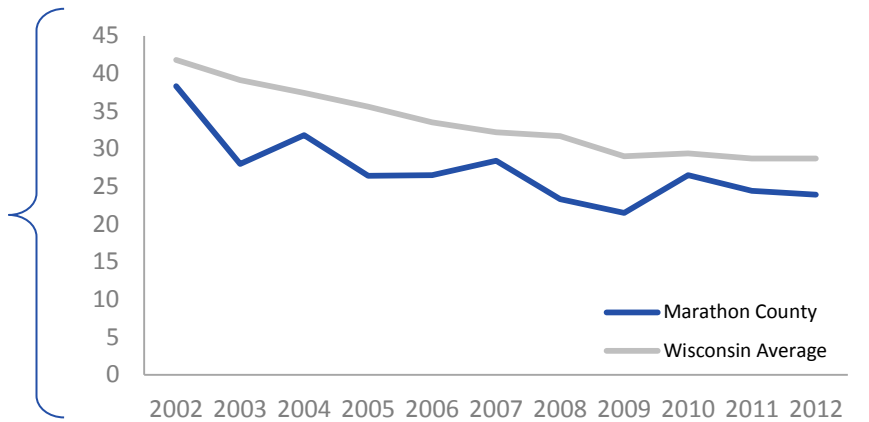
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



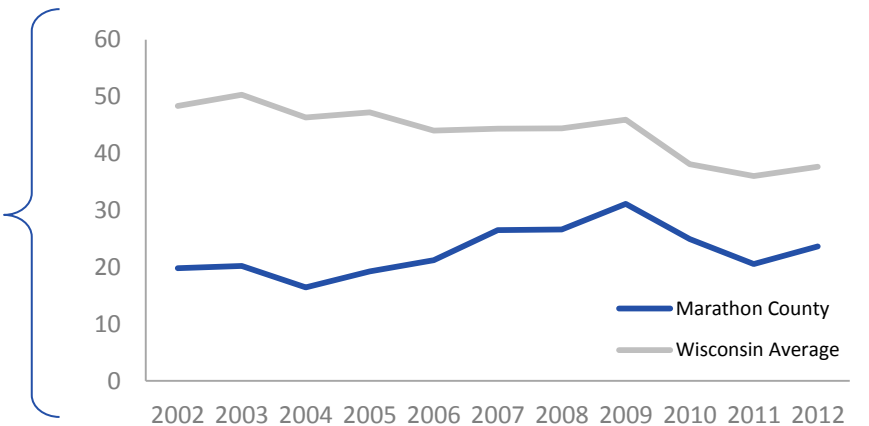
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



MARINETTE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MARINETTE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 4.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 11.4 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 29.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 29.4 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 58.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 25.8 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 54.9 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 4.1 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 3.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 80.9% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 9 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS MARINETTE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **11.4**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **4.6%**

CHILDHOOD LEAD POISONING

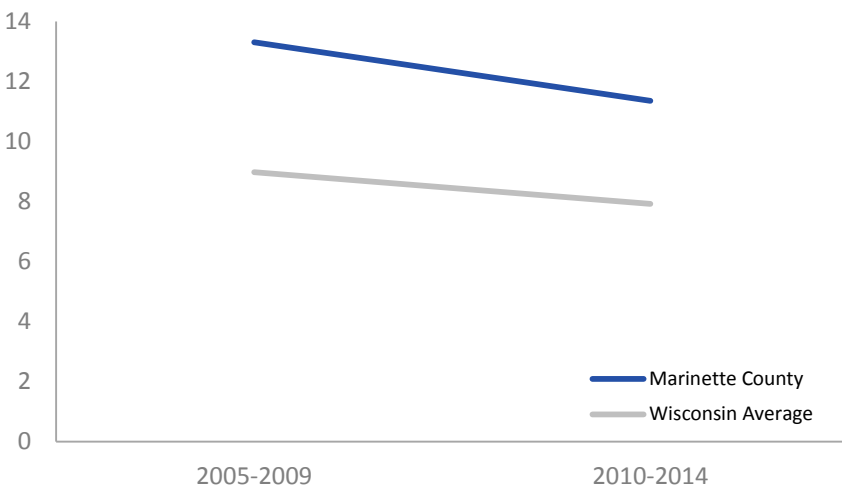
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS MARINETTE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

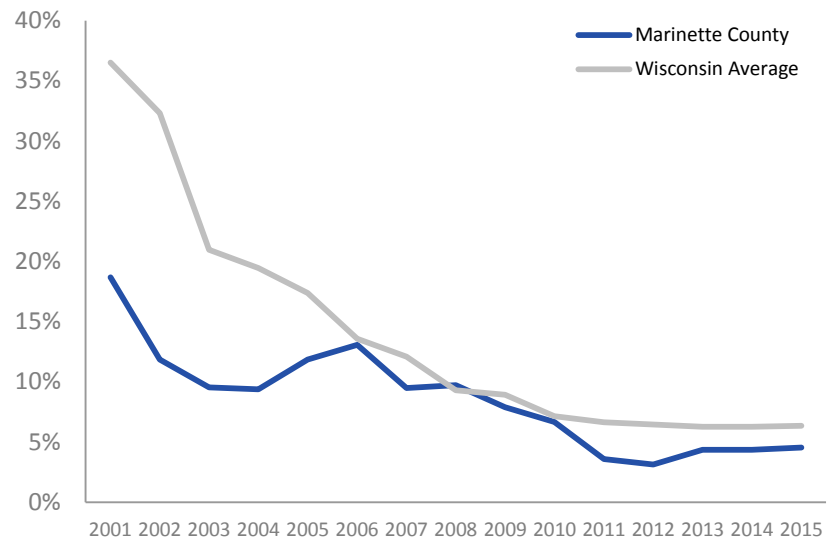
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

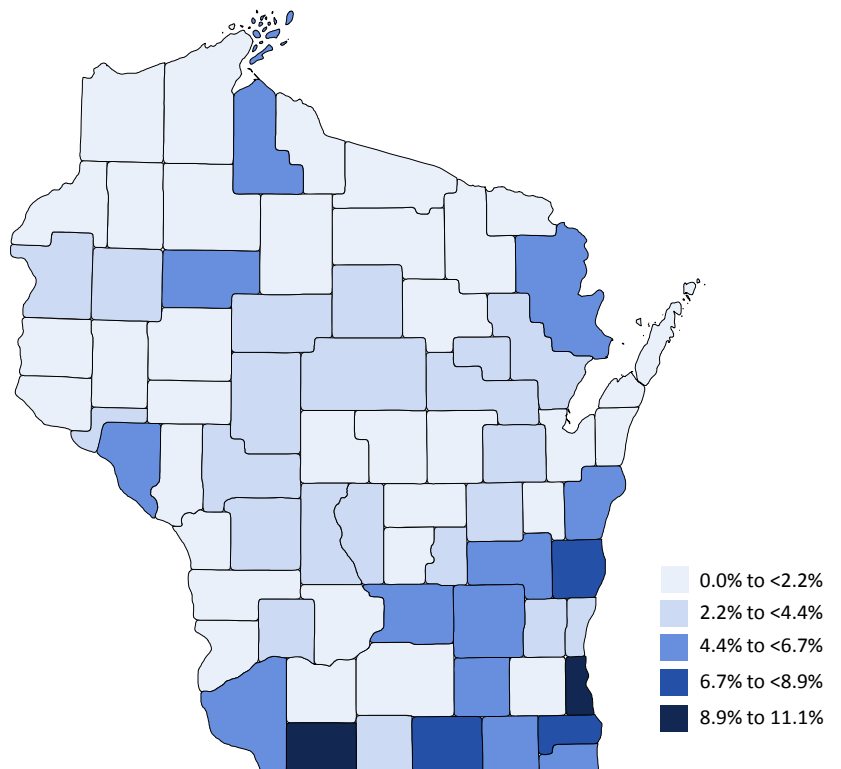
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE MARINETTE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

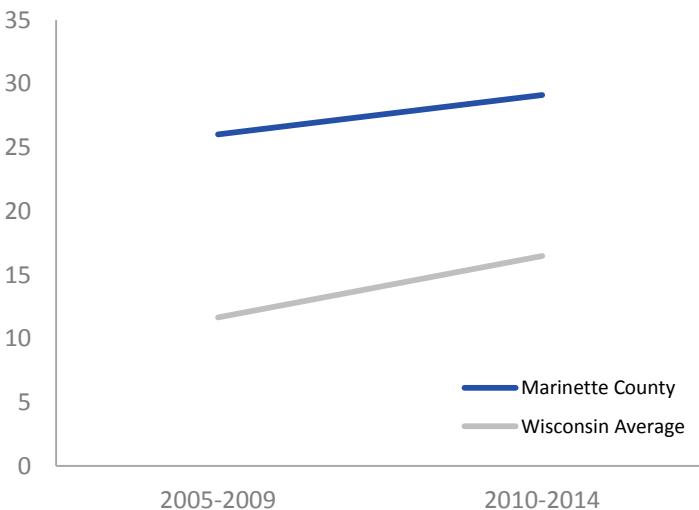
29.1
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

29.4
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

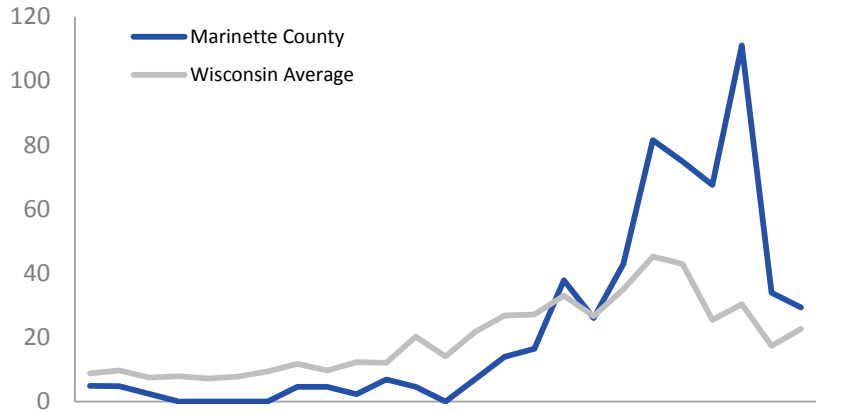
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

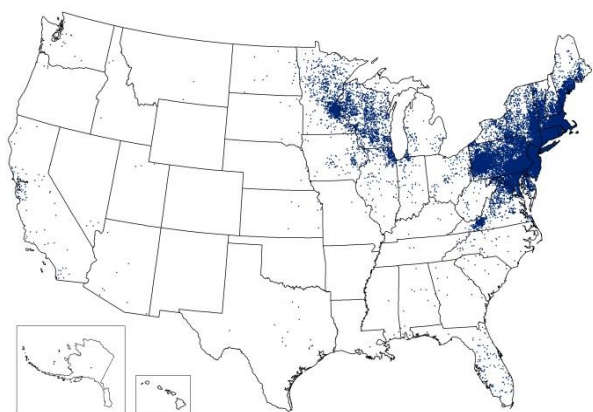
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

MARINETTE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

58.9

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

25.8

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

72.3

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

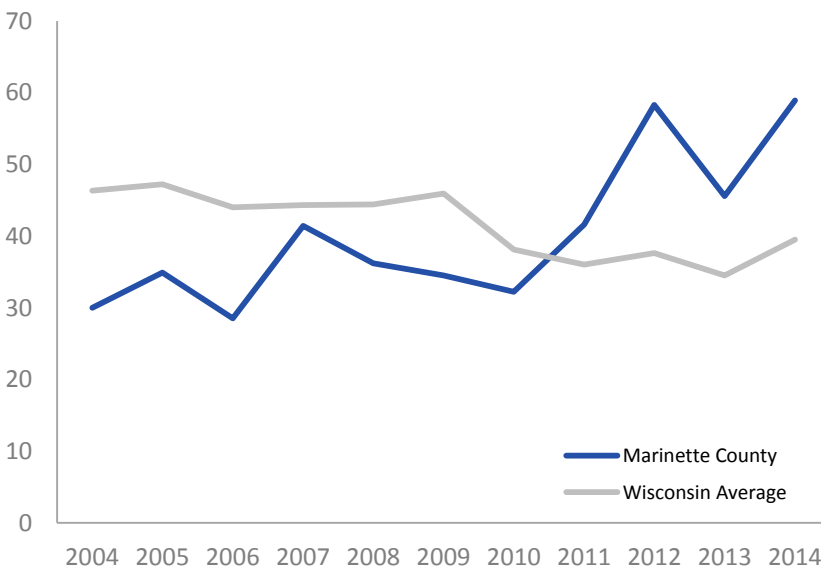
54.9

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

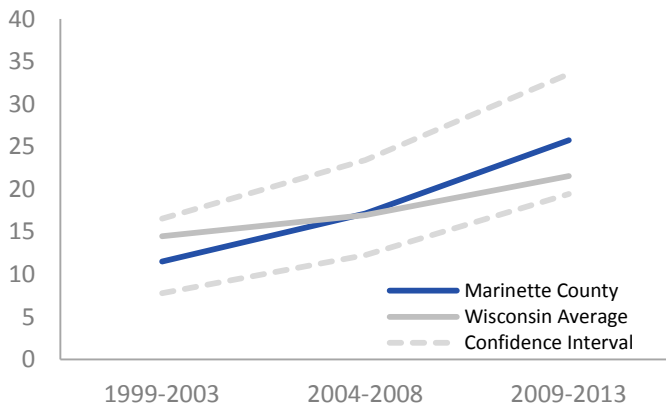
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

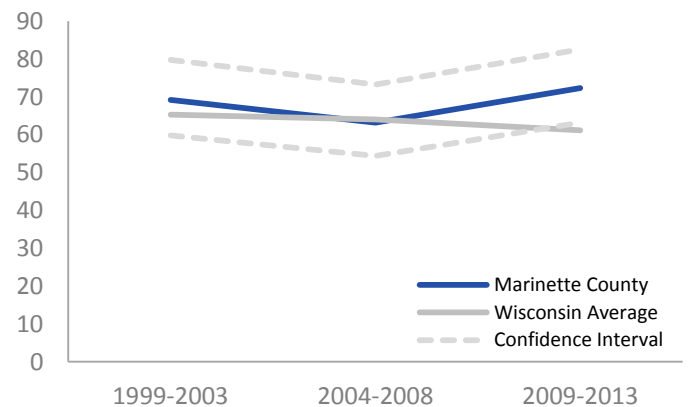
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

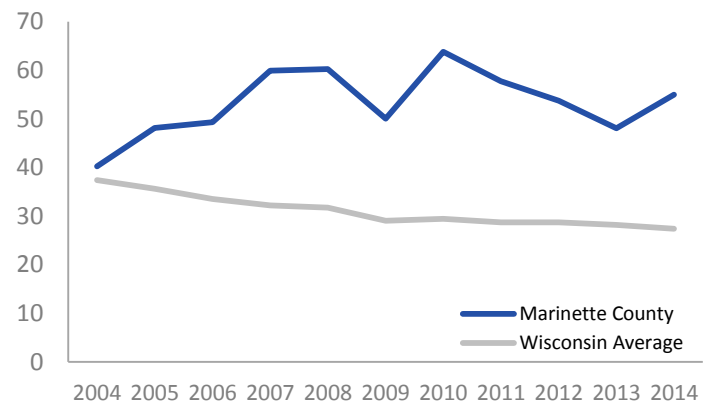
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY MARINETTE COUNTY

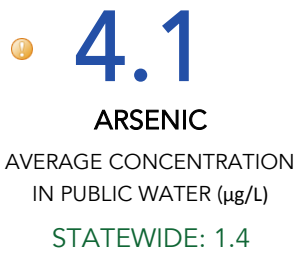
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

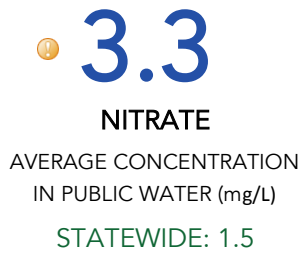
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

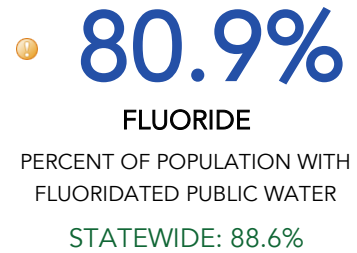
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



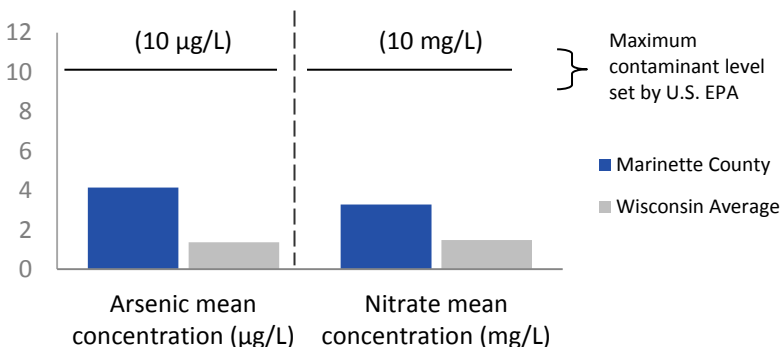
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY MARINETTE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

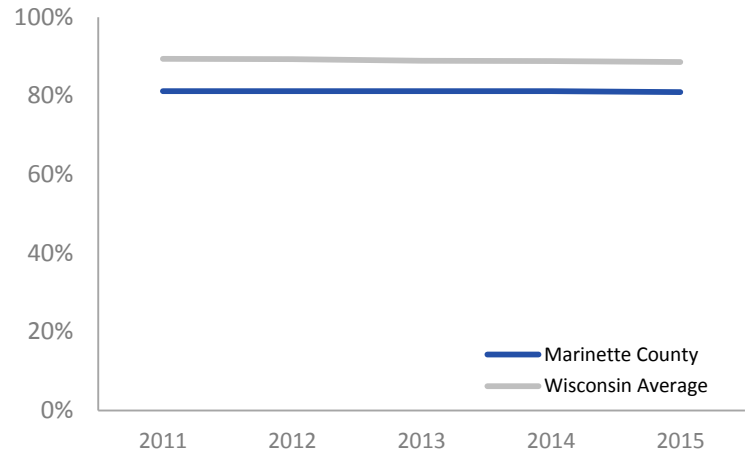
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

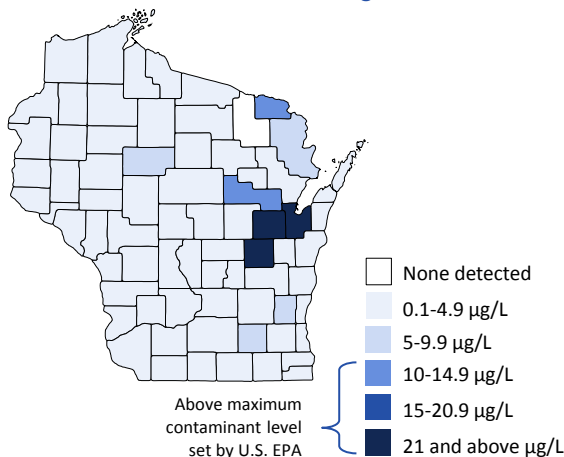
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

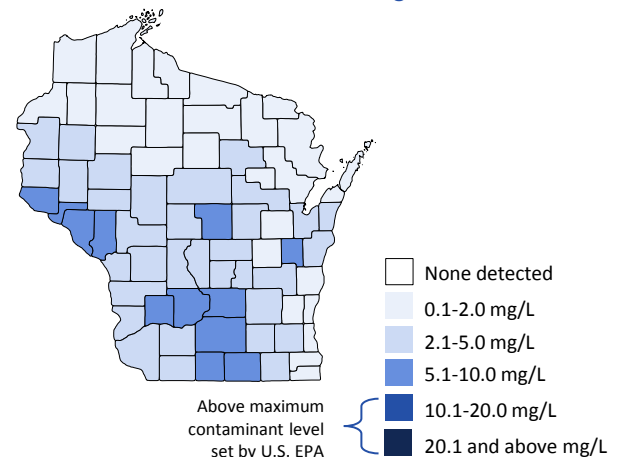
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



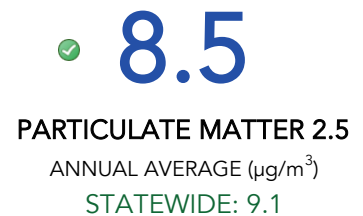
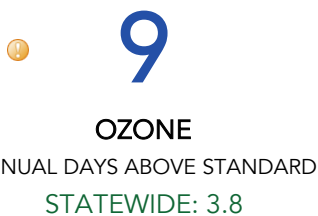


AIR QUALITY MARINETTE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

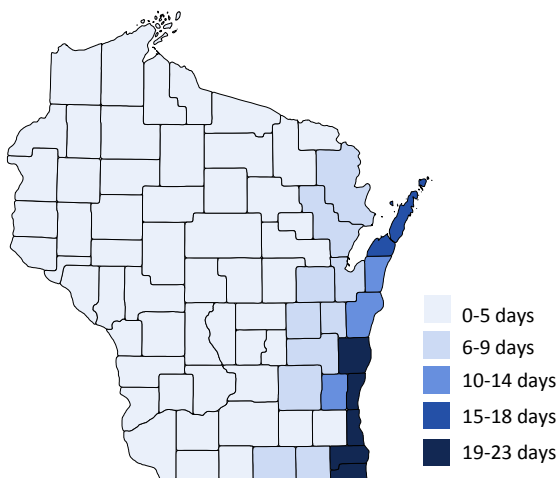
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

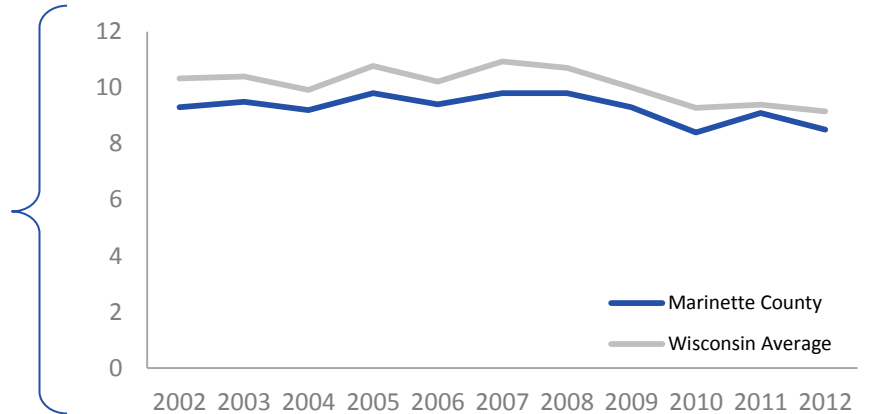
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

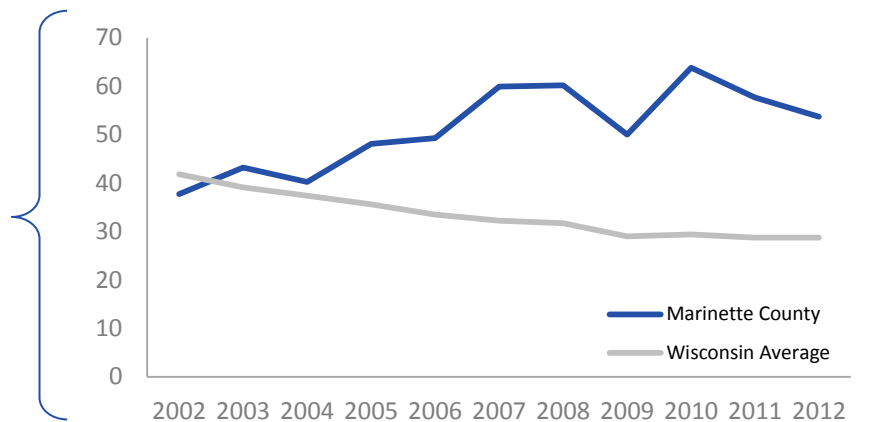
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



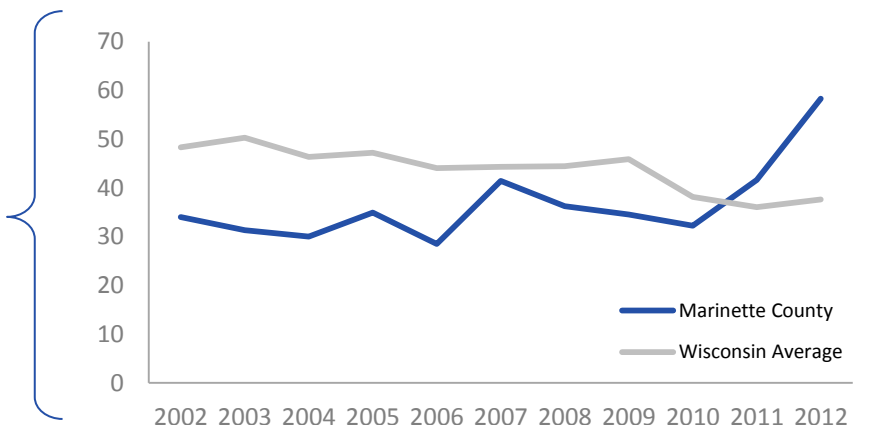
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's
Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education,
University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



MARQUETTE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MARQUETTE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.9% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.4 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 32.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 86.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 40.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 19.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 35.3 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 3.5 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 4 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS MARQUETTE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.4**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.9%**

CHILDHOOD LEAD POISONING

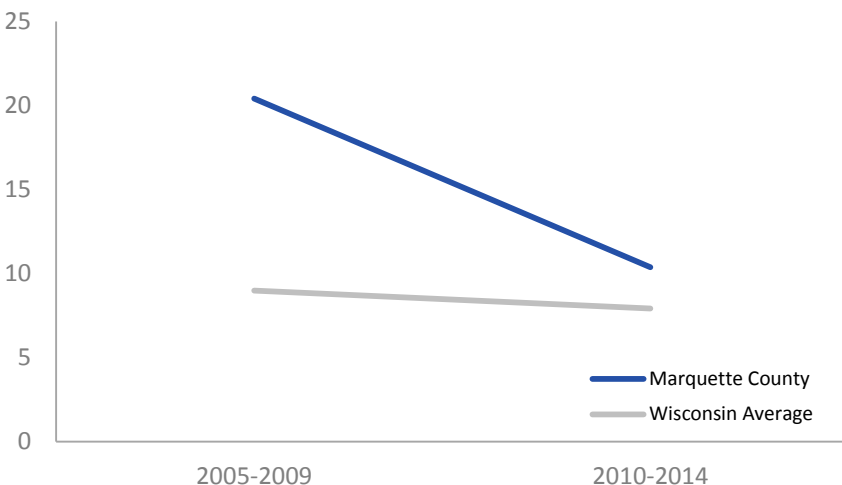
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS MARQUETTE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

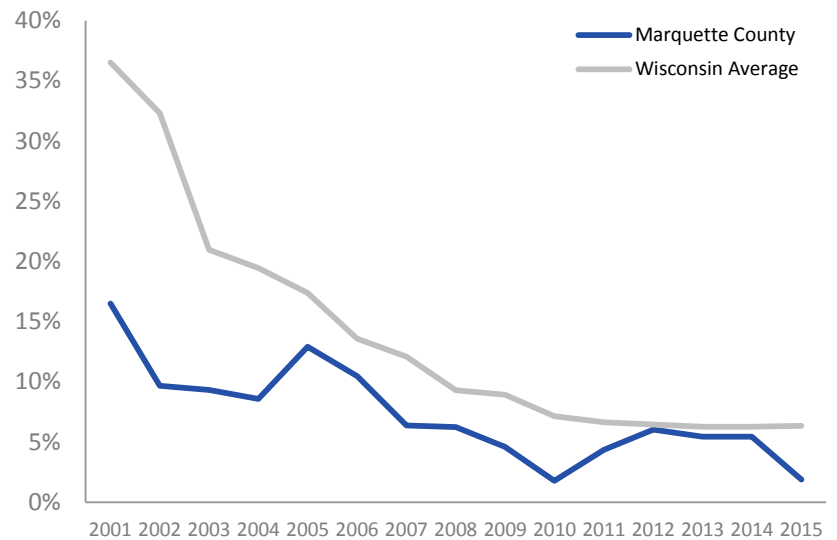
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

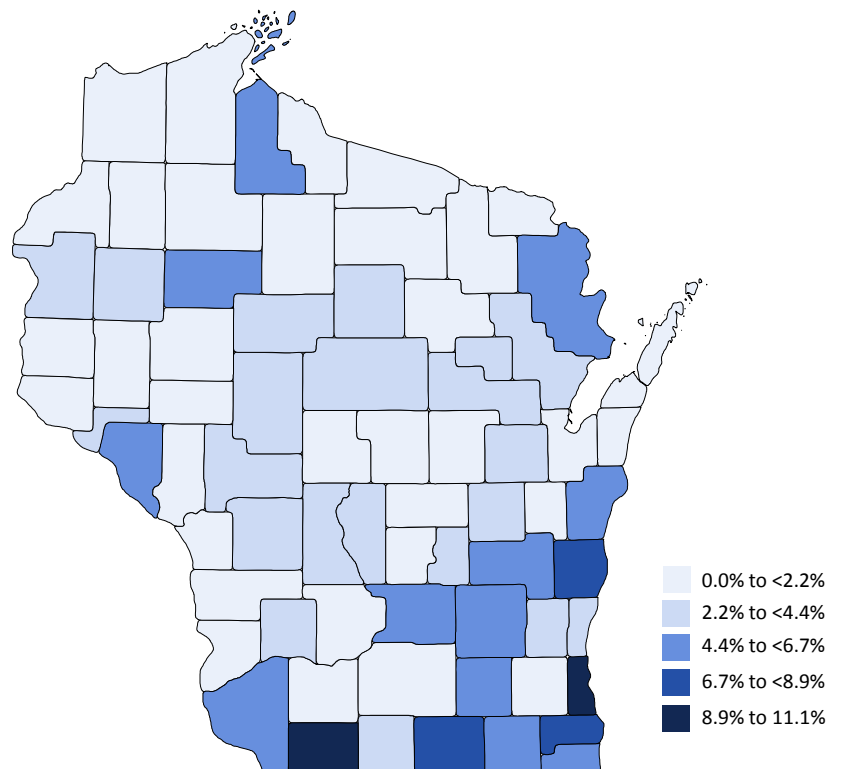
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE MARQUETTE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

32.1

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

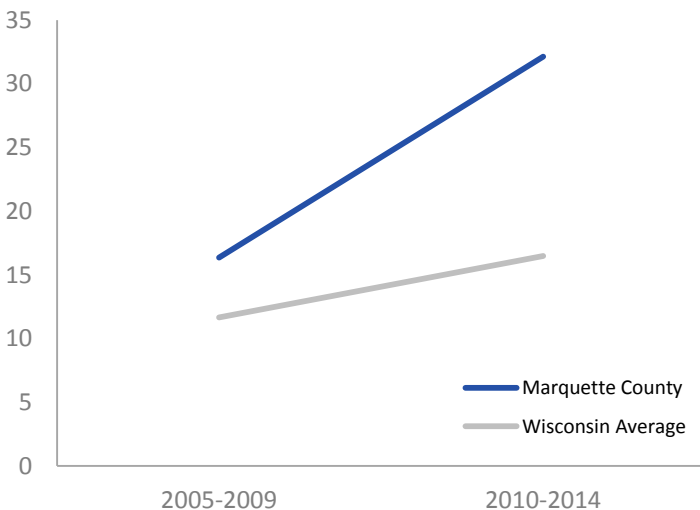
86.2

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

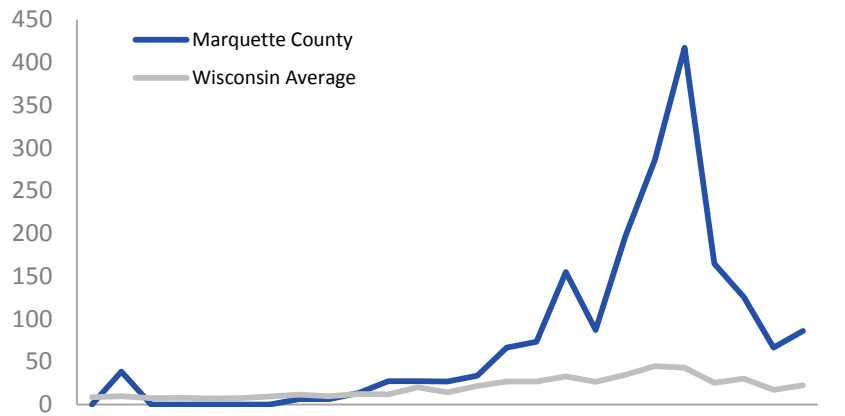
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

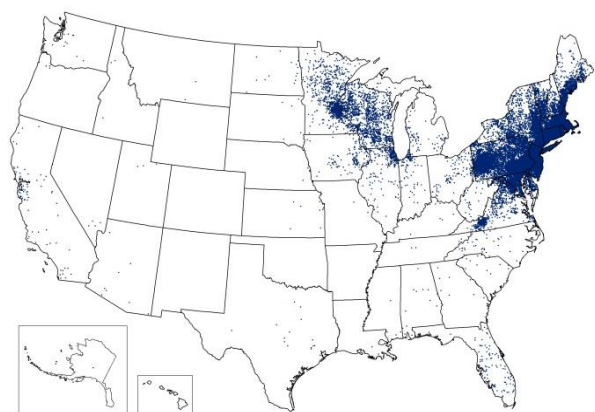
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

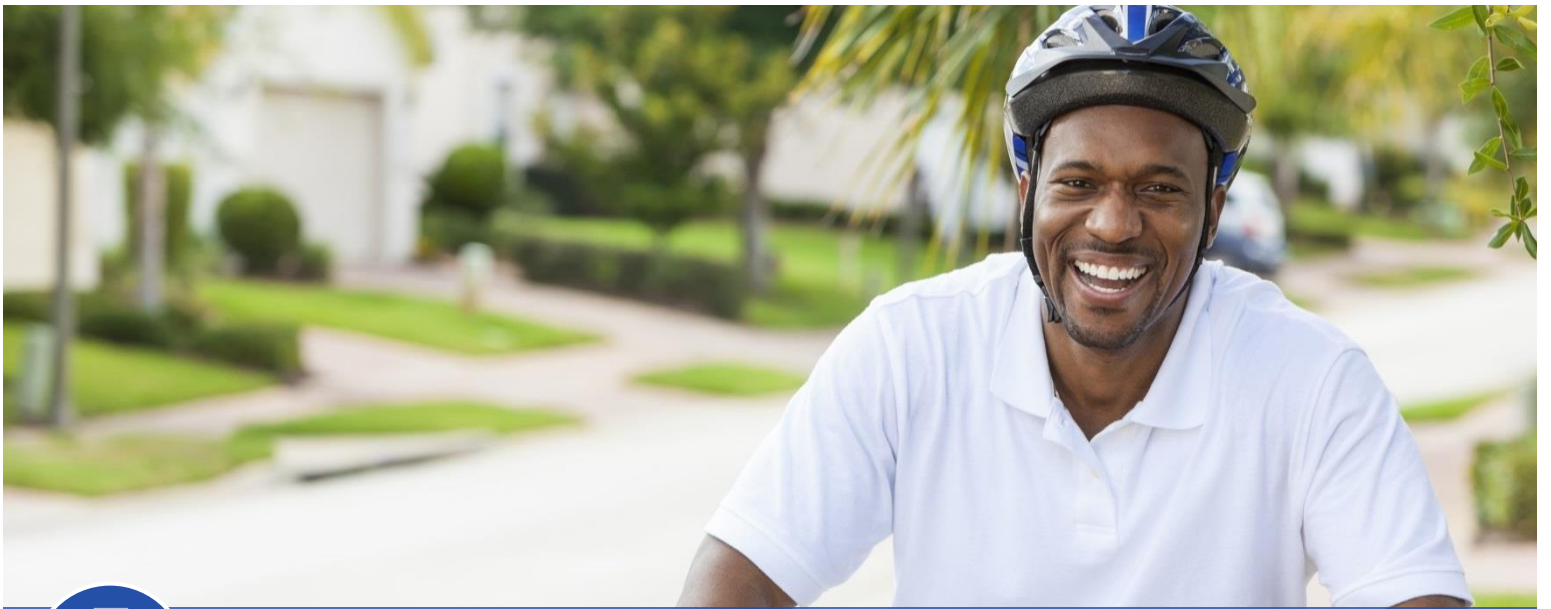


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

MARQUETTE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

40.1
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

19.0
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

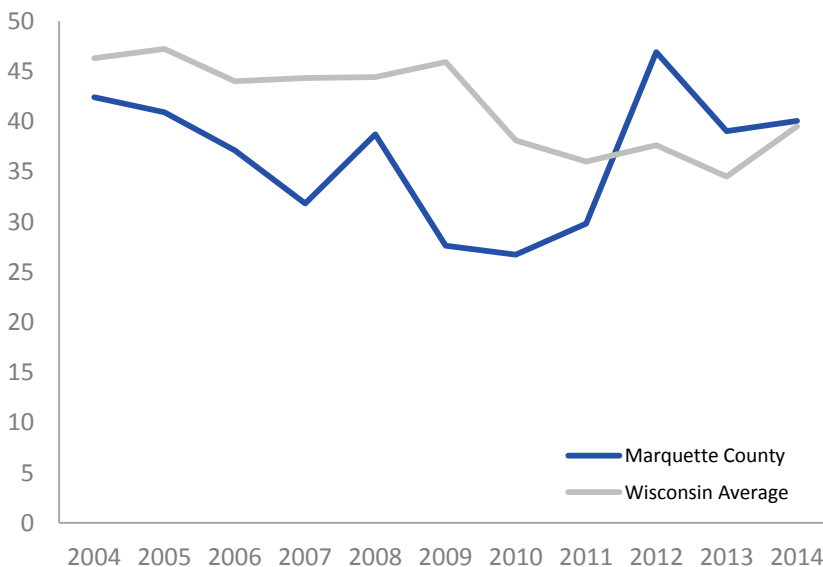
76.3
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

35.3
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

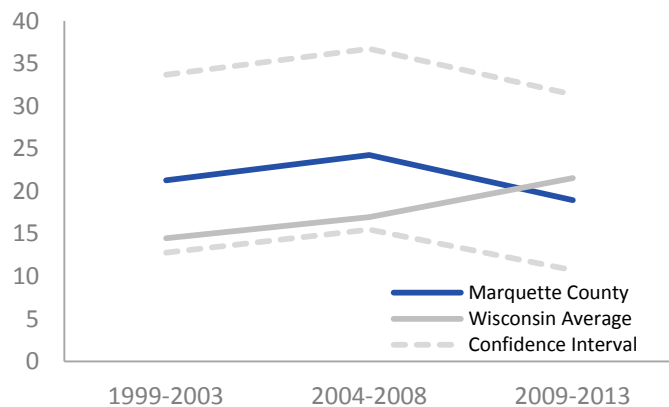
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

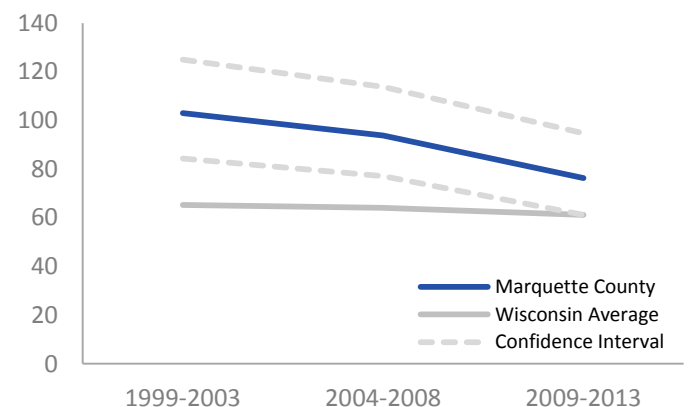
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

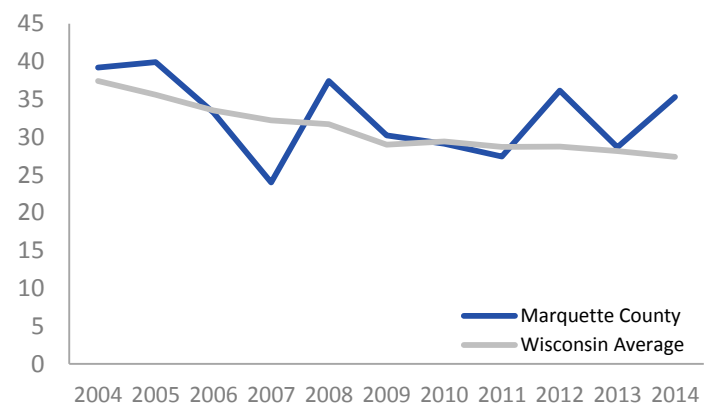
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY MARQUETTE

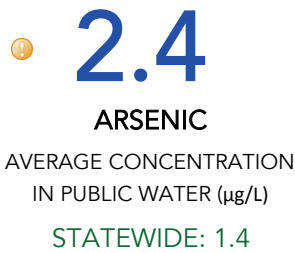
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

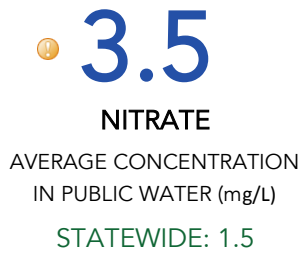
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

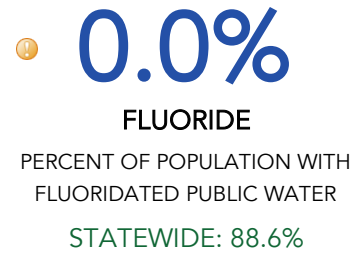
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



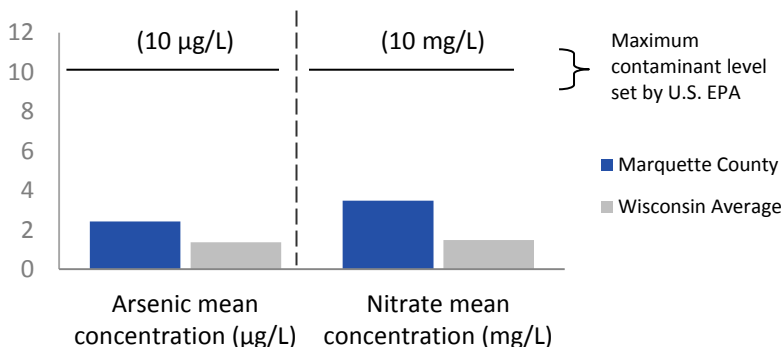
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY MARQUETTE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

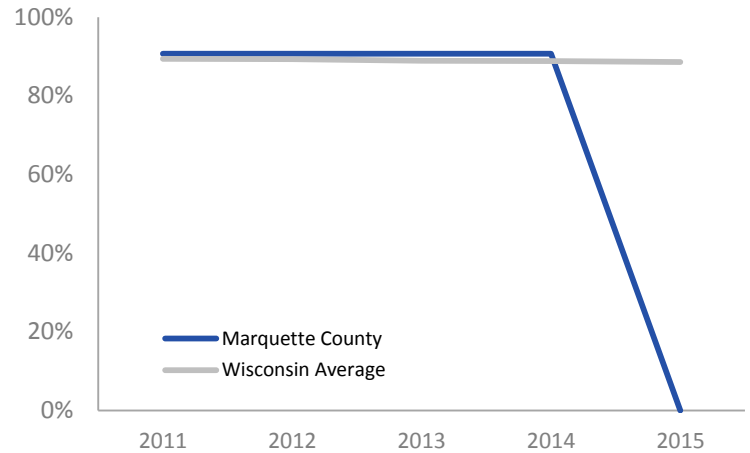
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

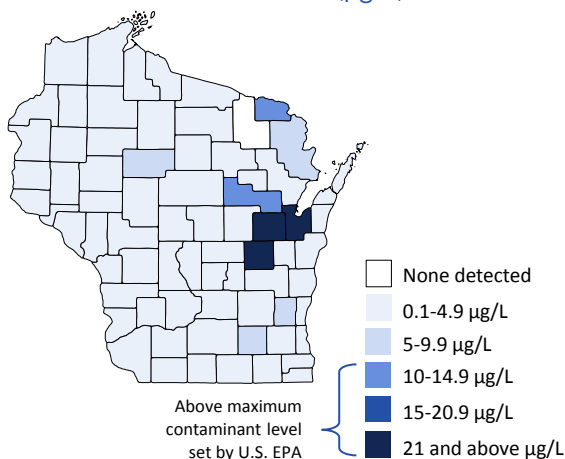
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

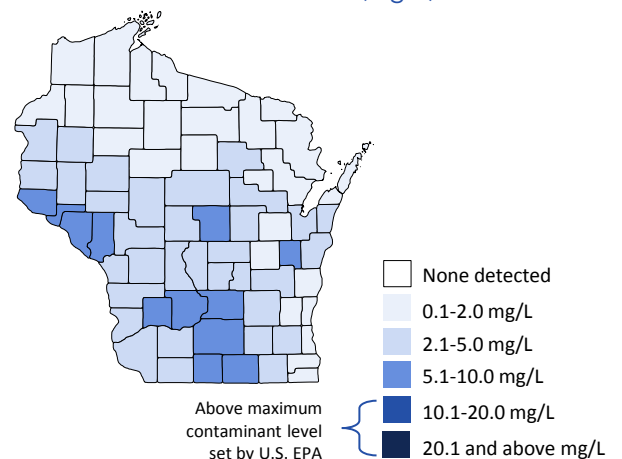
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY MARQUETTE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



4

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



9.4

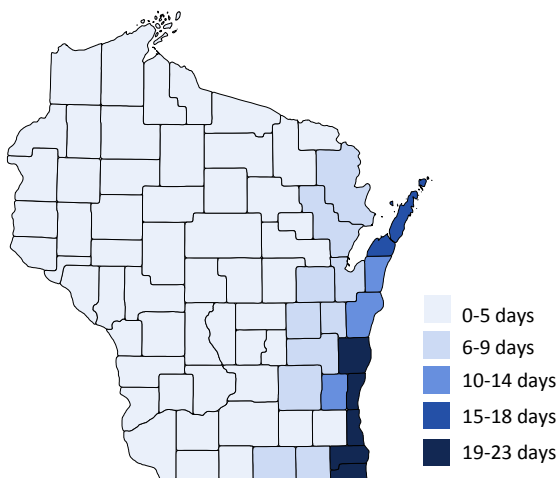
PARTICULATE MATTER 2.5

ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value
 ● At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

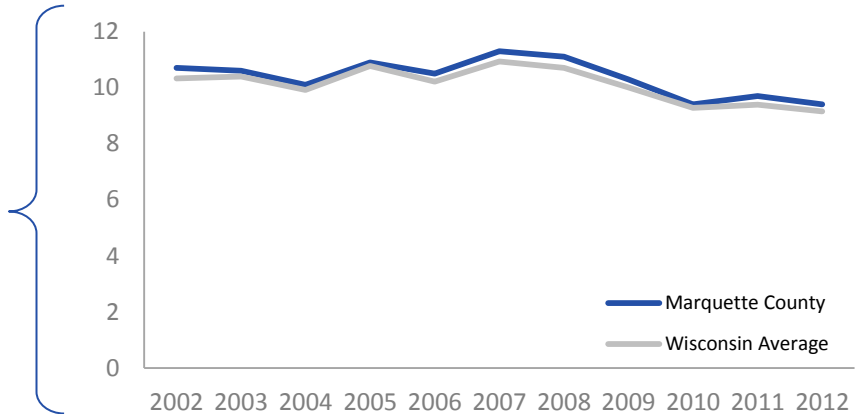


AIR QUALITY MARQUETTE COUNTY

PARTICULATE MATTER 2.5

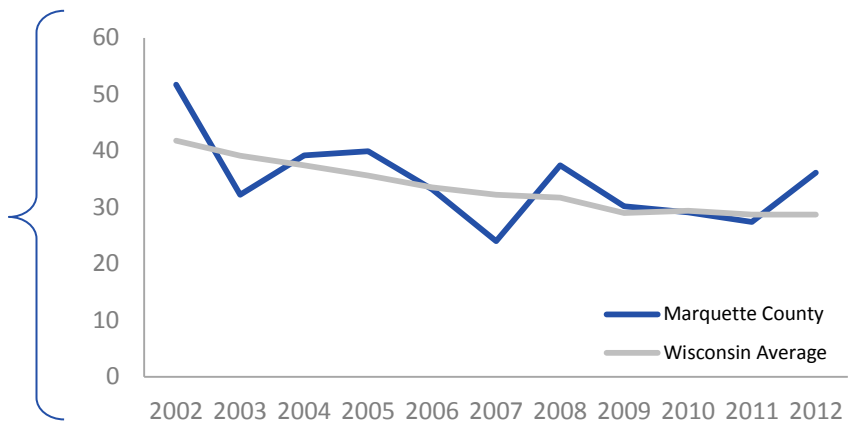
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



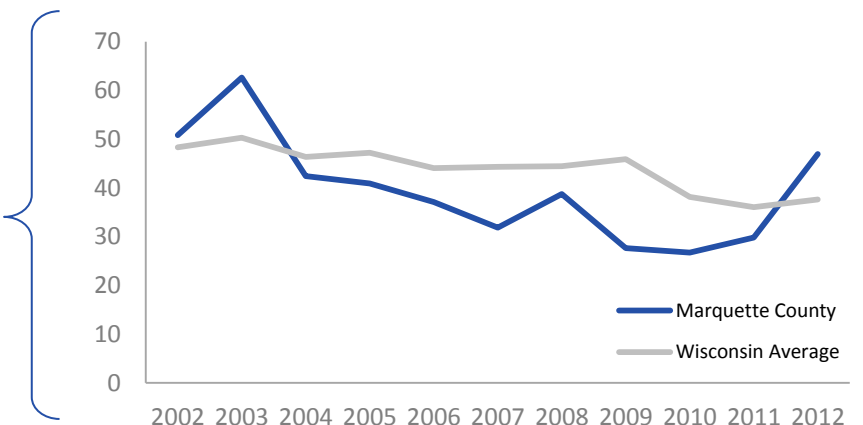
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



MENOMINEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MENOMINEE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 4.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 70.0 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 64.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 87.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 105.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

^ | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 75.4 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

| Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

| Average concentration in mg/L
Wisconsin: 1.5

Fluoride

| Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 2 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

#There is no mandatory reporting of these data because Menominee County is a sovereign nation.

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

MENOMINEE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **70.0**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **4.0%**

CHILDHOOD LEAD POISONING

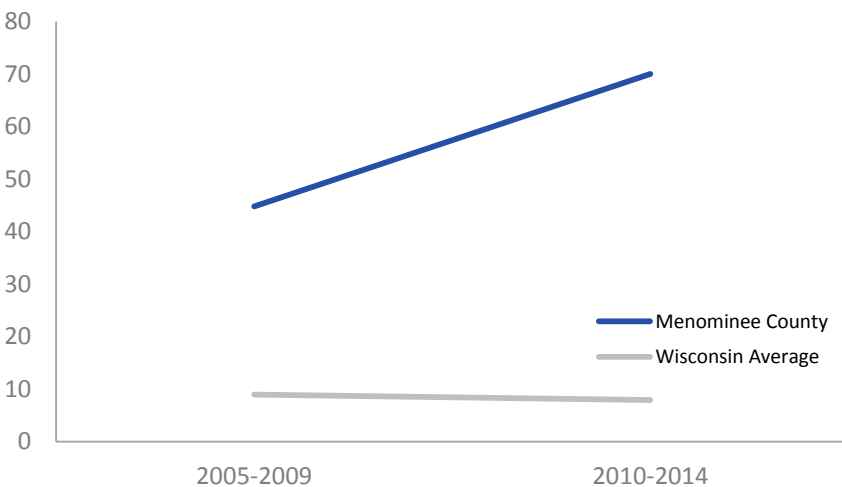
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g}/\text{dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



HOME HAZARDS MENOMINEE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

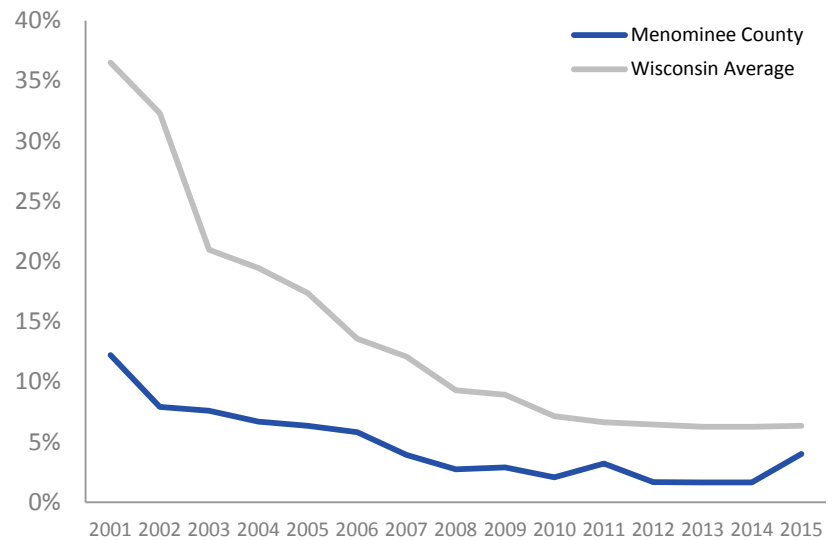
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

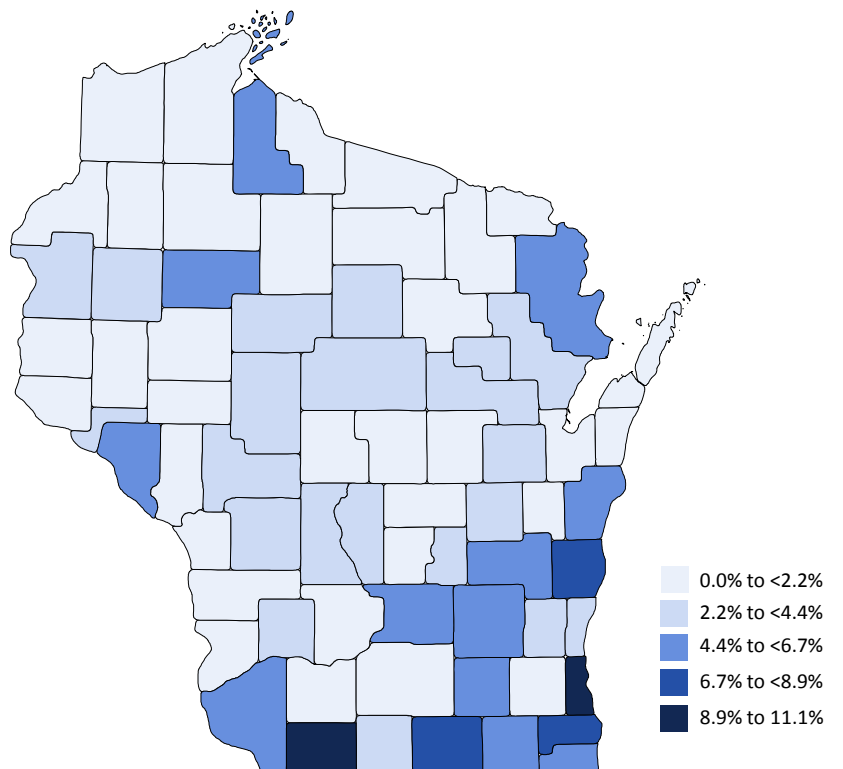
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE MENOMINEE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

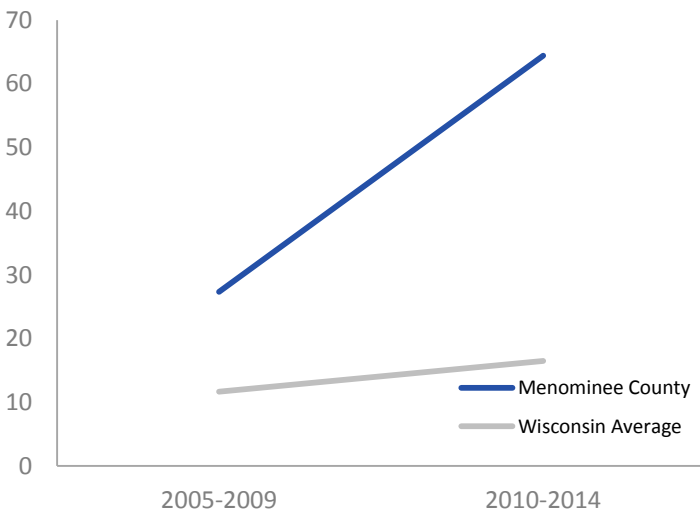
64.4
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

87.5
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

Above state value At or below state value Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht

Wisconsin Environmental Public Health Tracking | 7



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

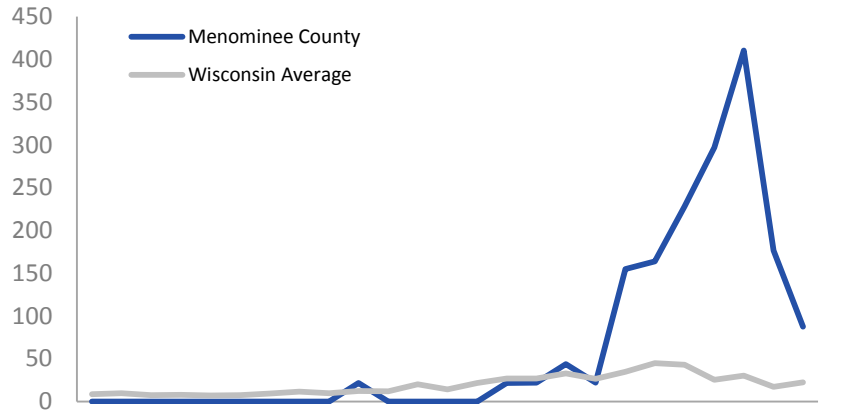
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

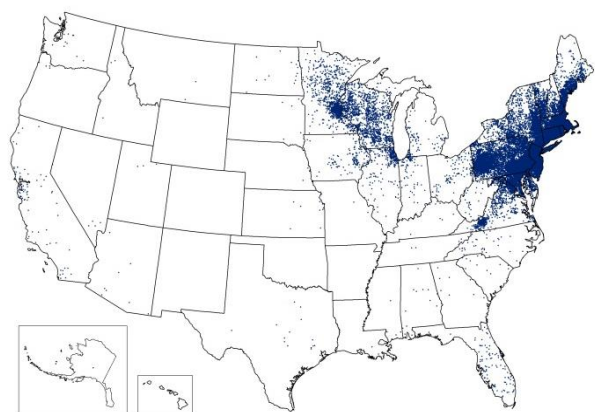
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES MENOMINEE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

105.5
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

^
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

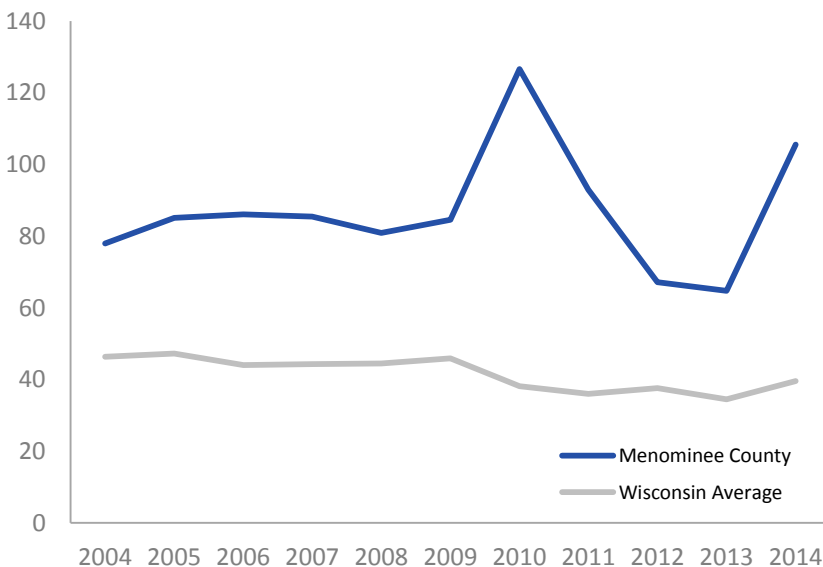
81.3
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

75.4
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

Ⓜ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

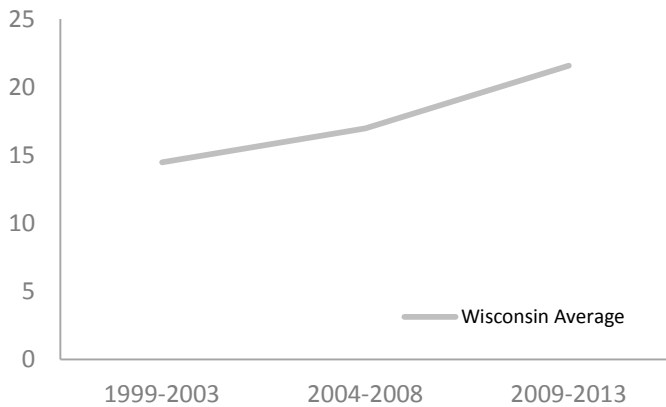
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

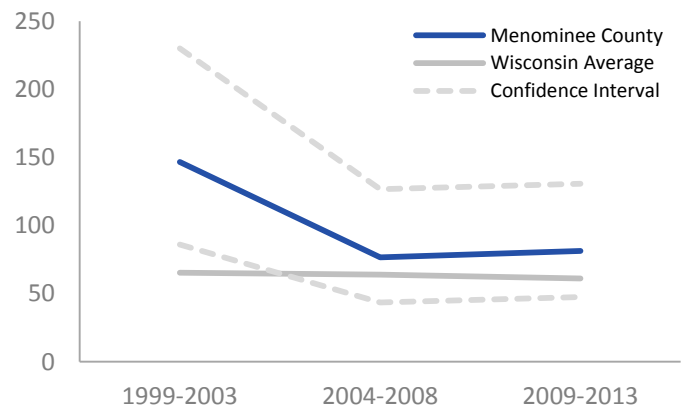
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

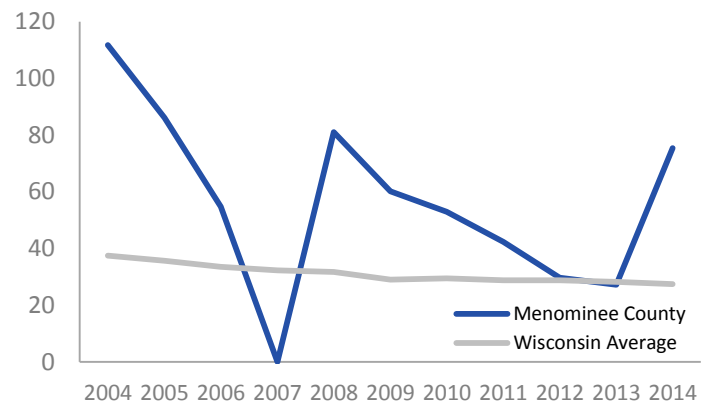
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY MENOMINEE

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.

No data*

ARSENIC

AVERAGE CONCENTRATION
IN PUBLIC WATER (µg/L)

STATEWIDE: 1.4

⚠ Above state value (with exception of fluoride where below state value is not preferred)

No data*

NITRATE

AVERAGE CONCENTRATION
IN PUBLIC WATER (mg/L)

STATEWIDE: 1.5

✅ At or below state value (with exception of fluoride where above state value is preferred)

No data*

FLUORIDE

PERCENT OF POPULATION WITH
FLUORIDATED PUBLIC WATER

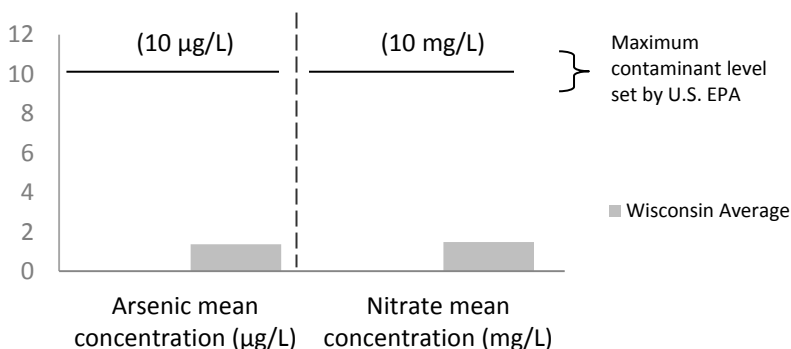
STATEWIDE: 88.6%

^ Suppressed

*There is no mandatory reporting of these data because Menominee County is a sovereign nation.

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY MENOMINEE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

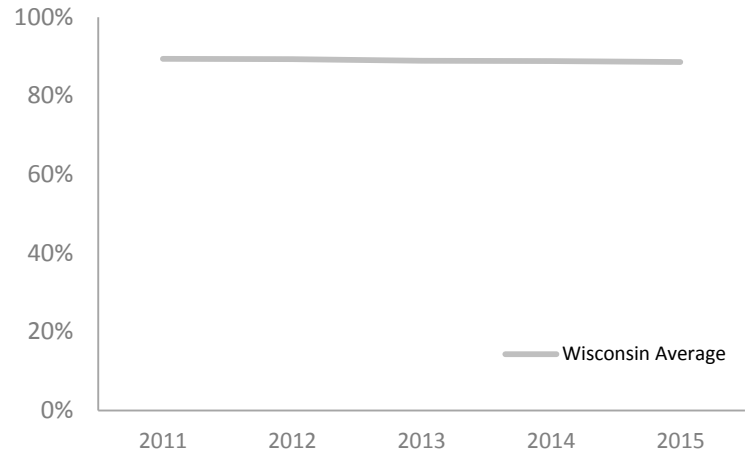
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

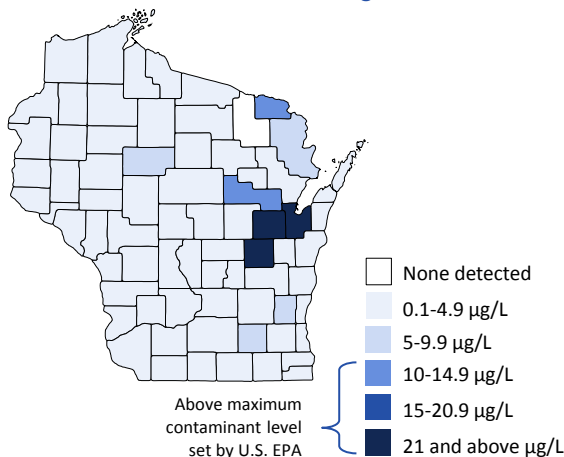
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

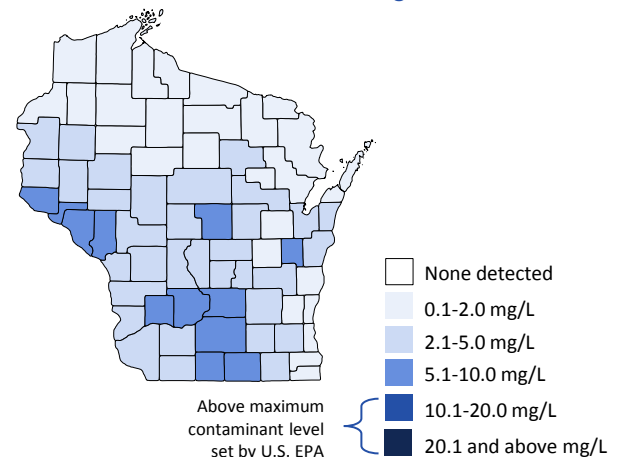
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



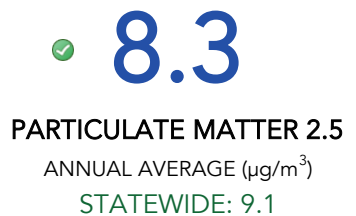
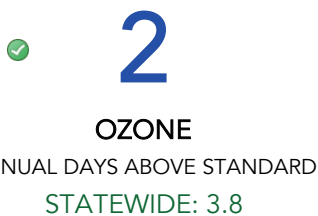


AIR QUALITY MENOMINEE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

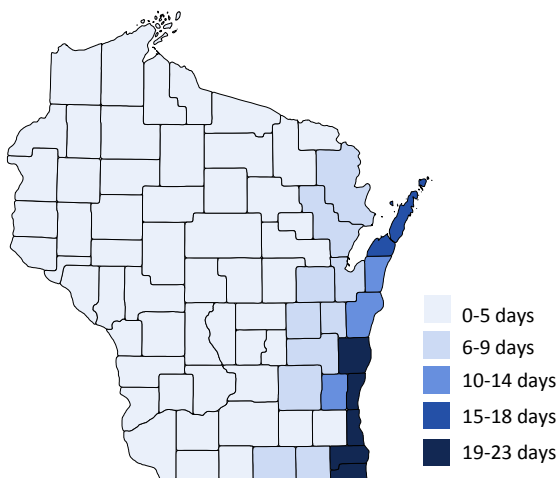
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

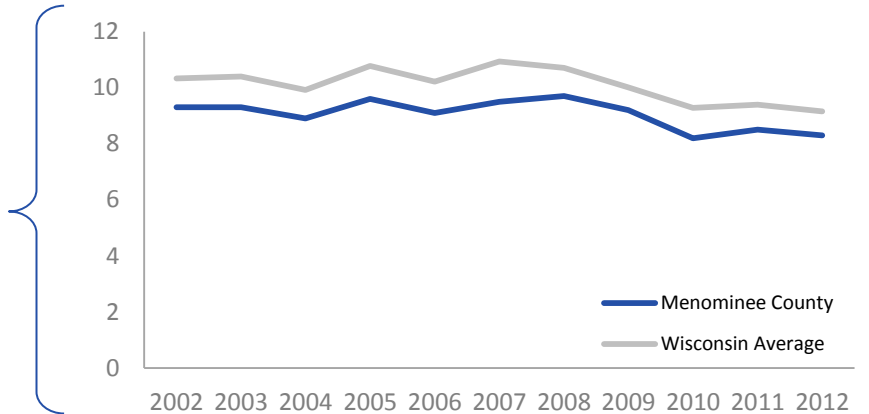
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

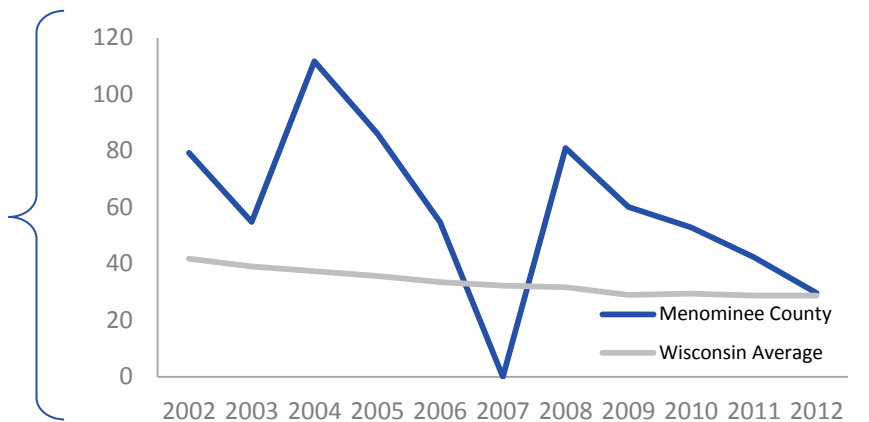
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



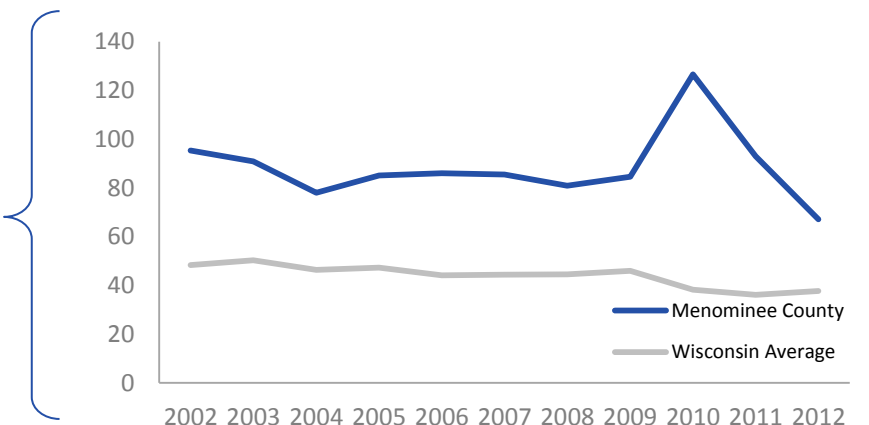
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



MILWAUKEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MILWAUKEE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

9.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

8.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

11.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

1.8 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

81.6 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

13.7 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

29.5 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

0.7 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

0.1 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

100.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

22 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

Above state value (with exception of fluoride where below state value is not preferred)

At or below state value (with exception of fluoride where above state value is preferred)

Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS MILWAUKEE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

8.5

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

9.6%

CHILDHOOD LEAD POISONING

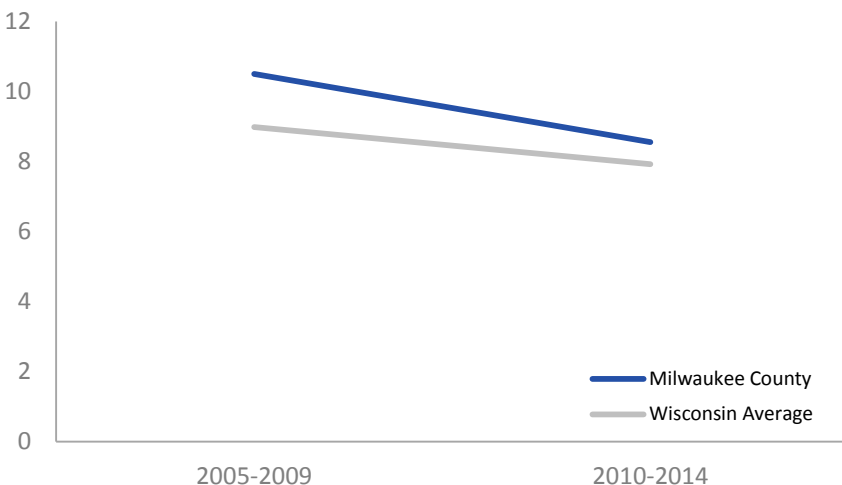
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

⚠ Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS MILWAUKEE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

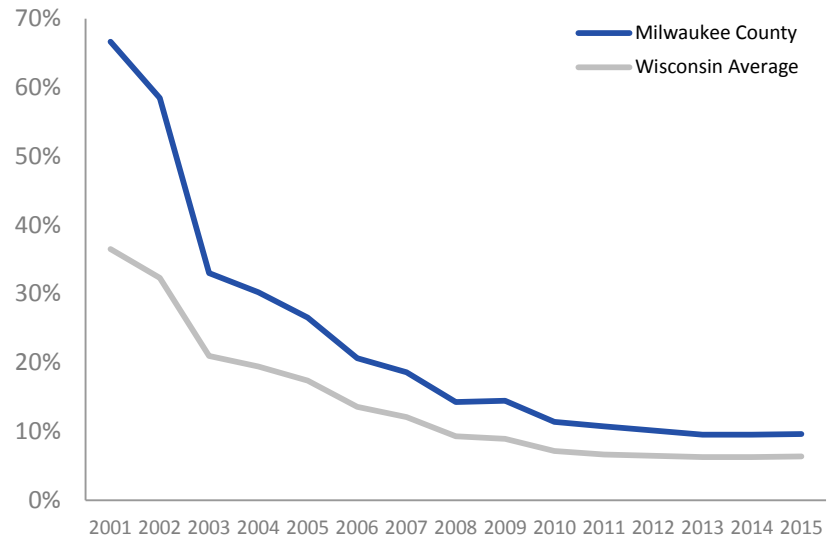
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

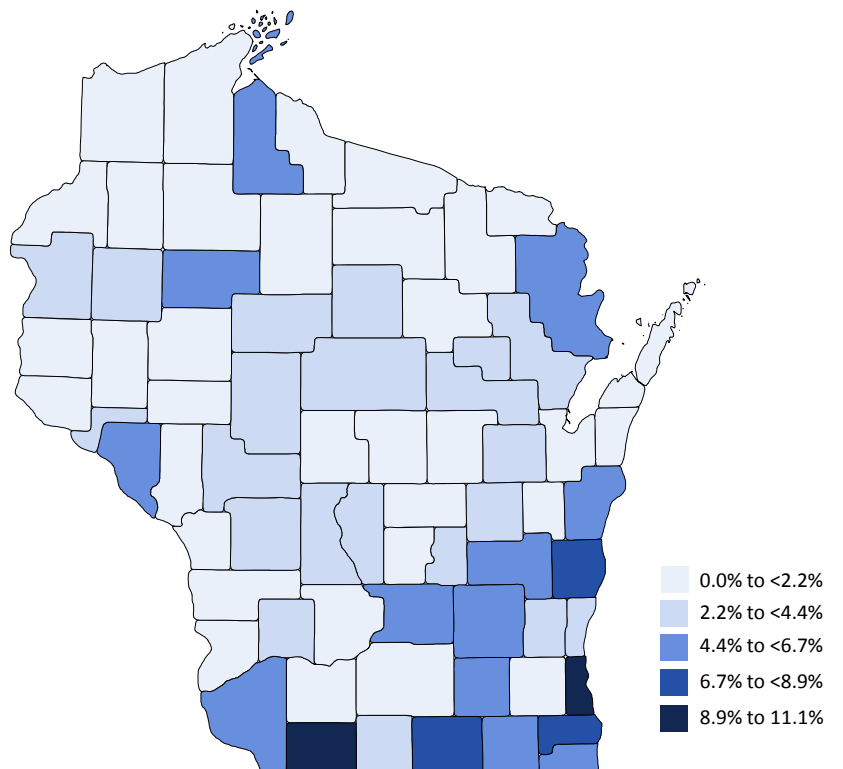
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE MILWAUKEE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **11.8**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

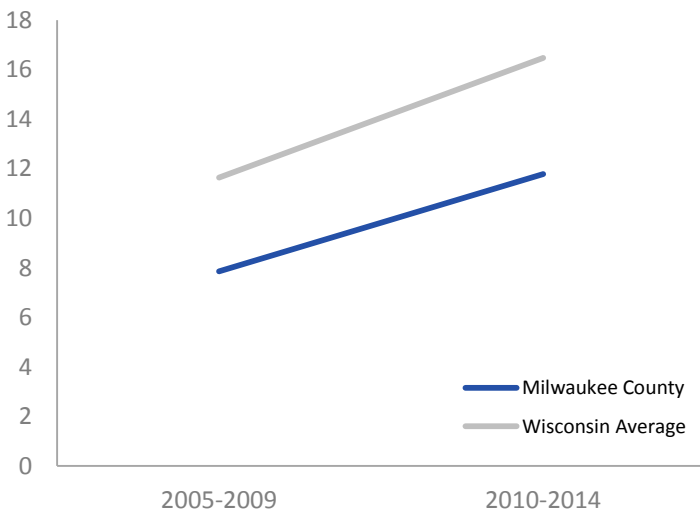
✓ **1.8**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

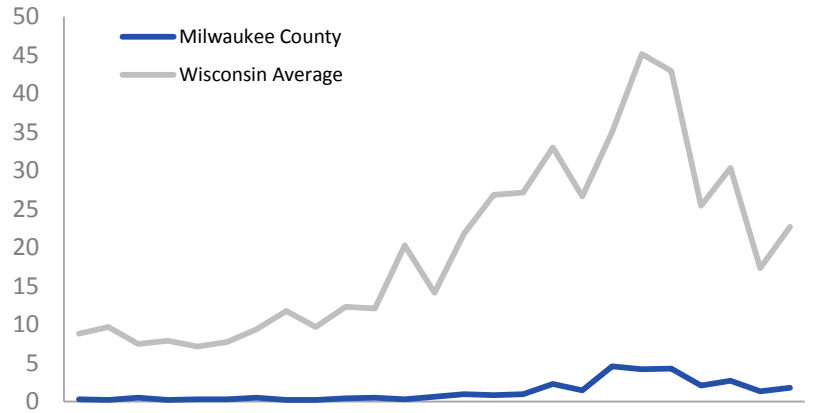
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

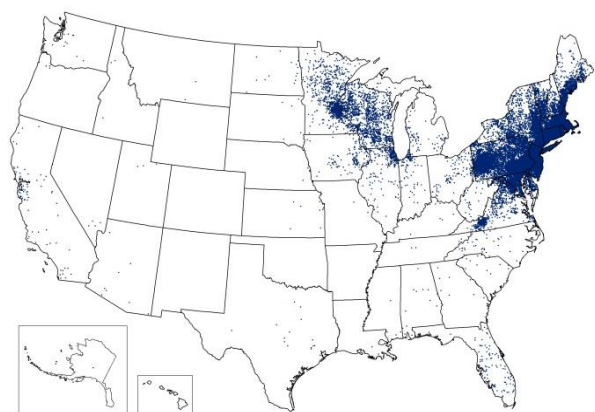
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

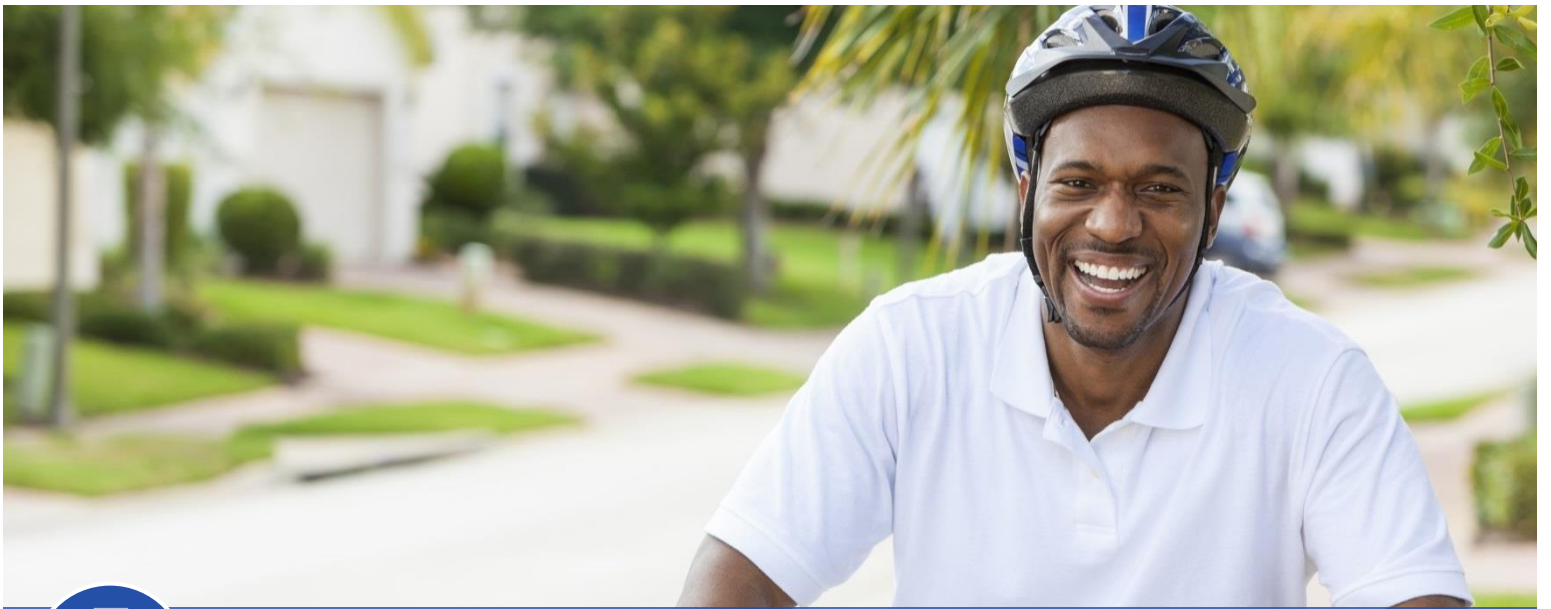


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES MILWAUKEE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

81.6
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

13.7
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

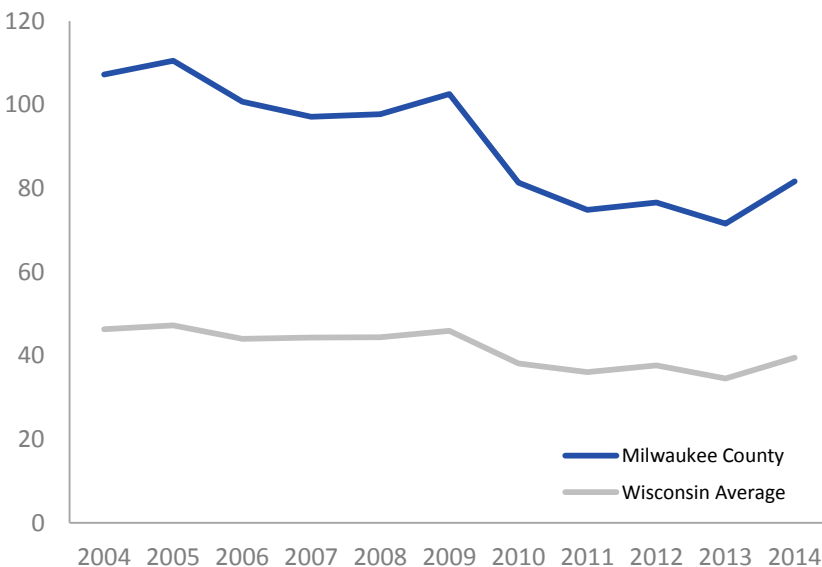
71.1
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

29.5
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬆ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

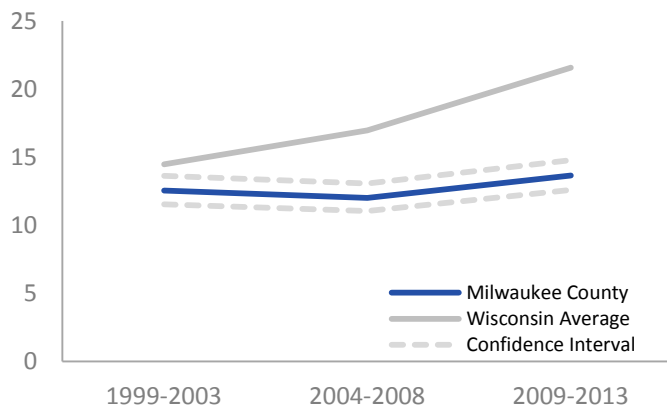
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

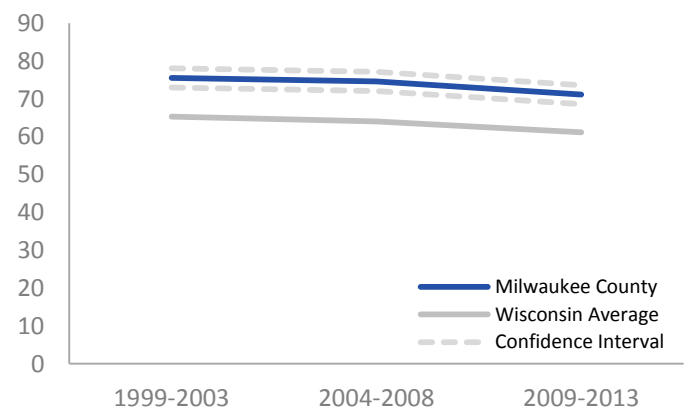
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

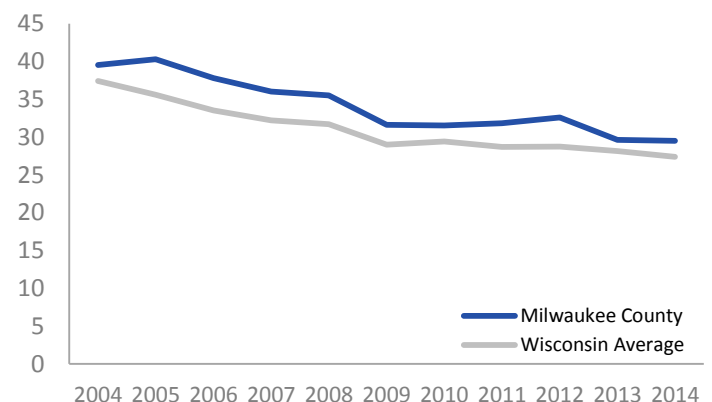
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY MILWAUKEE

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.

✓ **0.7**
ARSENIC
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (µg/L)
 STATEWIDE: 1.4

⊕ Above state value (with exception of fluoride where below state value is not preferred)

✓ **0.1**
NITRATE
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (mg/L)
 STATEWIDE: 1.5

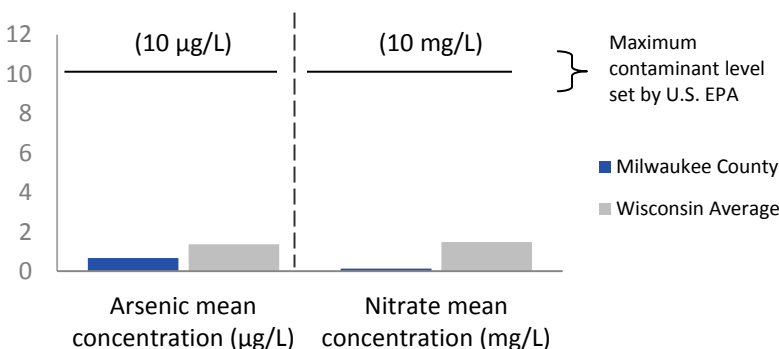
✓ At or below state value (with exception of fluoride where above state value is preferred)

✓ **100.0%**
FLUORIDE
 PERCENT OF POPULATION WITH
 FLUORIDATED PUBLIC WATER
 STATEWIDE: 88.6%

^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY MILWAUKEE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

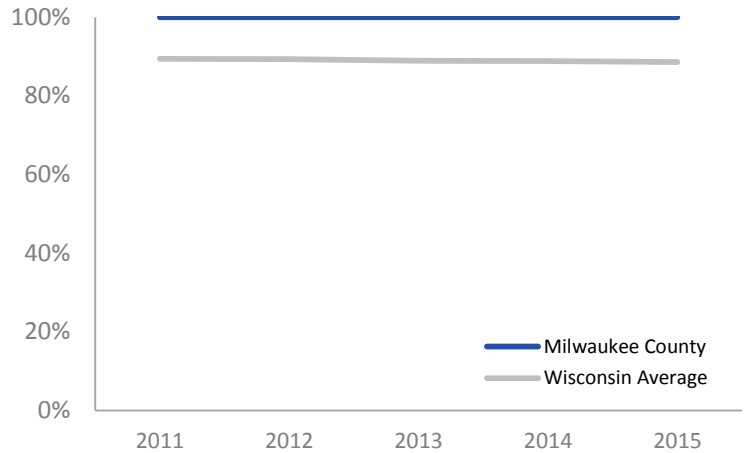
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

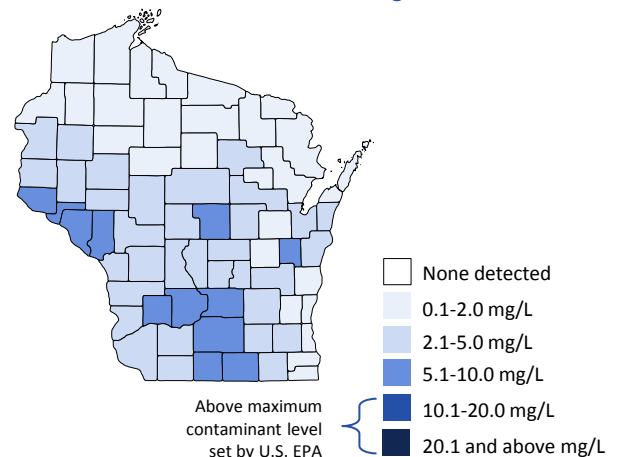
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



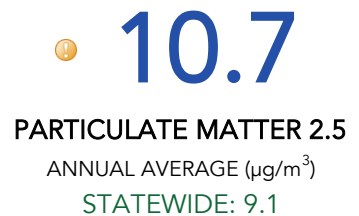
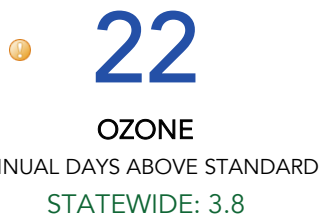


AIR QUALITY MILWAUKEE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

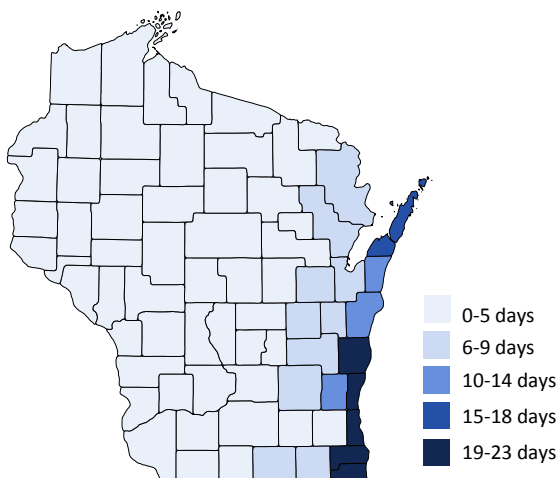
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

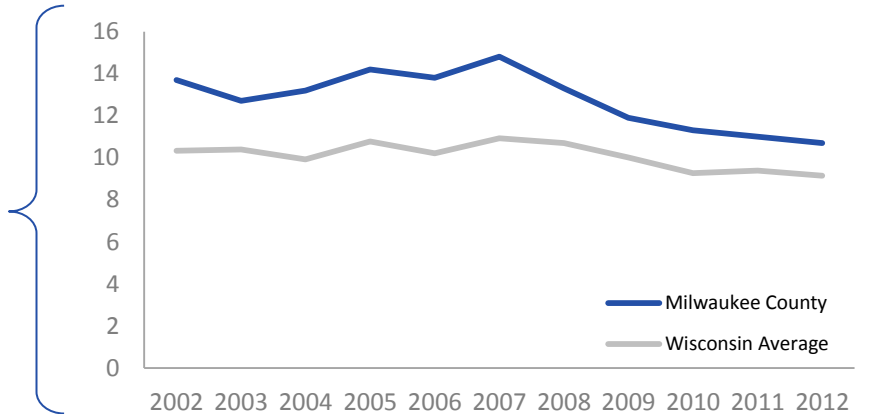
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

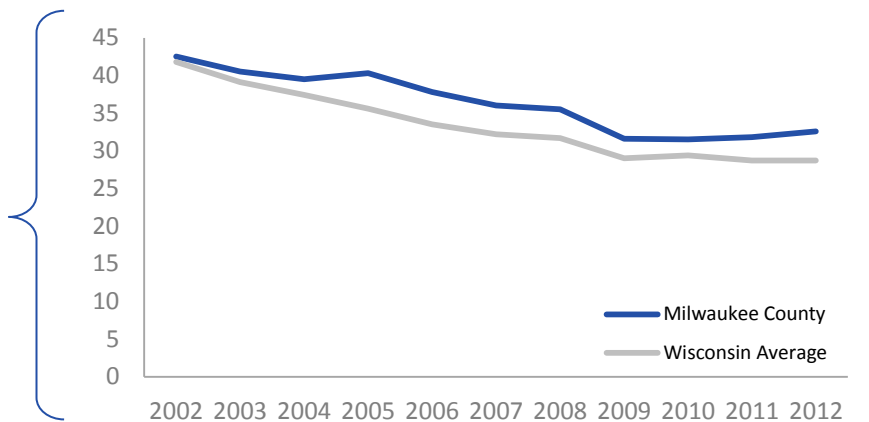
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



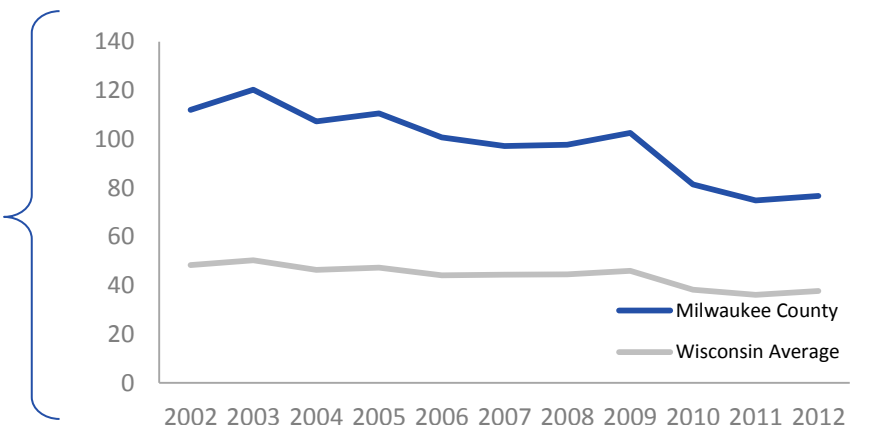
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



MONROE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

MONROE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 2.8% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 34.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 28.5 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 37.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 24.1 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 30.6 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 0.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 1.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 32.4% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

MONROE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **10.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.8%**

CHILDHOOD LEAD POISONING

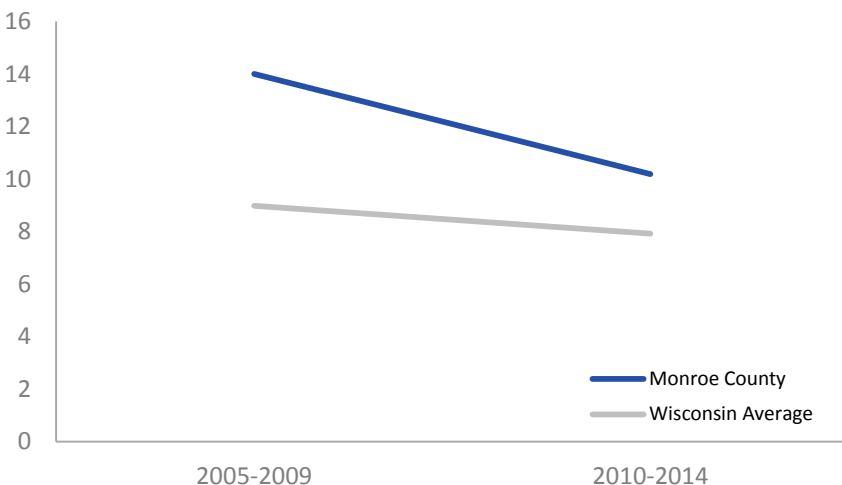
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS MONROE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

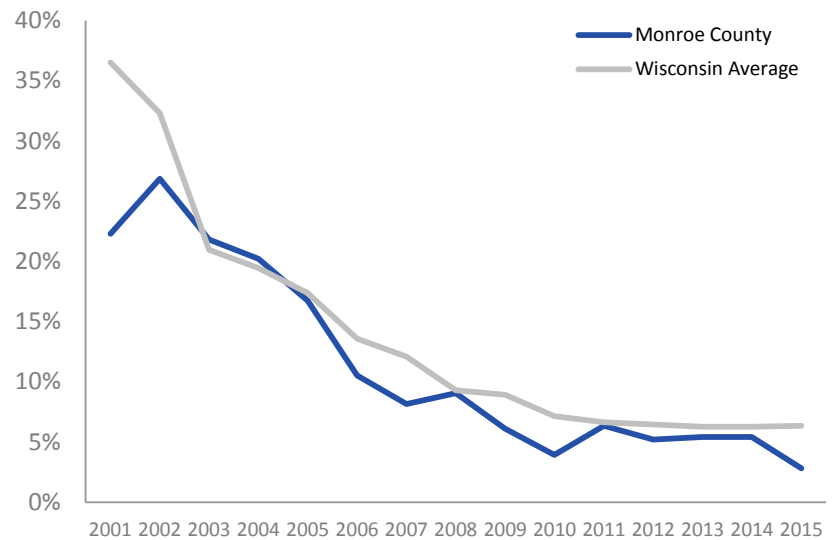
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

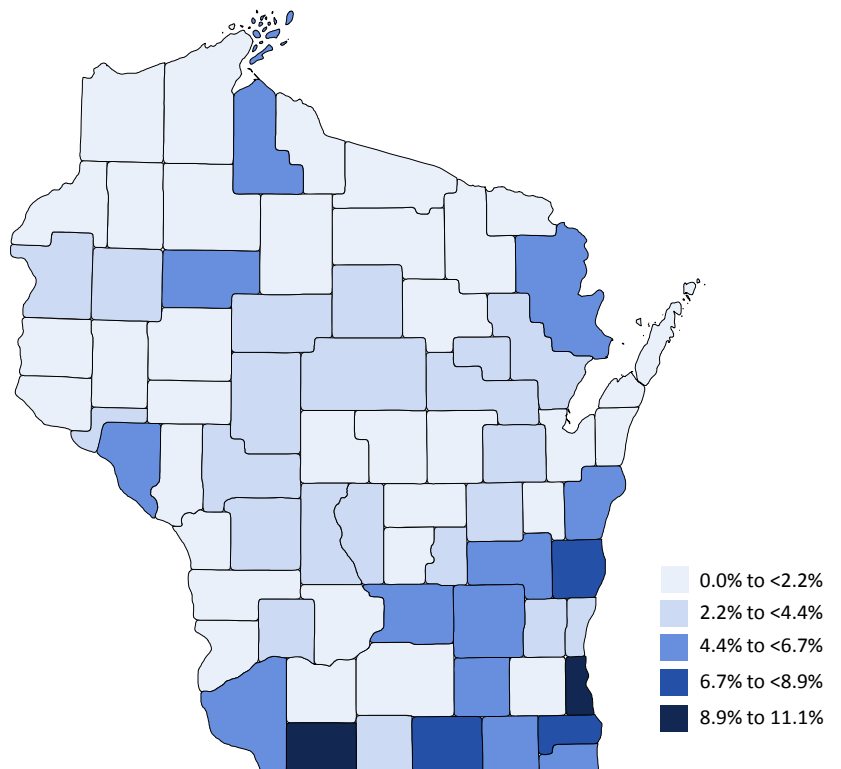
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE MONROE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

34.8

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

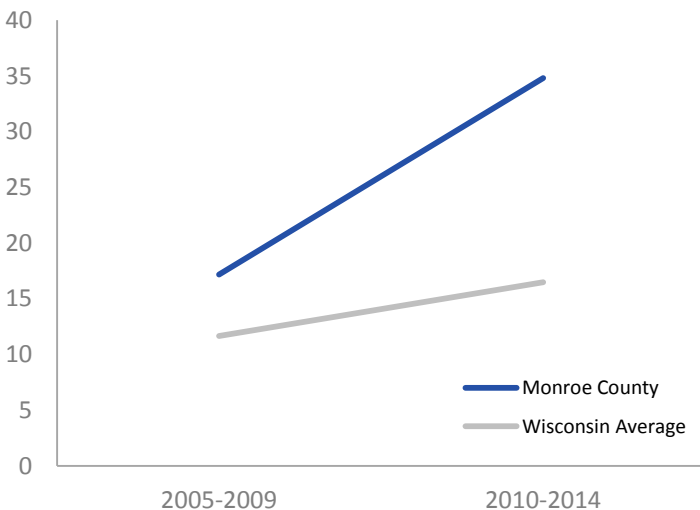
28.5

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

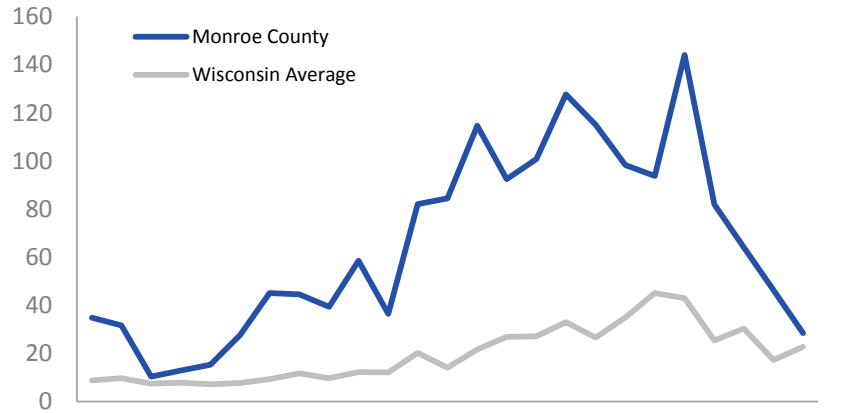
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

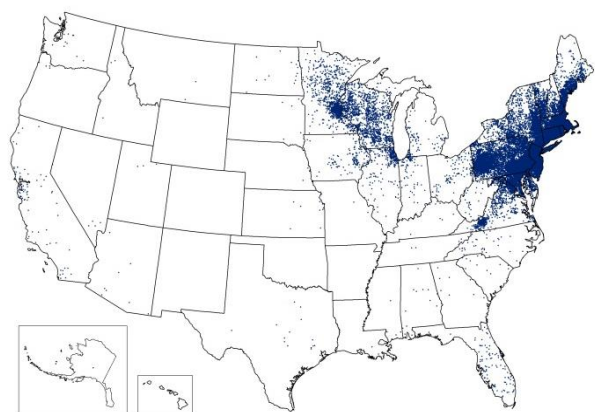
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

MONROE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **37.5**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⬇️ **24.1**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

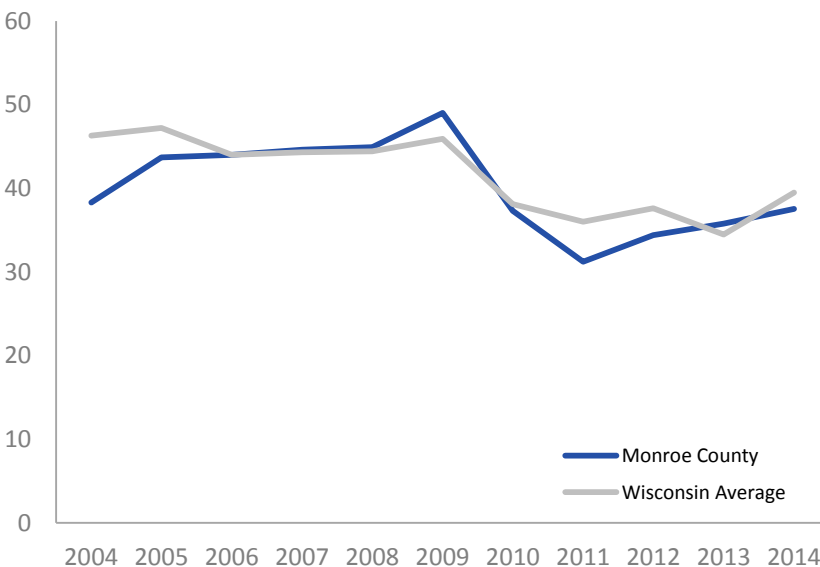
⬆️ **77.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⬆️ **30.6**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬆️ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

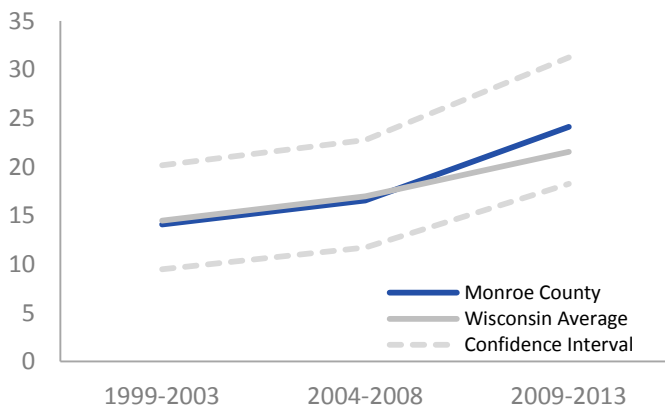
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

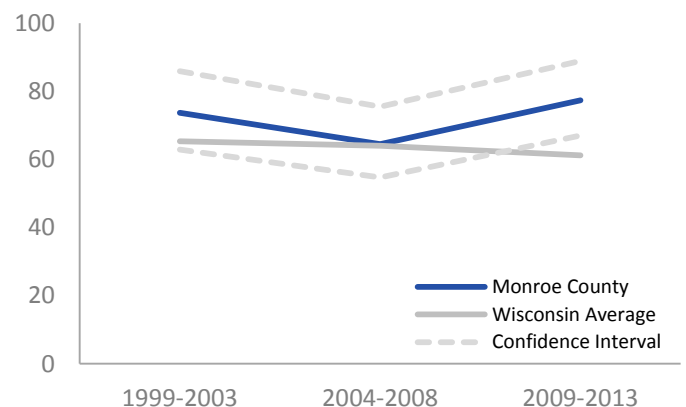
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

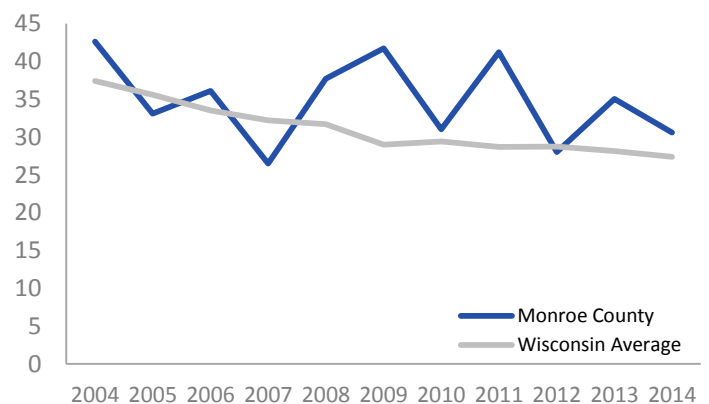
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY MONROE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

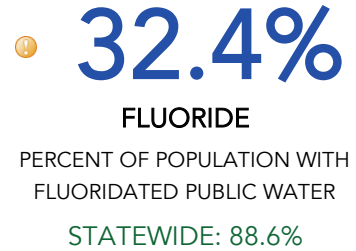
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



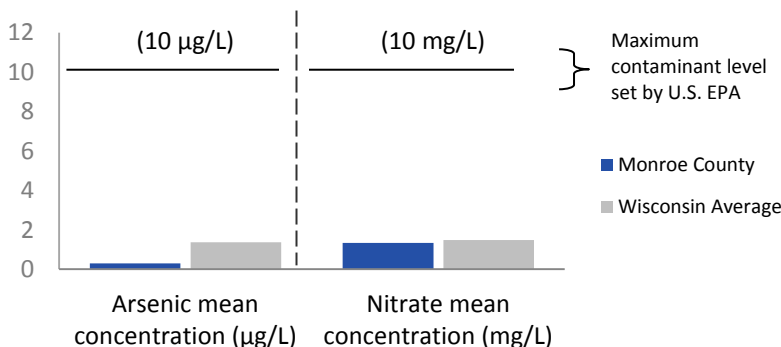
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY MONROE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

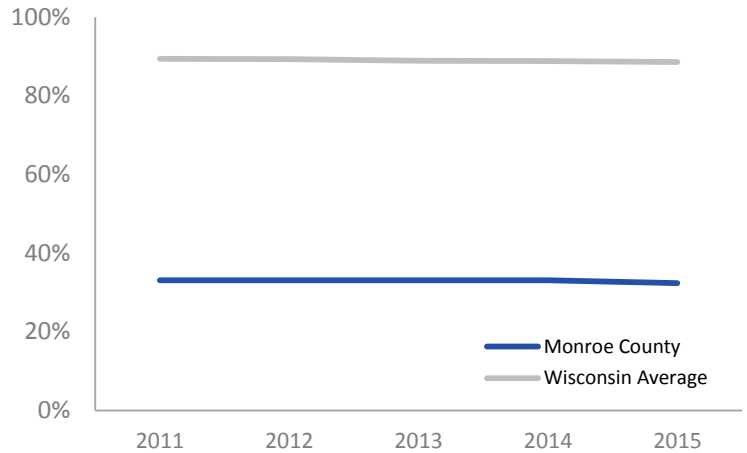
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

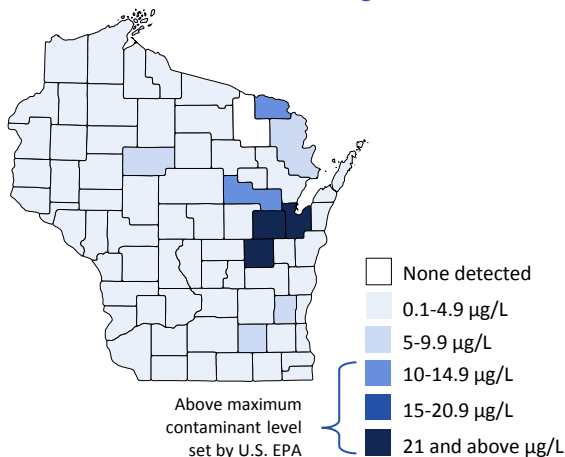
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

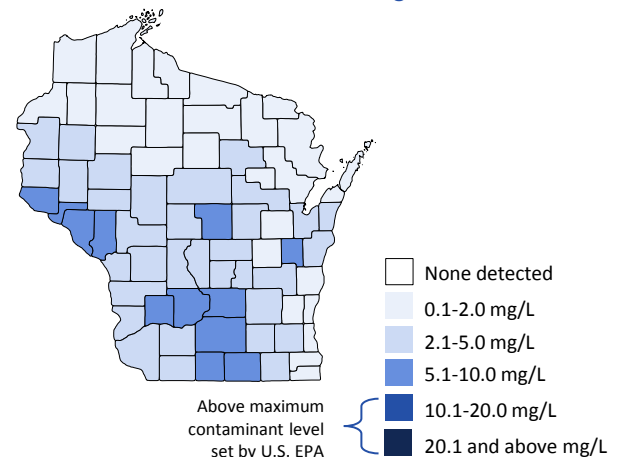
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



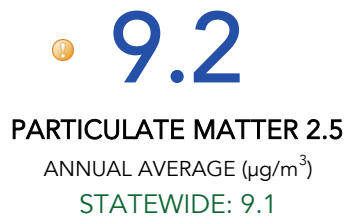


AIR QUALITY MONROE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

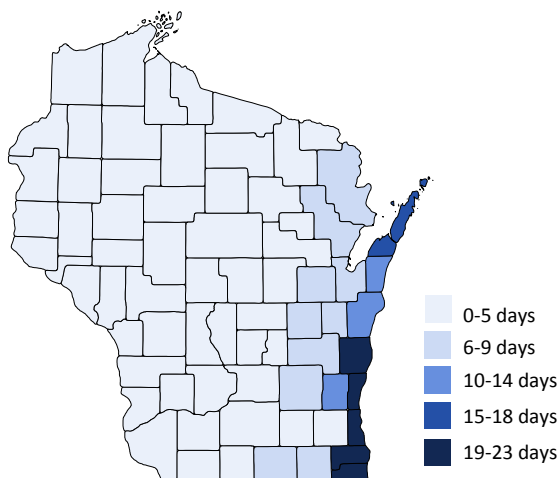
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

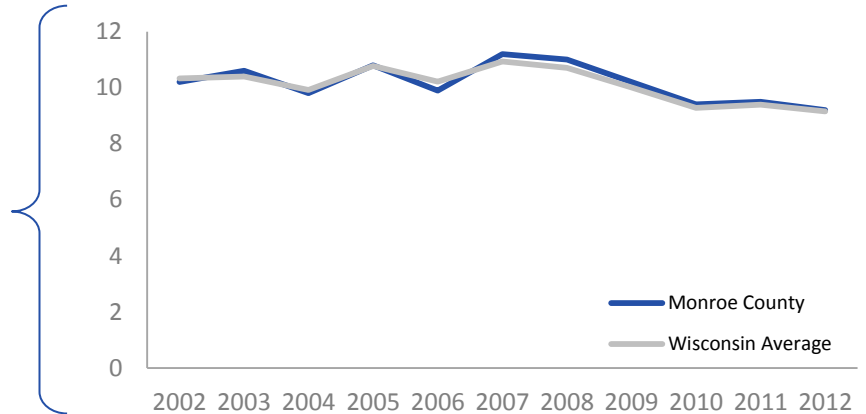


AIR QUALITY MONROE COUNTY

PARTICULATE MATTER 2.5

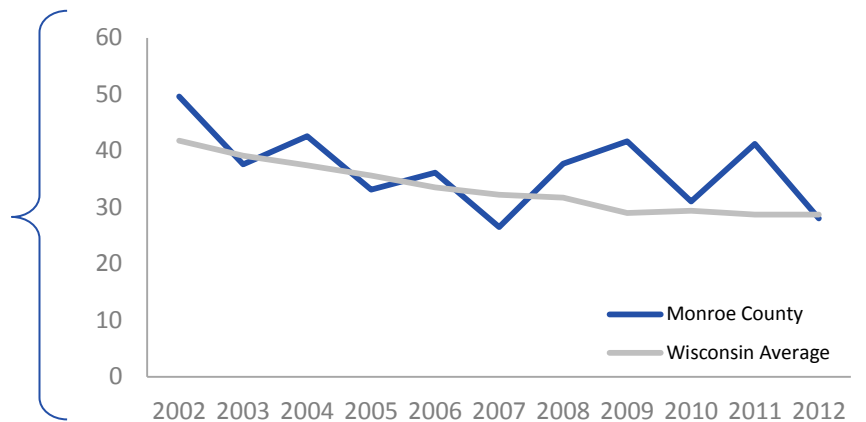
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



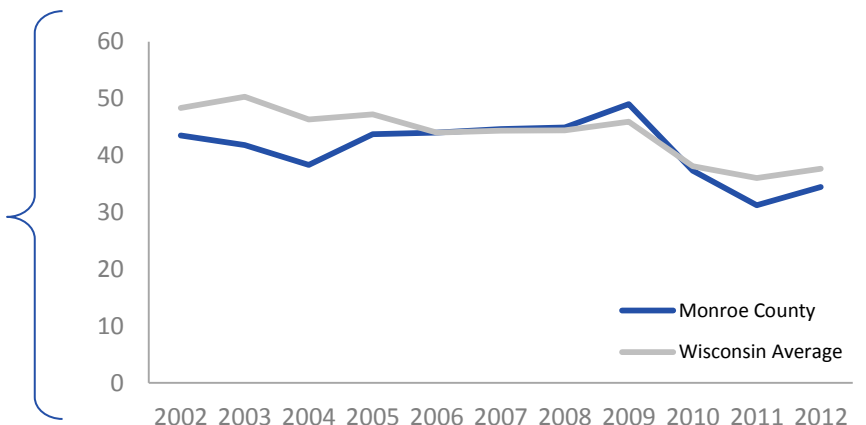
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



OCONTO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

OCONTO COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 7.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 10.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 34.7 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 27.8 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 24.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 26.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 5.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 73.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 6 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

OCONTO COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✔ **7.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✔ **2.6%**

CHILDHOOD LEAD POISONING

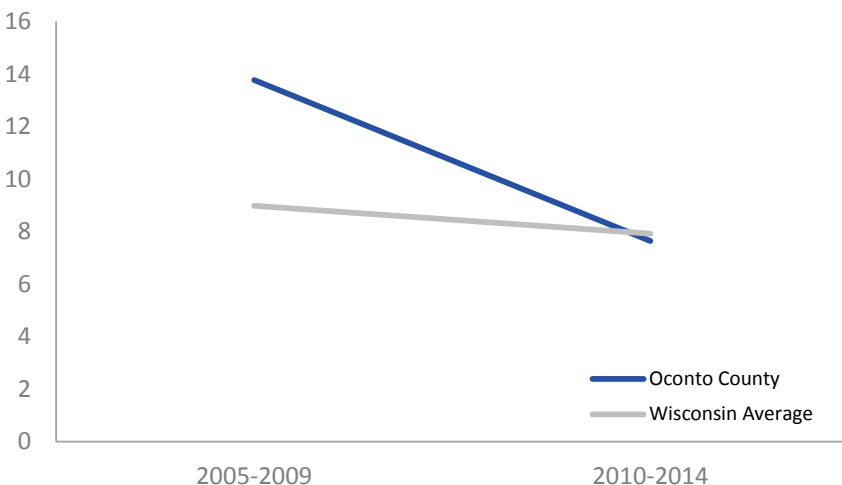
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✔ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS

OCONTO COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

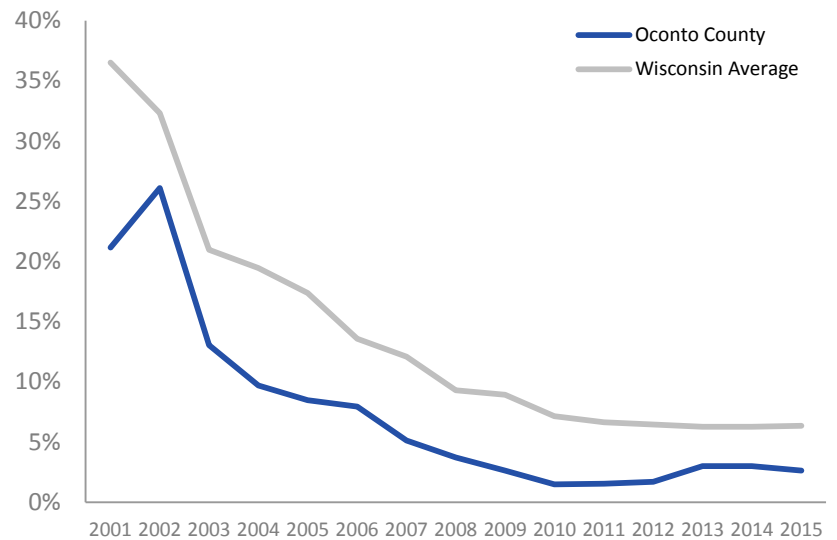
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

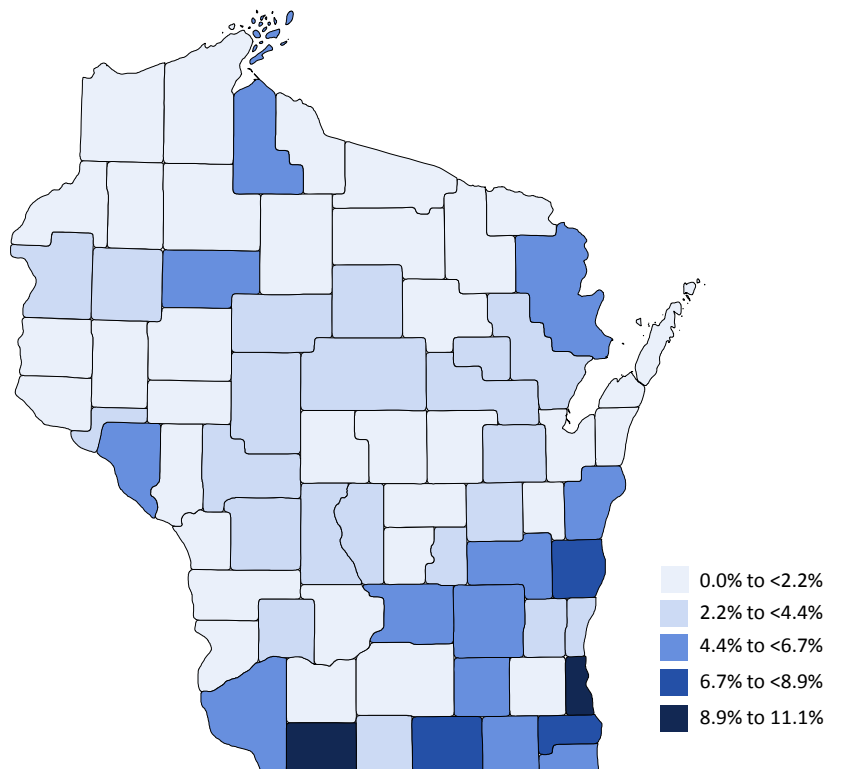
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE OCONTO COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

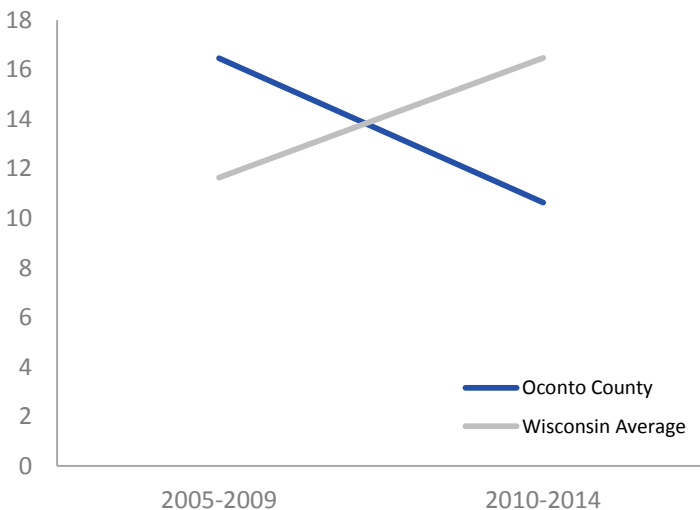
✓ **10.6**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

⚠ **34.7**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

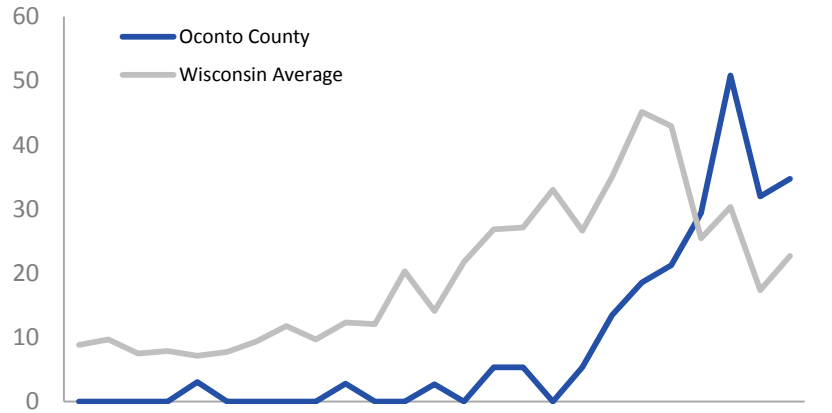
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

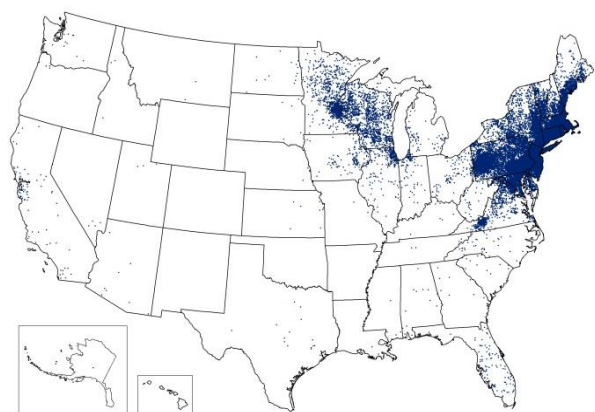
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

OCONTO COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **27.8**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

ⓘ **24.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

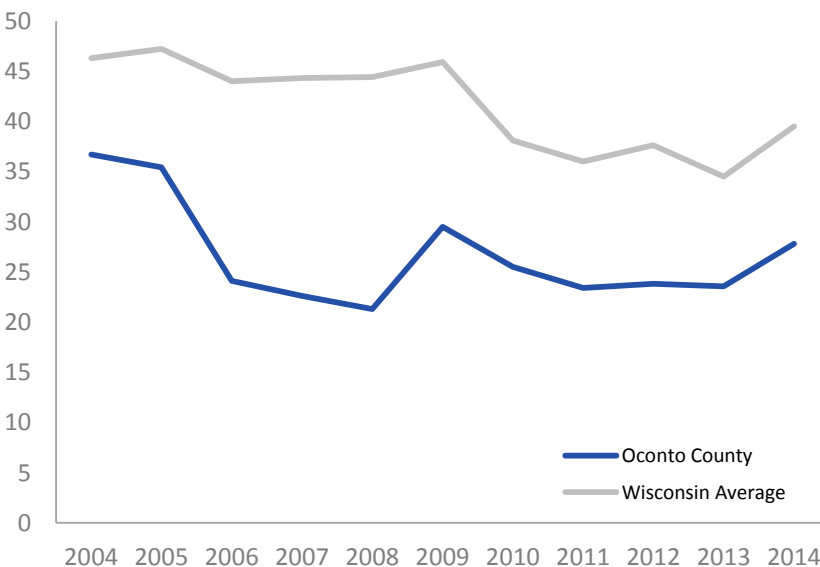
ⓘ **76.5**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **26.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

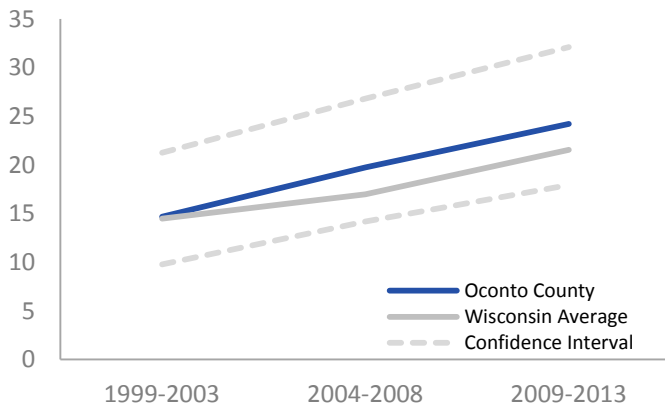
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

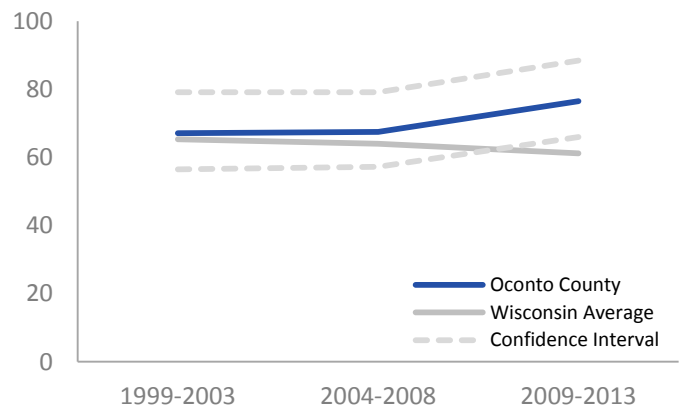
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

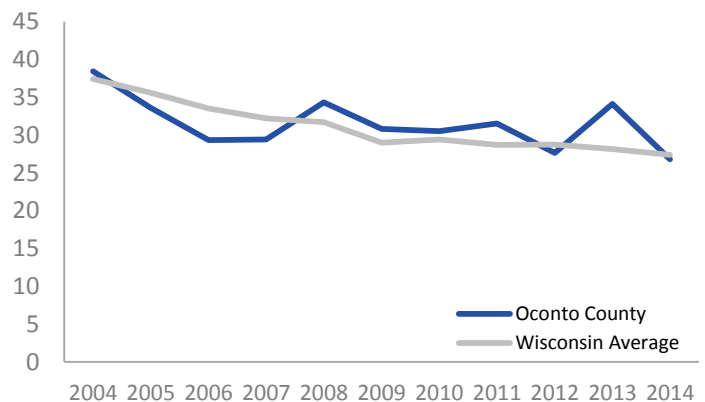
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY OCONTO COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

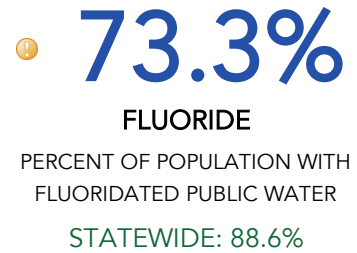
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



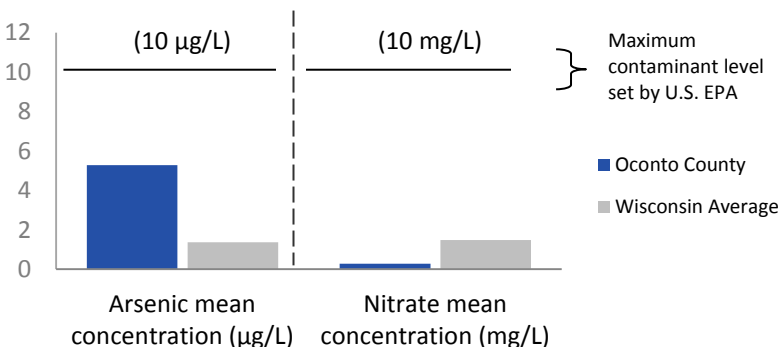
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY

OCONTO COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

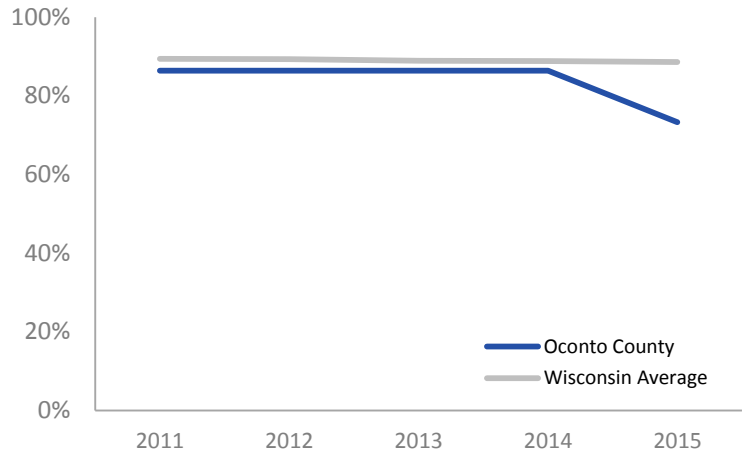
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

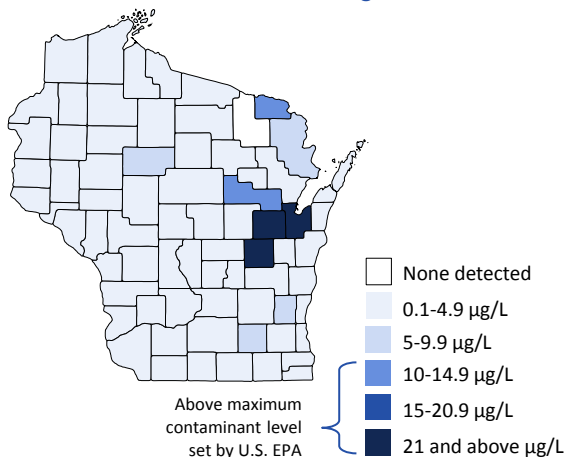
Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

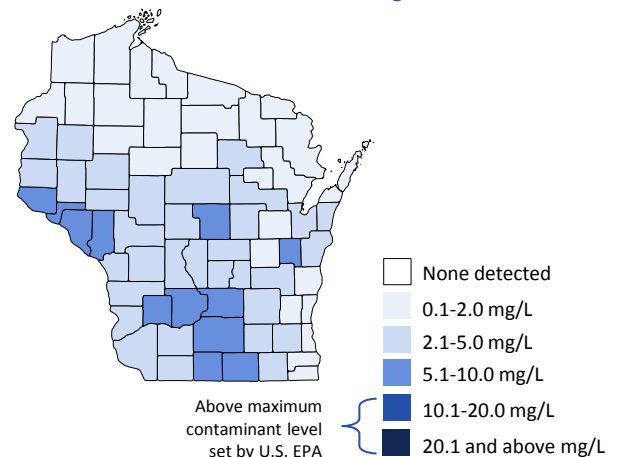
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)





AIR QUALITY OCONTO COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



6

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



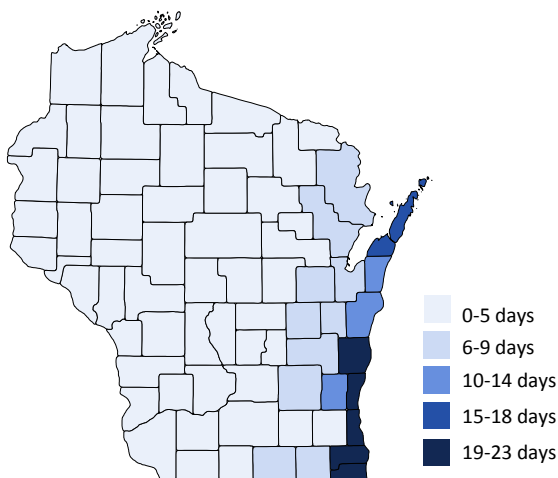
8.7

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

Above state value At or below state value Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

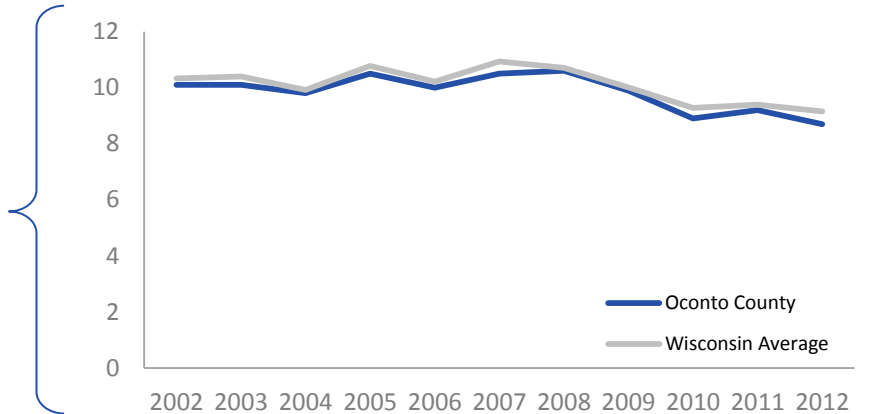


AIR QUALITY OCONTO COUNTY

PARTICULATE MATTER 2.5

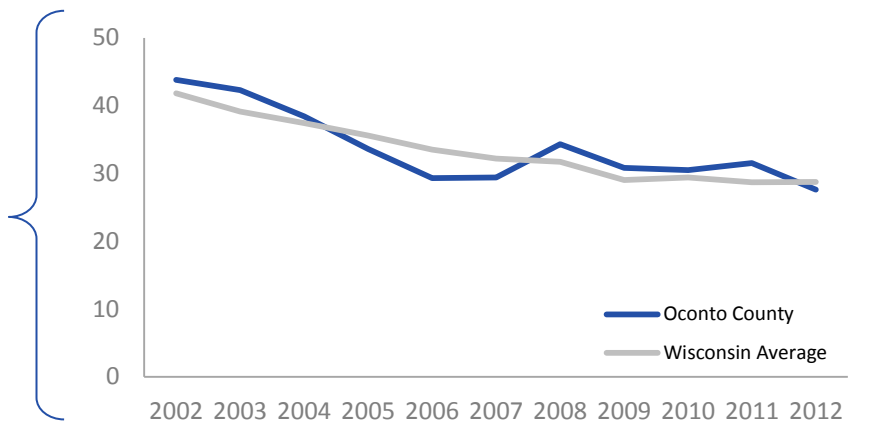
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



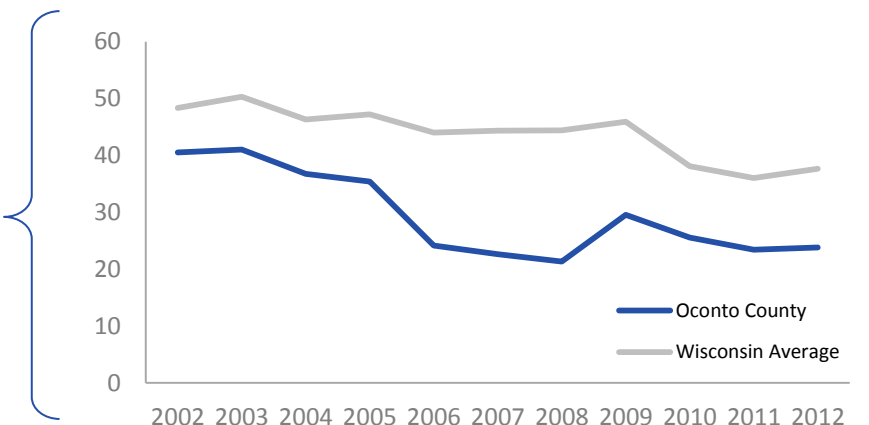
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



ONEIDA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



ONEIDA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 0.8% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 4.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

✓ 15.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 75.9 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 33.0 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 14.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 25.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 1.0 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 1.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 67.1% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS ONEIDA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **4.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **0.8%**

CHILDHOOD LEAD POISONING

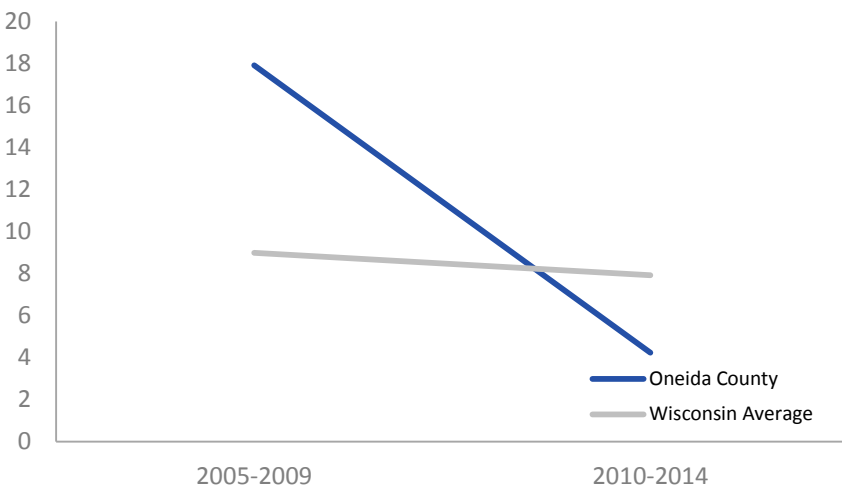
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS ONEIDA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

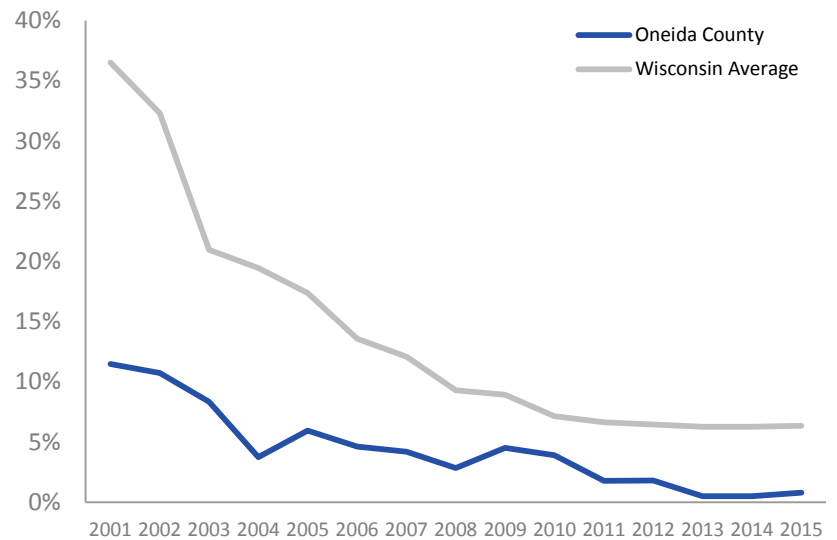
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

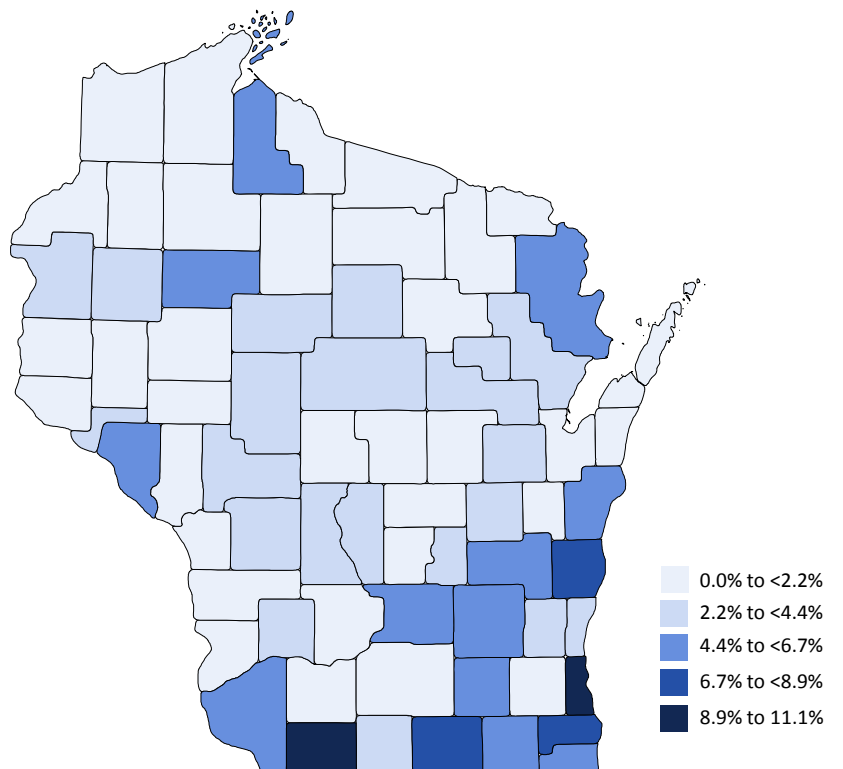
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE ONEIDA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

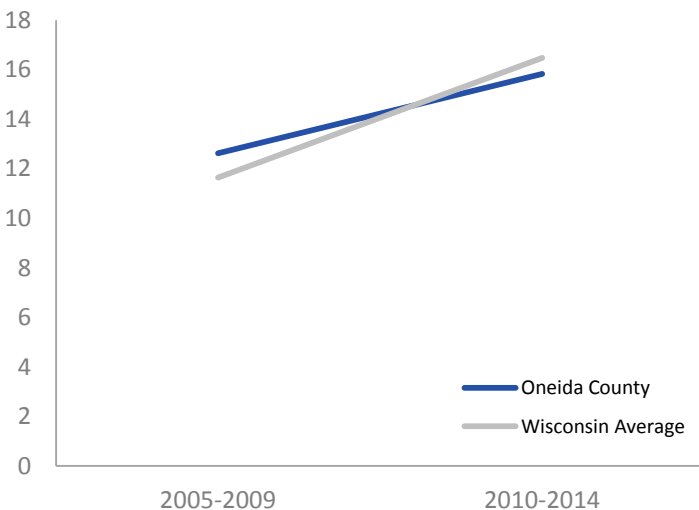
✓ **15.8**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

⚠ **75.9**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht

Wisconsin Environmental Public Health Tracking | 7



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

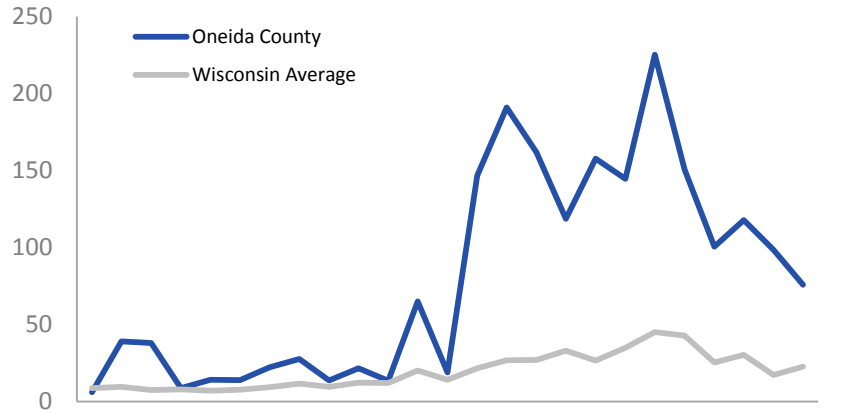
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

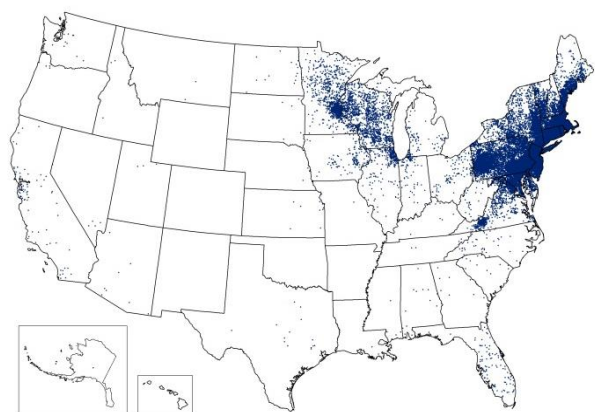
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES ONEIDA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **33.0**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **14.0**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

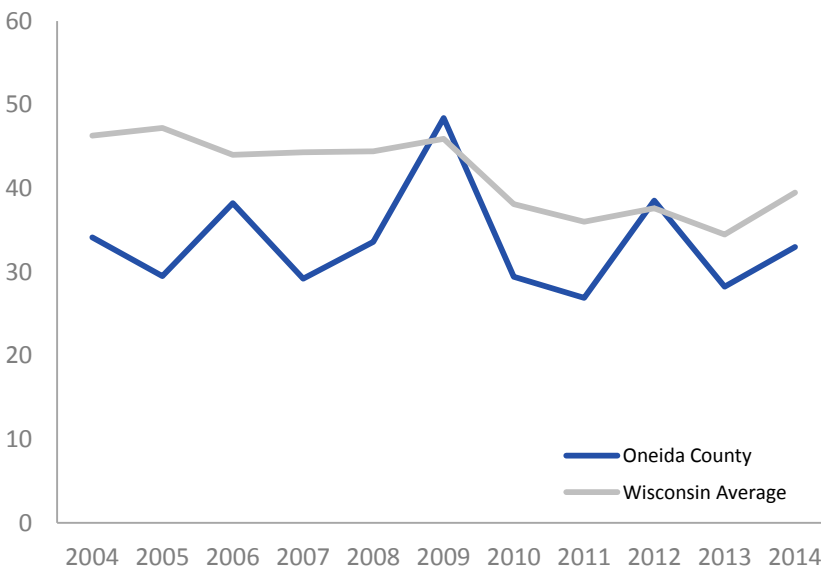
⚠ **78.2**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **25.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

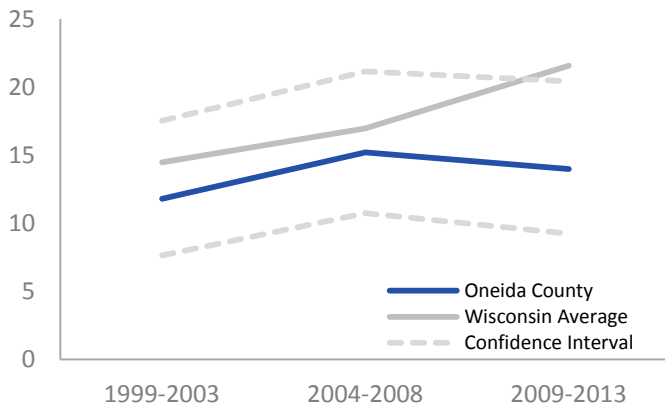
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

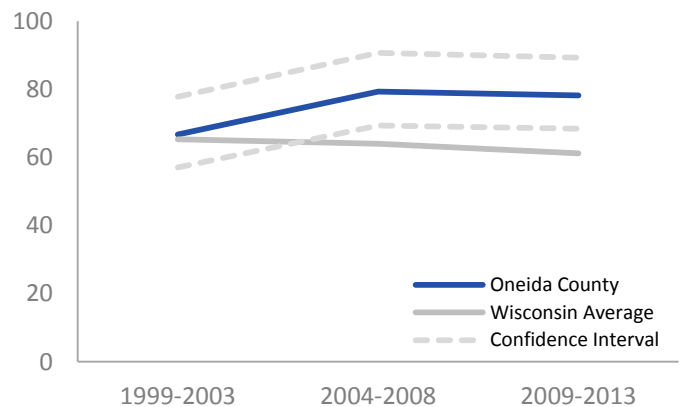
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

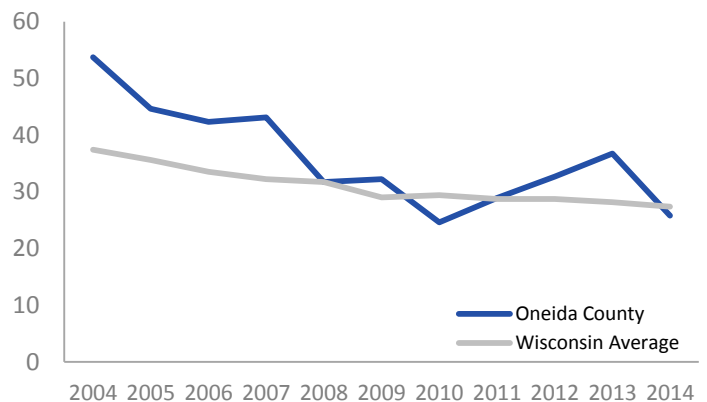
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY ONEIDA COUNTY

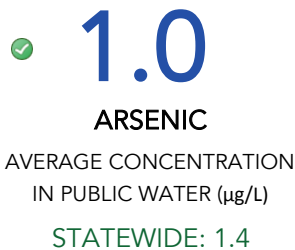
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

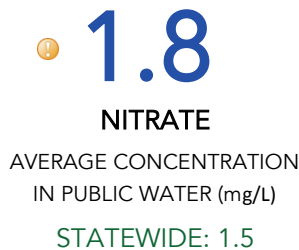
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

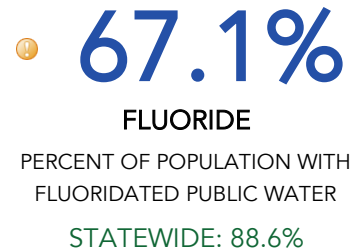
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



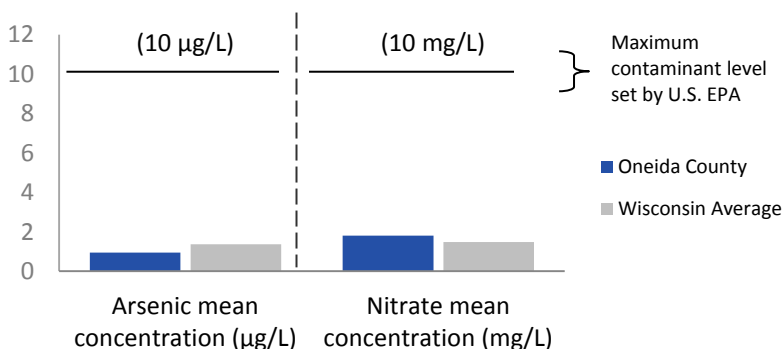
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY ONEIDA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

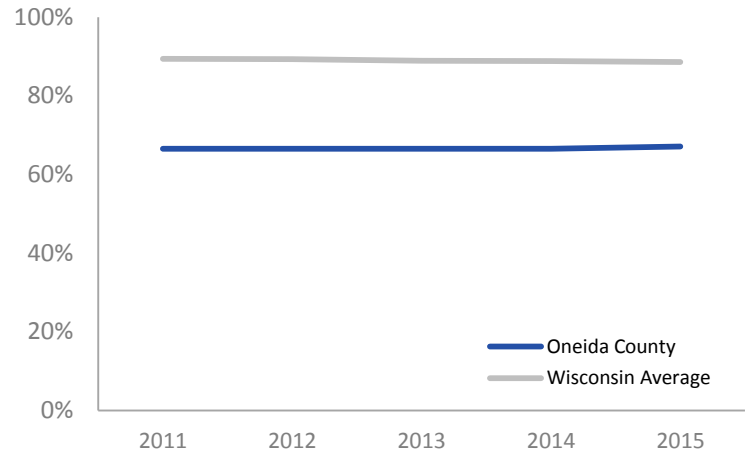
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

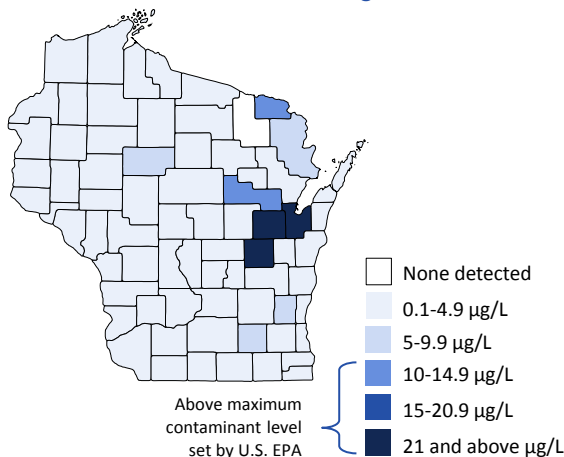
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

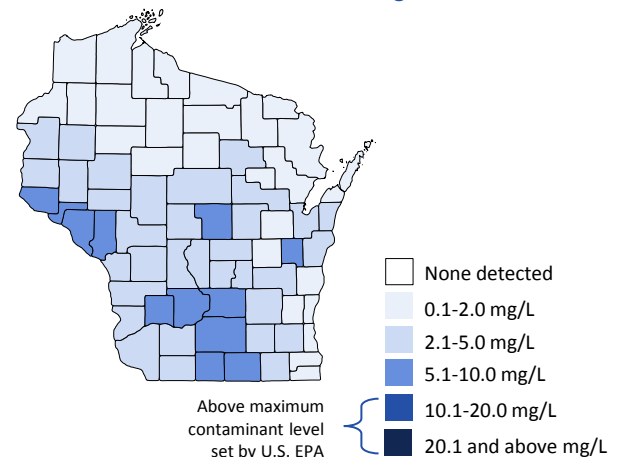
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



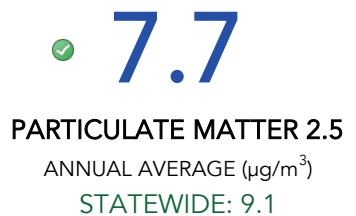


AIR QUALITY ONEIDA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

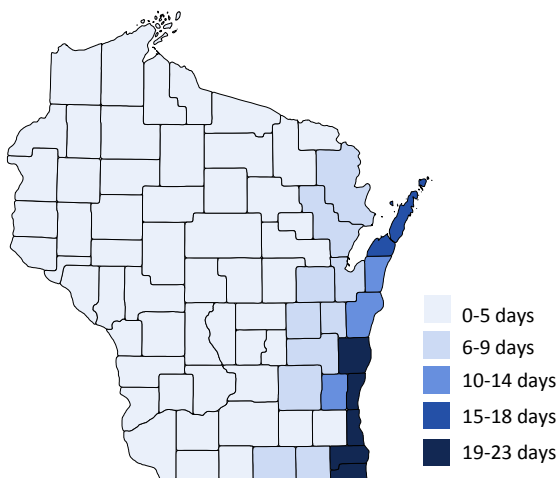
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

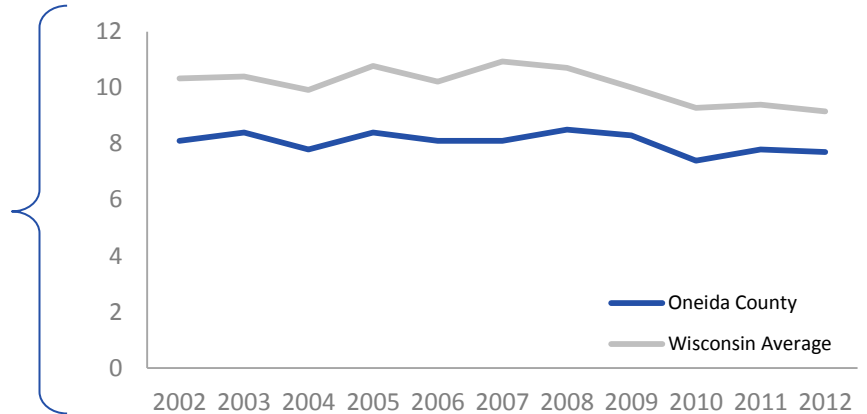


AIR QUALITY ONEIDA COUNTY

PARTICULATE MATTER 2.5

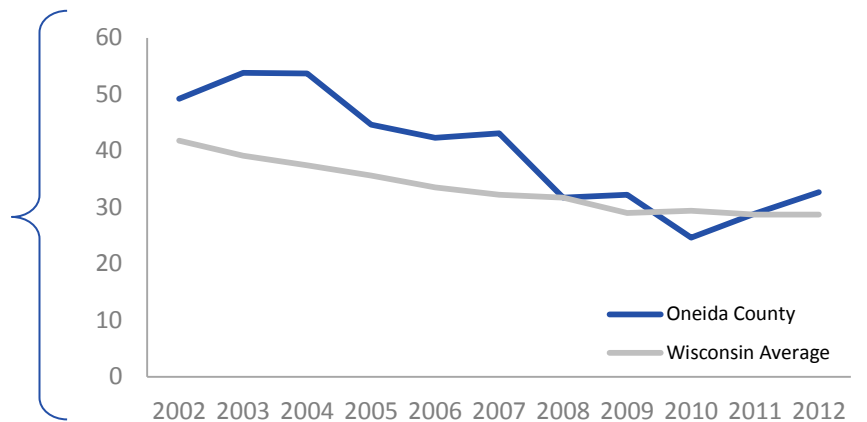
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



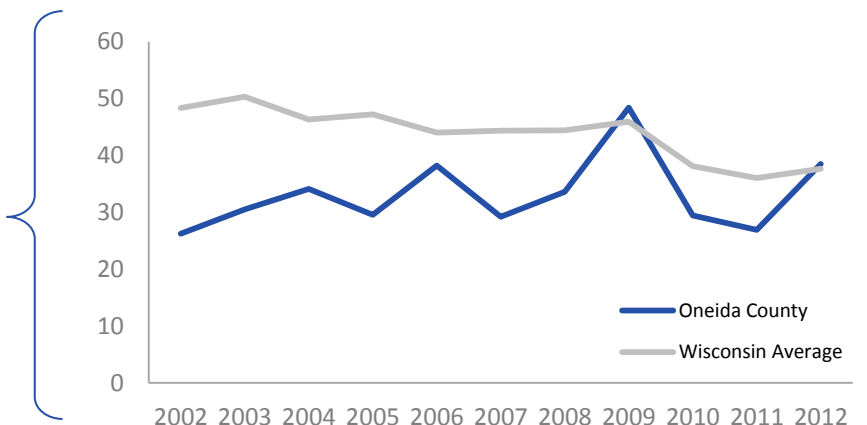
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



OUTAGAMIE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



OUTAGAMIE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 3.1% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 7.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 14.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 6.0 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 25.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 35.1 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 24.1 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.9 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 88.6% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 6 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS OUTAGAMIE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✔ **7.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✔ **3.1%**

CHILDHOOD LEAD POISONING

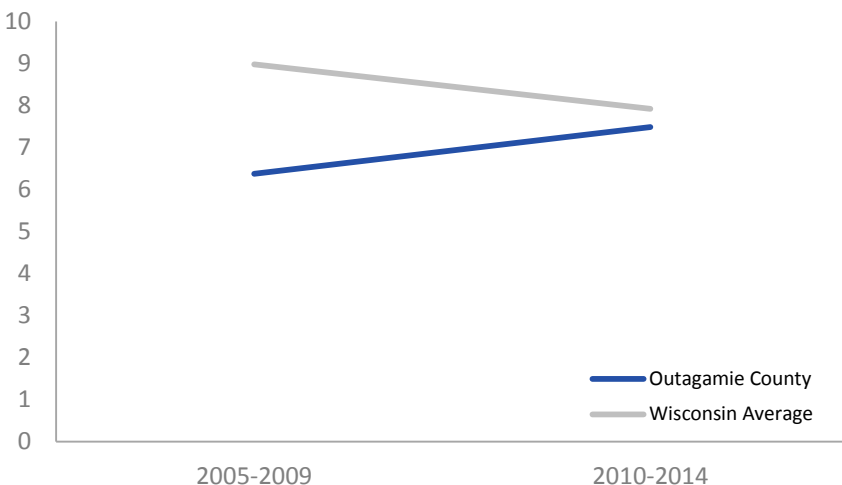
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✔ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS OUTAGAMIE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

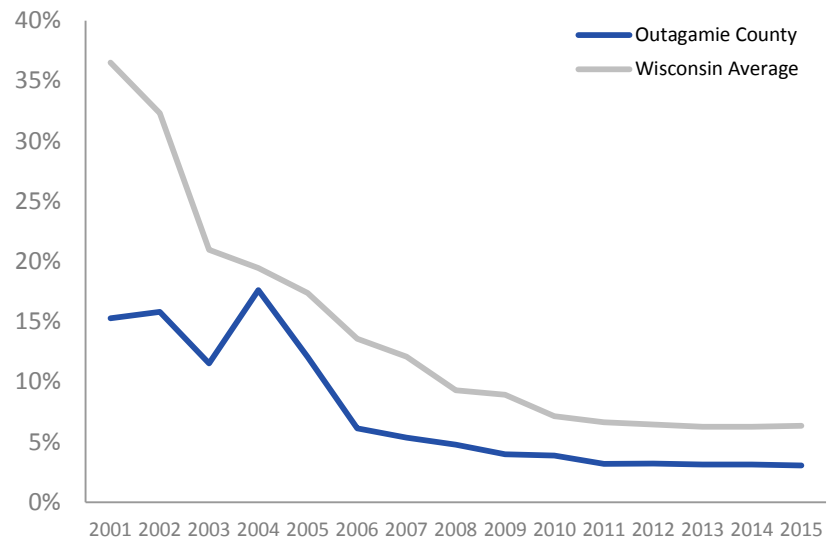
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

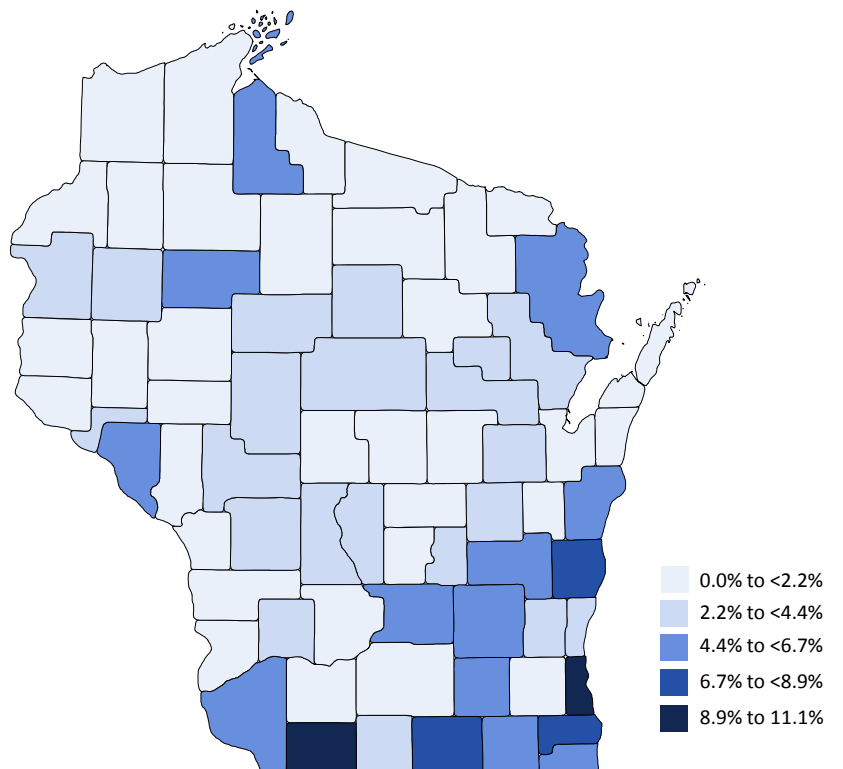
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE OUTAGAMIE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **14.8**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

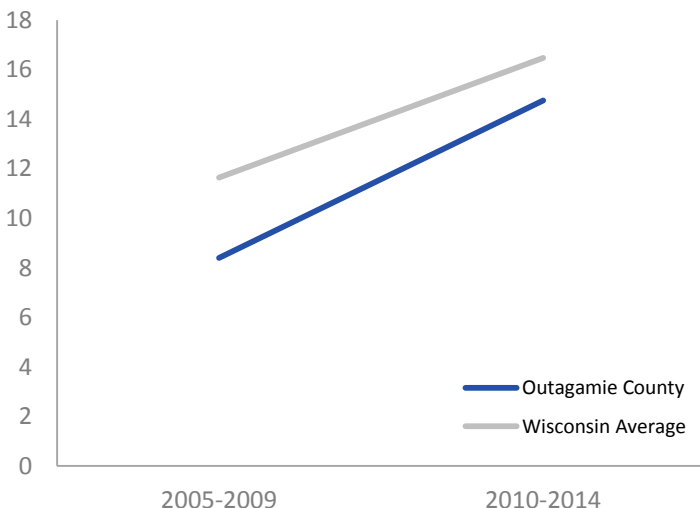
✓ **6.0**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⬆ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

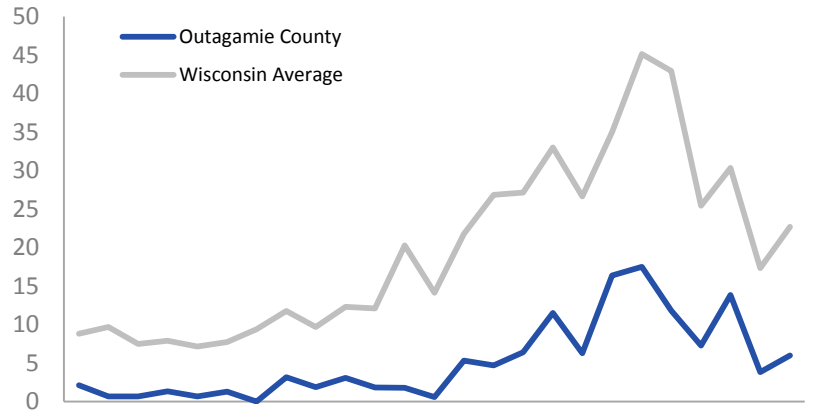
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

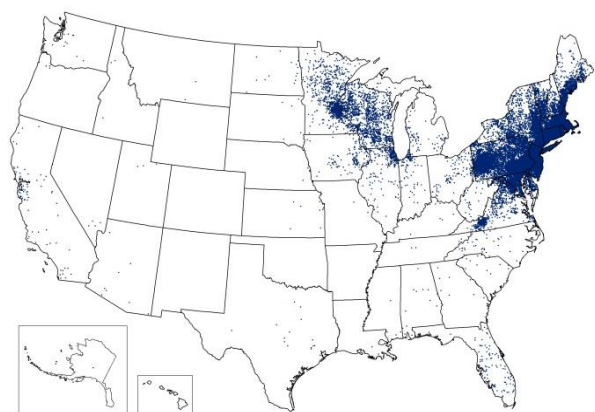
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

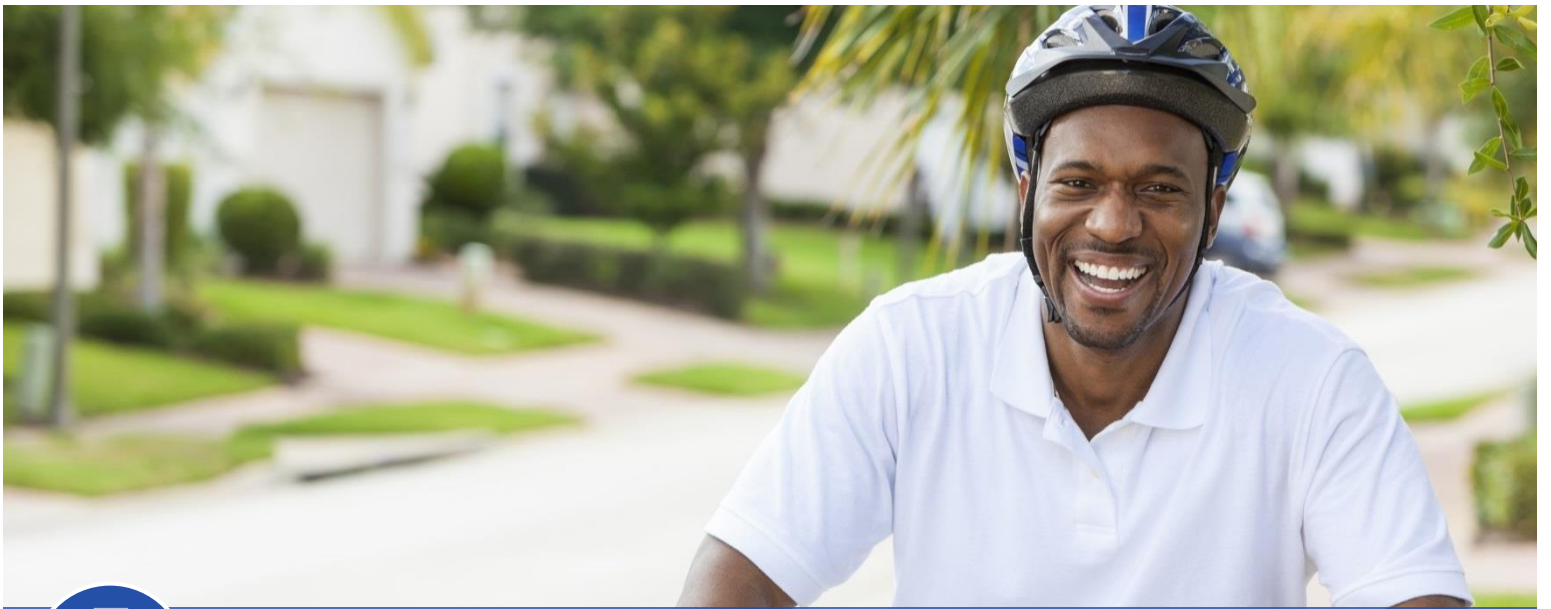


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES OUTAGAMIE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **25.9**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **35.1**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

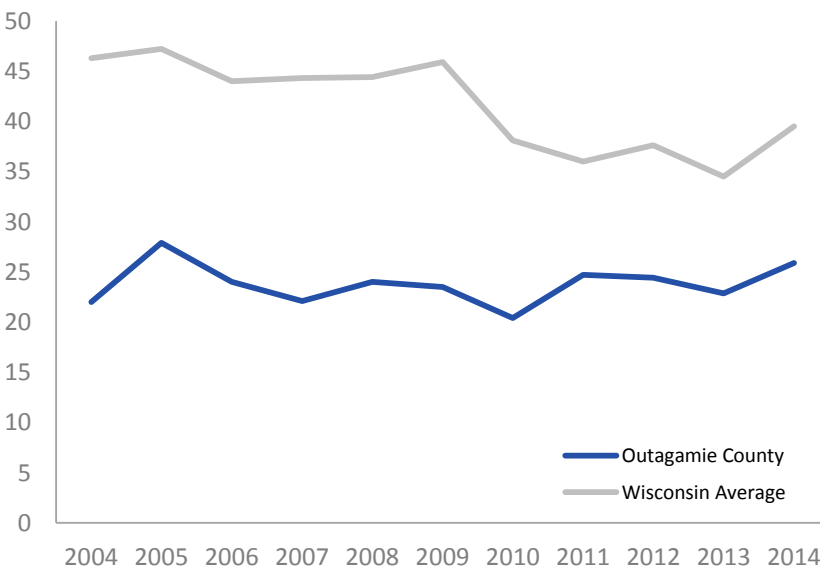
✓ **54.8**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **24.1**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

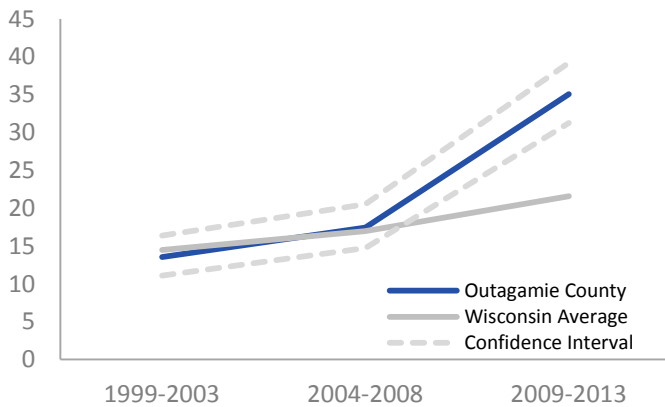
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

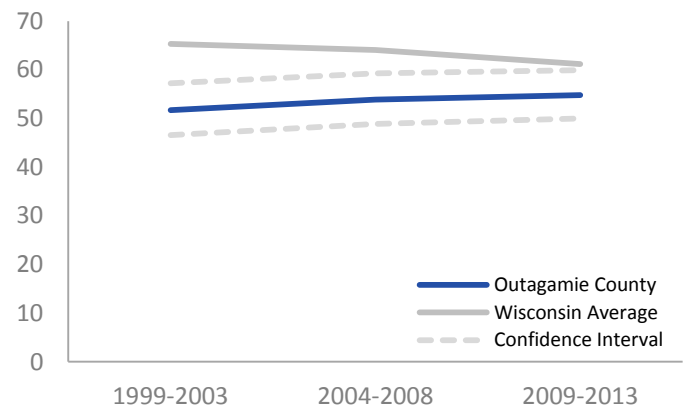
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

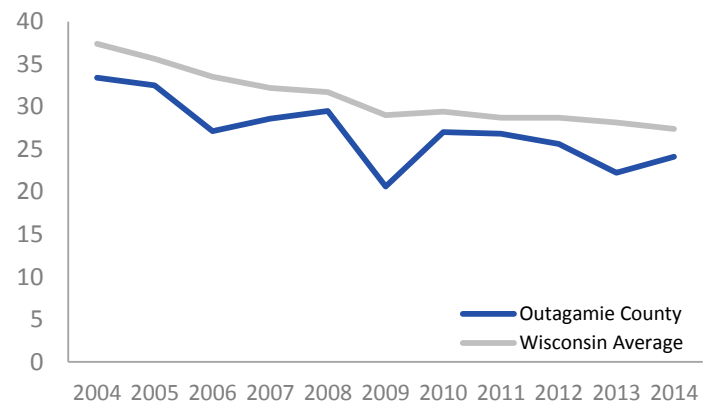
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY OUTAGAMIE

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

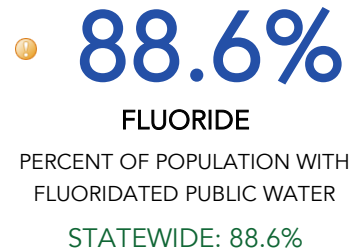
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



ⓘ Above state value (with exception of fluoride where below state value is not preferred)



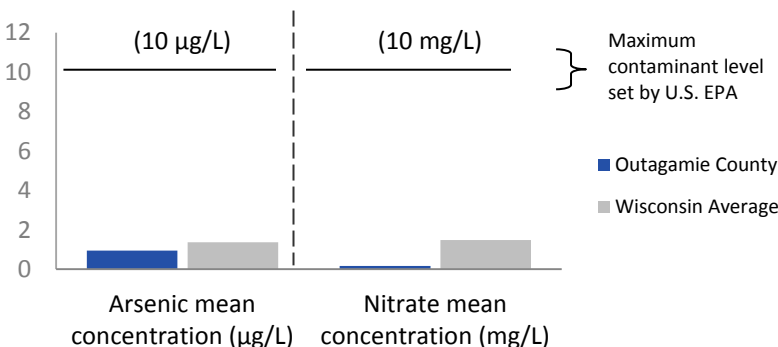
✔ At or below state value (with exception of fluoride where above state value is preferred)



ⓘ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY OUTAGAMIE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

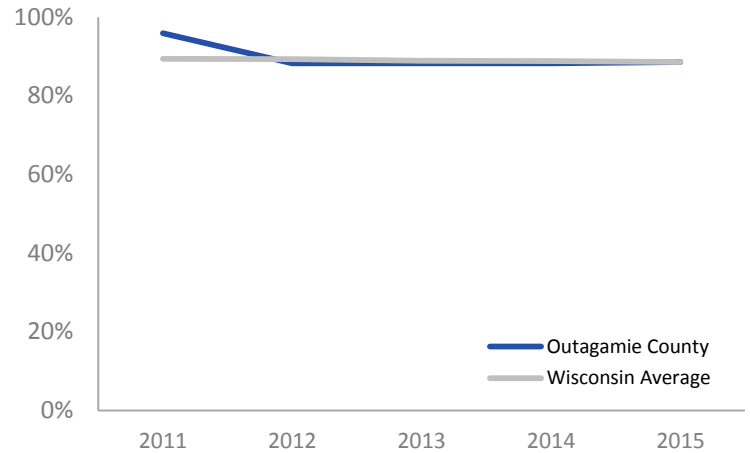
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

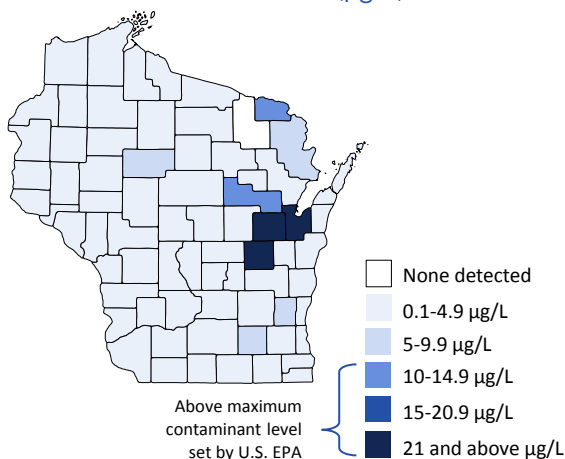
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

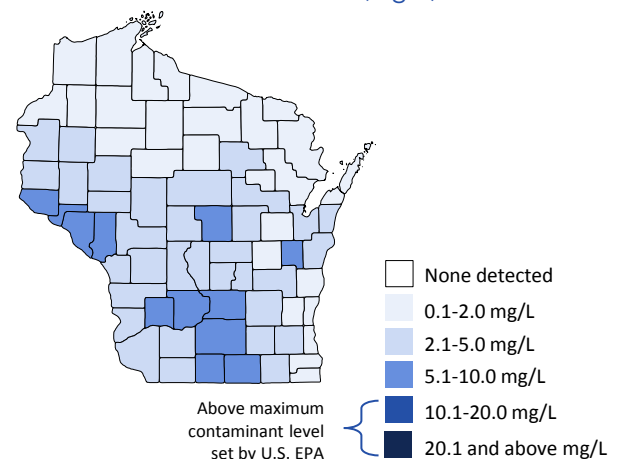
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



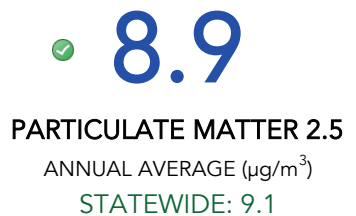
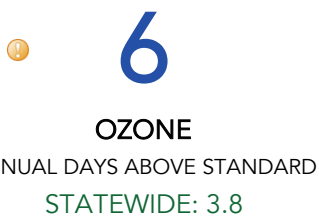


AIR QUALITY OUTAGAMIE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

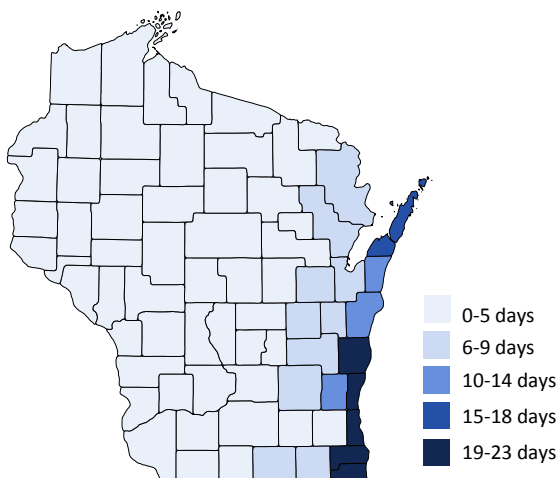
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



⚠ Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

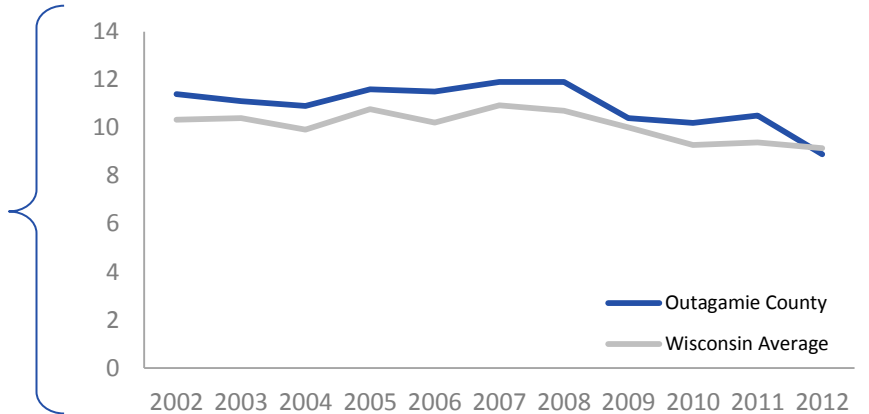


AIR QUALITY OUTAGAMIE COUNTY

PARTICULATE MATTER 2.5

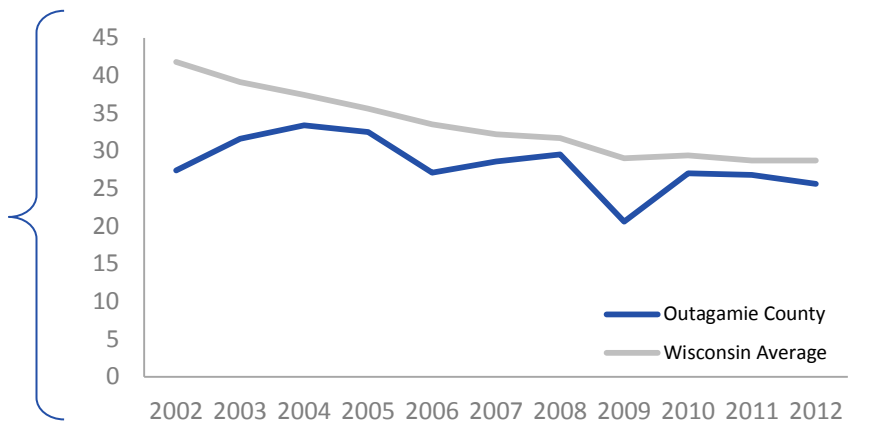
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



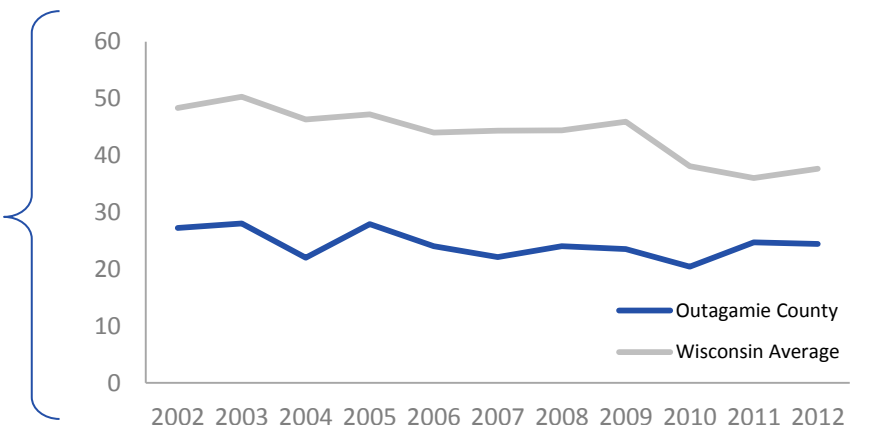
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



OZAUKEE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

OZAUKEE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 3.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 3.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 10.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 4.6 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 20.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 26.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 24.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 3.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.1 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 92.6% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 19 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS OZAUKEE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **3.6%**

CHILDHOOD LEAD POISONING

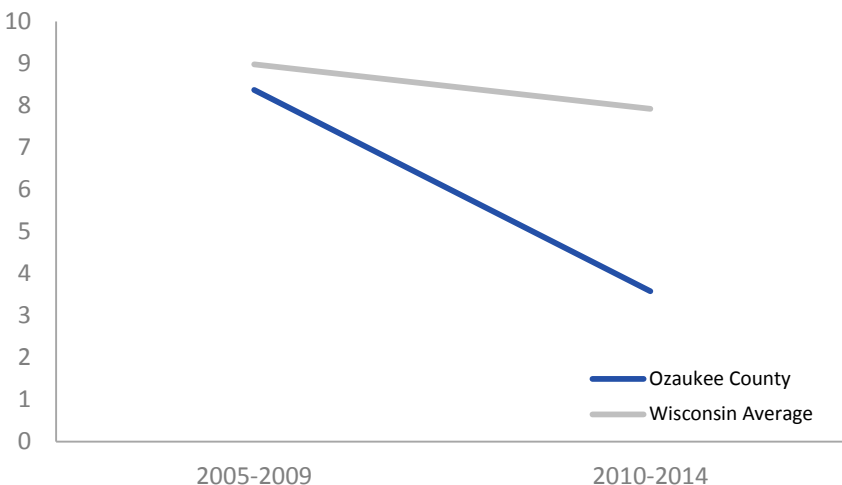
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS OZAUKEE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

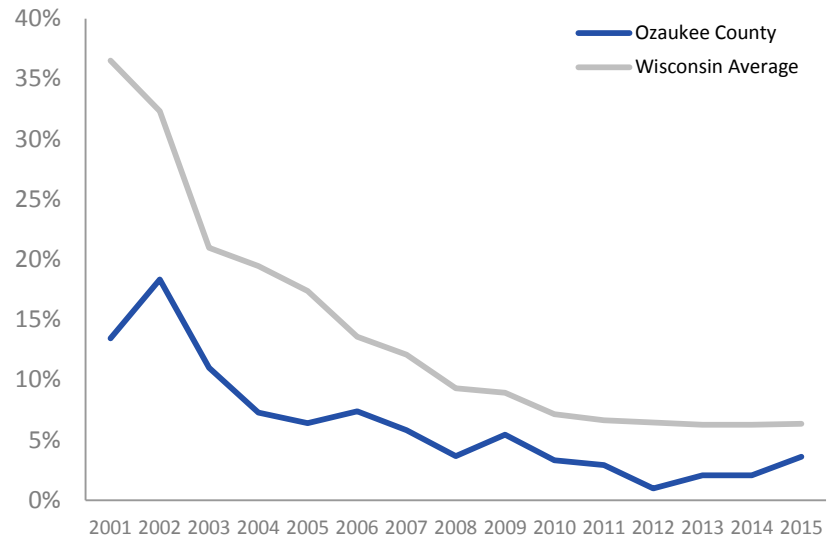
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

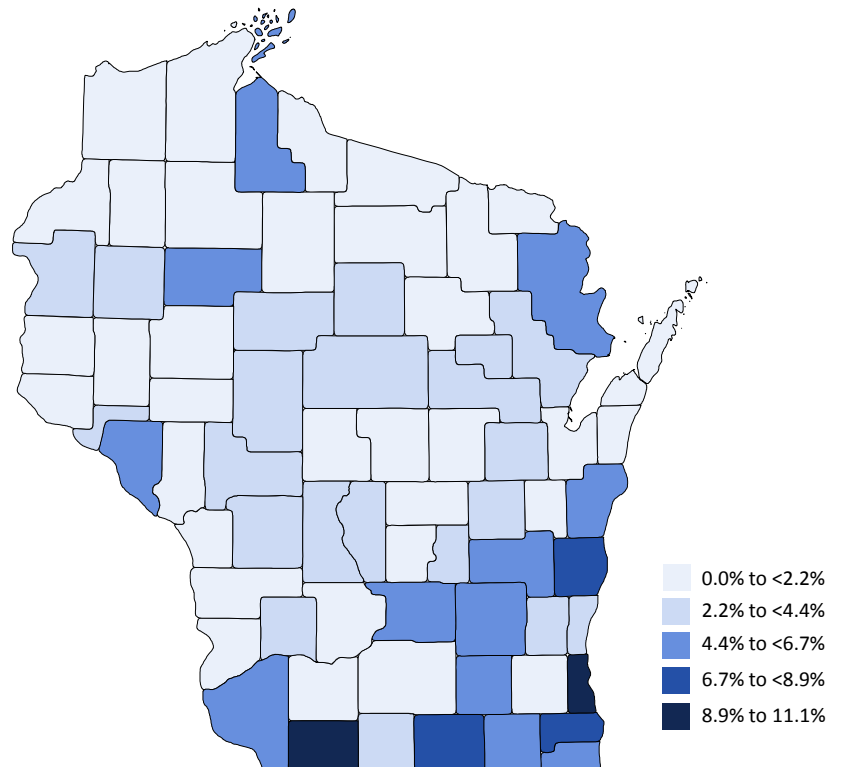
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE OZAUKEE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ 10.7

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

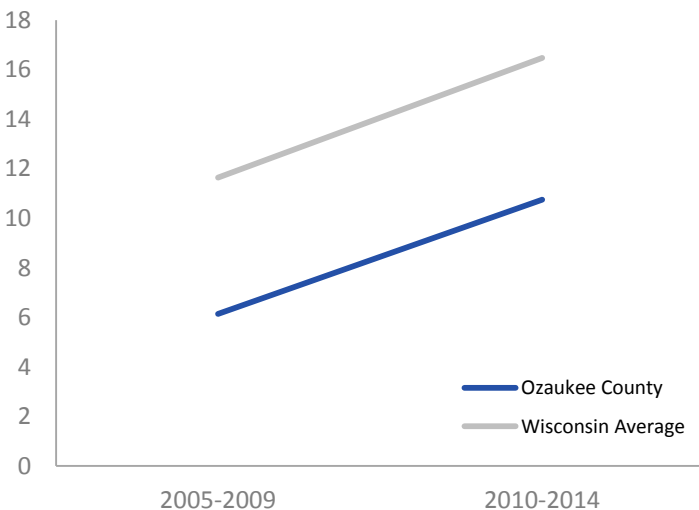
✓ 4.6

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⬆ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

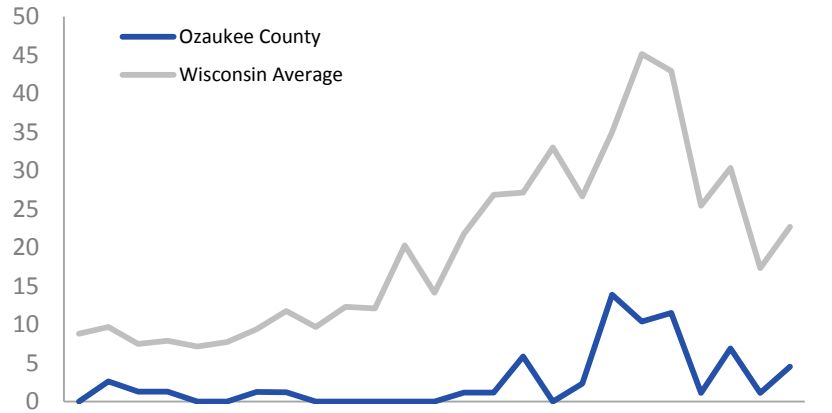
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

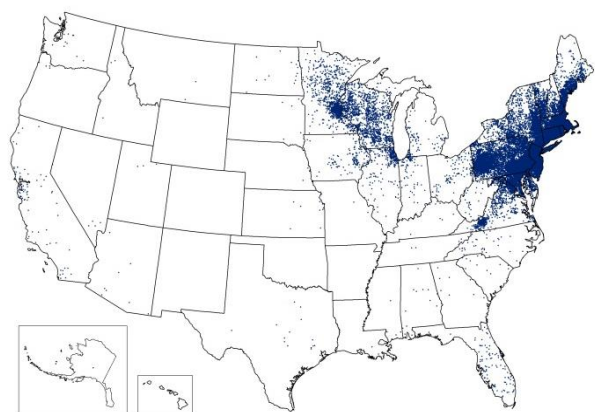
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

OZAUKEE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **20.9**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **26.0**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

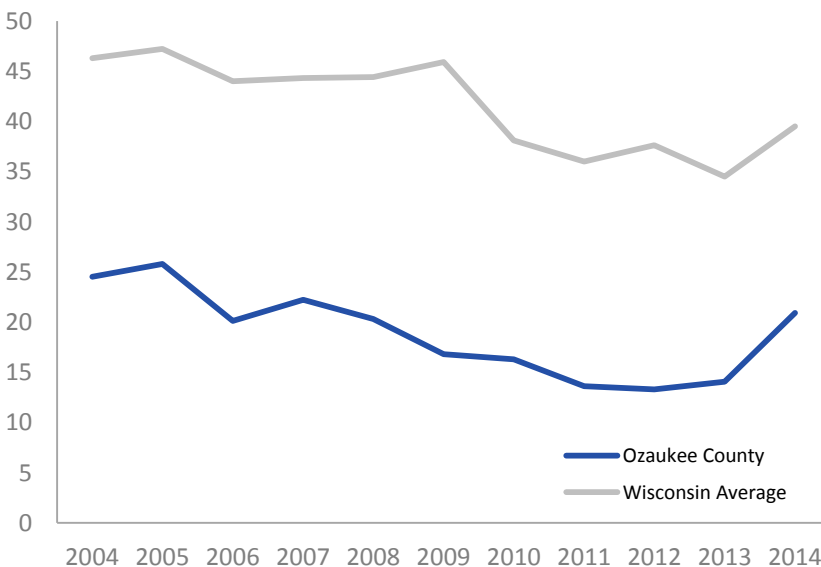
✓ **49.4**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **24.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

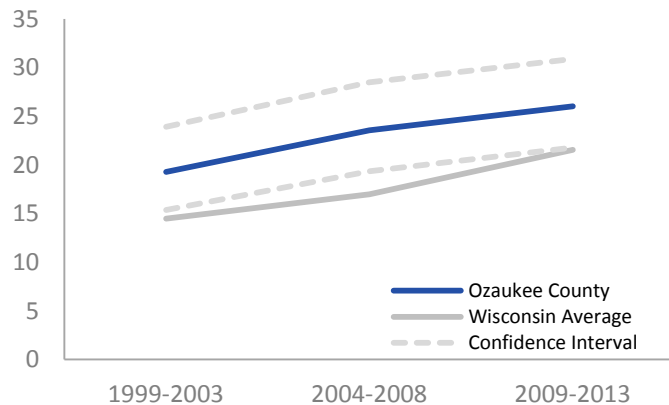
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

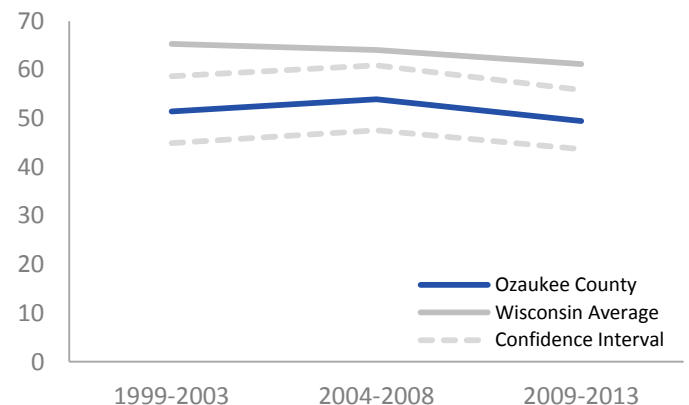
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

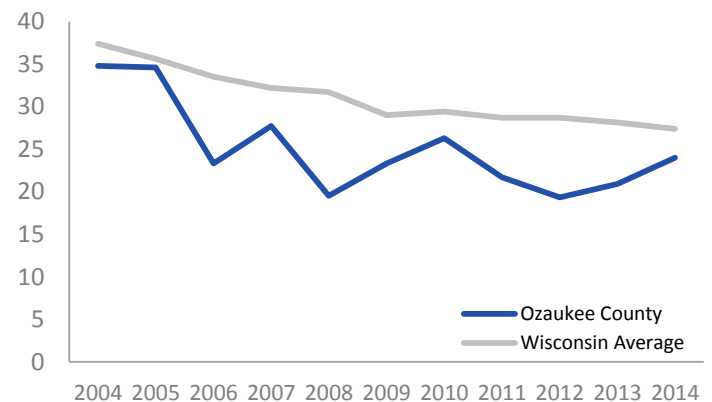
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY OZAUKEE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

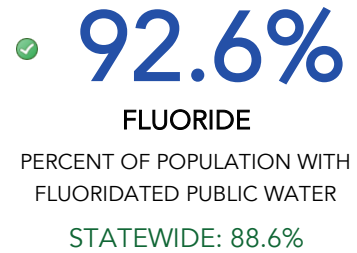
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠️ Above state value (with exception of fluoride where below state value is not preferred)



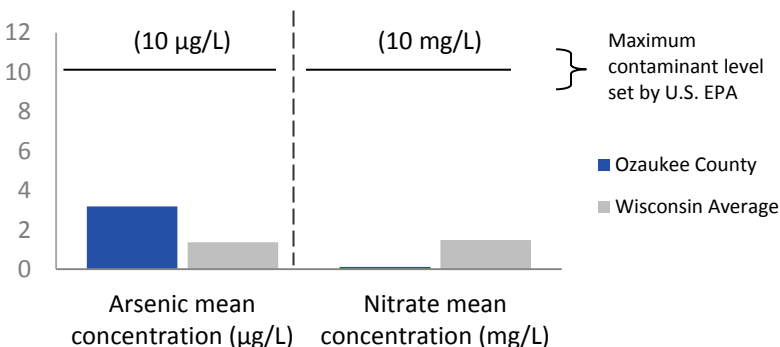
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.



WATER QUALITY OZAUKEE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

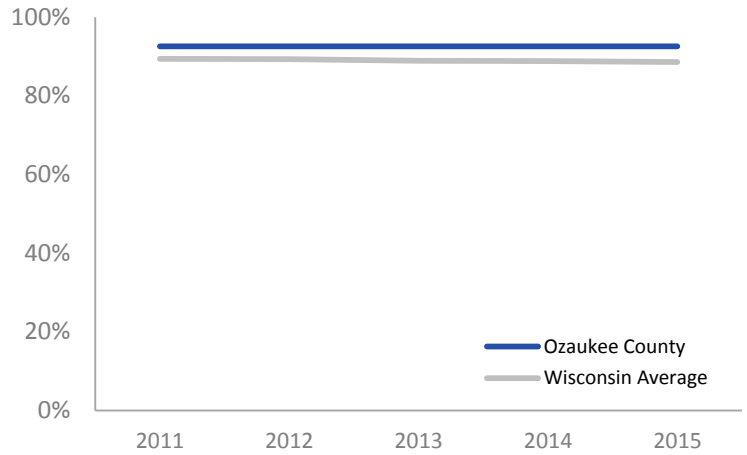
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

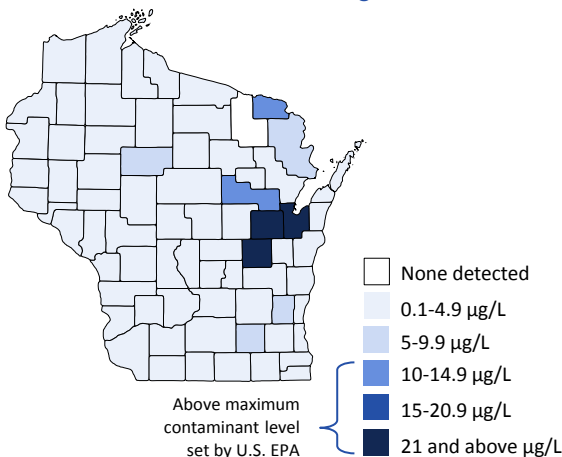
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

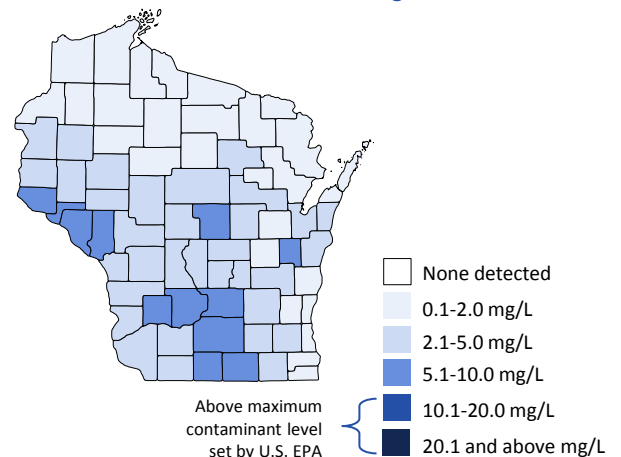
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY OZAUKEE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.

19

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8

1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3

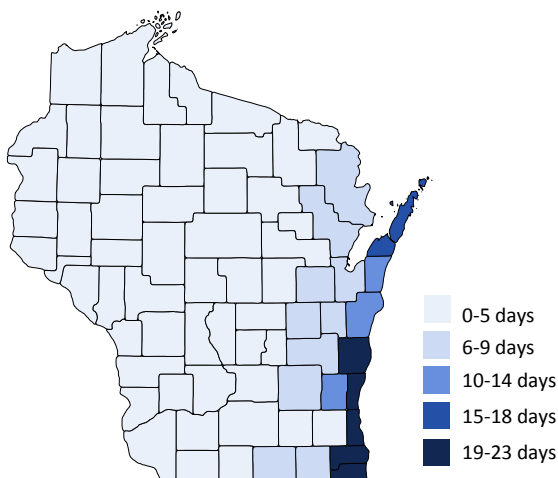
9.8

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

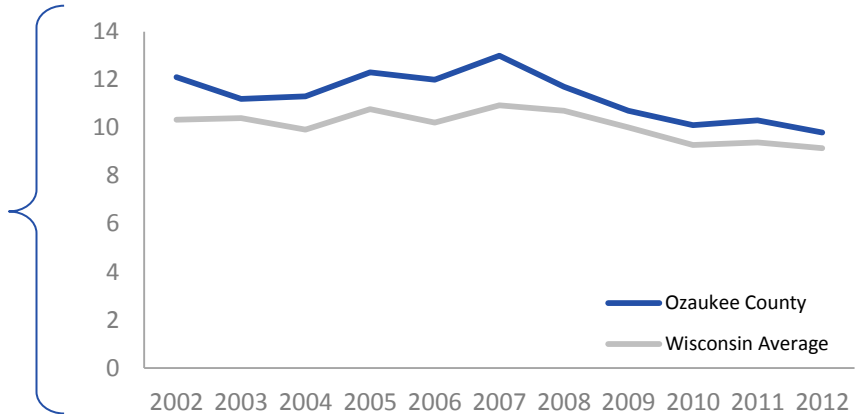


AIR QUALITY OZAUKEE COUNTY

PARTICULATE MATTER 2.5

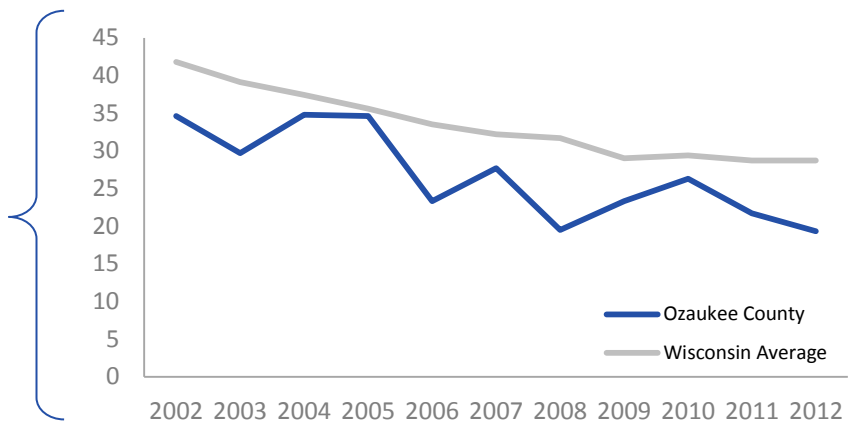
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



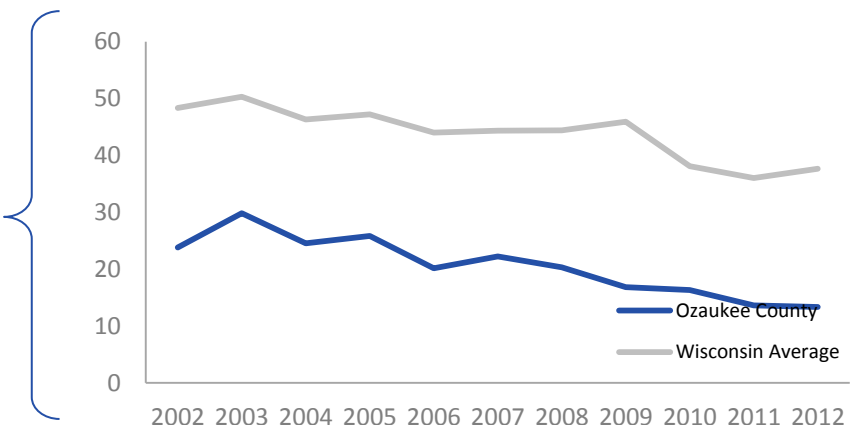
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



PEPIN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

PEPIN COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 3.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

^ | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

! 21.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

! 54.9 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

! 40.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 16.9 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 27.1 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.7 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

! 2.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

! 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

! Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS PEPIN COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.



CARBON MONOXIDE POISONING
RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

Above state value



3.0%

CHILDHOOD LEAD POISONING

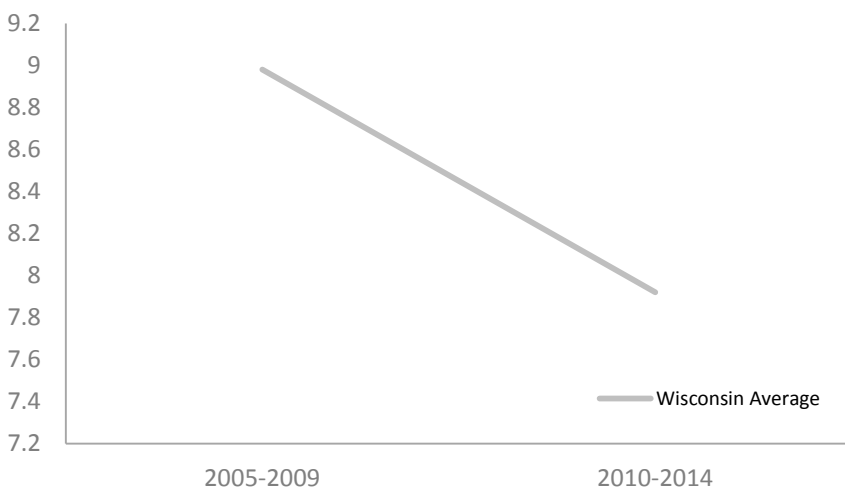
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

At or below state value Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS PEPIN COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

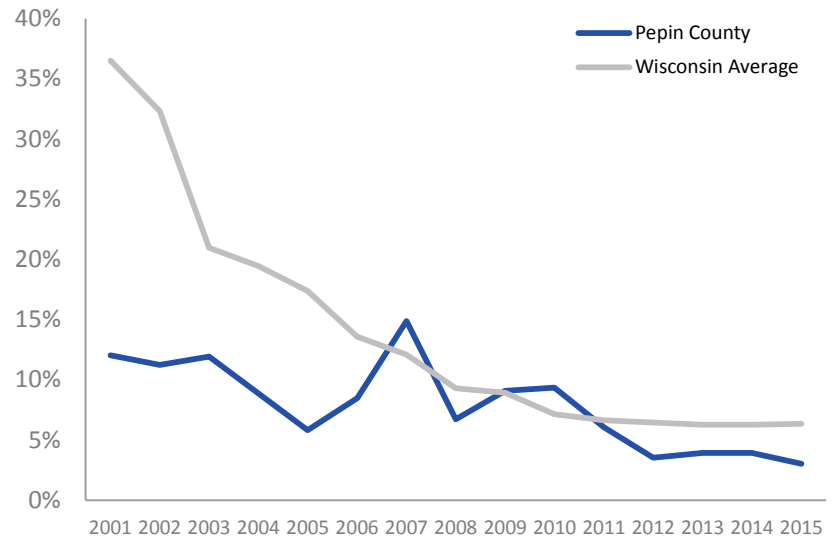
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

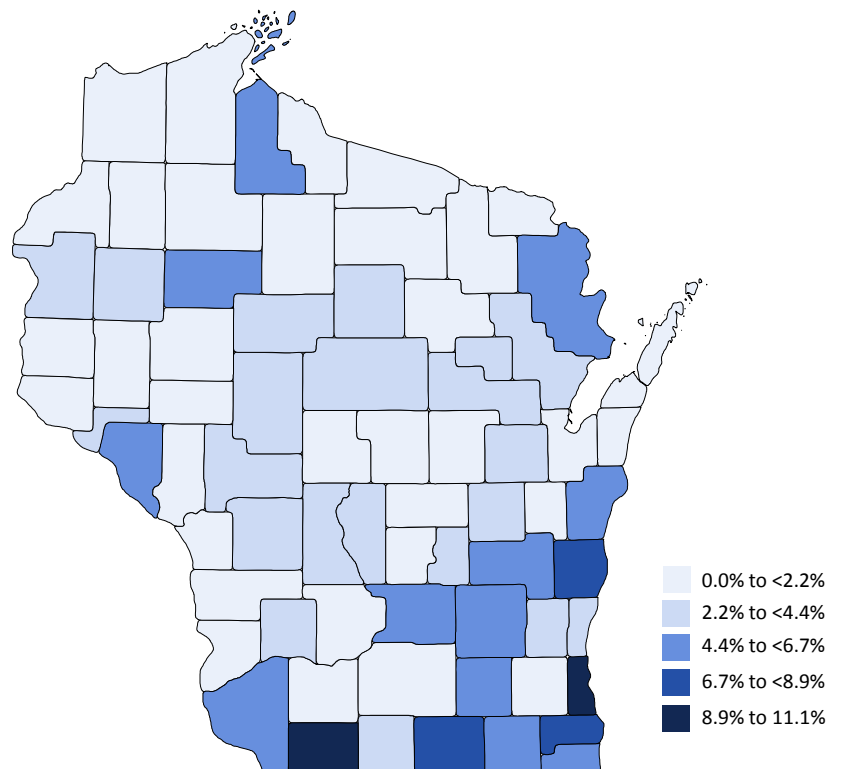
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE PEPIN COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

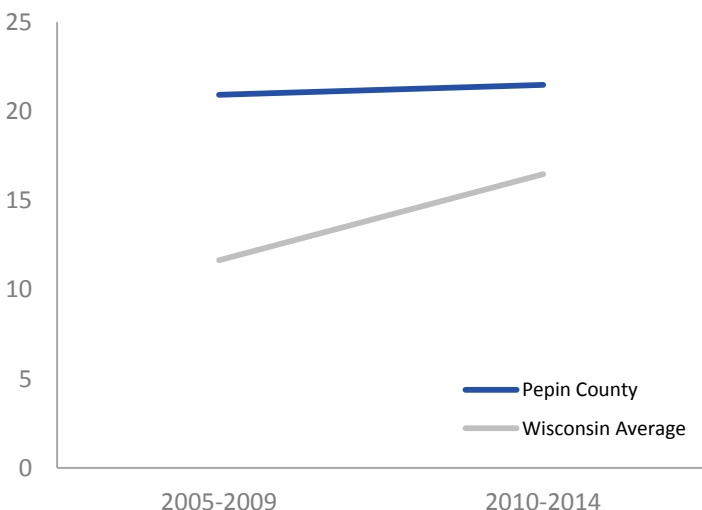
21.5
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

54.9
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

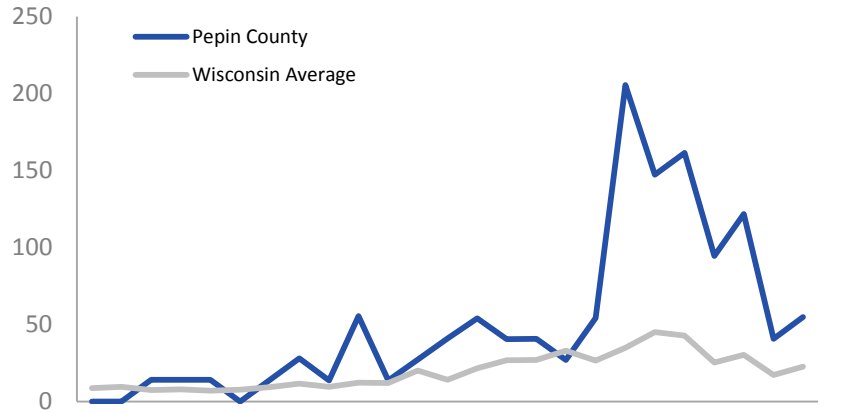
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

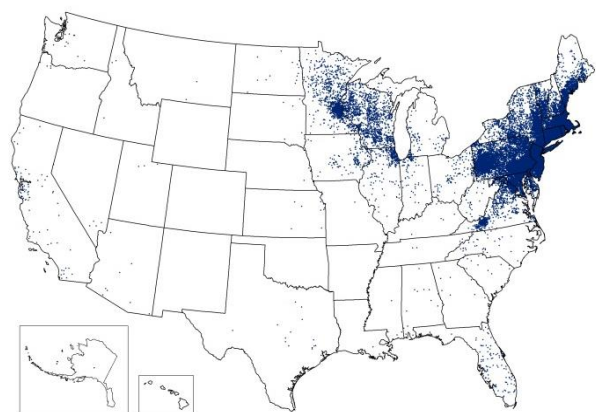
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES PEPIN COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

40.3
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

16.9
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

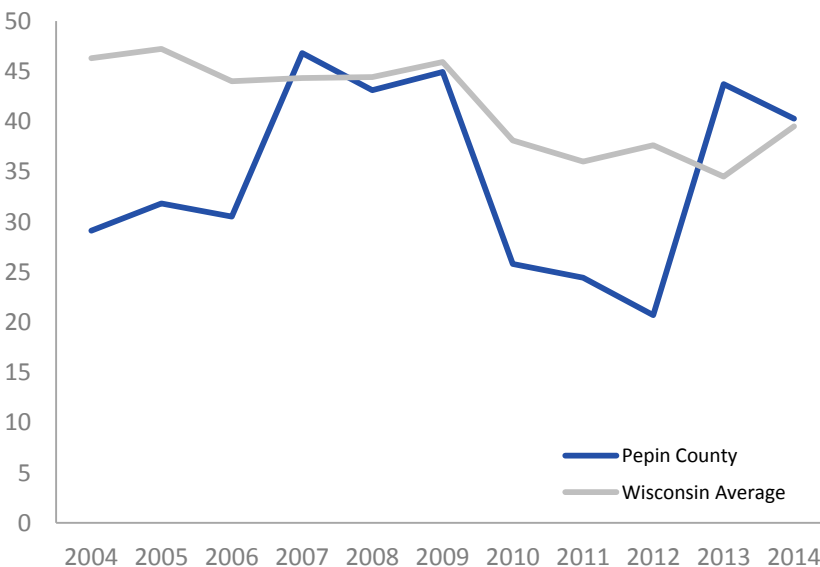
53.3
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

27.1
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

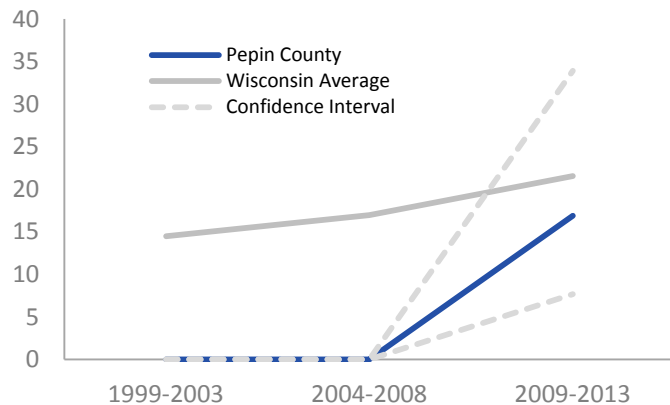
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

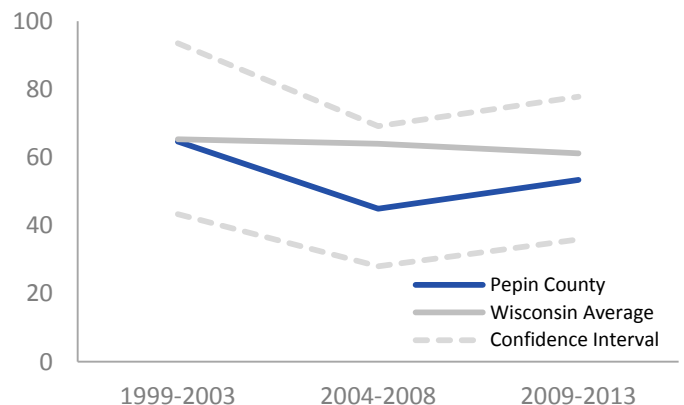
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

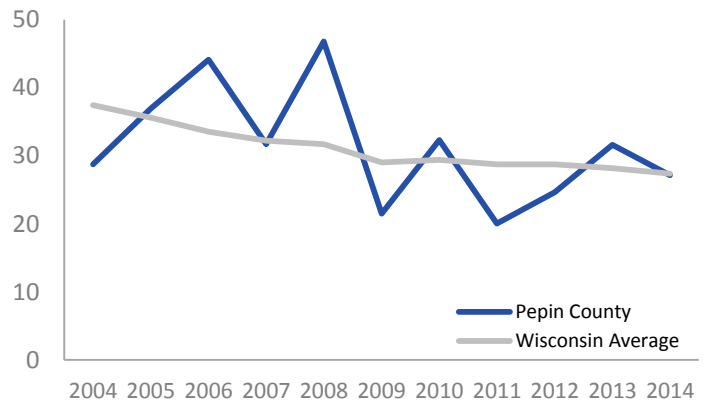
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY PEPIN COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

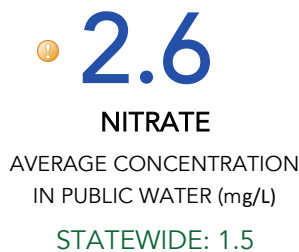
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

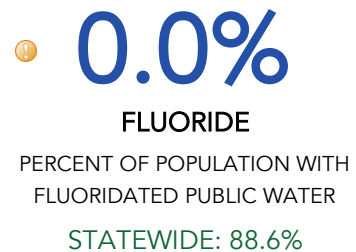
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



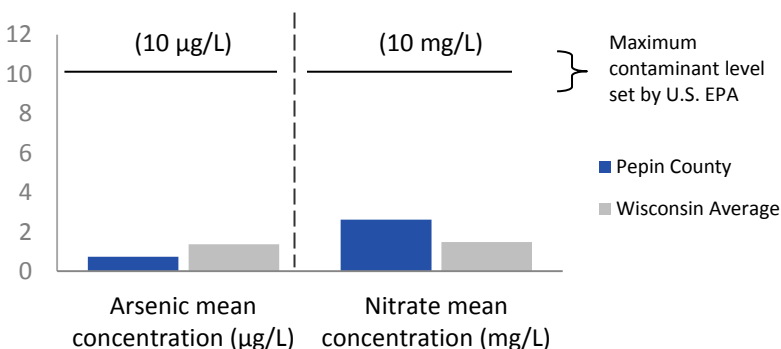
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY PEPIN COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

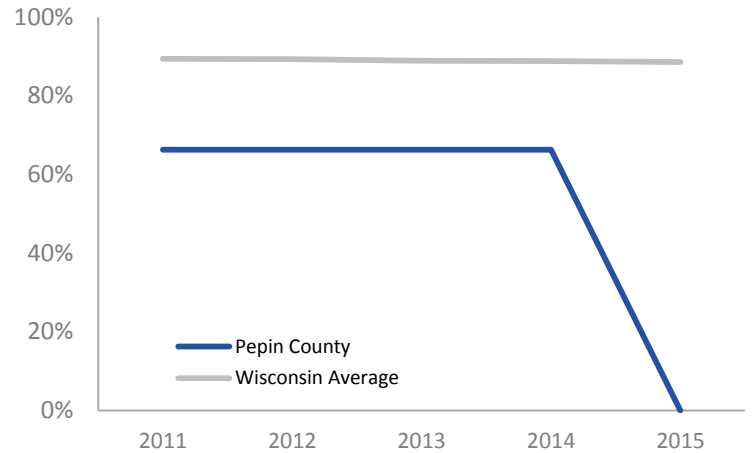
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

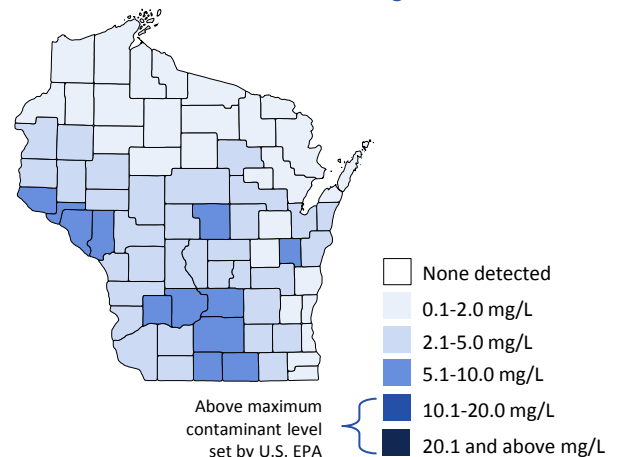
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





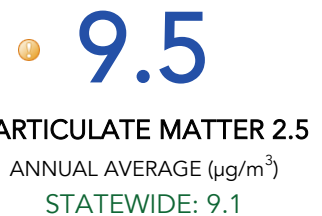
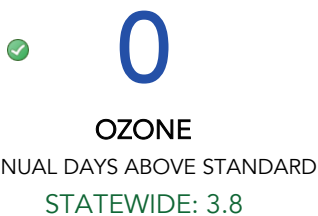
AIR QUALITY

PEPIN COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

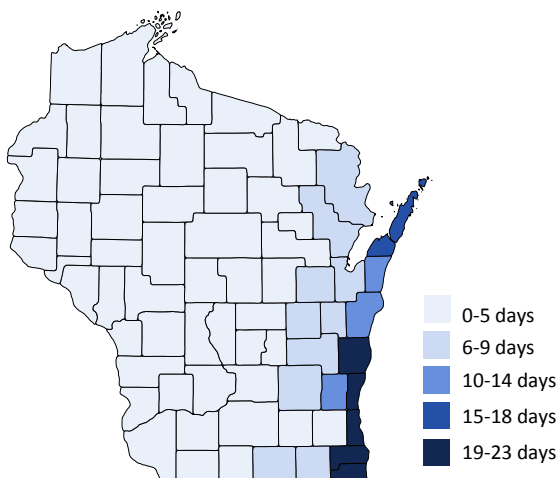
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

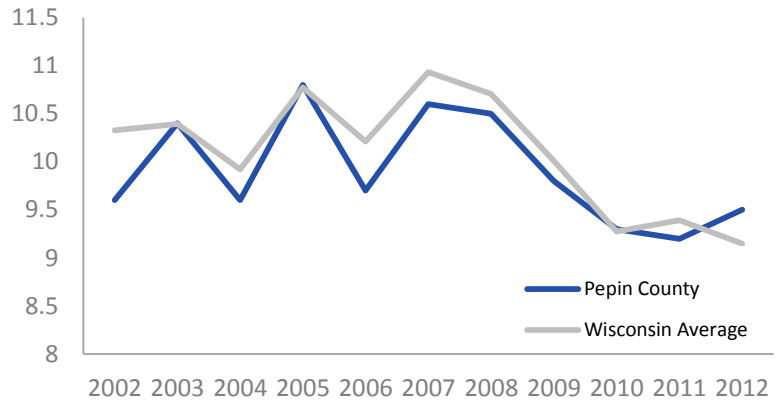


AIR QUALITY PEPIN COUNTY

PARTICULATE MATTER 2.5

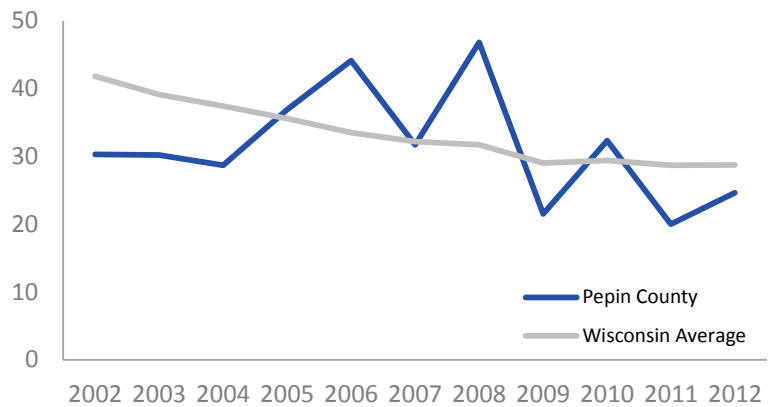
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



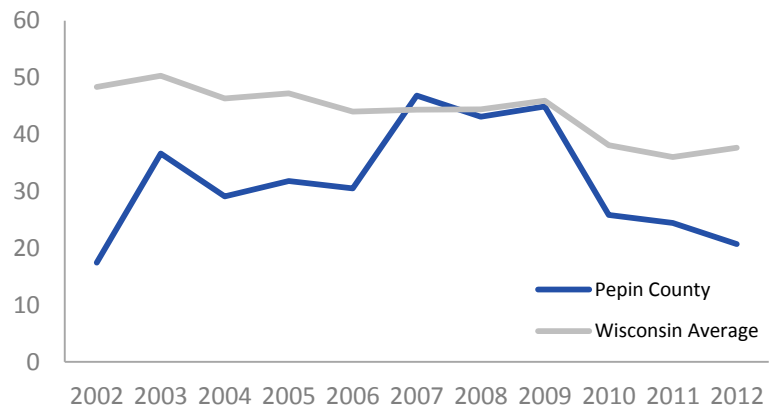
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



PIERCE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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PIERCE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

3.2 | Rate of ER visits per 100,000 people
Wisconsin: 8.5



CLIMATE

Heat Stress

14.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

51.4 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

29.8 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

16.3 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

29.6 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

0.8 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

1.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

92.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✅ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2005-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS PIERCE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.5

✓ **0.0%**

CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE (2005-2014)



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS PIERCE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

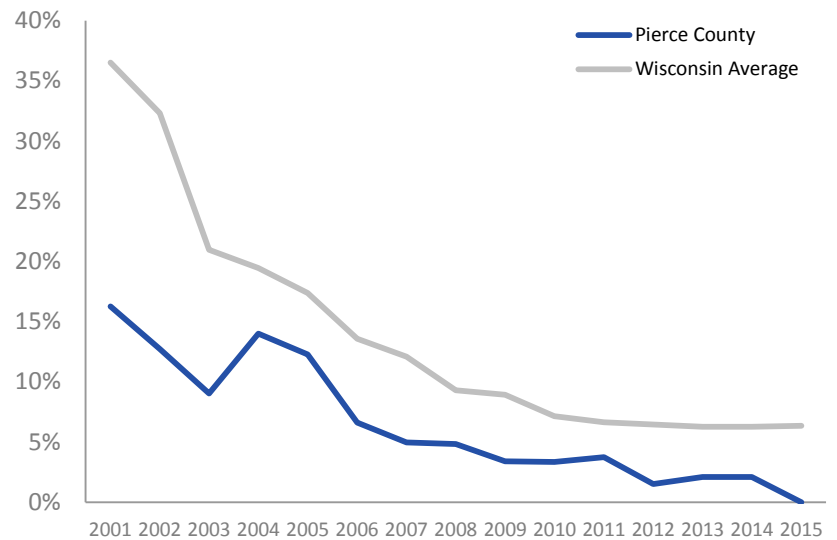
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

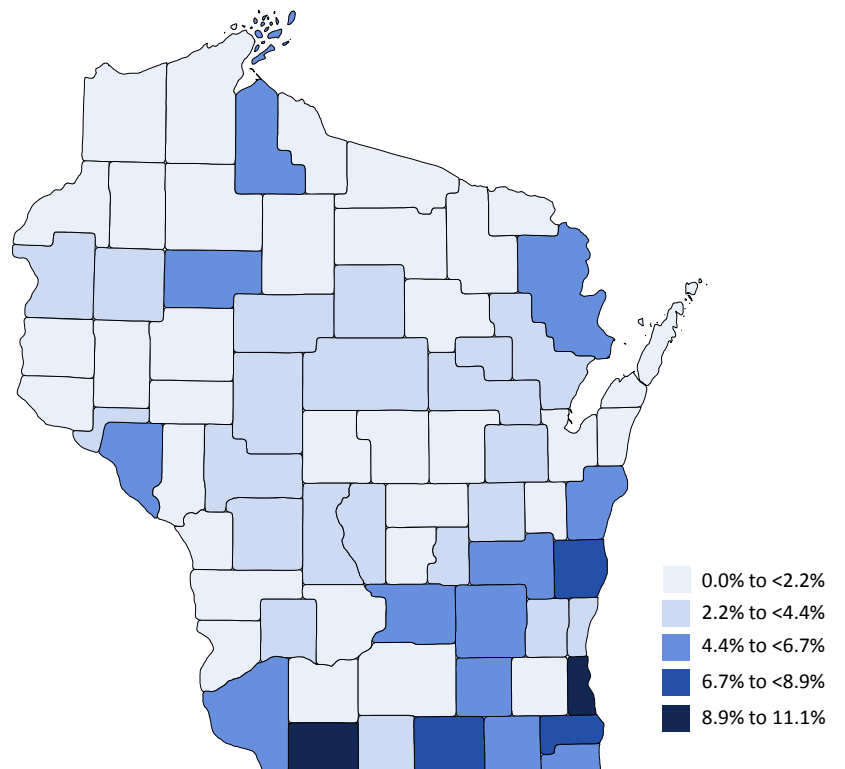
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE PIERCE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **14.9**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

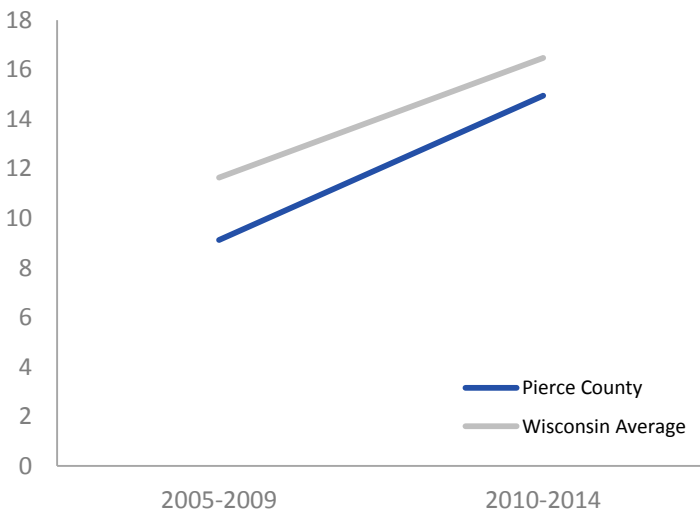
⚠ **51.4**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht

Wisconsin Environmental Public Health Tracking | 7



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

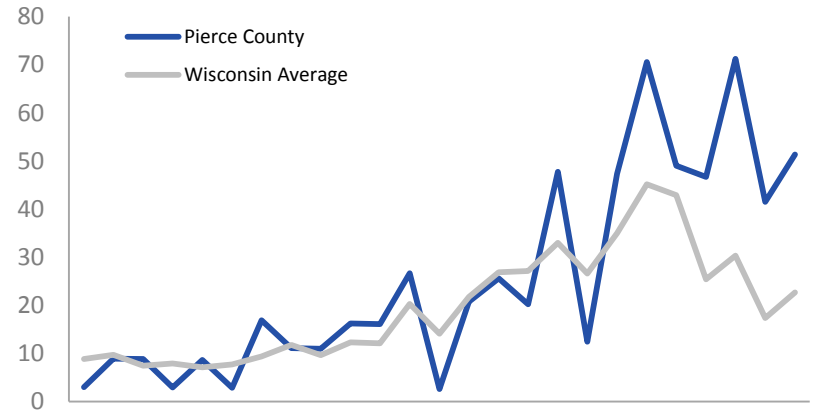
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

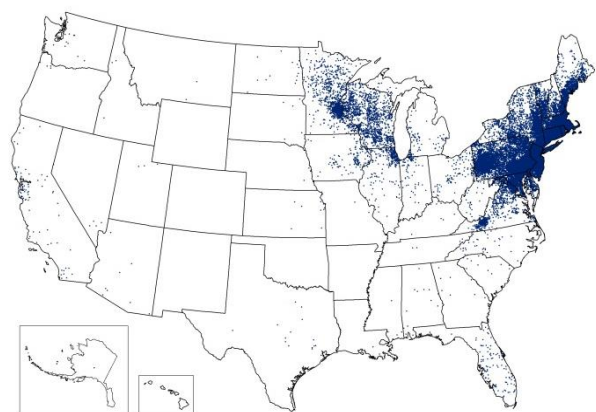
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES PIERCE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **29.8**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **16.3**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

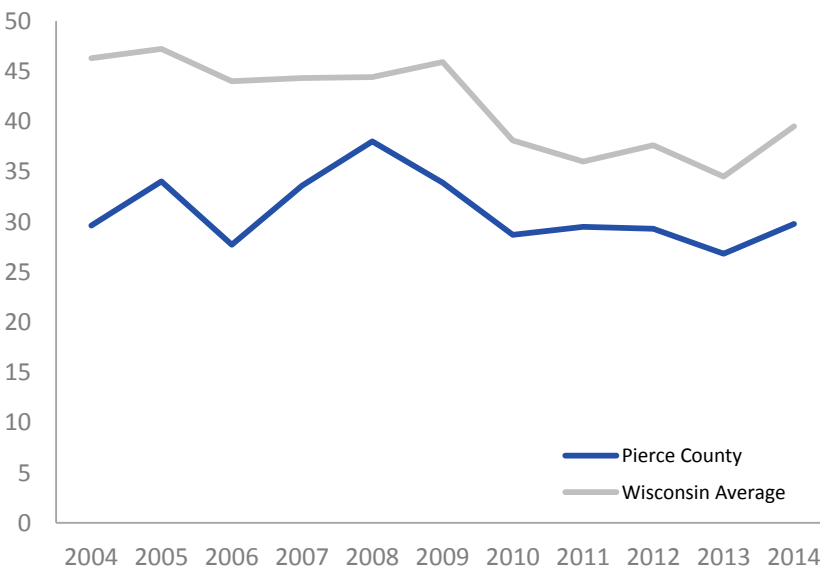
✓ **37.6**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **29.6**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

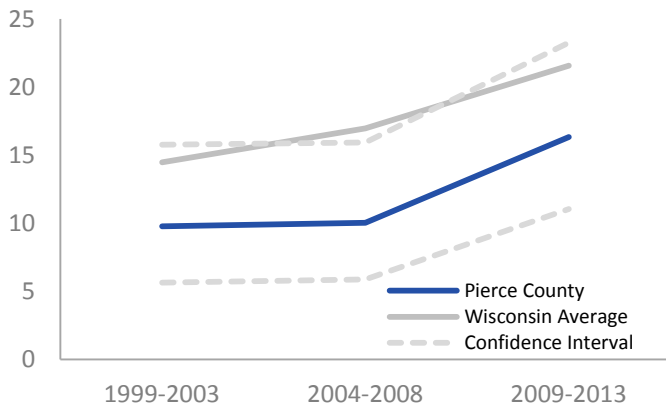
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

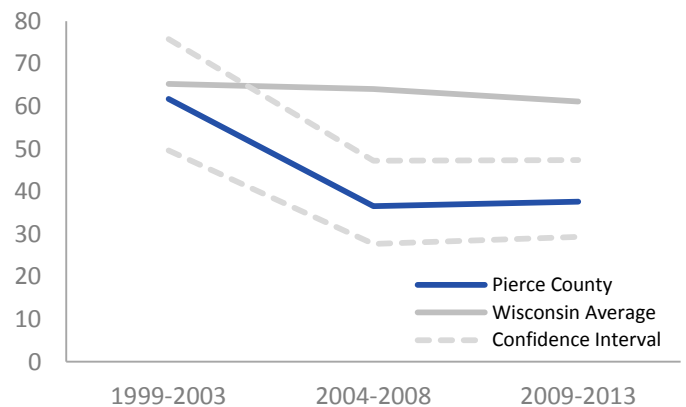
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

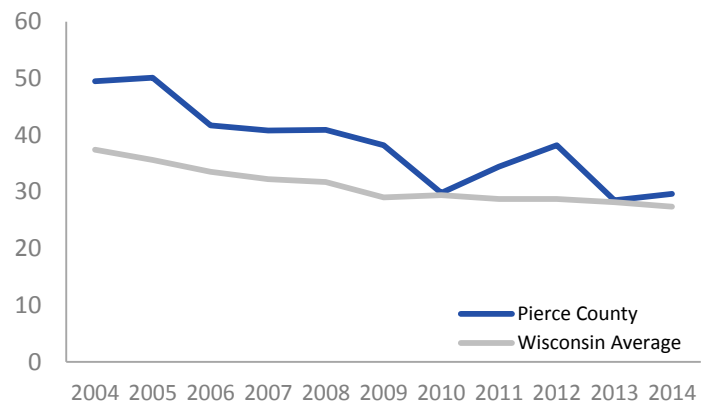
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY PIERCE COUNTY

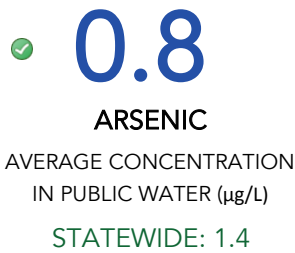
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

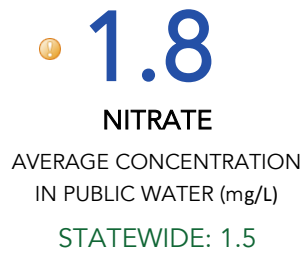
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

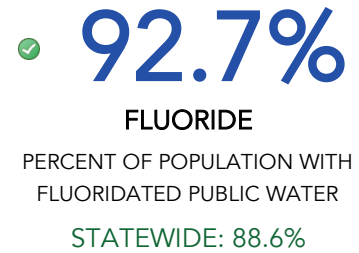
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



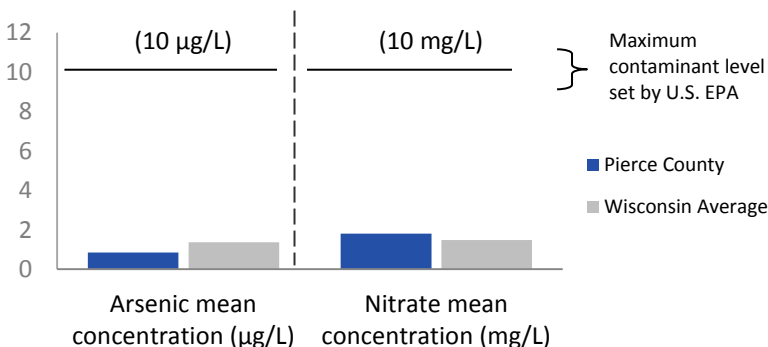
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY PIERCE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

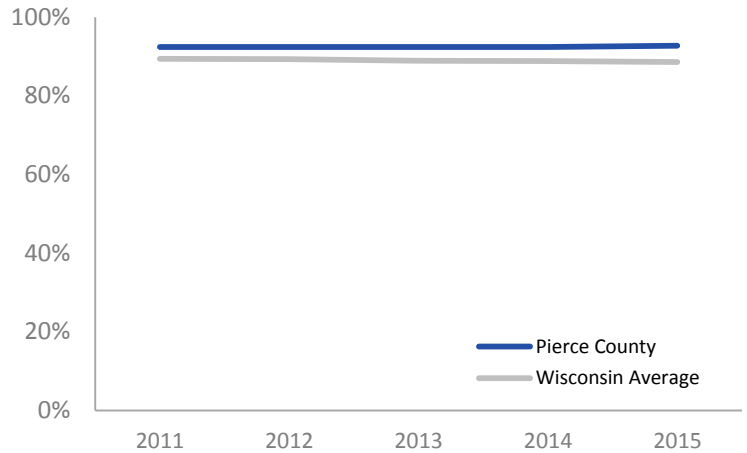
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

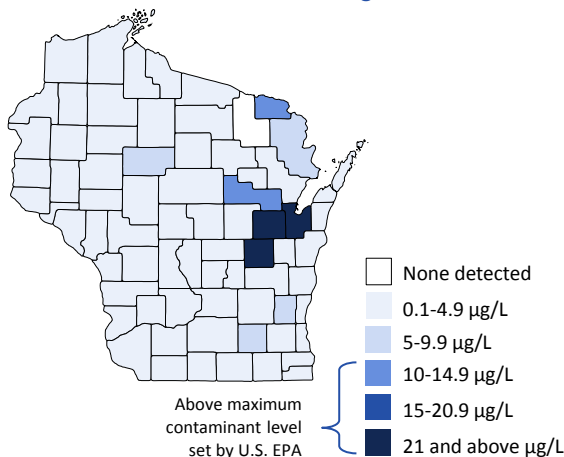
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

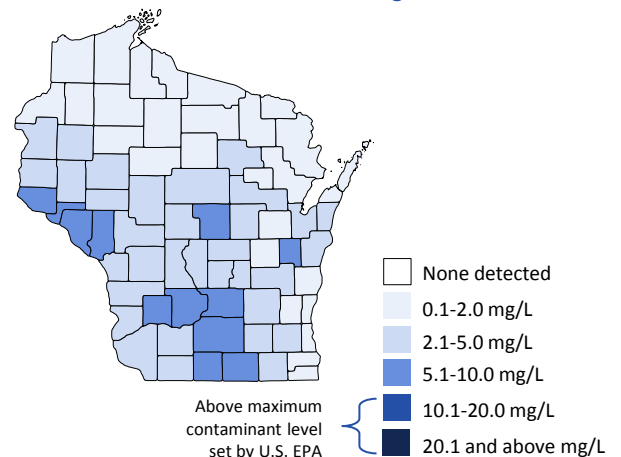
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY

PIERCE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

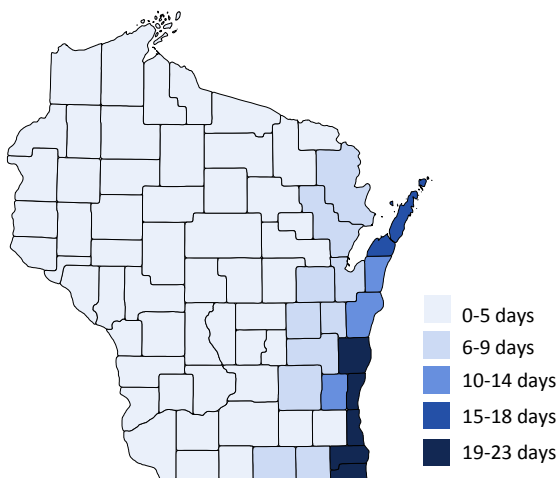
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

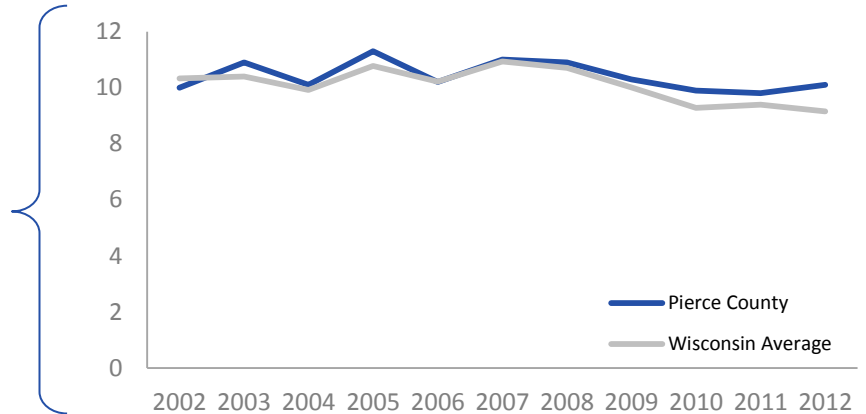
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

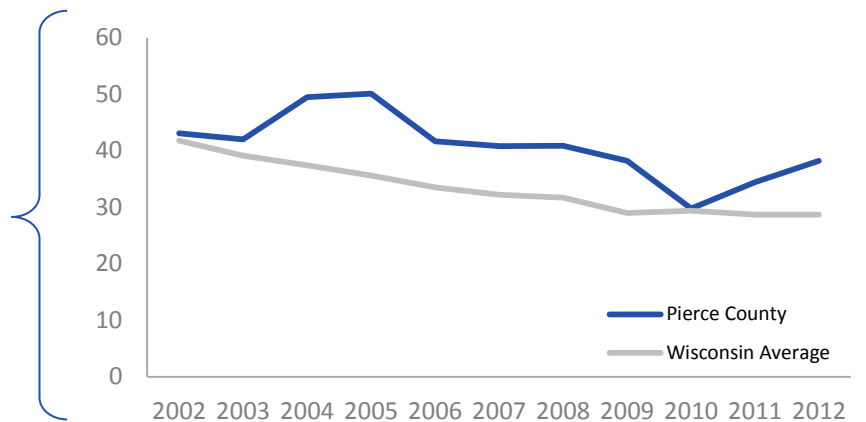
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE ($\mu\text{g}/\text{m}^3$)



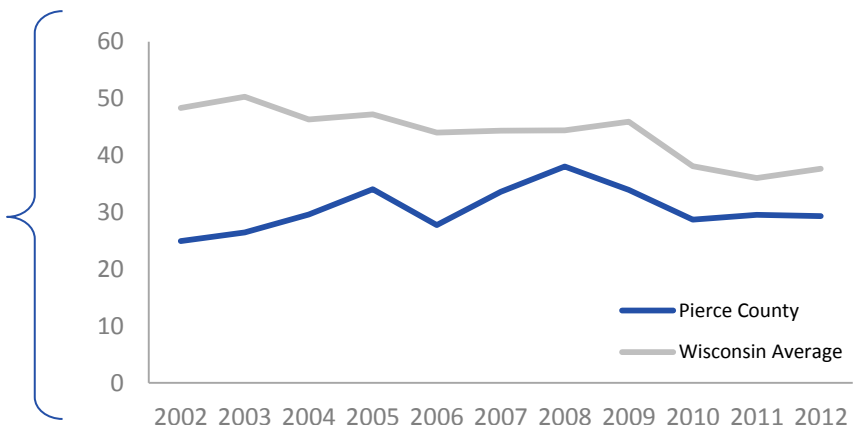
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: Averaged data from 2005-2014

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population. These data were averaged over ten years for five counties in order to minimize suppression.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



POLK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

POLK COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.2% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.4 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 27.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 69.1 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 32.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 13.3 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 31.4 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.1 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 1.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 64.2% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS POLK COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.4**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.2%**

CHILDHOOD LEAD POISONING

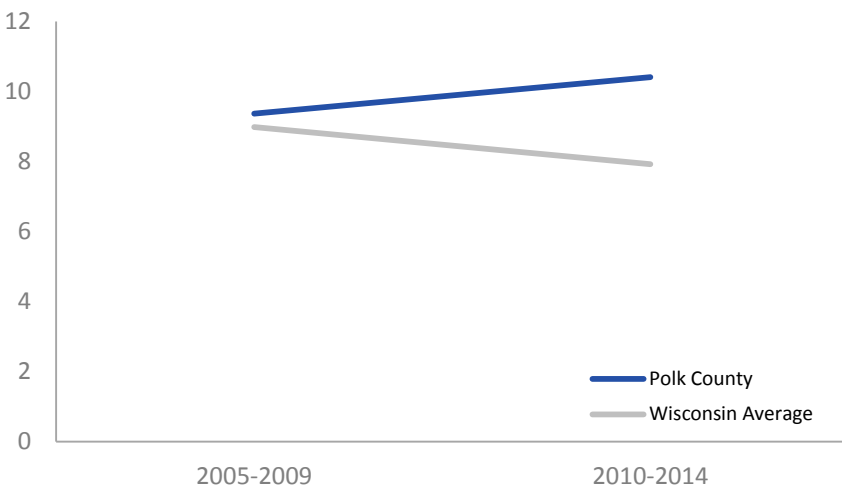
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS POLK COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

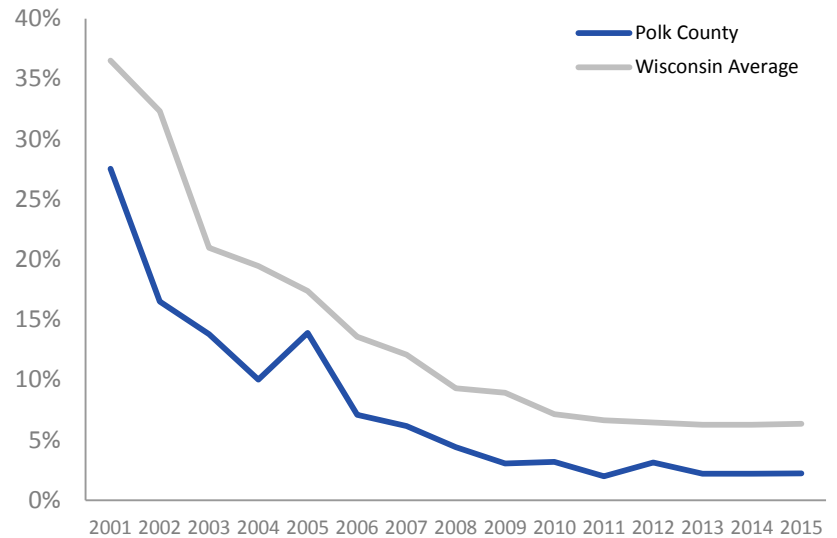
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

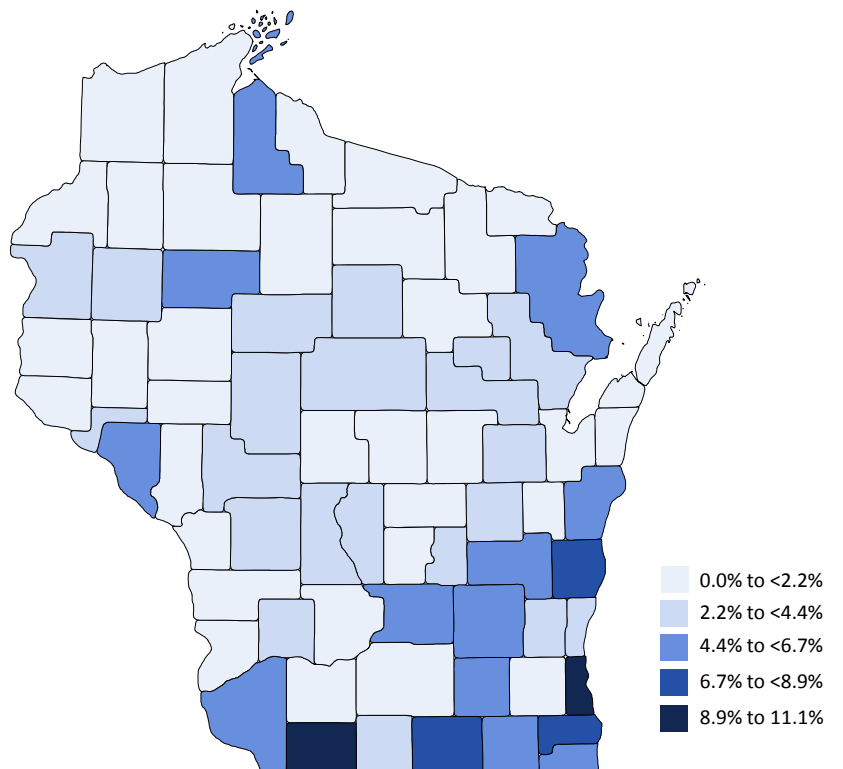
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE POLK COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

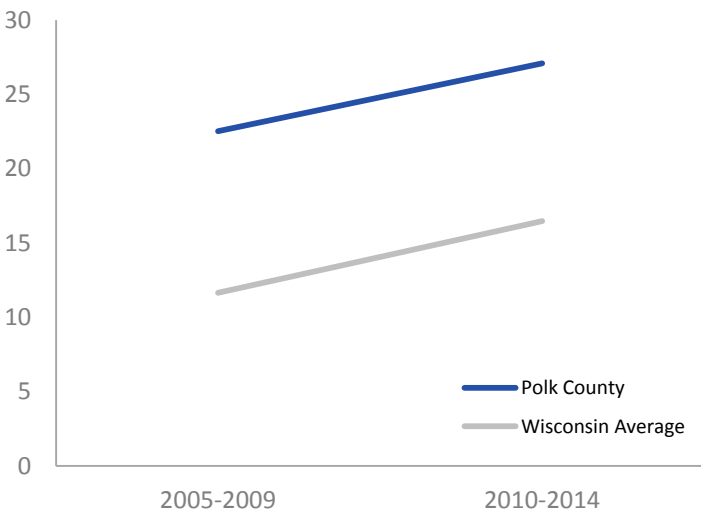
27.1
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

69.1
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

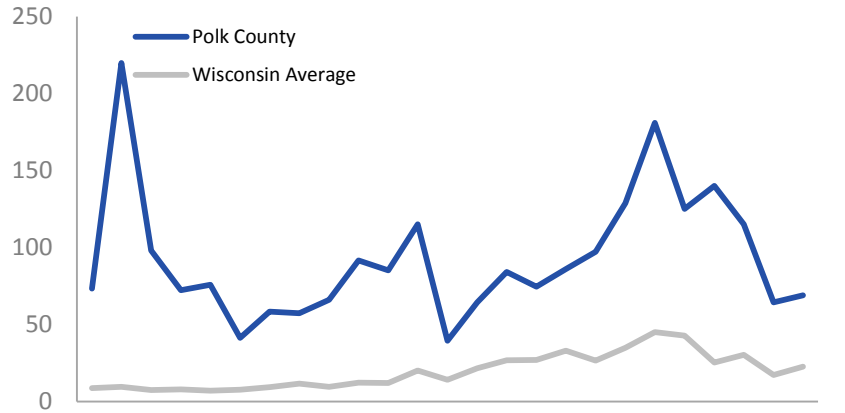
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

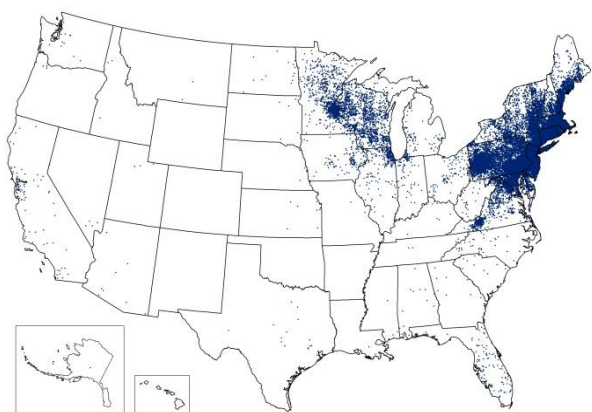
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

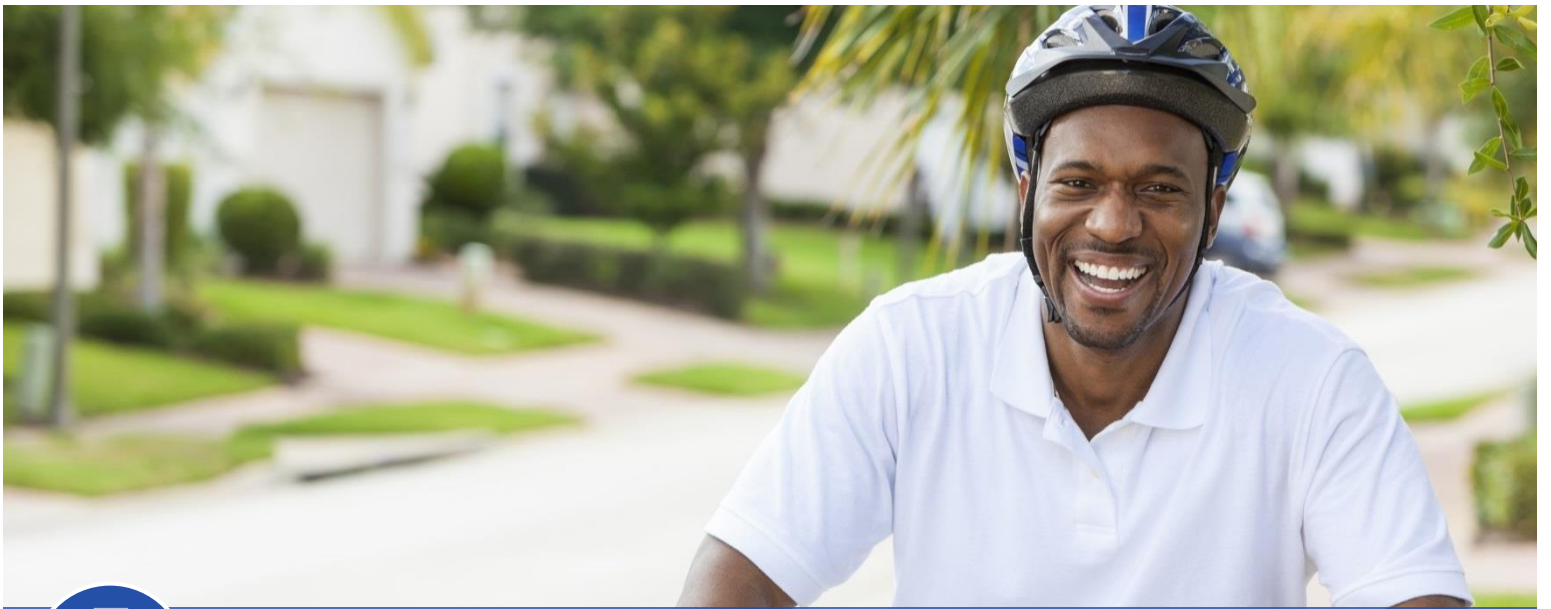


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES POLK COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **32.1**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **13.3**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

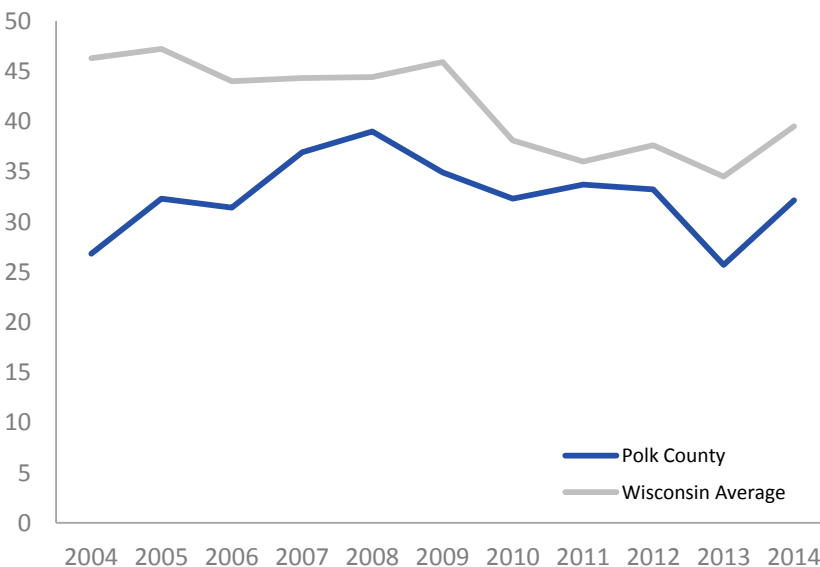
✓ **52.2**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **31.4**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

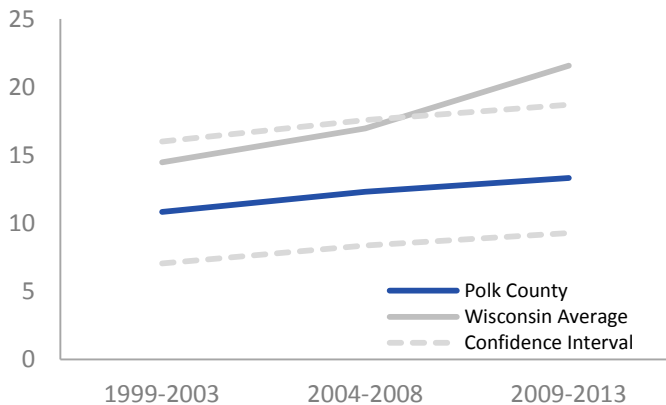
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

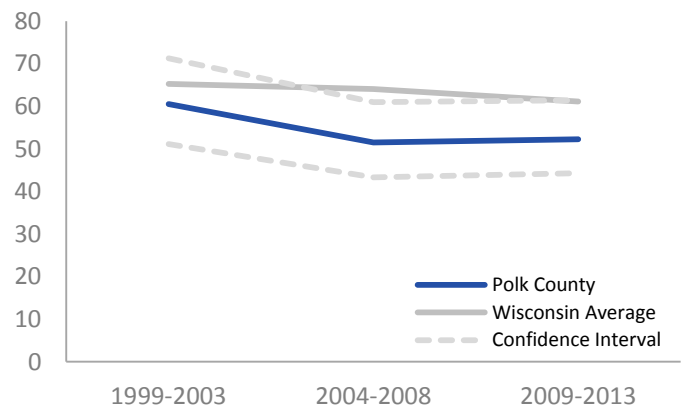
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

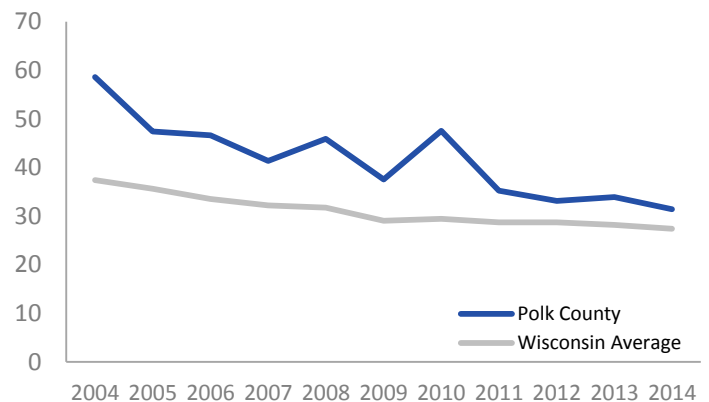
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY POLK COUNTY

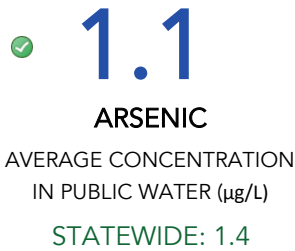
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

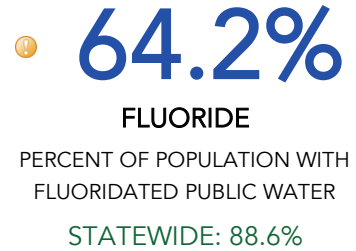
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



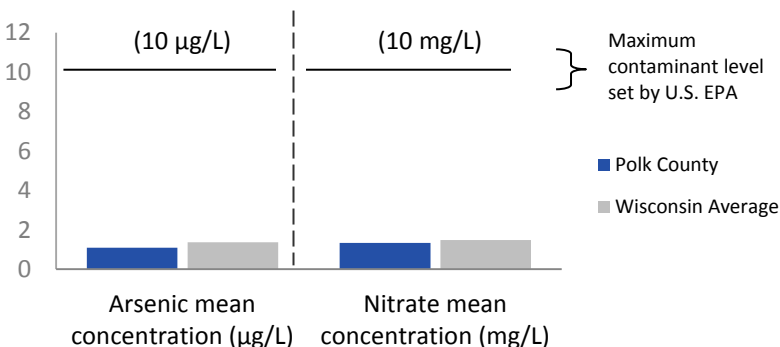
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY POLK COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

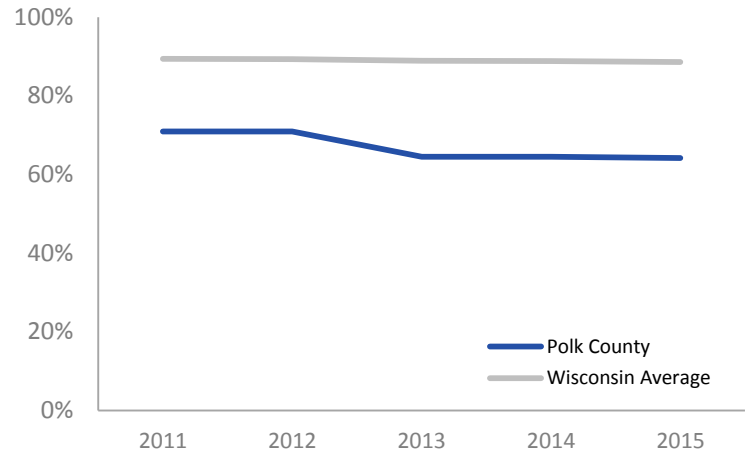
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

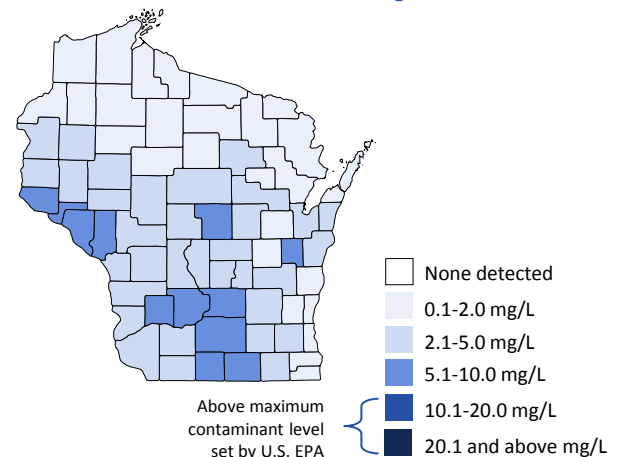
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



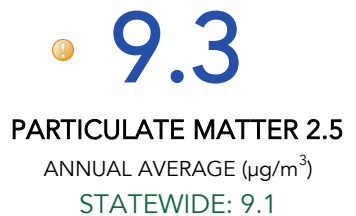
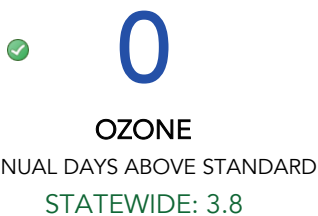


AIR QUALITY POLK COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

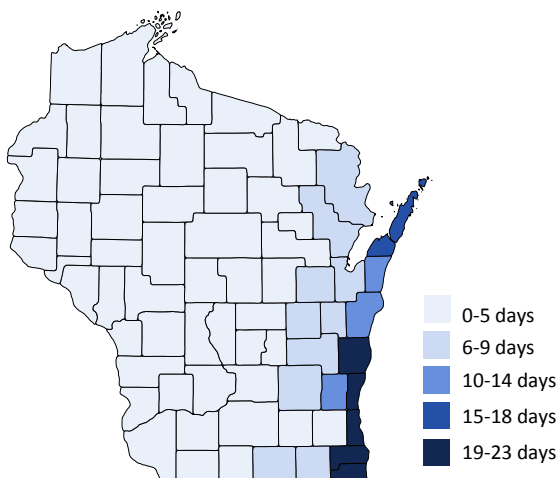
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

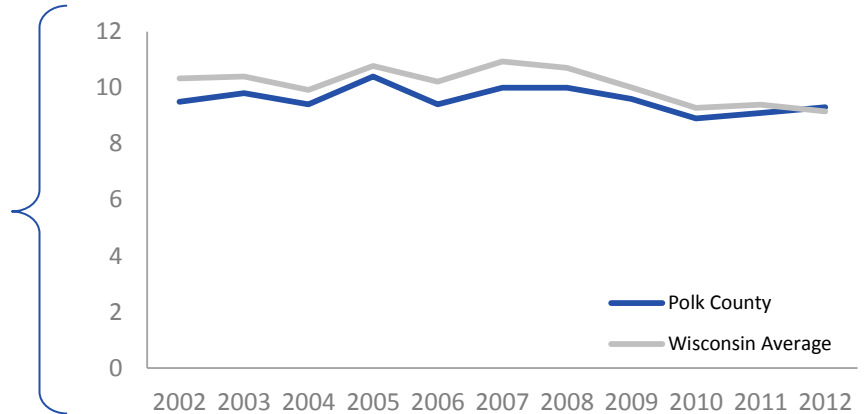


AIR QUALITY POLK COUNTY

PARTICULATE MATTER 2.5

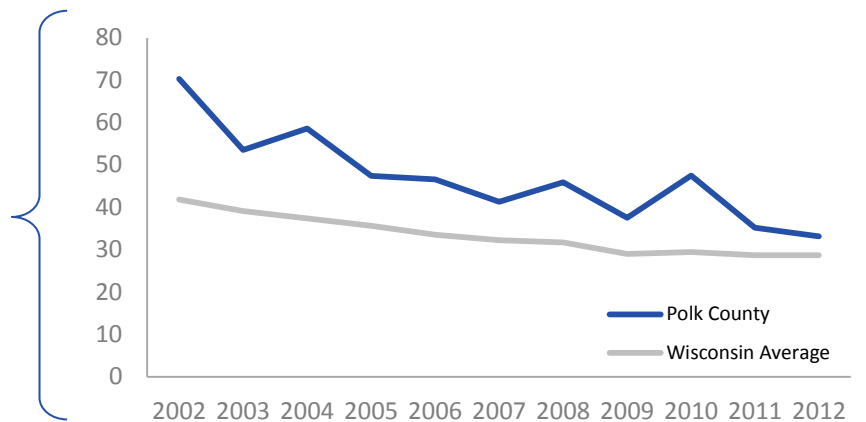
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



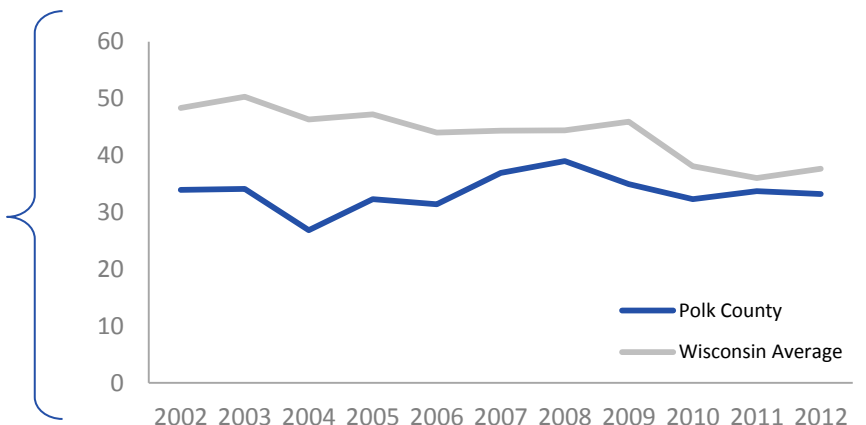
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



PORTAGE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

PORTAGE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.3% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 6.7 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 21.5 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 56.8 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 22.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 23.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 38.1 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.7 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 4.9 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 94.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS PORTAGE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **6.7**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **1.3%**

CHILDHOOD LEAD POISONING

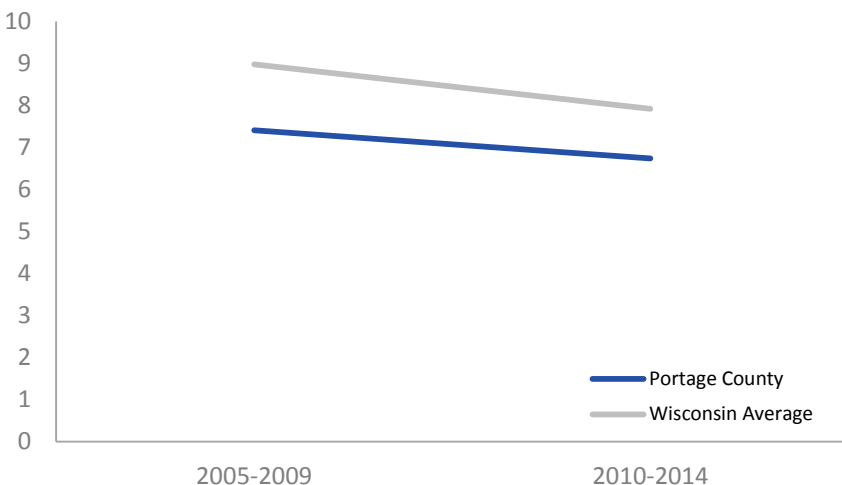
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS PORTAGE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

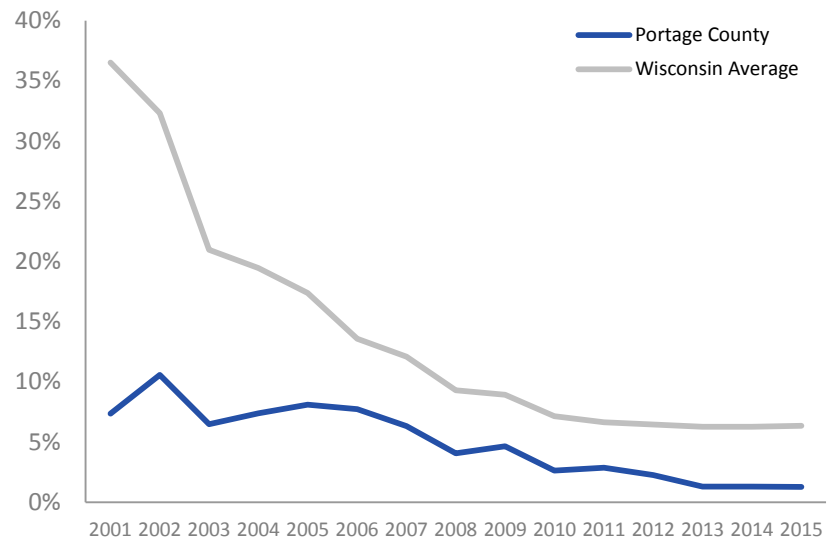
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

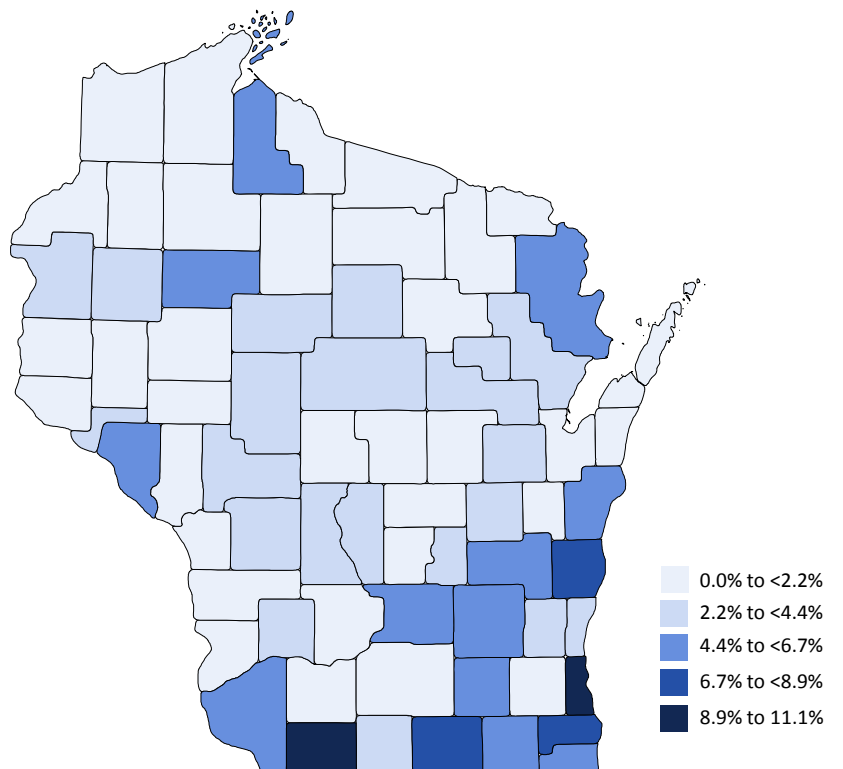
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE PORTAGE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

21.5

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

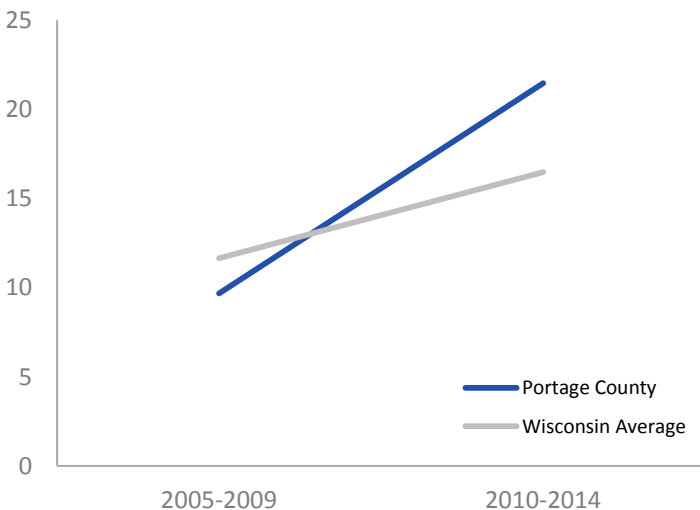
56.8

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

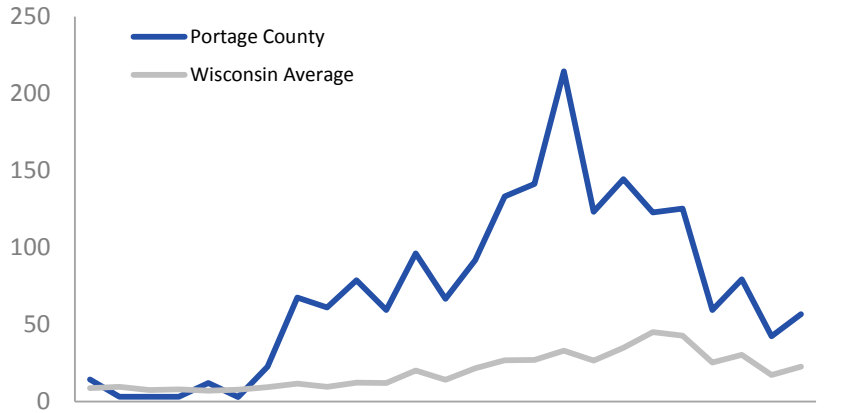
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

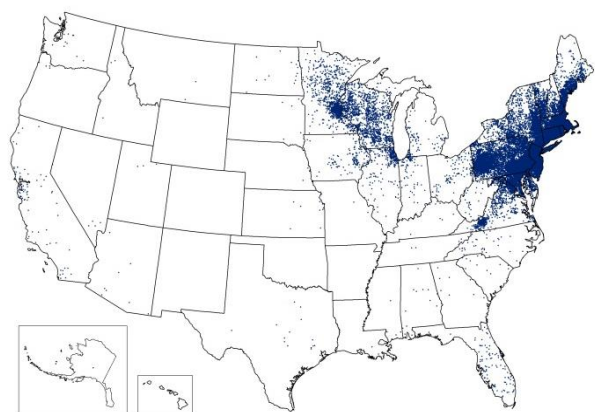
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES PORTAGE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **22.3**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **23.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

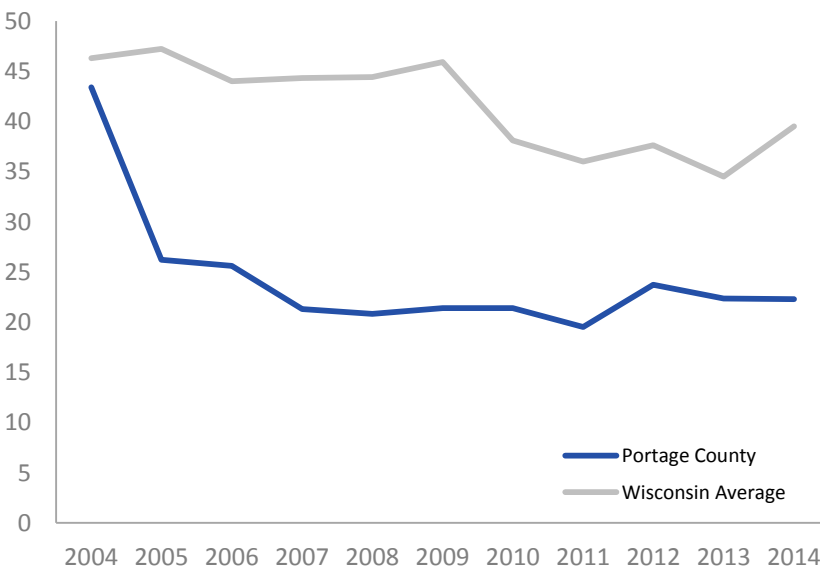
✓ **54.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **38.1**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

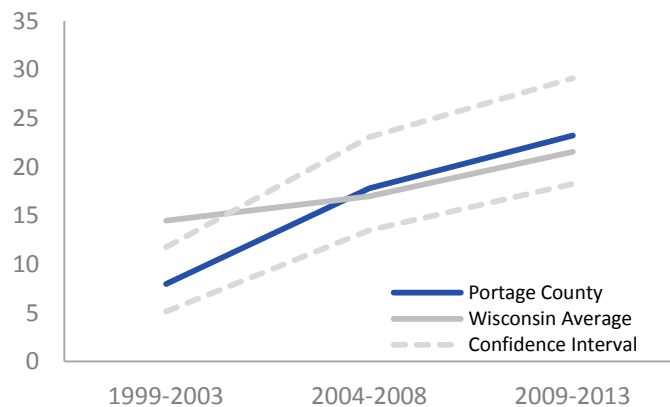
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

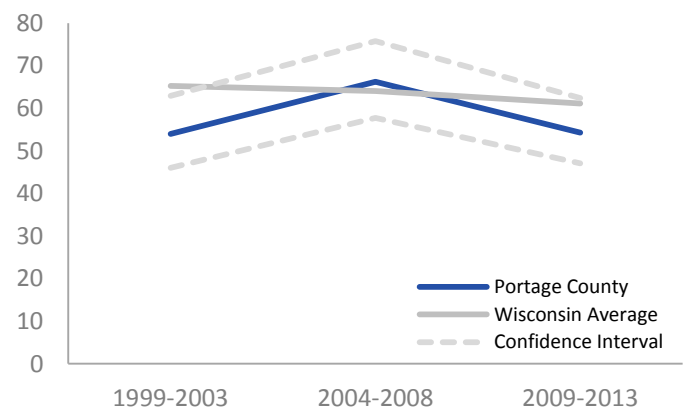
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

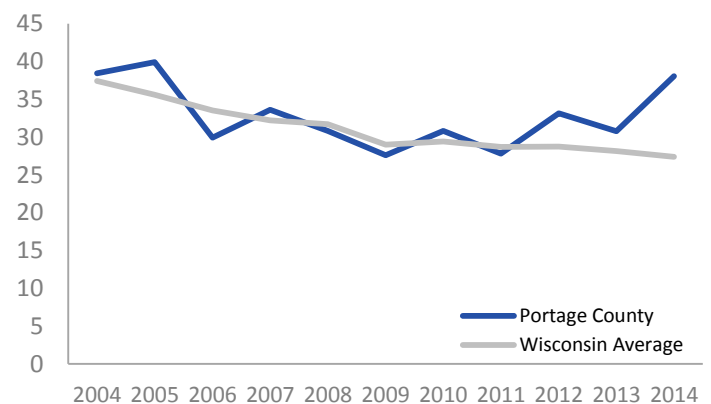
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY PORTAGE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

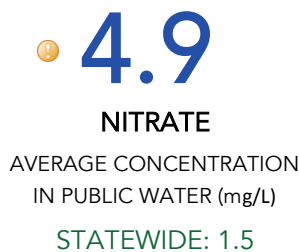
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

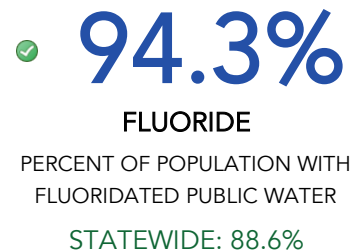
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



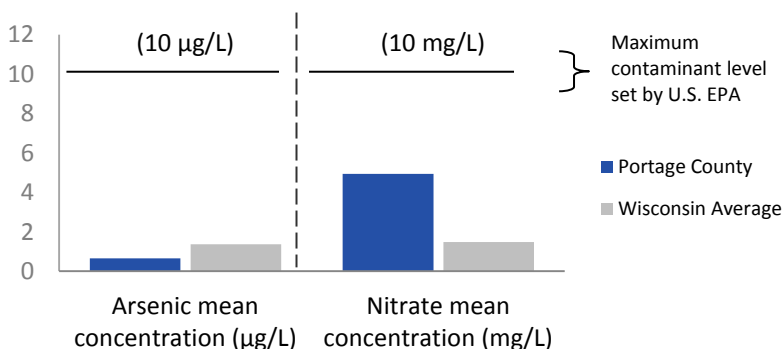
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY PORTAGE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

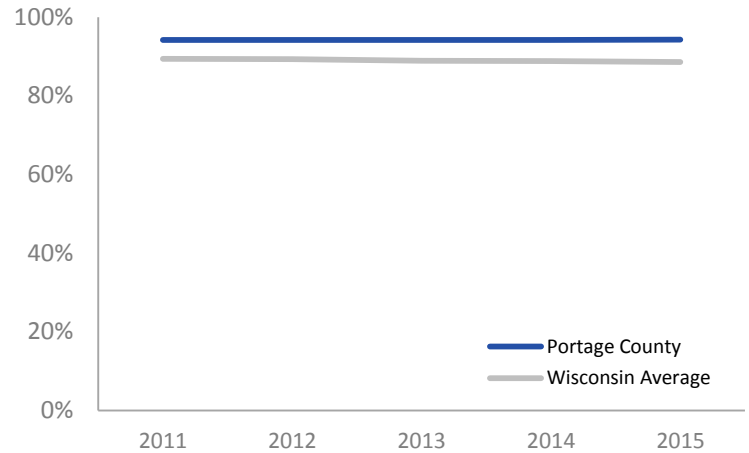
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

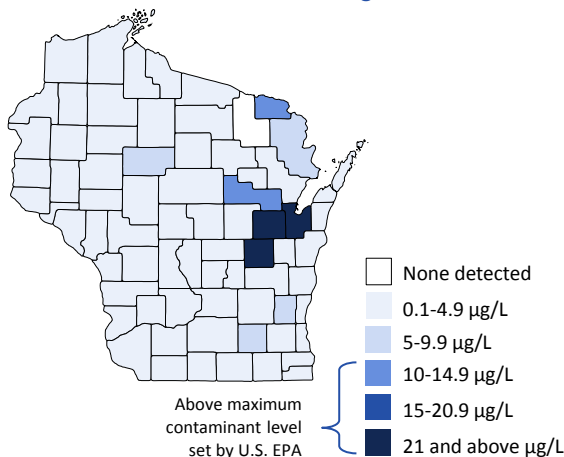
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

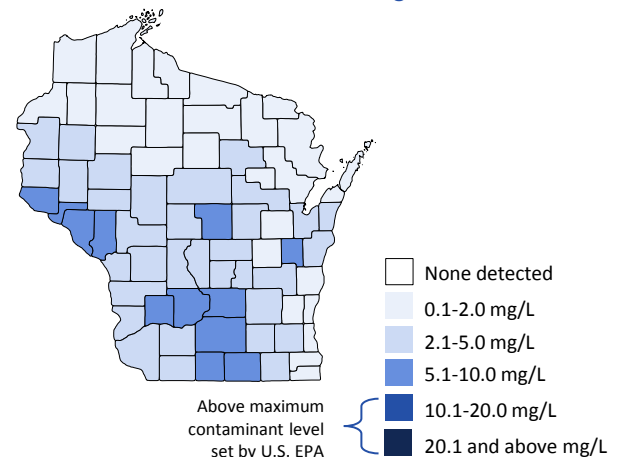
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



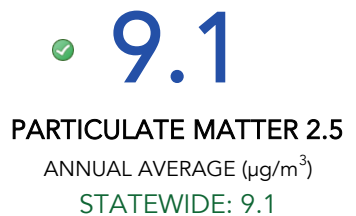


AIR QUALITY PORTAGE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

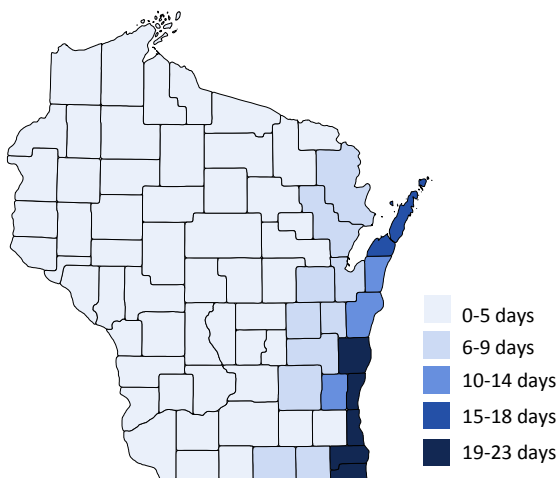
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

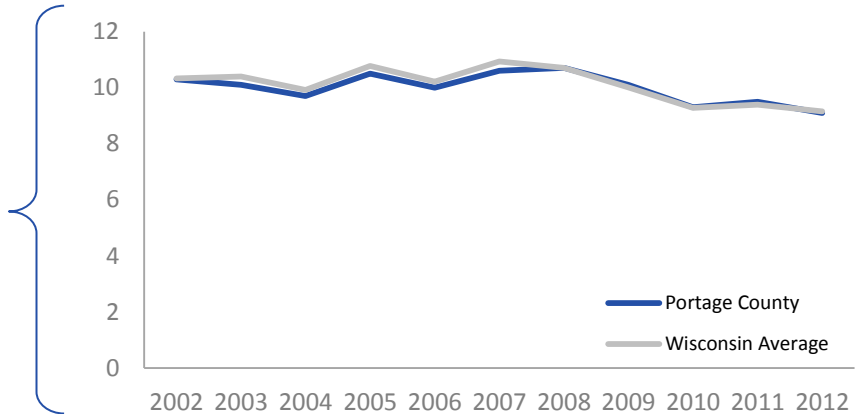


AIR QUALITY PORTAGE COUNTY

PARTICULATE MATTER 2.5

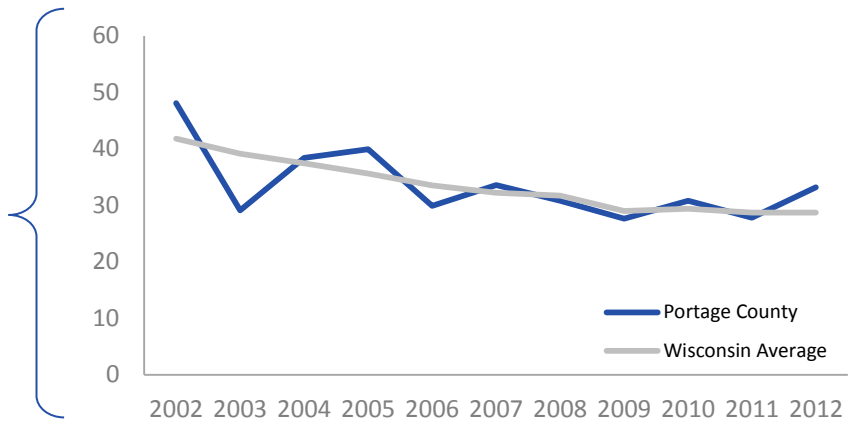
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



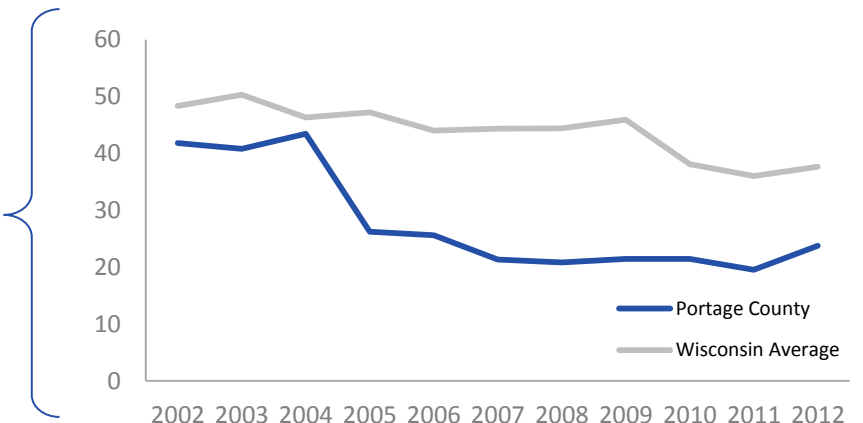
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



PRICE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)


dhstracking@wi.gov
608-267-2488

PRICE COUNTY


DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning


 **0.0%** | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning


 **8.7** | Rate of ER visits per 100,000 people
Wisconsin: 8.5

CLIMATE

Heat Stress


 **13.2** | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease


 **183.2** | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES


Asthma

 **47.9** | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma


 **10.2** | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack


 **38.9** | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY


Arsenic

 **1.2** | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate


 **1.4** | Average concentration in mg/L
Wisconsin: 1.5

Fluoride


 **81.9%** | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY


Ozone


 **0** | Annual days above standard
Wisconsin: 3.8


Particulate Matter (PM) 2.5

 **0** | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

 Above state value (with exception of fluoride where below state value is not preferred)

 At or below state value (with exception of fluoride where above state value is preferred)

 Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2005-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS PRICE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **8.7**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.5

✅ **0.0%**

CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE (2005-2014)



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



HOME HAZARDS PRICE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

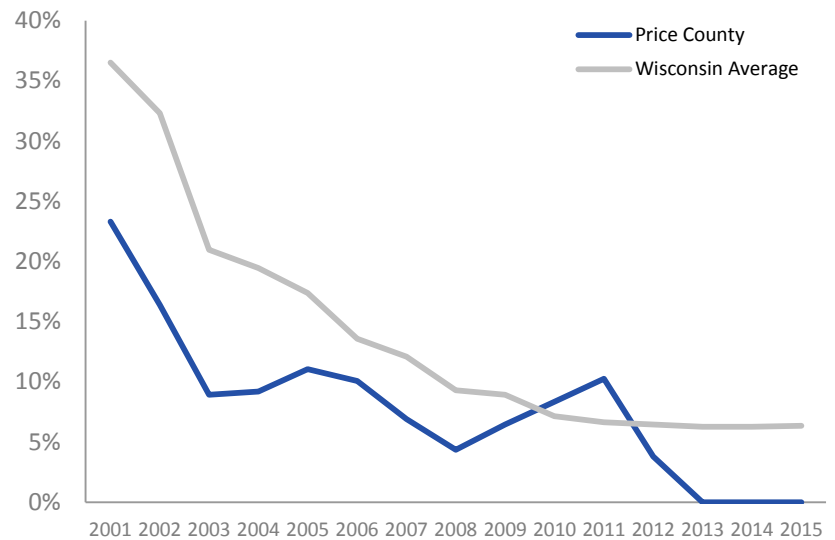
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

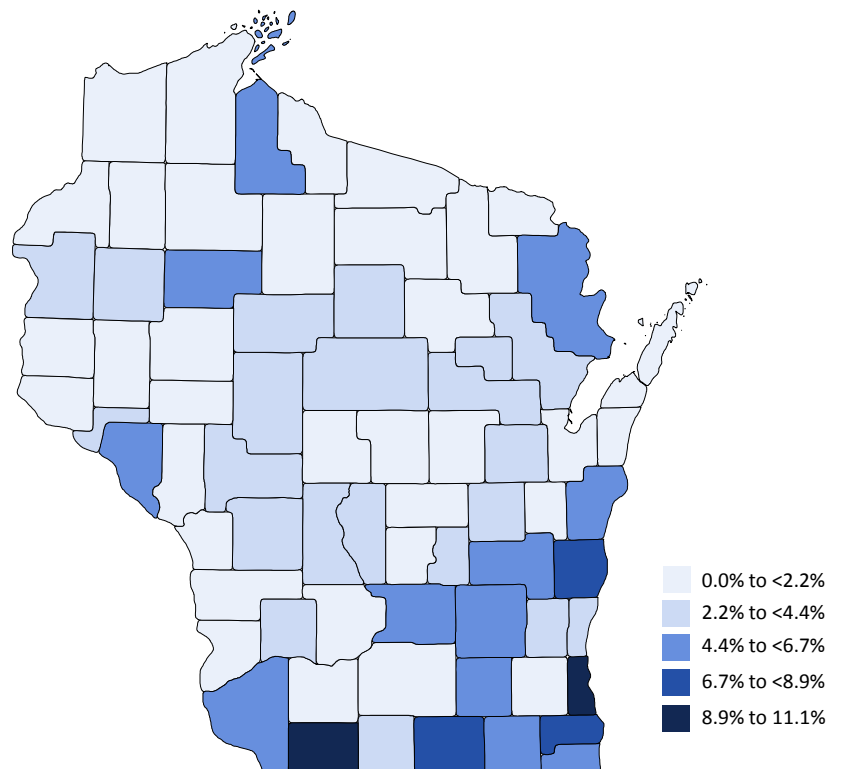
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE PRICE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

✓ **13.2**

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

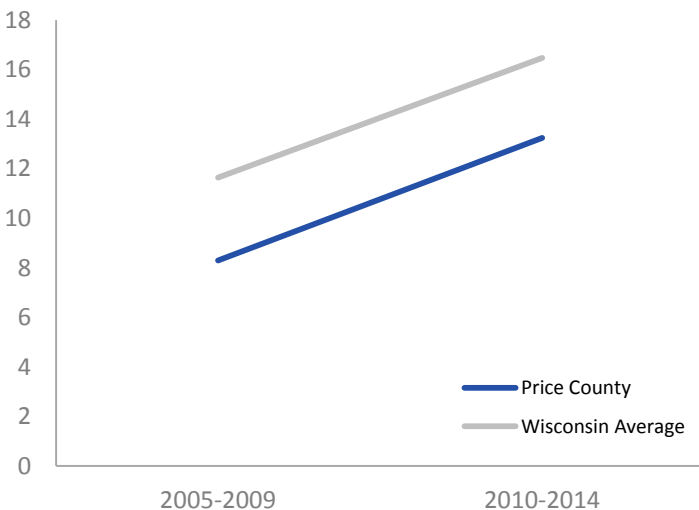
⚠ **183.2**

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

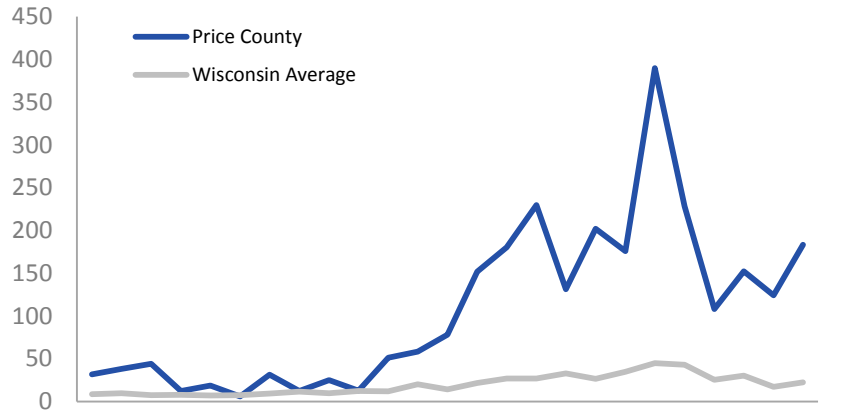
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

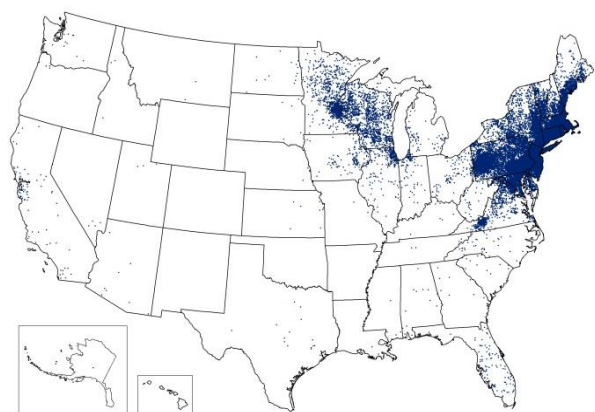
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

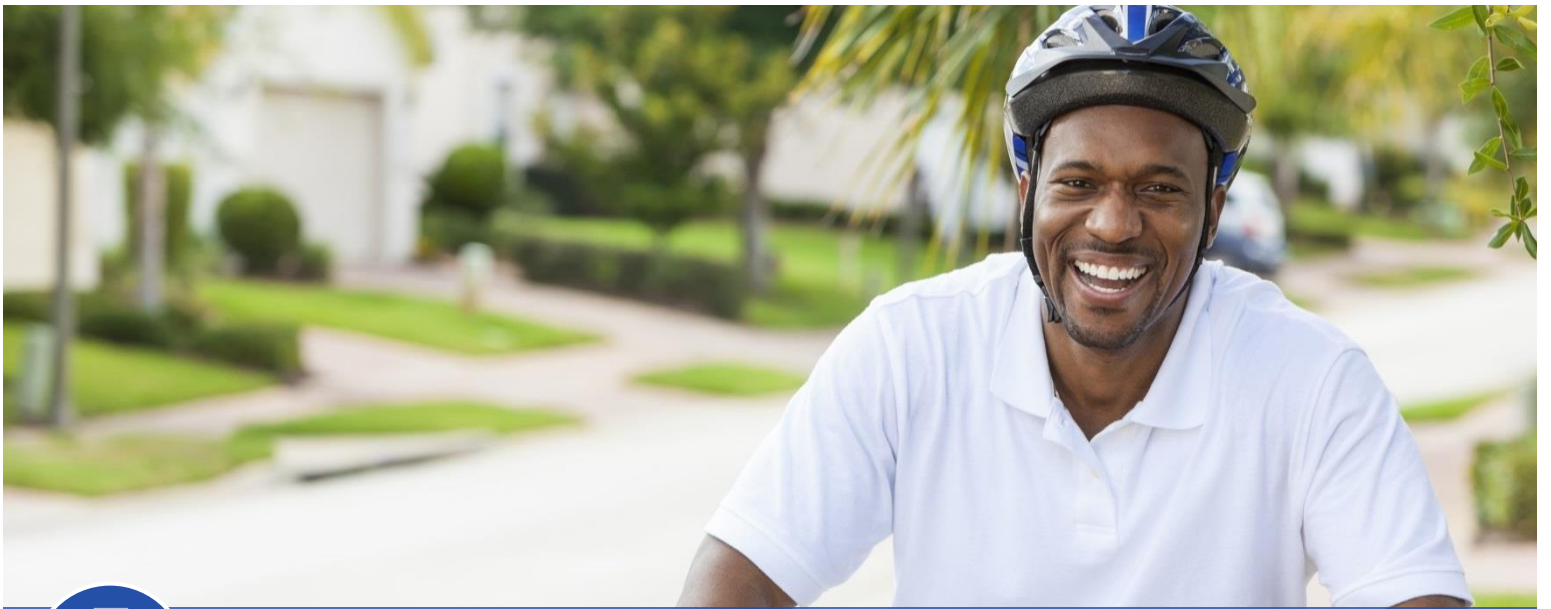


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES PRICE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

⬇️ **47.9**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✔️ **10.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

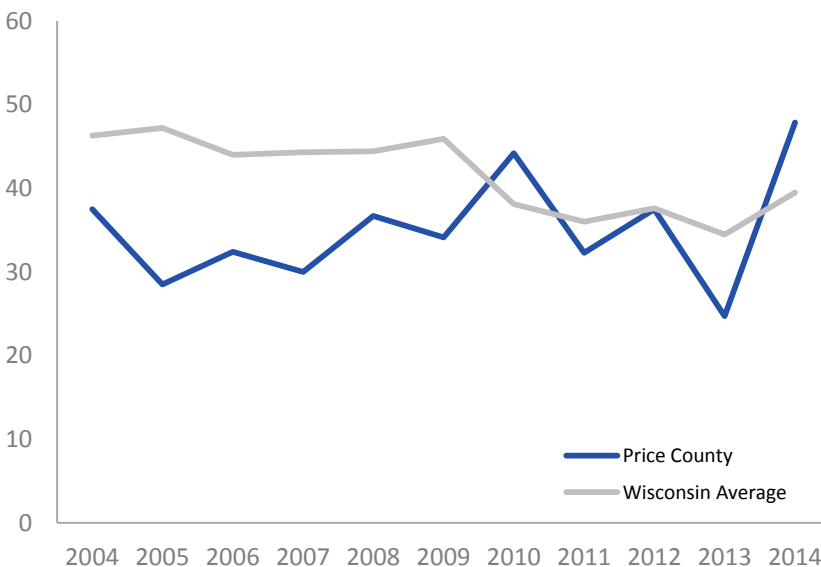
✔️ **58.0**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⬇️ **38.9**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬇️ Above state value
 ✔️ At or below state value
 ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

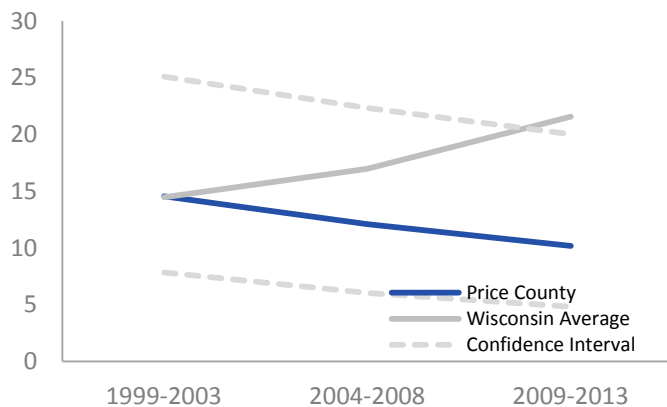
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

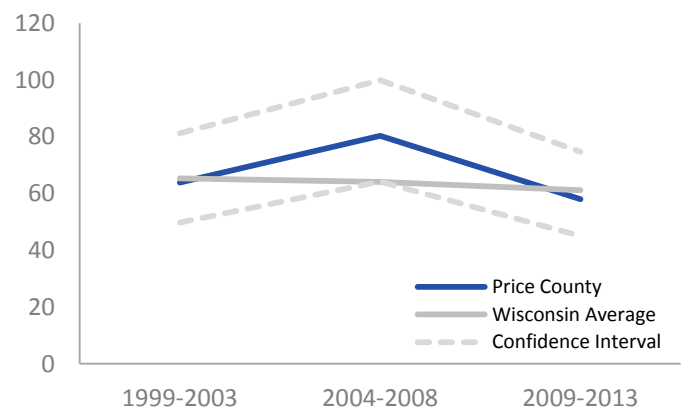
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

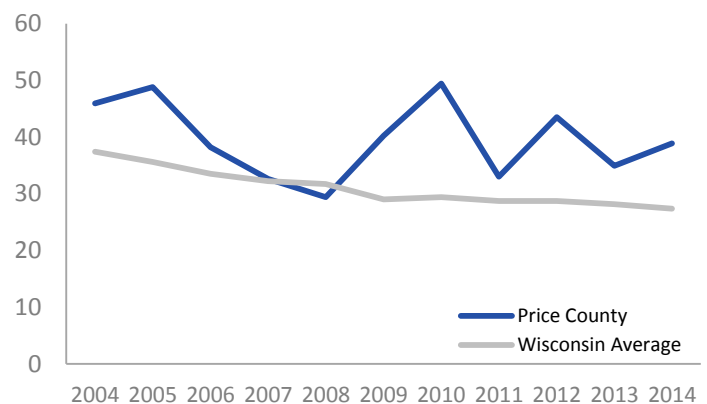
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY PRICE COUNTY

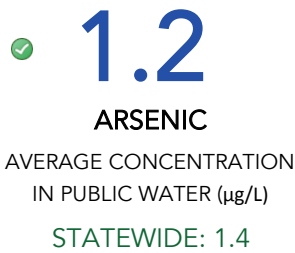
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

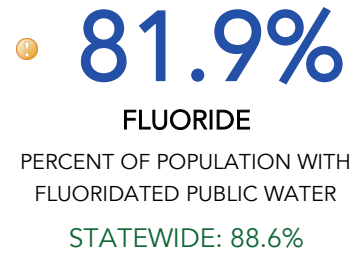
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



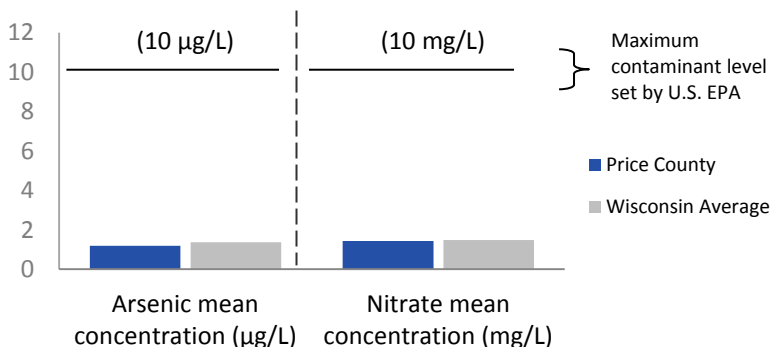
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY PRICE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

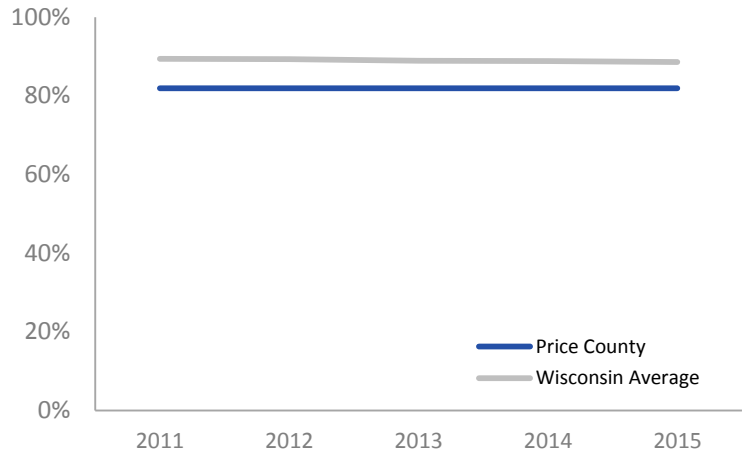
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

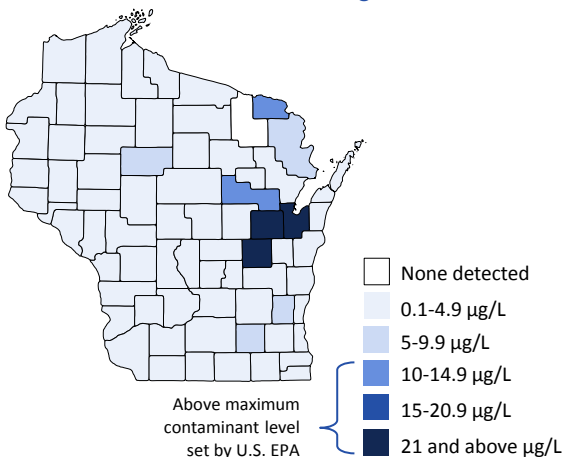
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

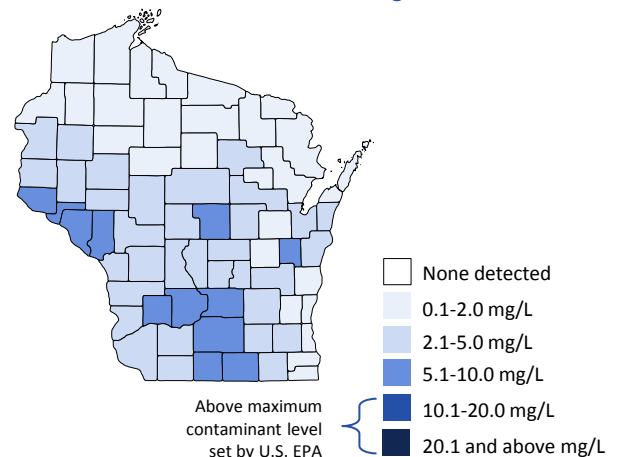
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



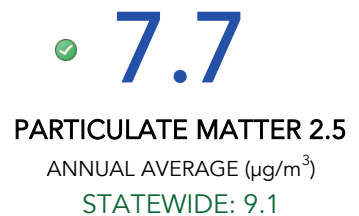


AIR QUALITY PRICE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

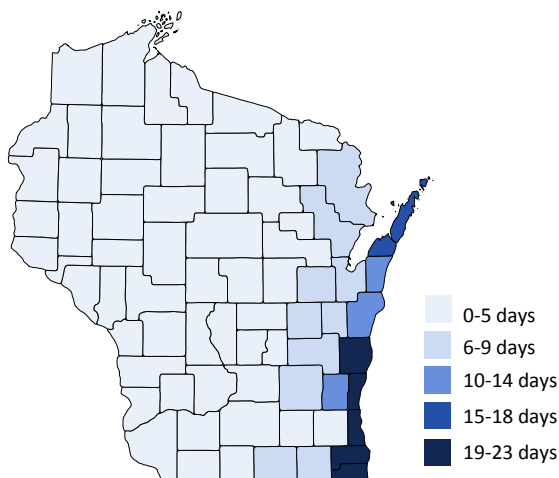
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

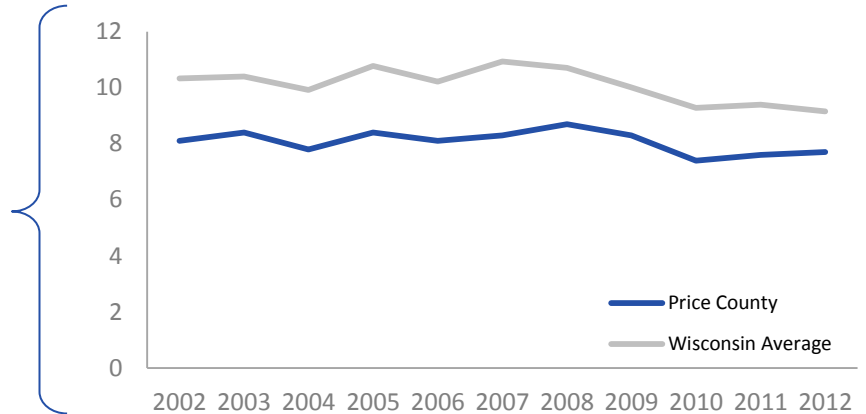


AIR QUALITY PRICE COUNTY

PARTICULATE MATTER 2.5

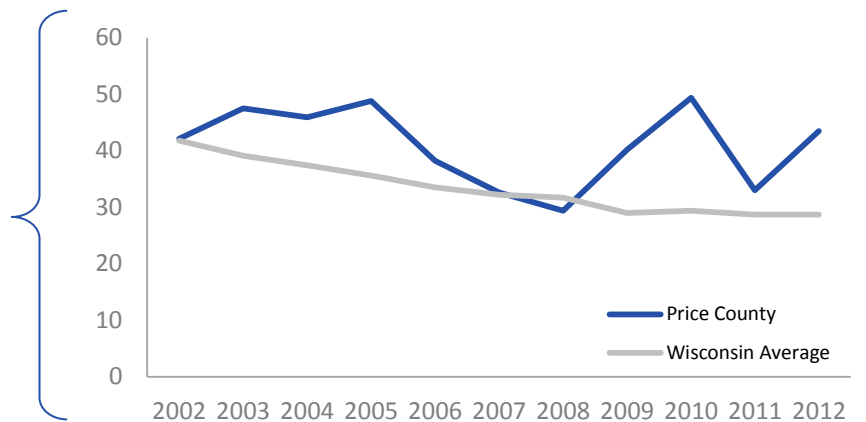
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



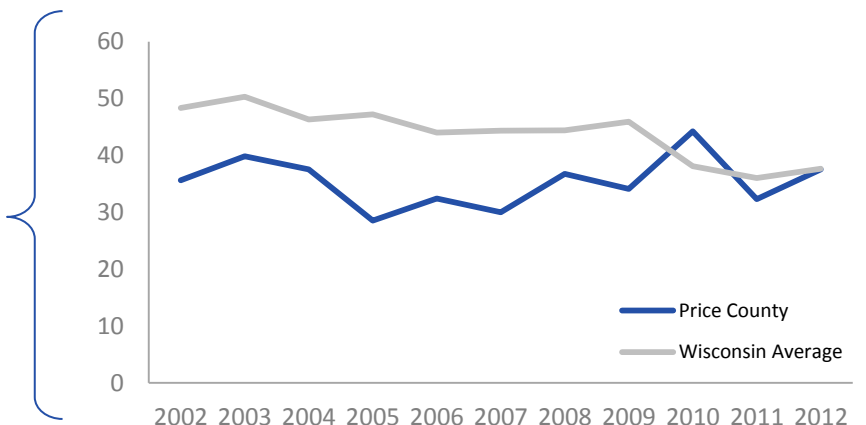
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: Averaged data from 2005-2014

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population. These data were averaged over ten years for five counties in order to minimize suppression.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

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MAY 2017 | P-00719 (Rev. 05/2017)



RACINE COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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RACINE COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

7.3% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

9.3 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

16.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

3.1 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

45.9 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

14.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

28.6 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

3.7 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

0.2 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

89.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

20 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⬇️ Above state value (with exception of fluoride where below state value is not preferred)

✅ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS RACINE COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

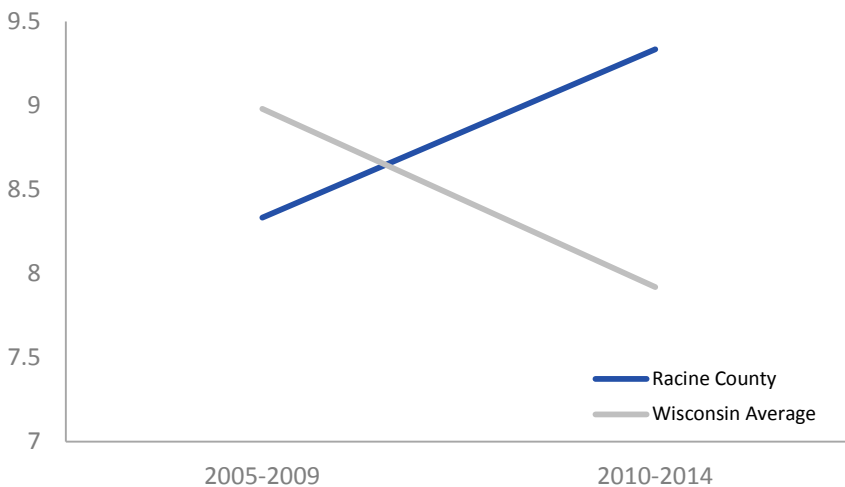
⚠ **9.3**
CARBON MONOXIDE POISONING
 RATE OF ER VISITS RELATED TO CO PER 100,000
 STATEWIDE: 7.9

⚠ **7.3%**
CHILDHOOD LEAD POISONING
 PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$
 STATEWIDE: 6.4%

⚠ Above state value
 ✔ At or below state value
 ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS RACINE COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

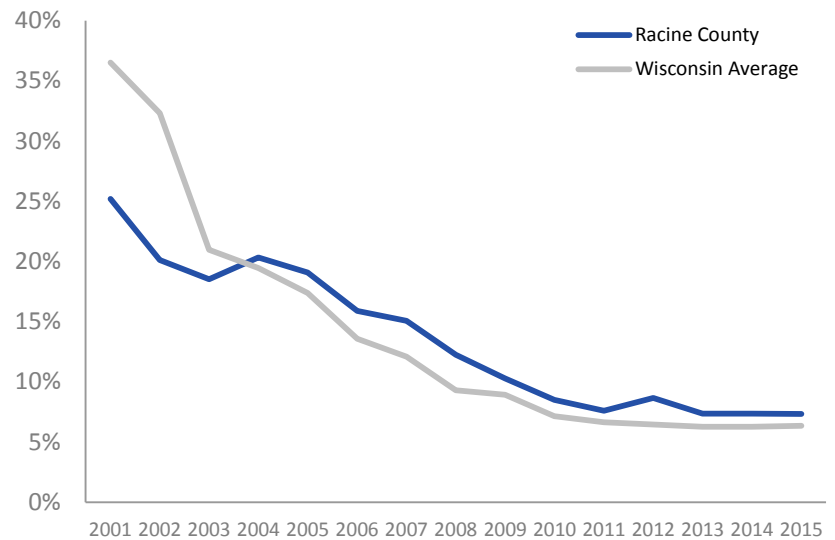
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

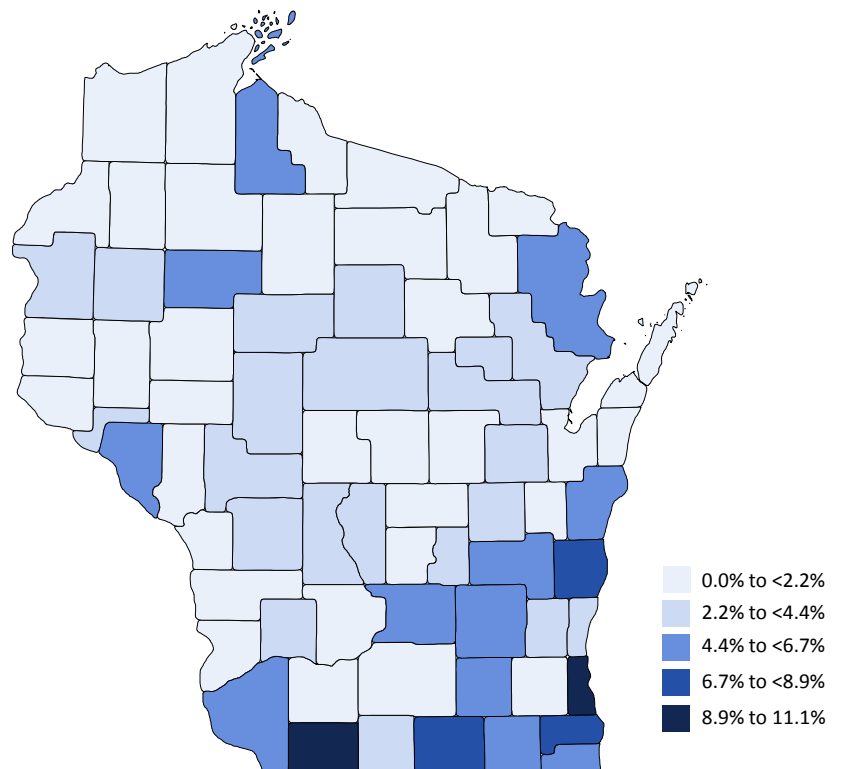
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE RACINE COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

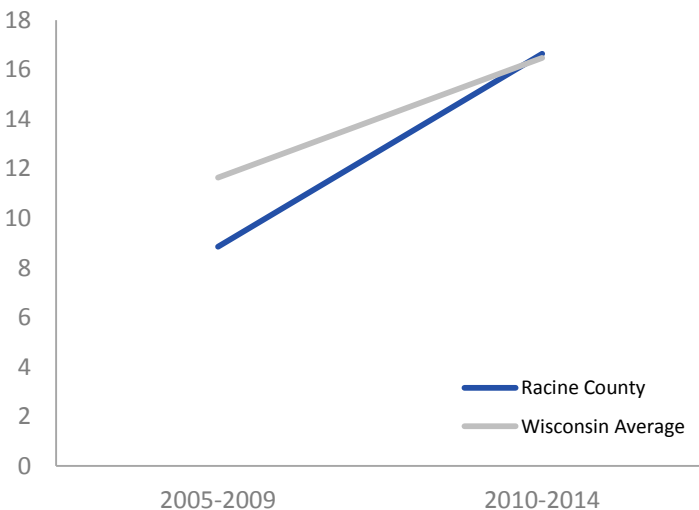
⚠️ **16.6**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✅ **3.1**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠️ Above state value ✅ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

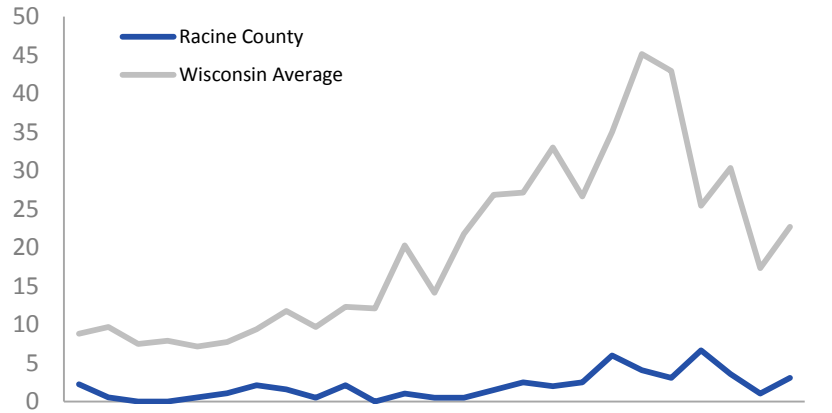
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

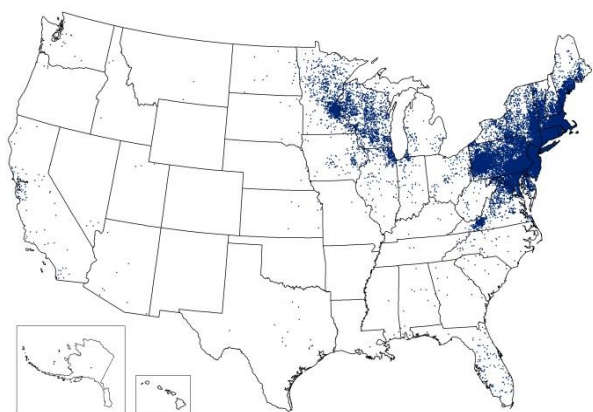
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES RACINE COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

45.9
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

14.4
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

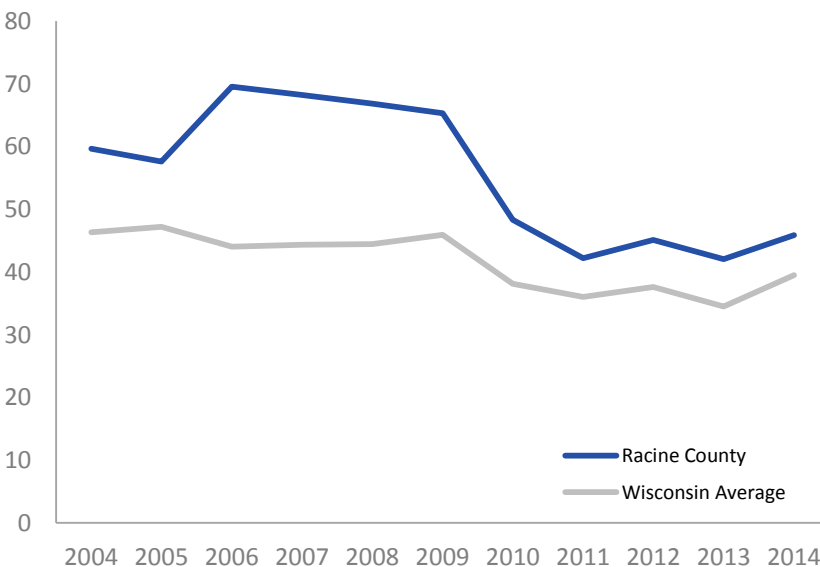
69.5
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

28.6
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬇️ Above state value
 ✔️ At or below state value
 ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

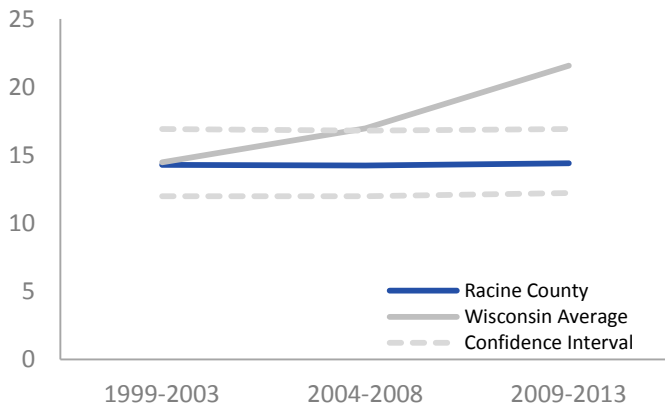
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

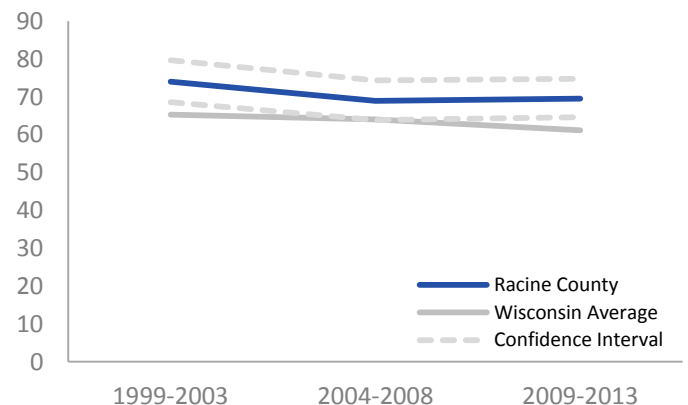
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

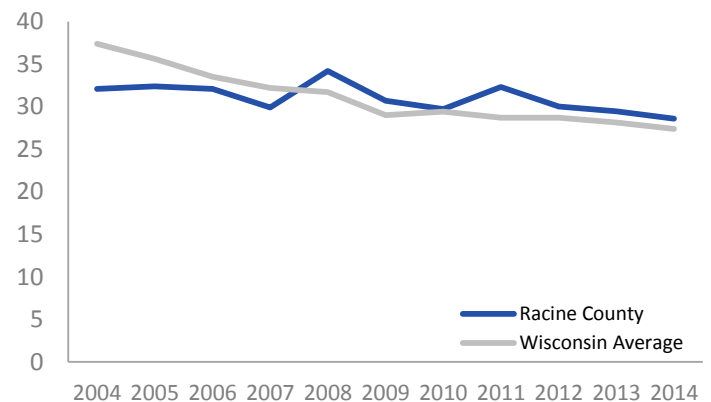
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY RACINE COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

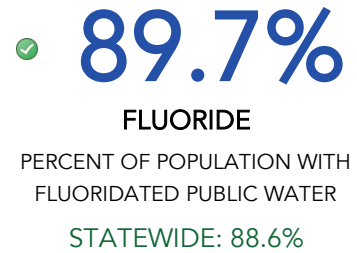
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



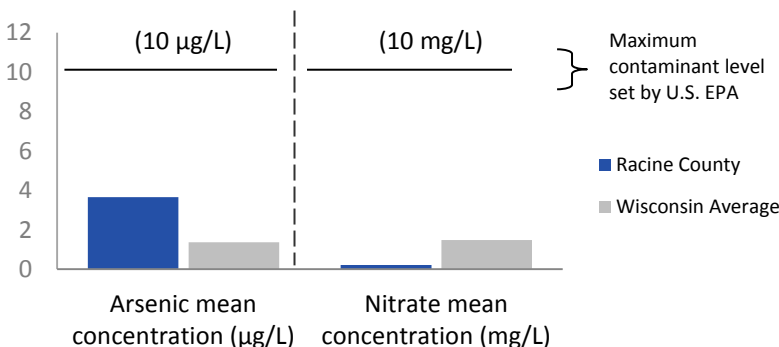
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY RACINE COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

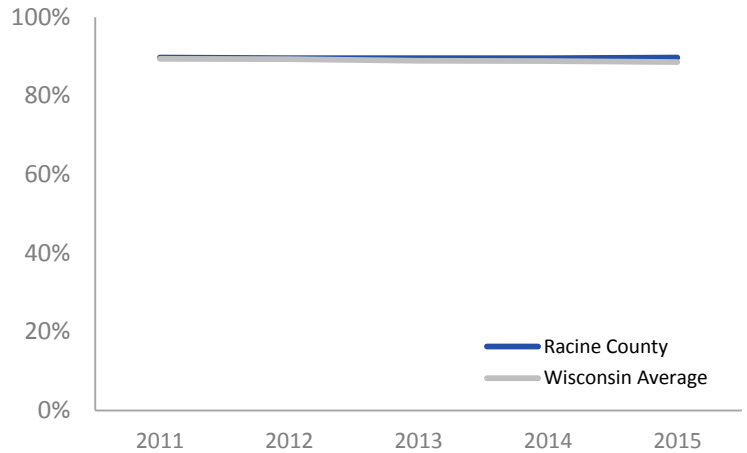
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

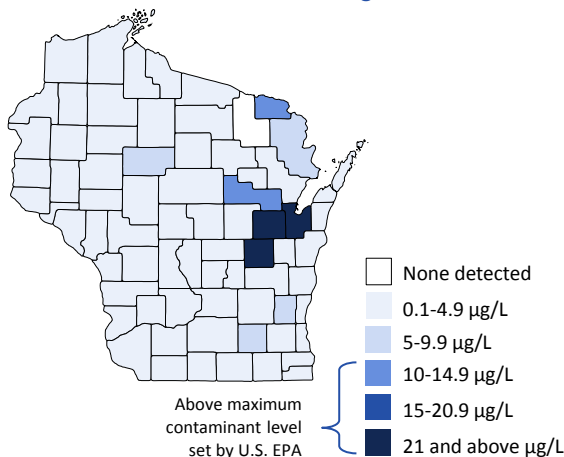
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

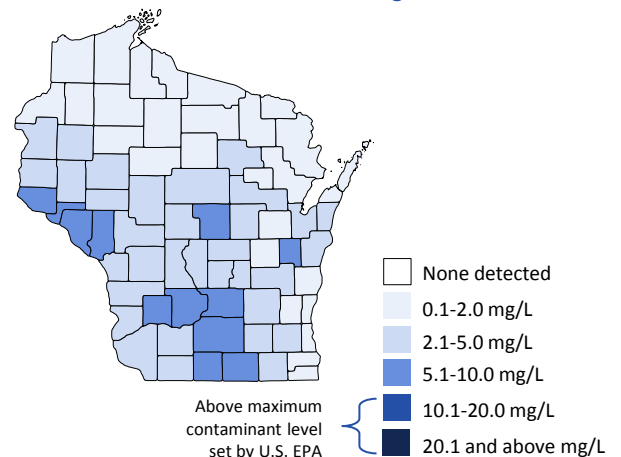
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY RACINE COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



20

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



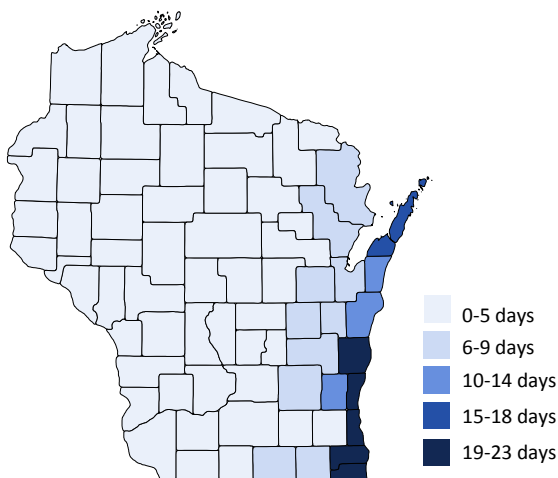
11.0

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

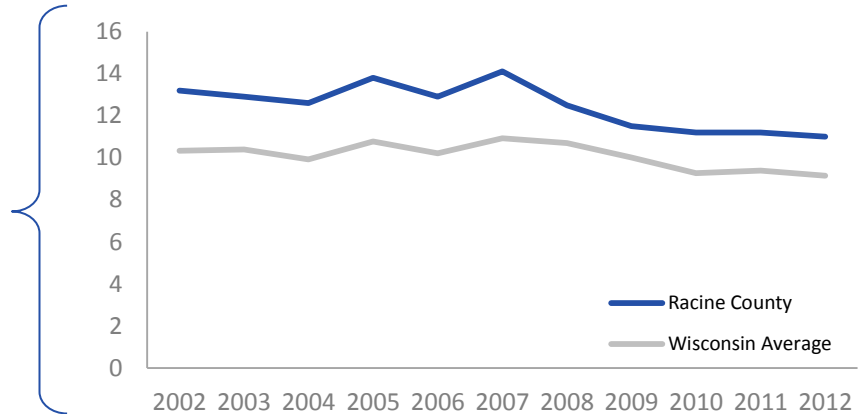
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

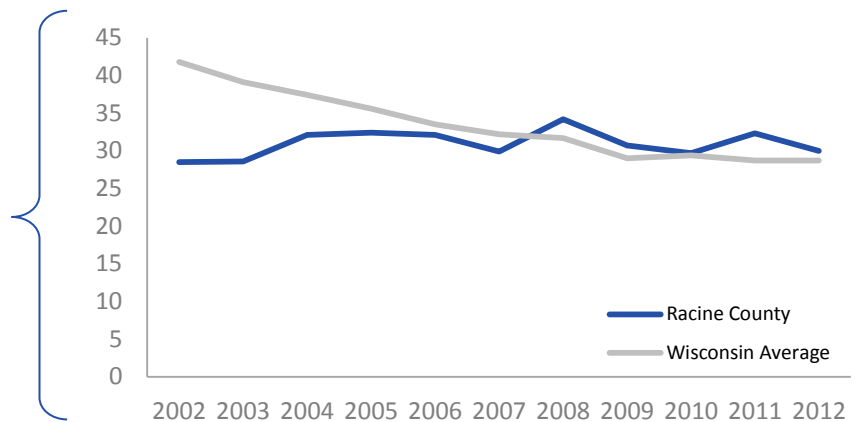
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



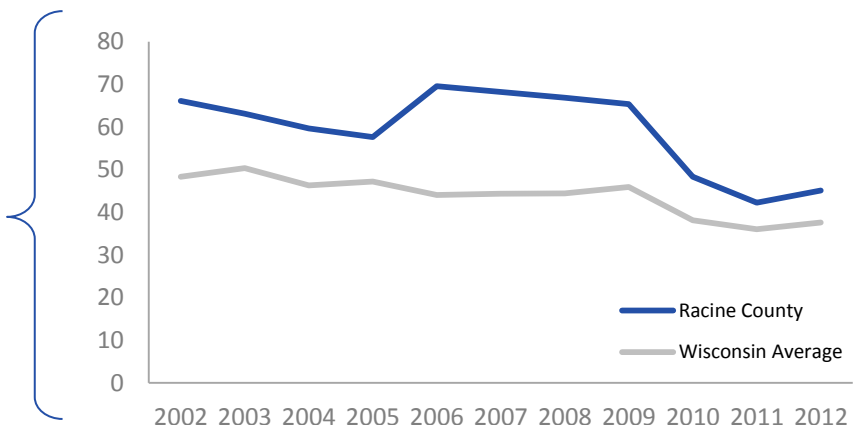
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



RICHLAND COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

RICHLAND COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 4.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.3 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 24.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 171.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 26.0 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 12.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 26.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.1 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 85.8% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 1 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS RICHLAND COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.3**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **4.0%**

CHILDHOOD LEAD POISONING

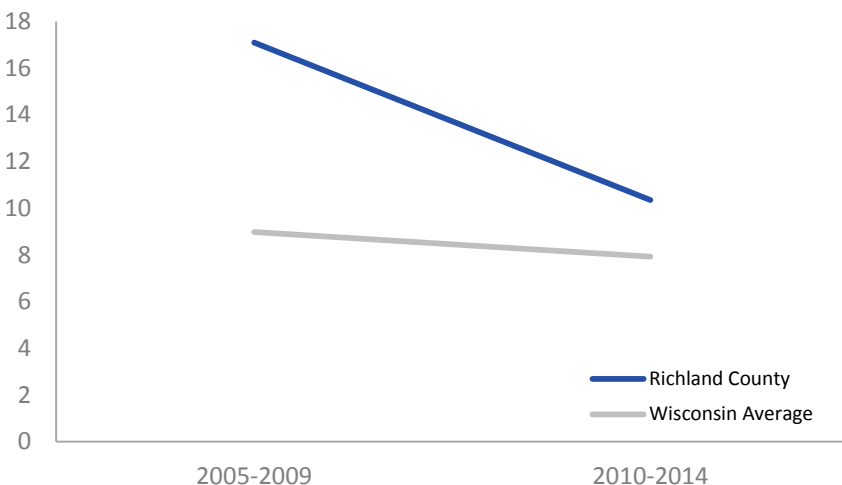
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS RICHLAND COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

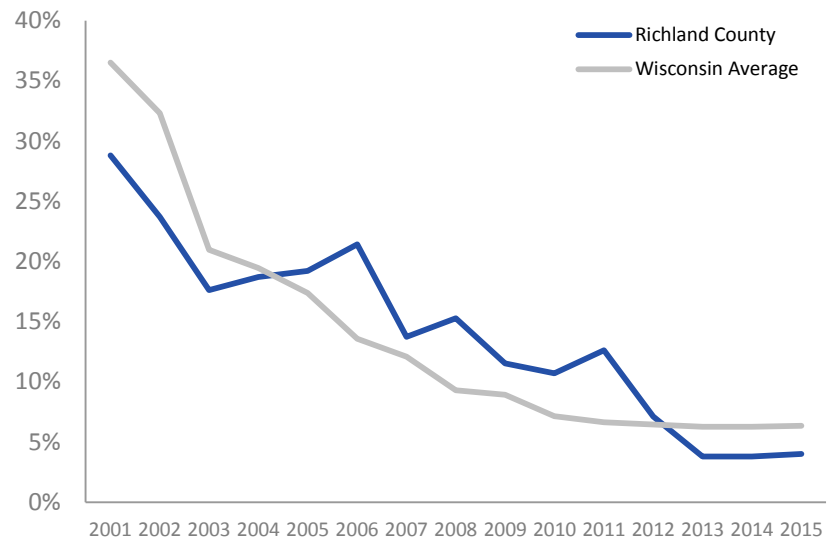
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

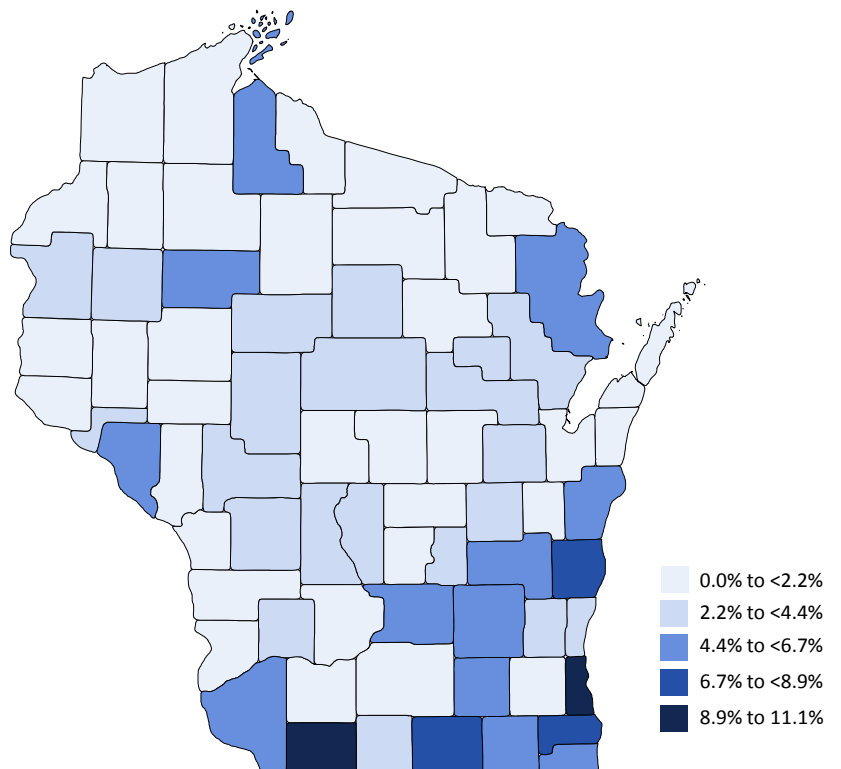
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE RICHLAND COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

24.8

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

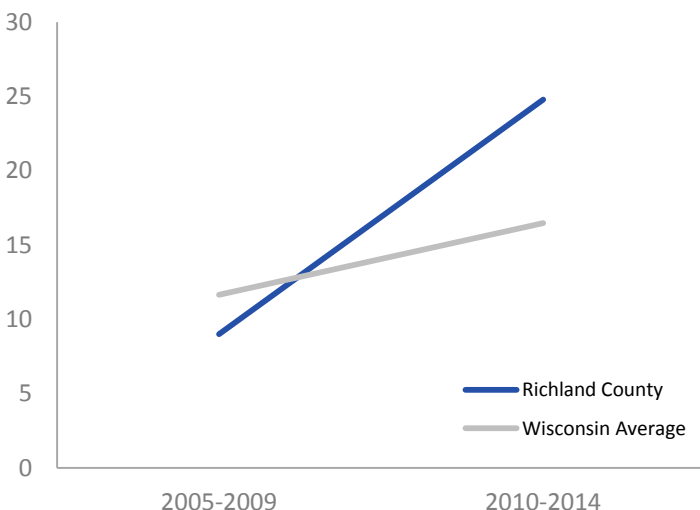
171.5

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

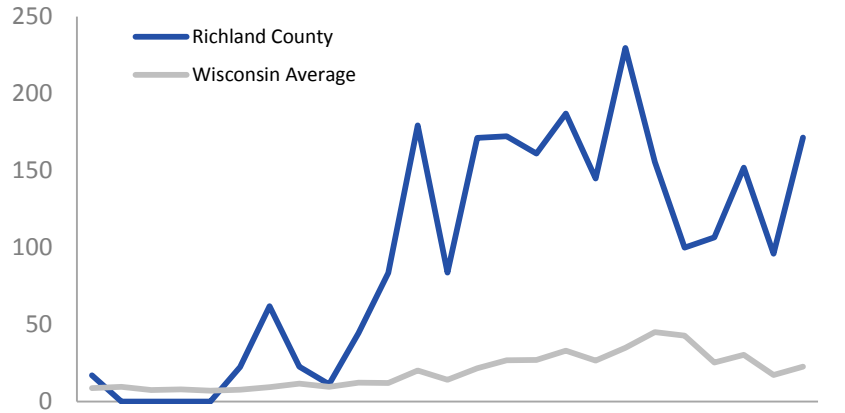
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

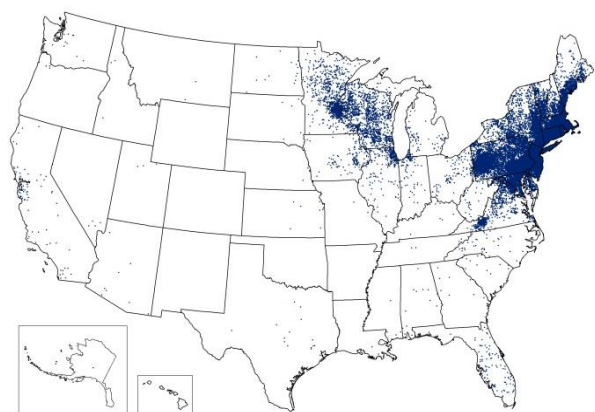
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

RICHLAND COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **26.0**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **12.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

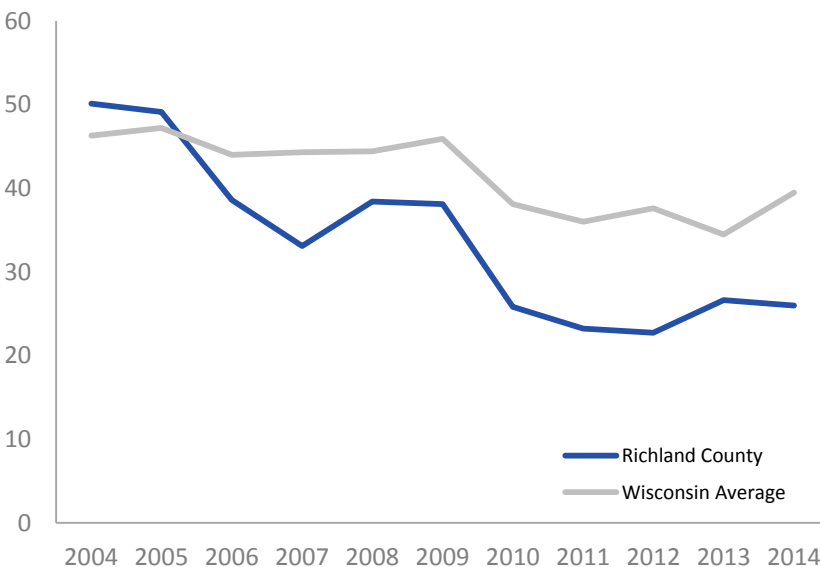
✓ **57.8**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **26.2**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

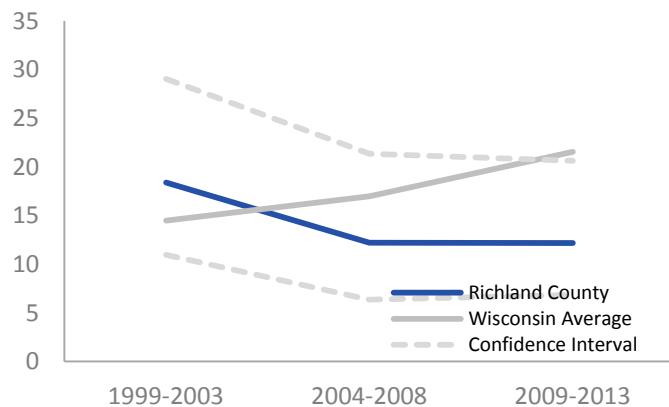
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

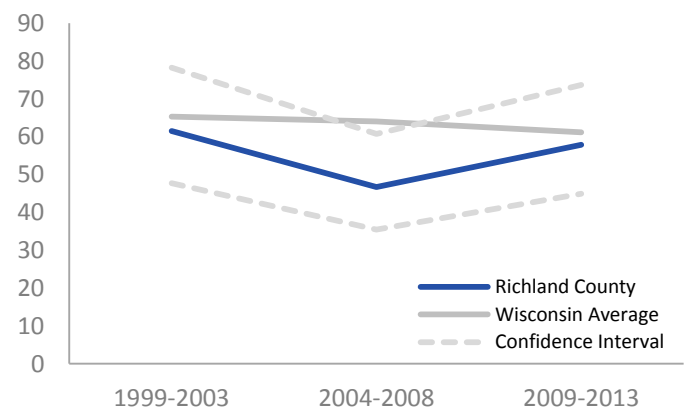
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

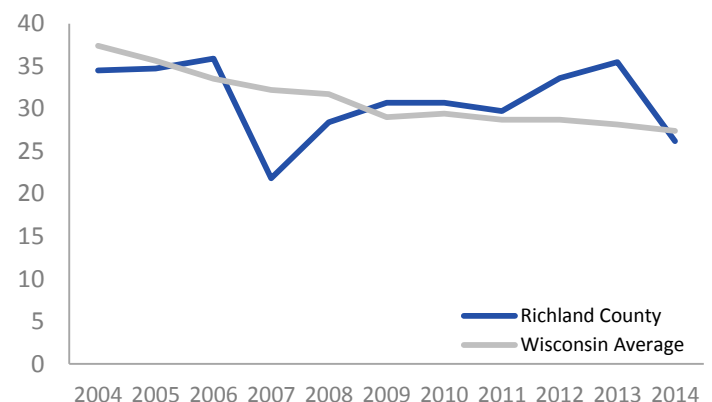
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY RICHLAND COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

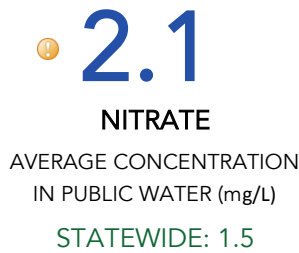
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

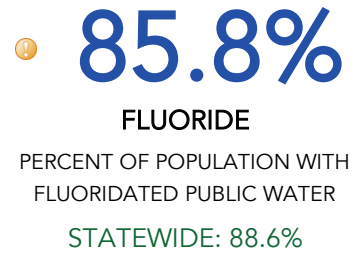
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



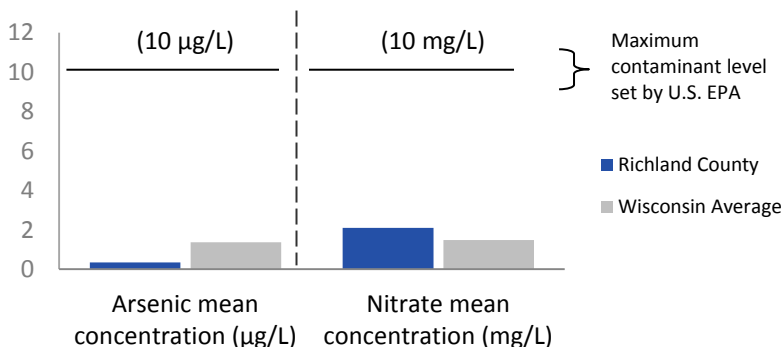
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY RICHLAND COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

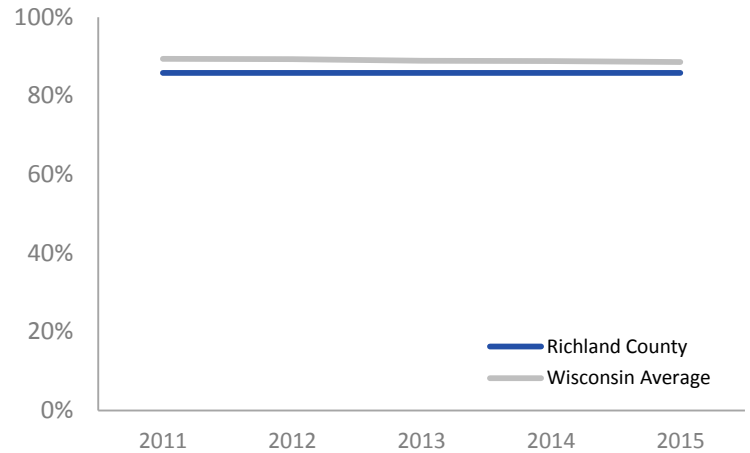
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

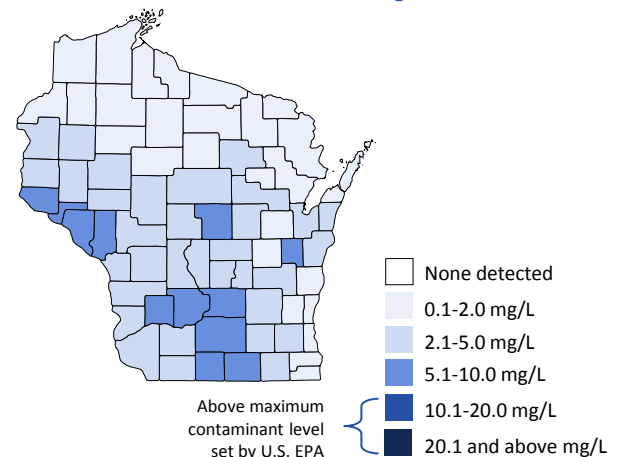
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY RICHLAND COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



1

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



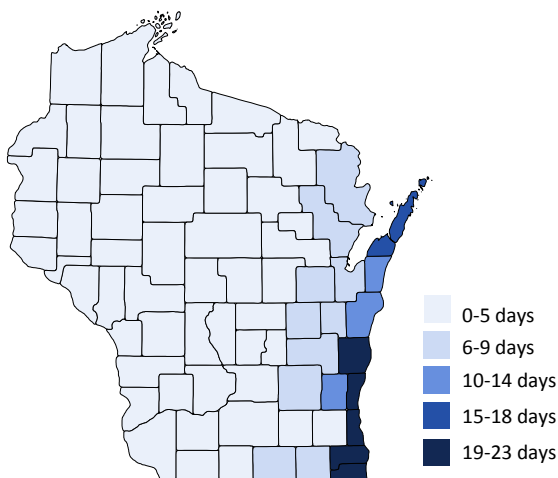
9.3

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

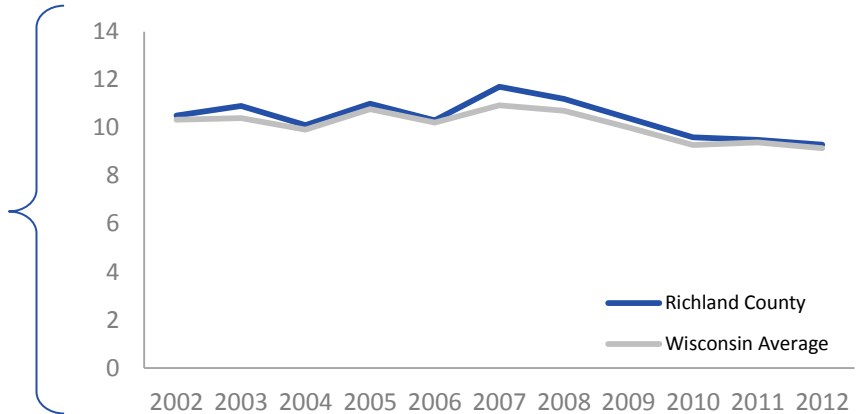


AIR QUALITY RICHLAND COUNTY

PARTICULATE MATTER 2.5

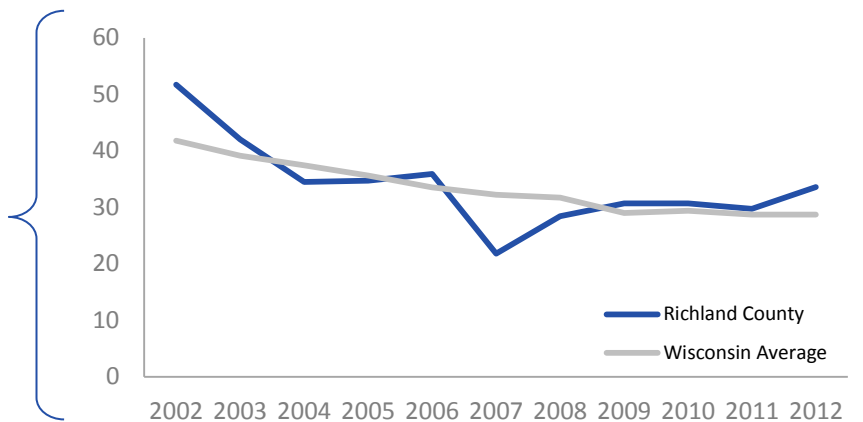
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



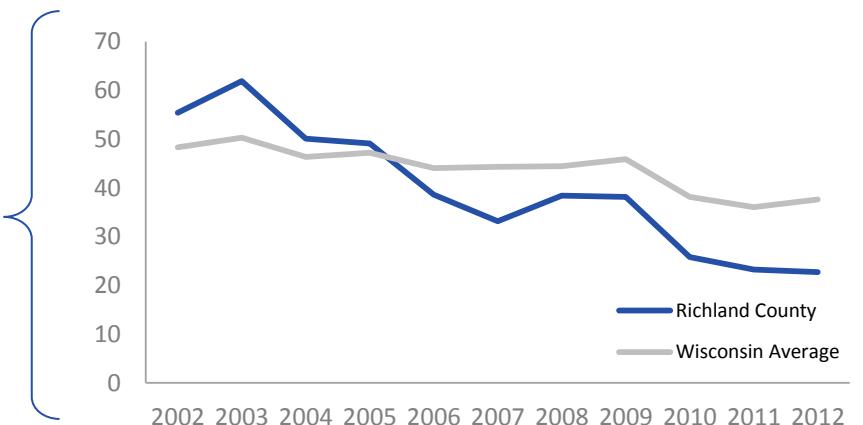
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



ROCK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

ROCK COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

7.3% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

11.4 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

20.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

4.3 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

60.8 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

20.6 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

34.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

1.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

2.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

97.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

6 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

2 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⬇ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS ROCK COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

⚠️ **11.4**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

⚠️ **7.3%**

CHILDHOOD LEAD POISONING

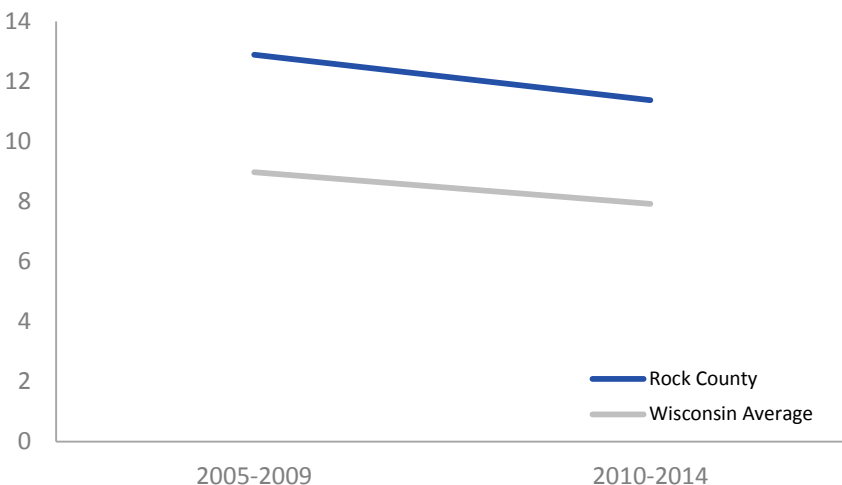
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

⚠️ Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS ROCK COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

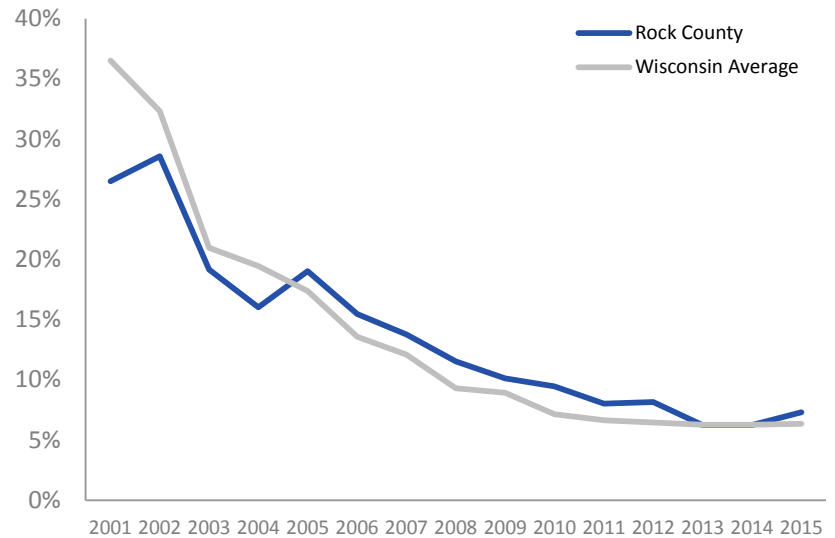
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

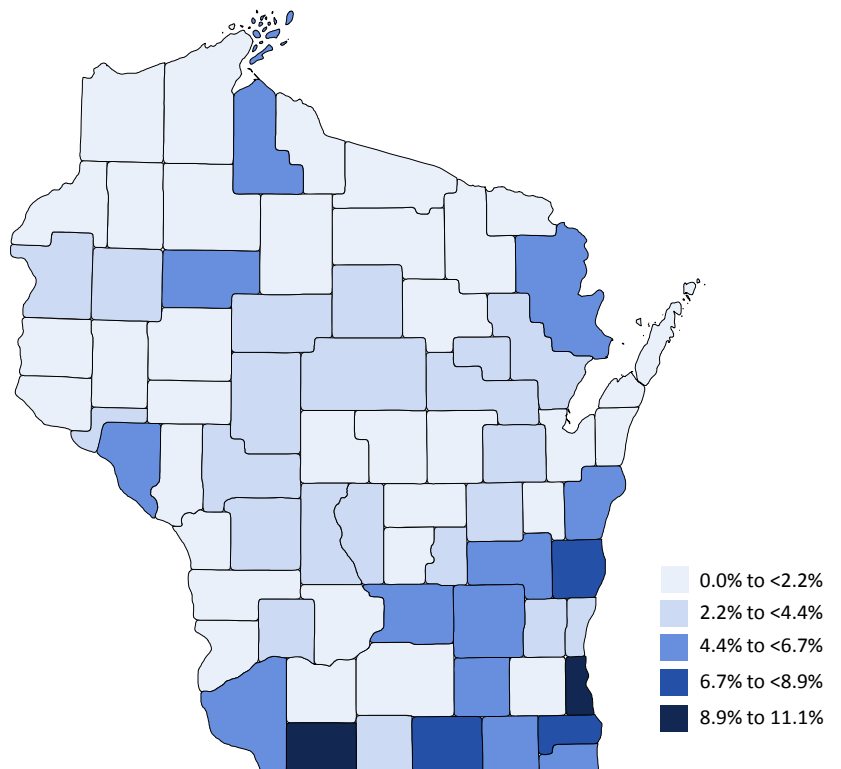
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE ROCK COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

20.3

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

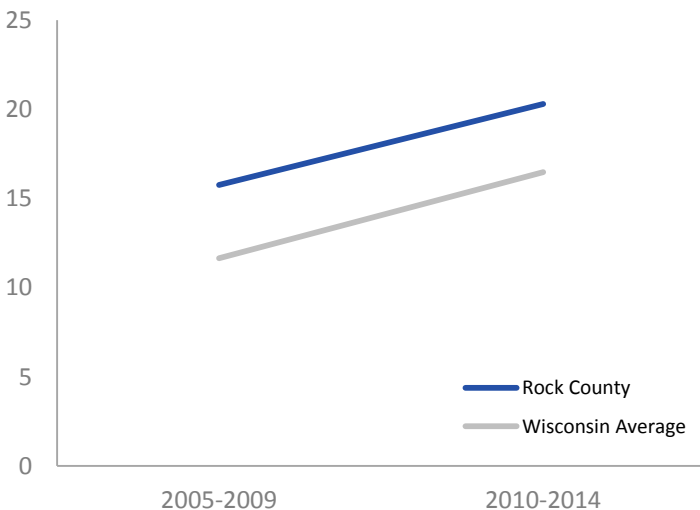
4.3

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

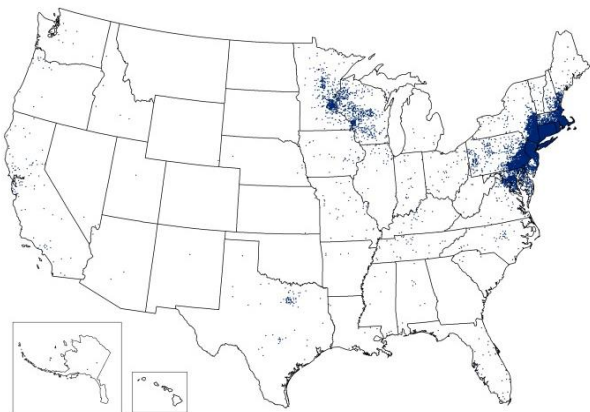
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

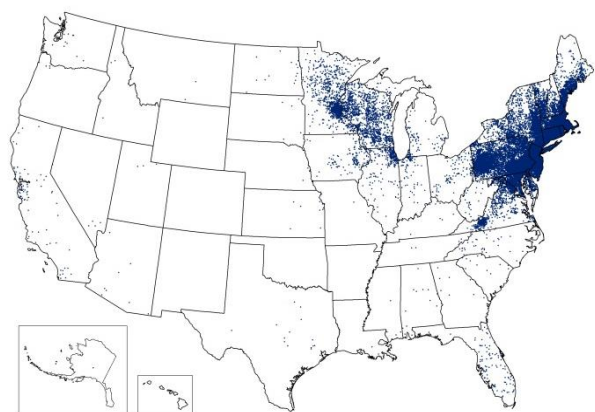
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

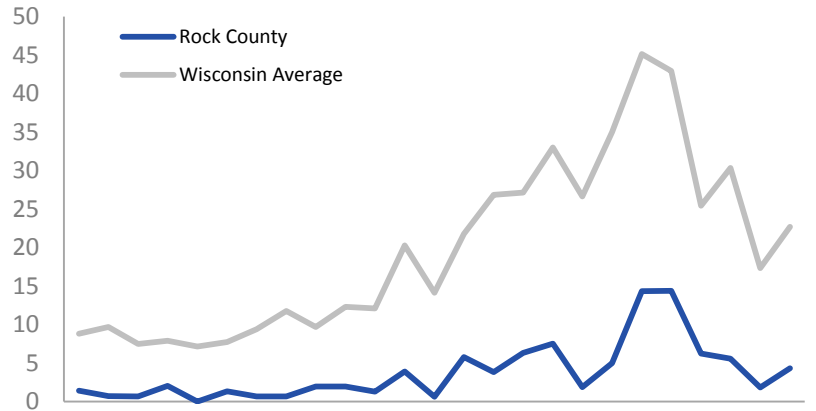


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES ROCK COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

60.8
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

20.6
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

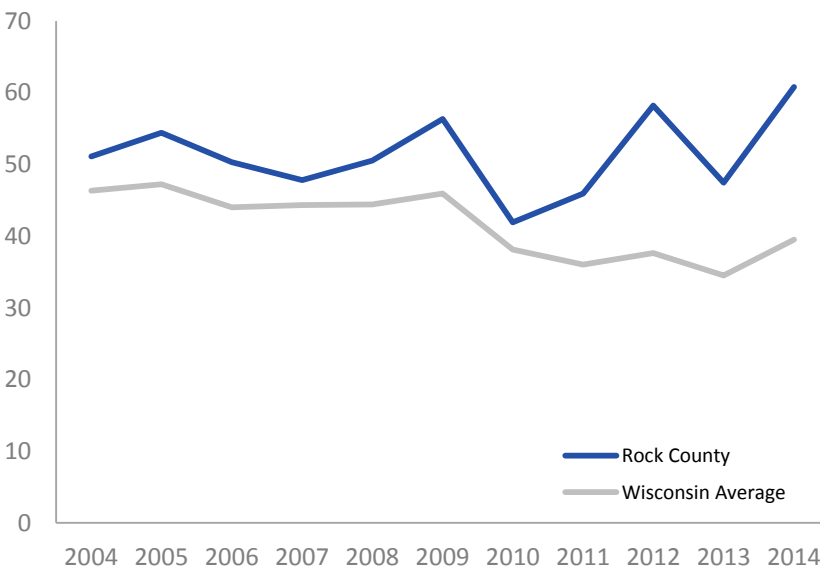
74.9
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

34.8
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬇ Above state value ✔ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

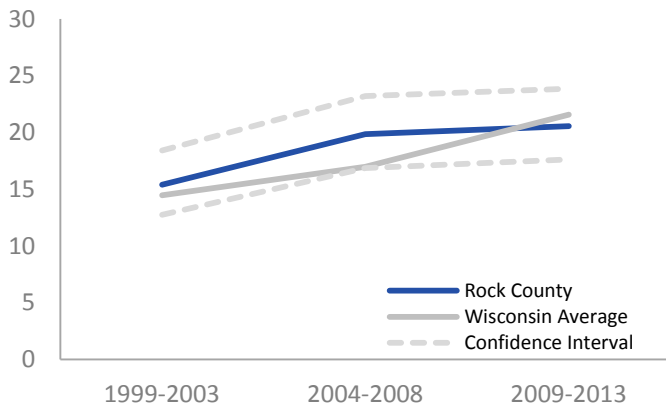
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

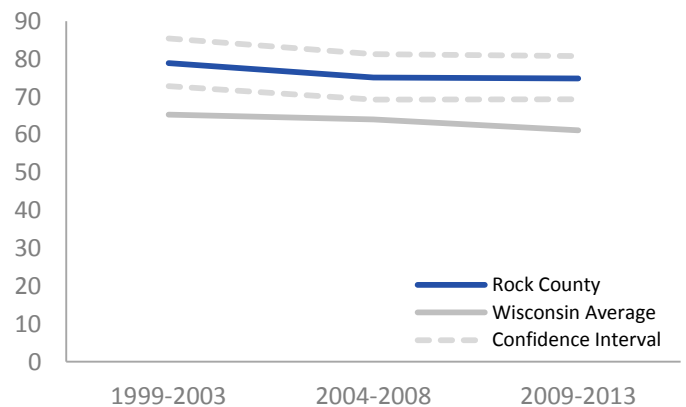
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

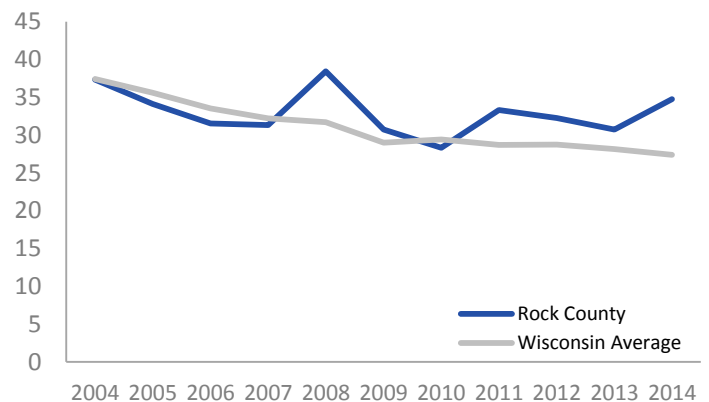
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY ROCK COUNTY

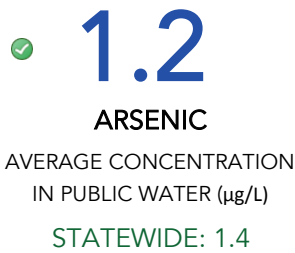
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

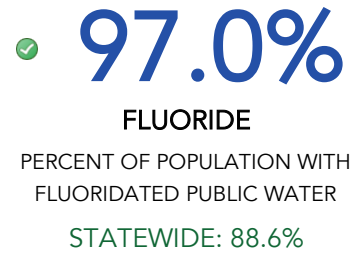
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



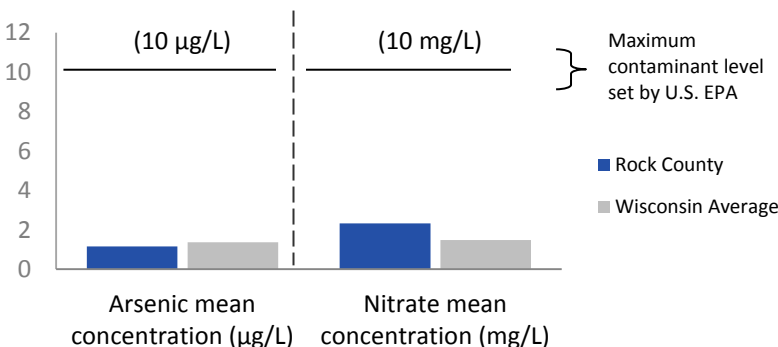
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY ROCK COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

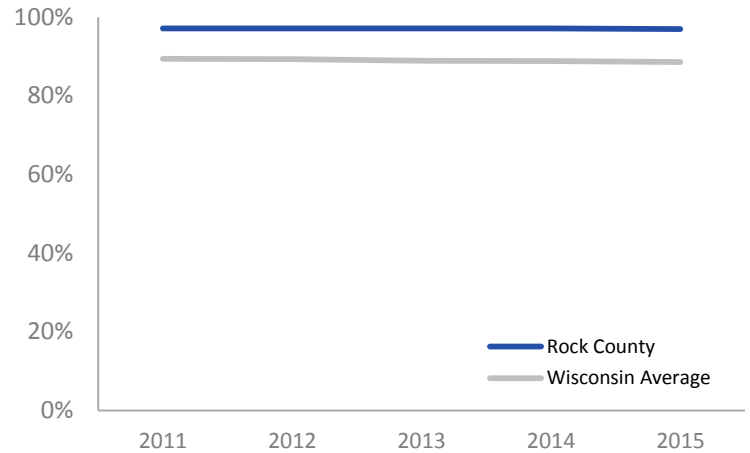
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

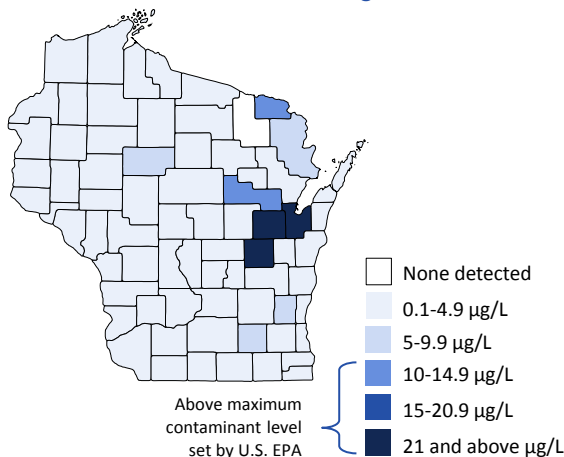
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

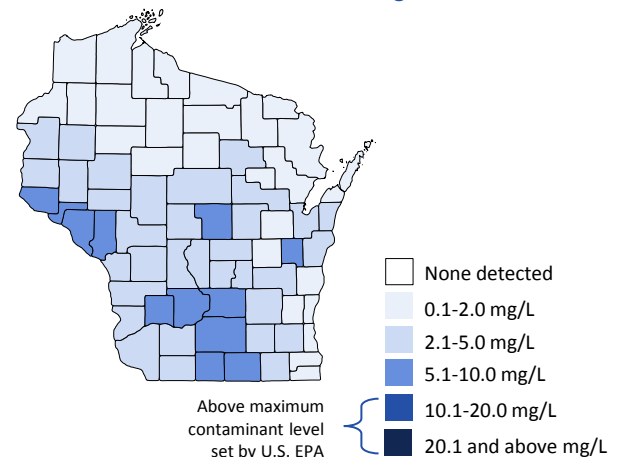
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY ROCK COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



6

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



2

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



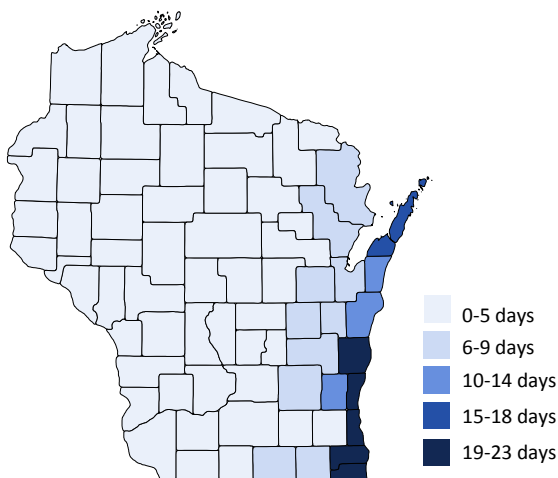
10.7

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

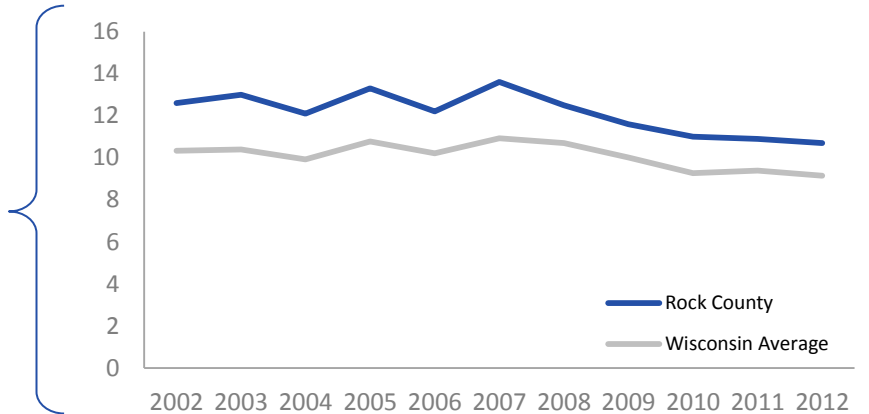
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

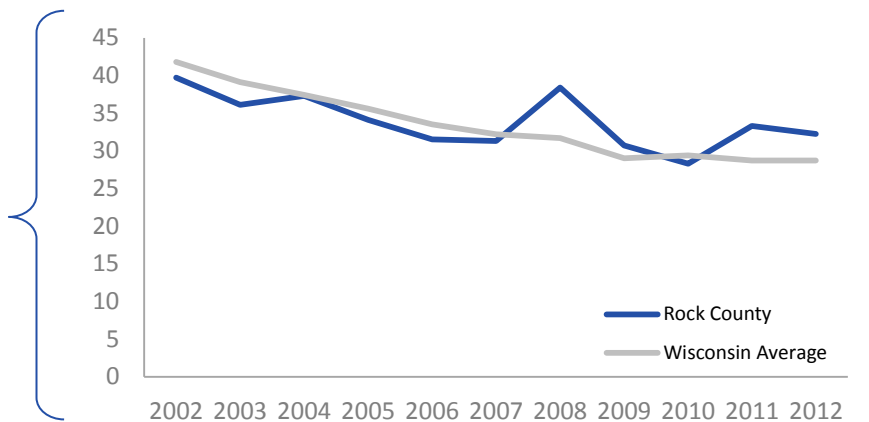
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



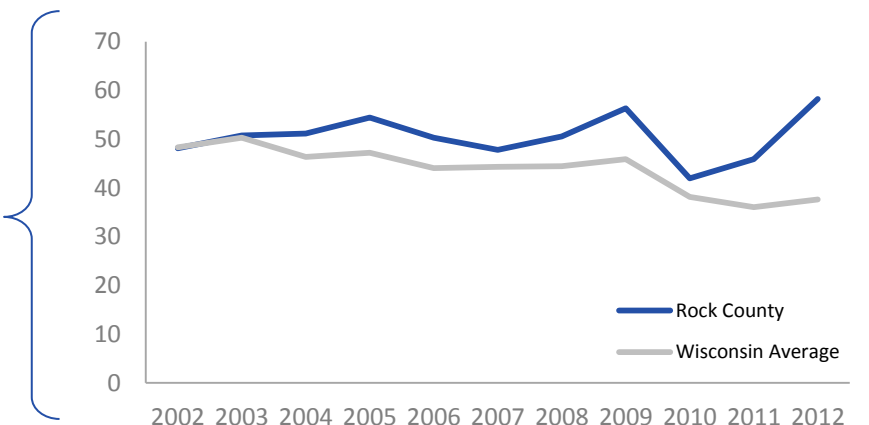
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



RUSK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488

RUSK COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 4.8% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 23.8 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 18.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 106.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 49.2 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 20.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 19.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 65.1% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)

WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM
Bureau of Environmental and Occupational Health

Wisconsin Department of Health Services | Division of Public Health
www.dhs.wisconsin.gov/epht | dhstracking@wi.gov | 608-267-2488



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS RUSK COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **23.8**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **4.8%**

CHILDHOOD LEAD POISONING

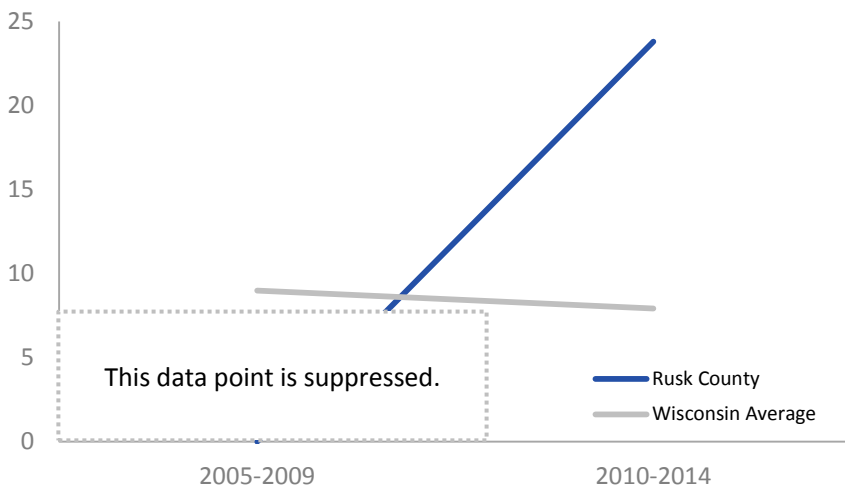
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS RUSK COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

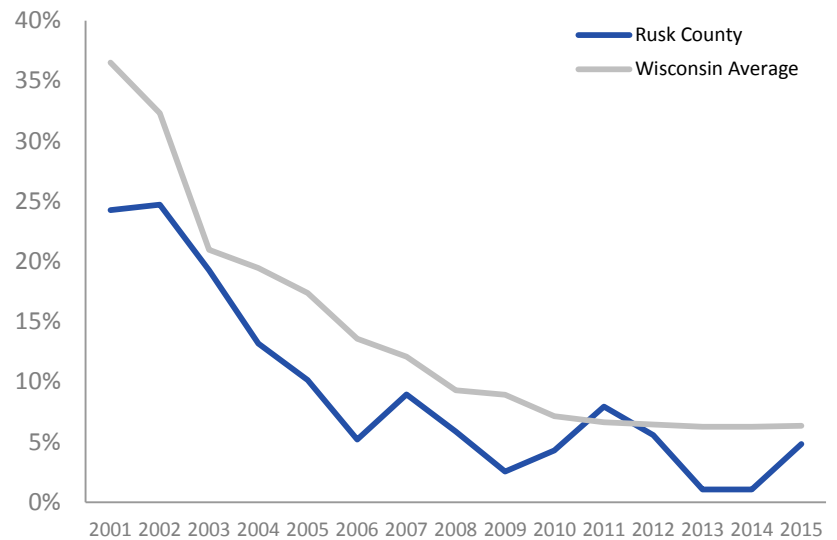
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

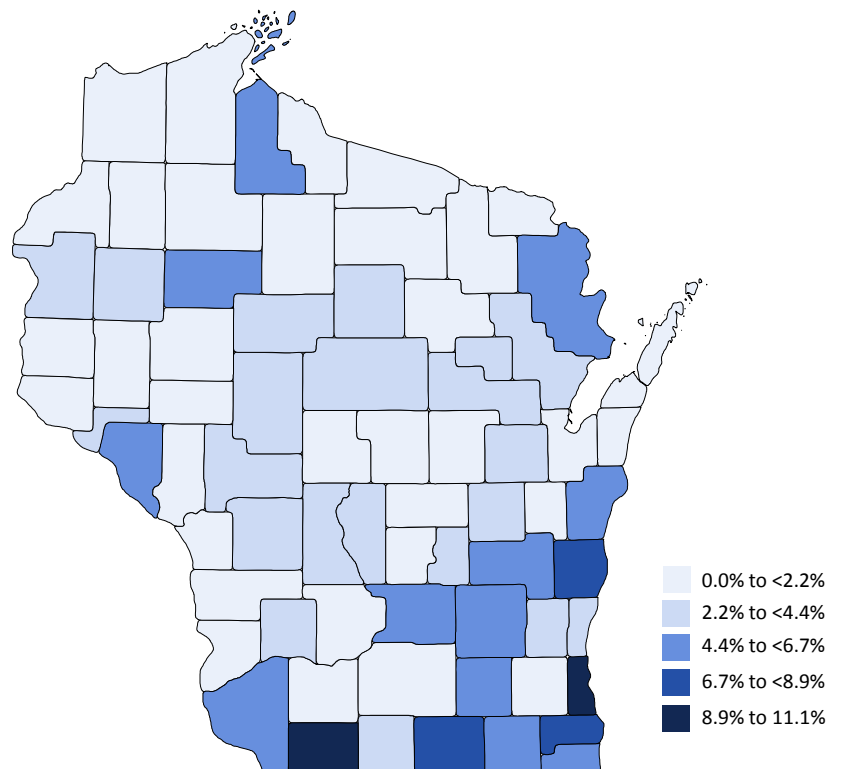
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE RUSK COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

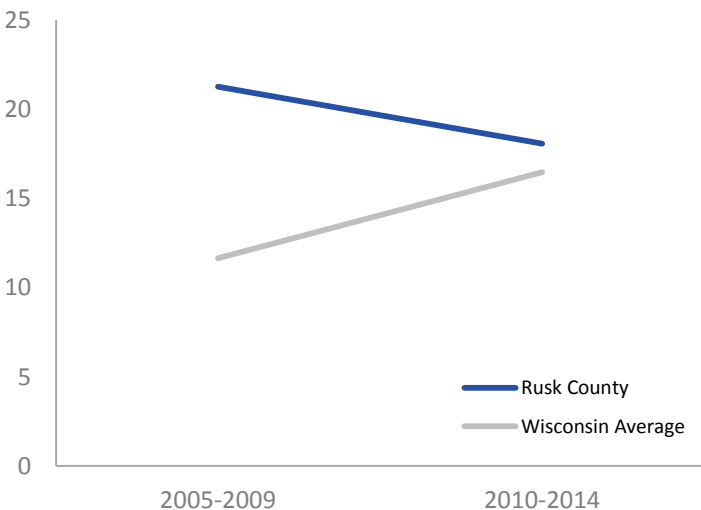
18.1
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

106.2
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

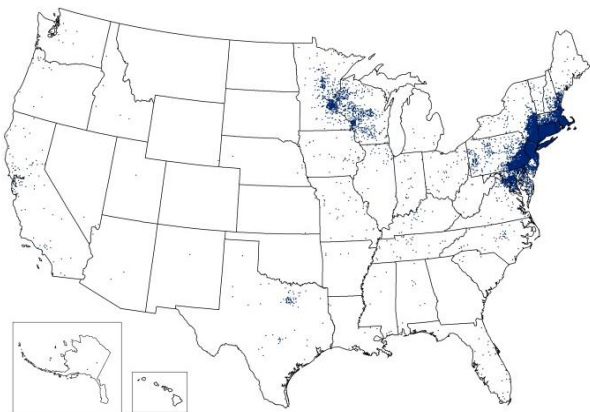
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

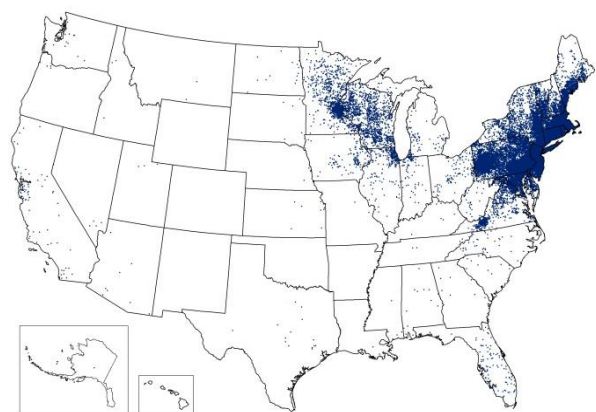
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

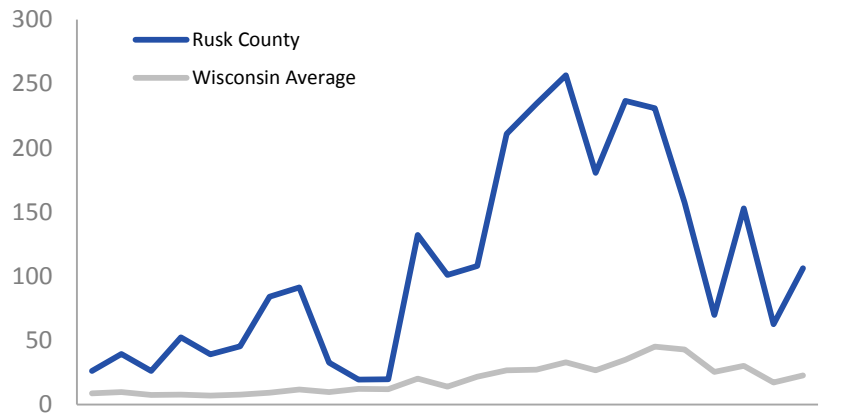


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES RUSK COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

49.2
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

20.2
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

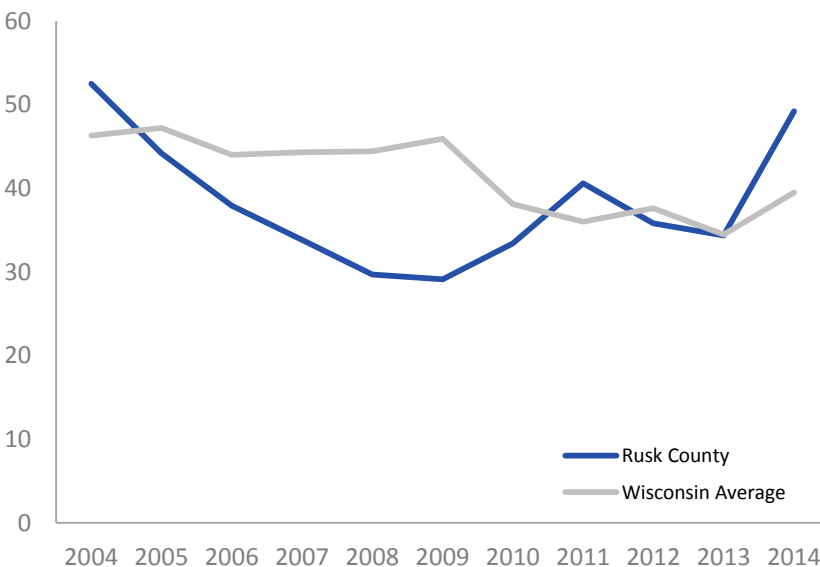
76.0
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

19.2
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

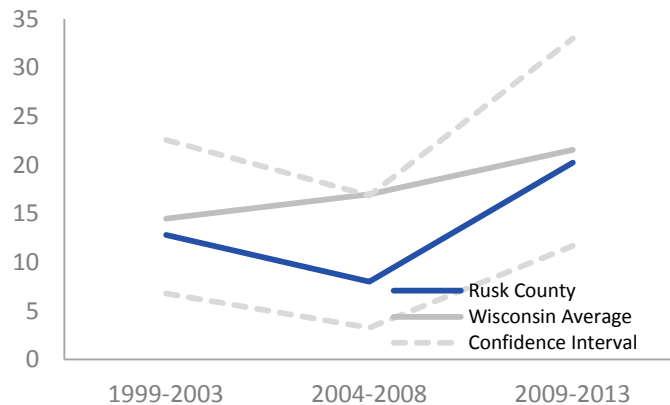
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

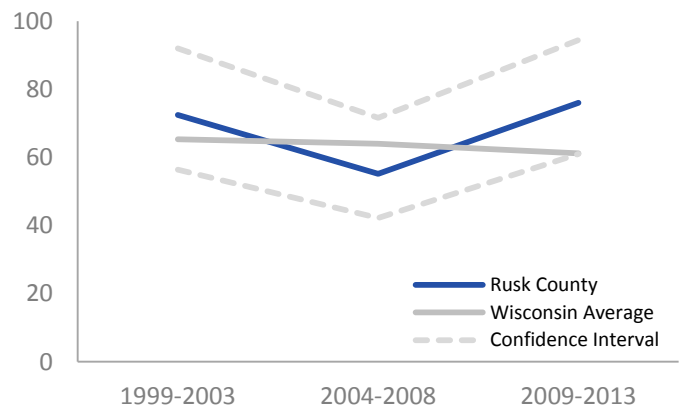
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

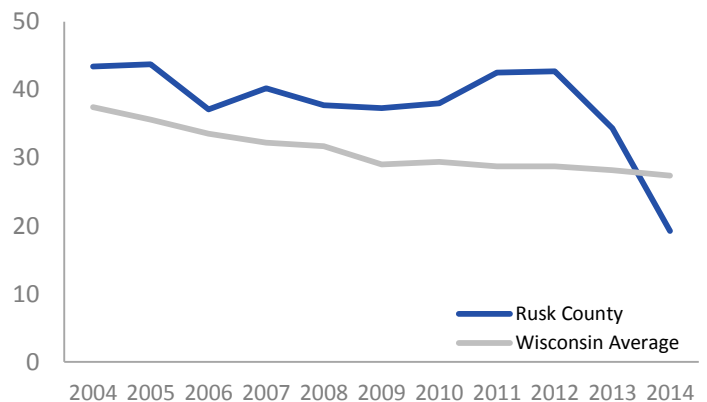
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY RUSK COUNTY

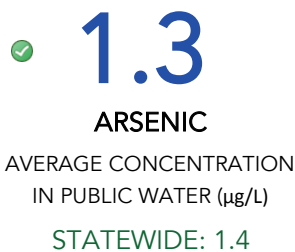
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

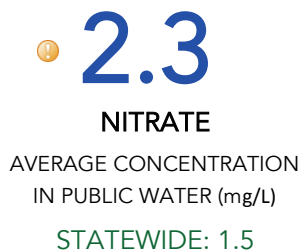
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

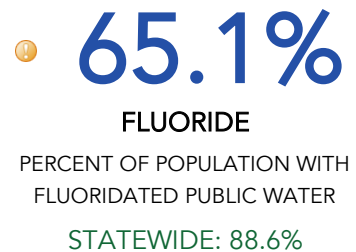
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



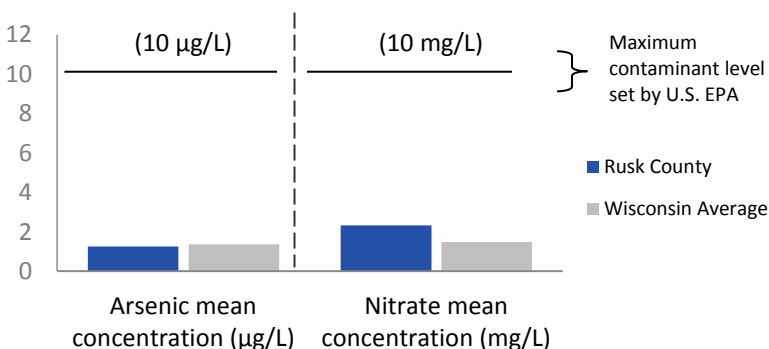
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY RUSK COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

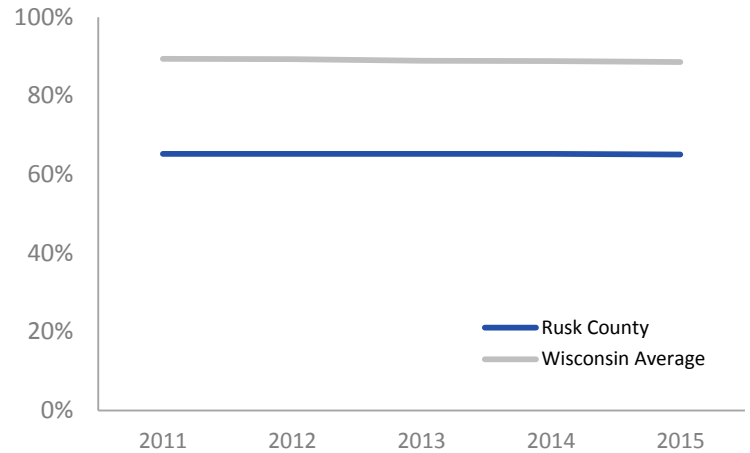
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

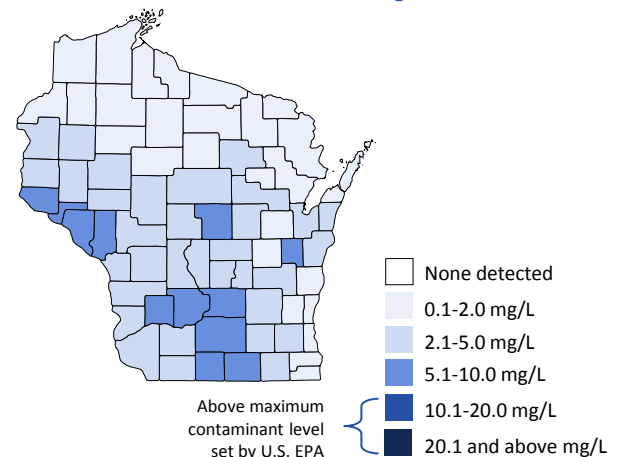
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



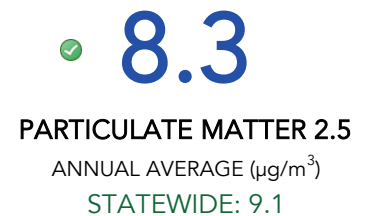


AIR QUALITY RUSK COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

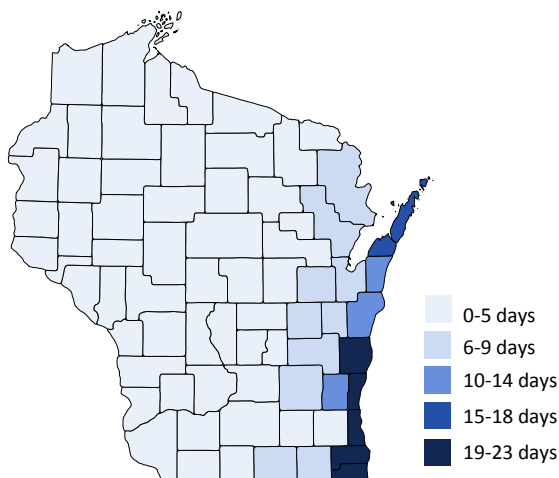
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

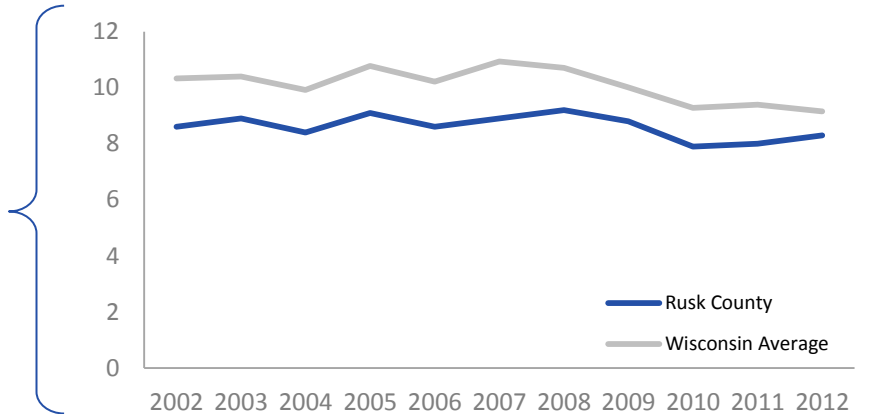


AIR QUALITY RUSK COUNTY

PARTICULATE MATTER 2.5

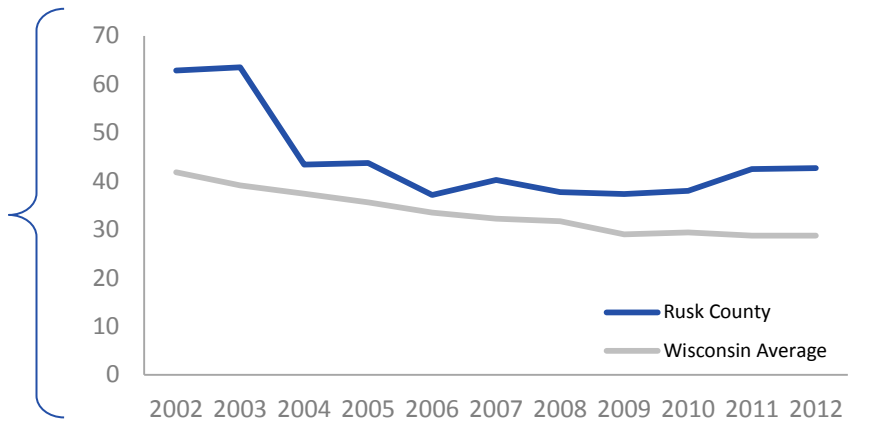
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



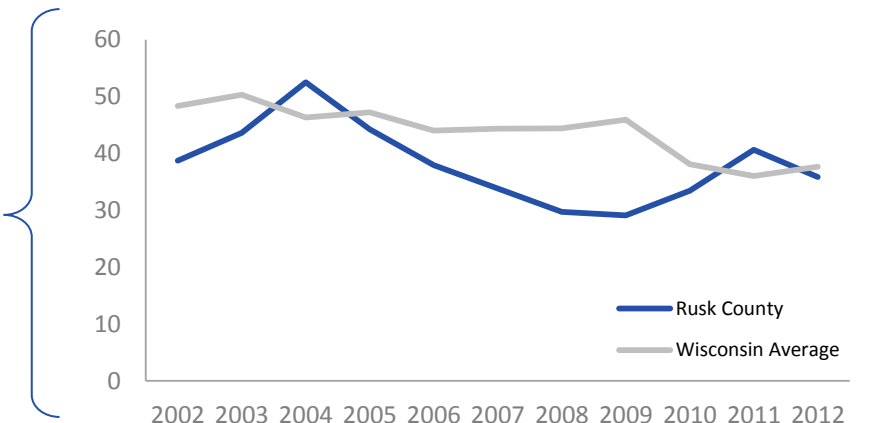
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



SAUK COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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608-267-2488



SAUK COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 1.4% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 14.2 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 28.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 42.4 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

✓ 31.4 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 14.3 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 28.3 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.1 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 94.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 3 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS SAUK COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **14.2**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.4%**

CHILDHOOD LEAD POISONING

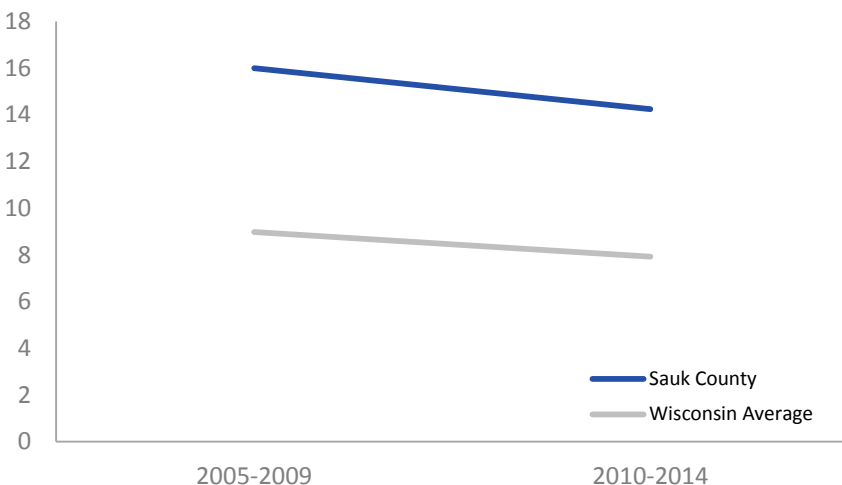
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS SAUK COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

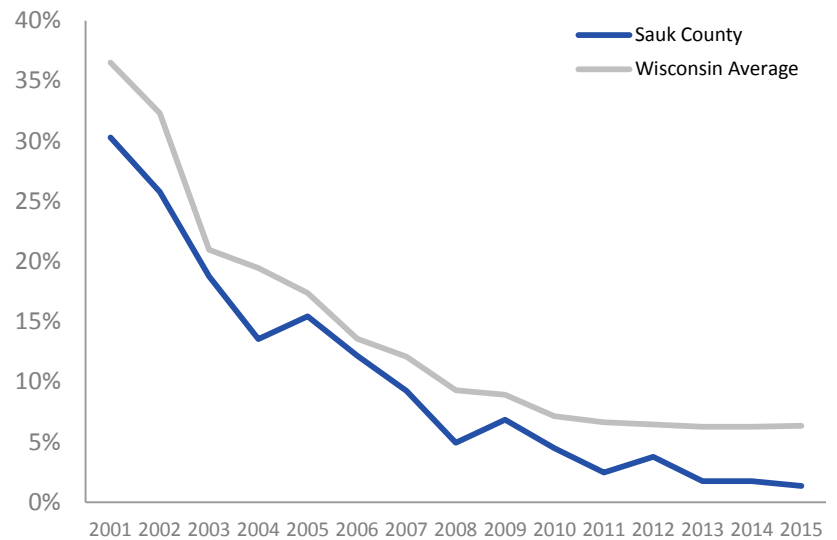
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

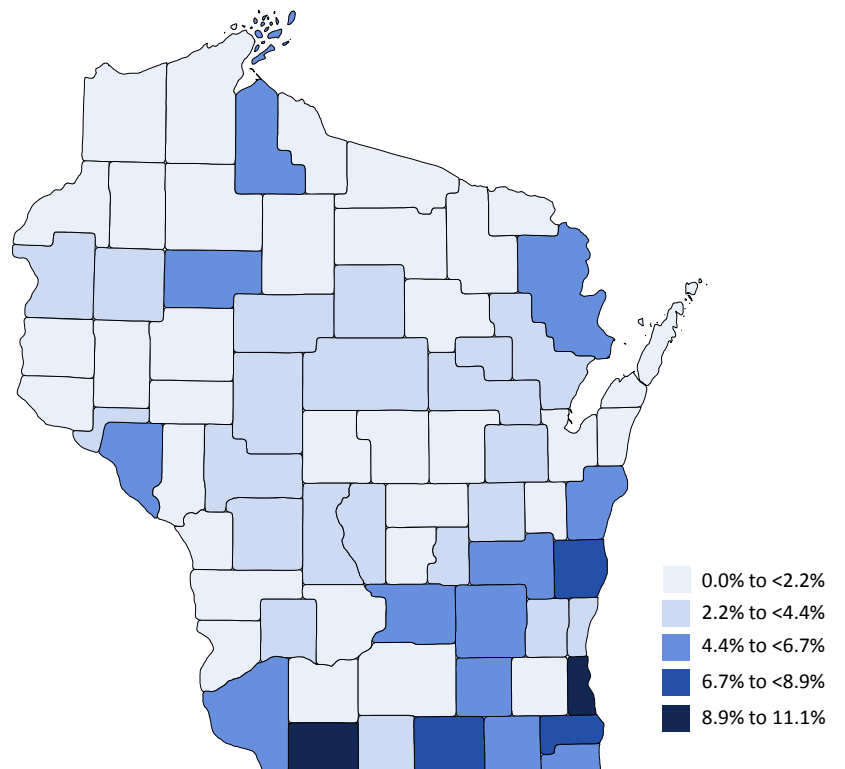
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE SAUK COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

28.9

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

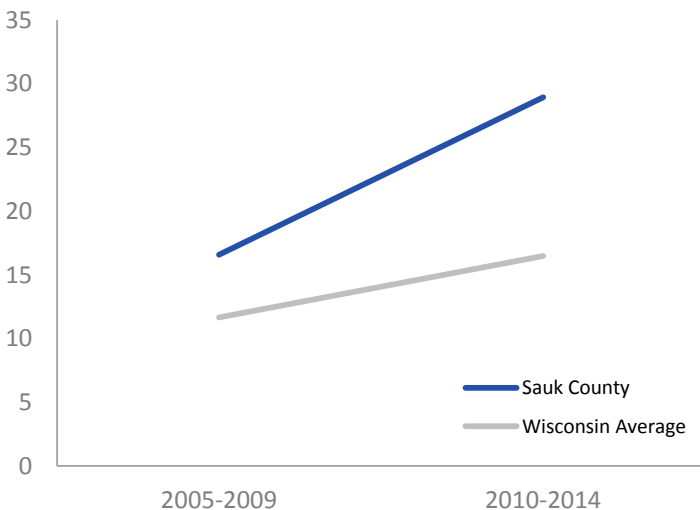
42.4

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

⚠ Above state value ✔ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht

Wisconsin Environmental Public Health Tracking | 7



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

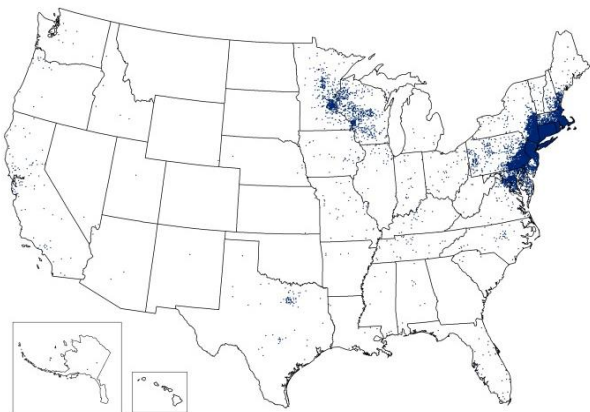
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

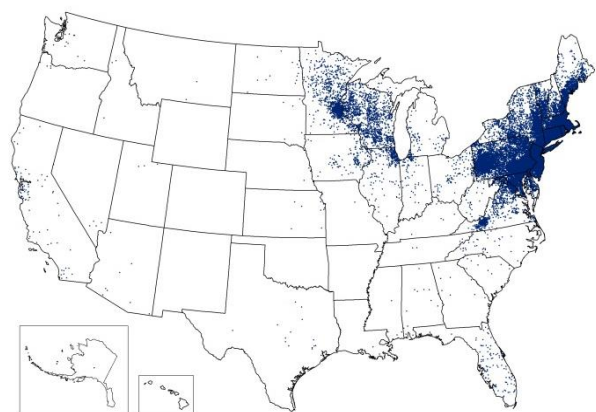
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

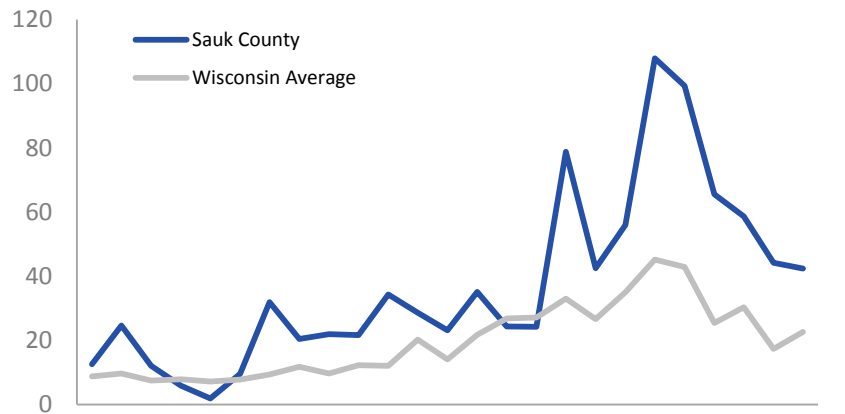


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES SAUK COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **31.4**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **14.3**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

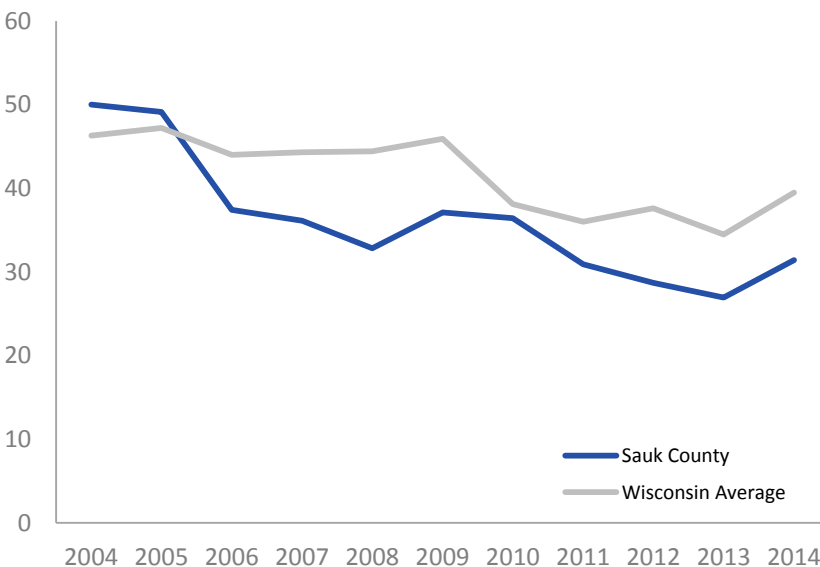
✓ **57.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **28.3**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

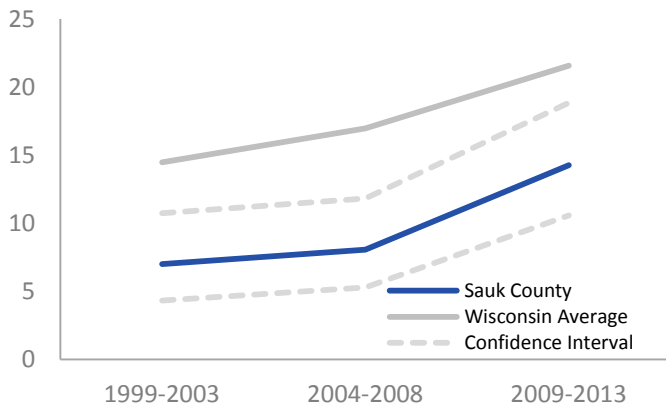
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

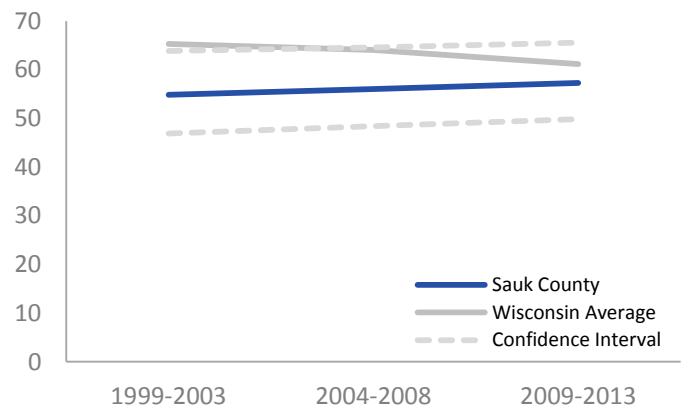
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

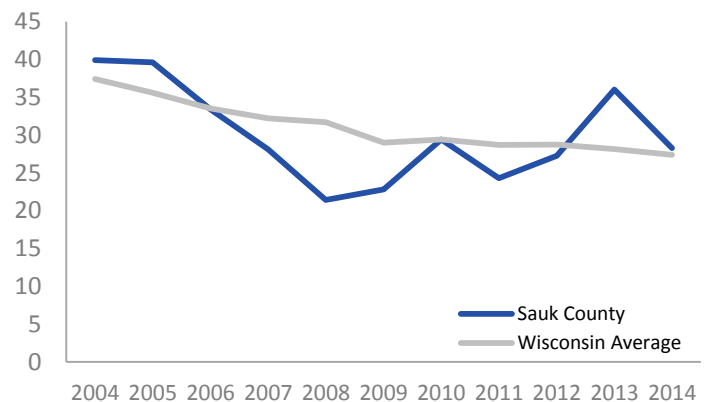
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY SAUK COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

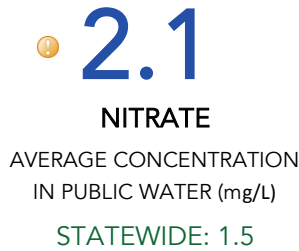
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

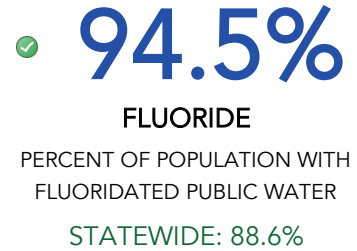
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



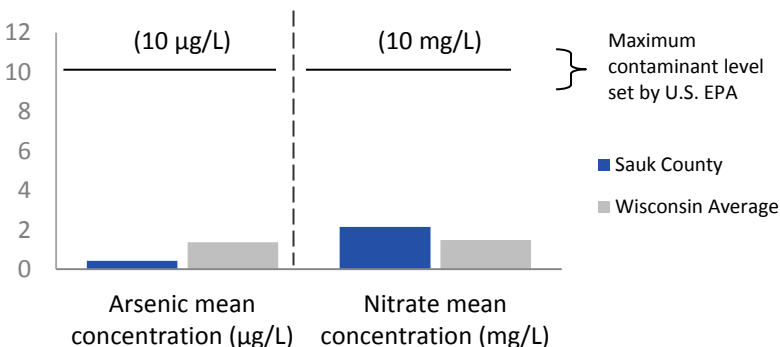
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY SAUK COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

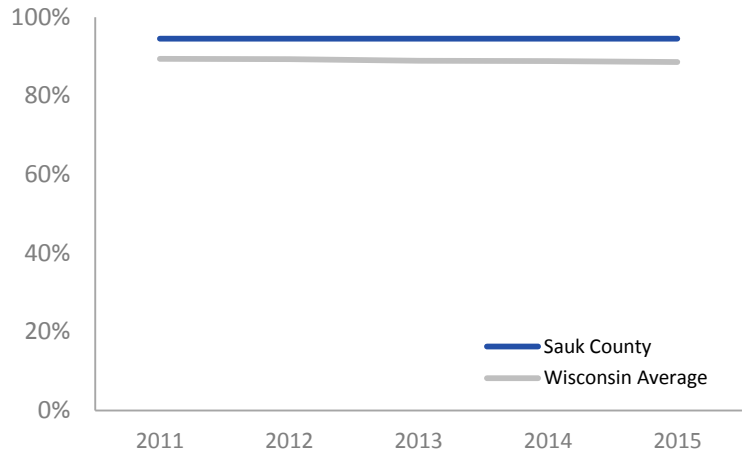
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

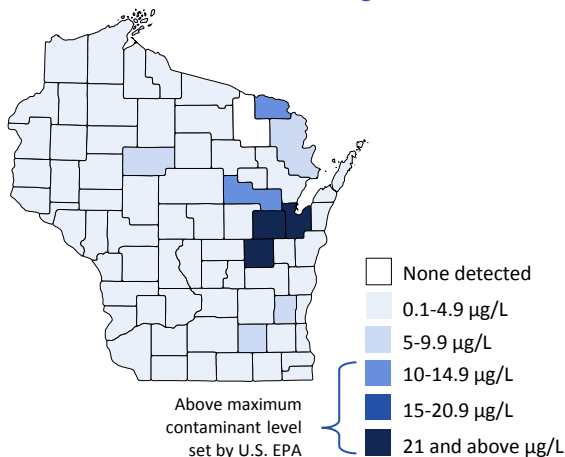
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

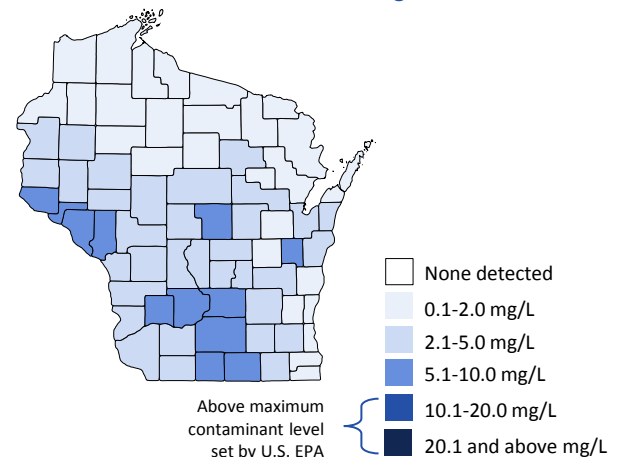
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



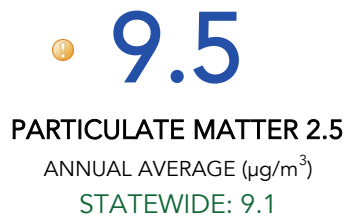
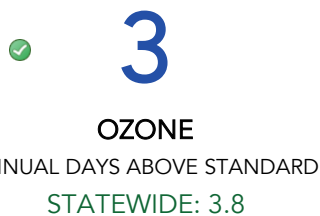


AIR QUALITY SAUK COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

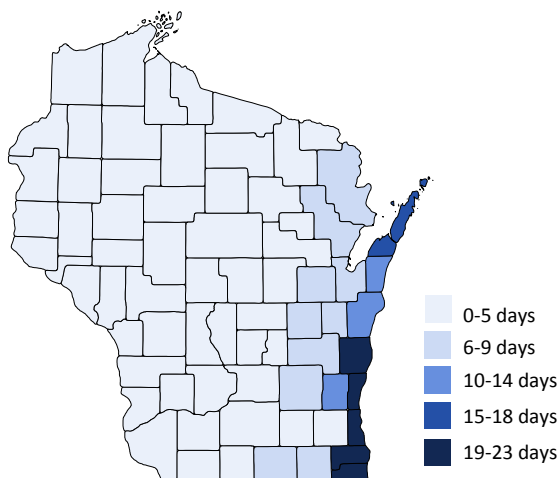
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

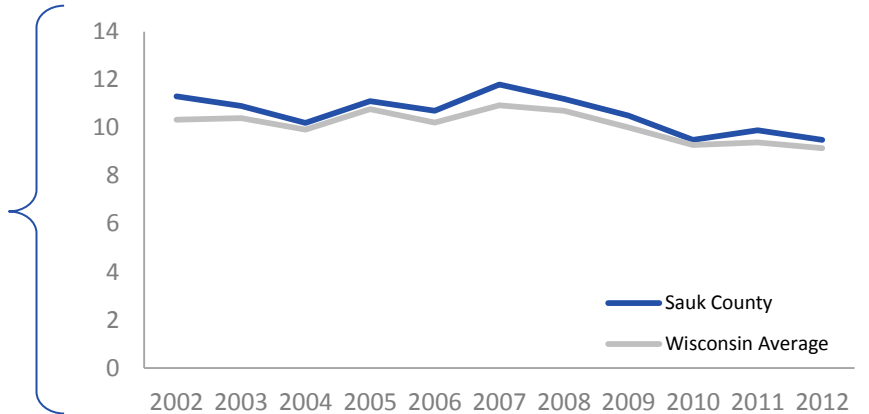


AIR QUALITY SAUK COUNTY

PARTICULATE MATTER 2.5

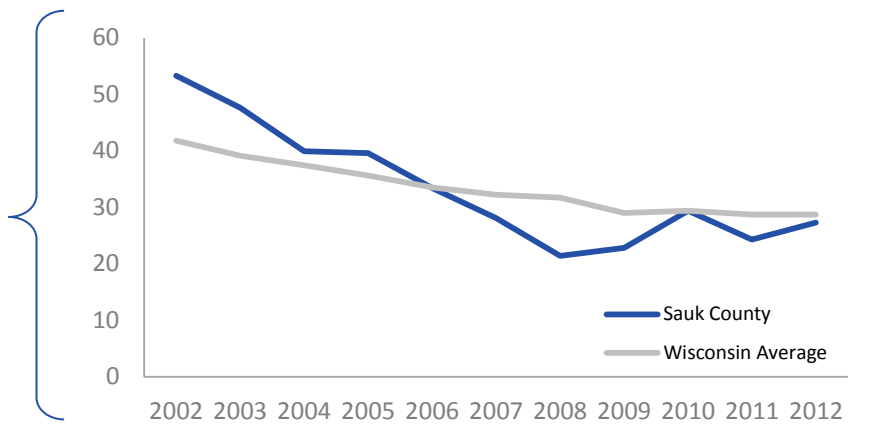
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



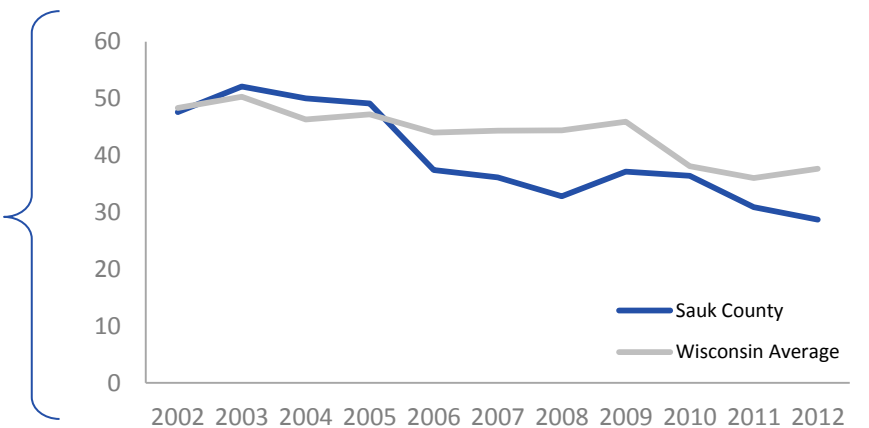
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



SAWYER COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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608-267-2488



SAWYER COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 1.9% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 8.5 | Rate of ER visits per 100,000 people
Wisconsin: 8.5

CLIMATE

Heat Stress

⚠ 26.3 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 73.3 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

⚠ 83.0 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 26.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 31.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

✓ 1.1 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.5 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 65.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2005-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS SAWYER COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **8.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 8.5

✓ **1.9%**

CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE (2005-2014)



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



HOME HAZARDS SAWYER COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

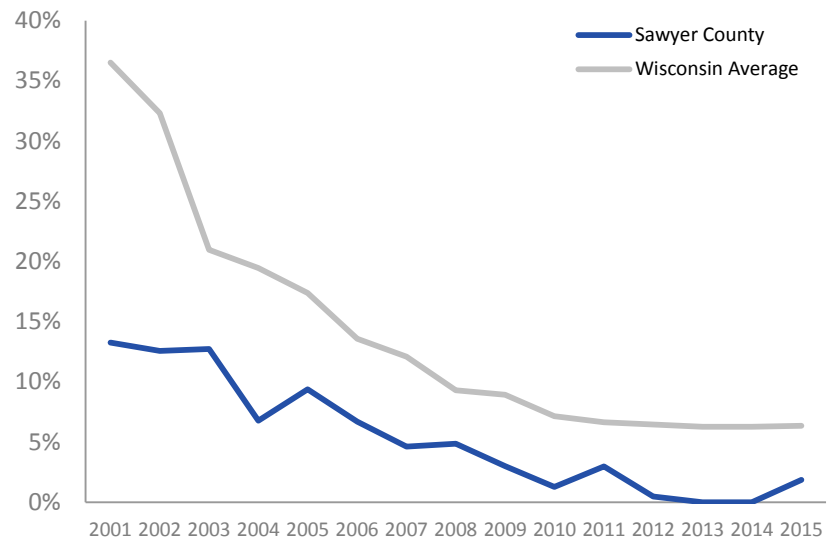
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

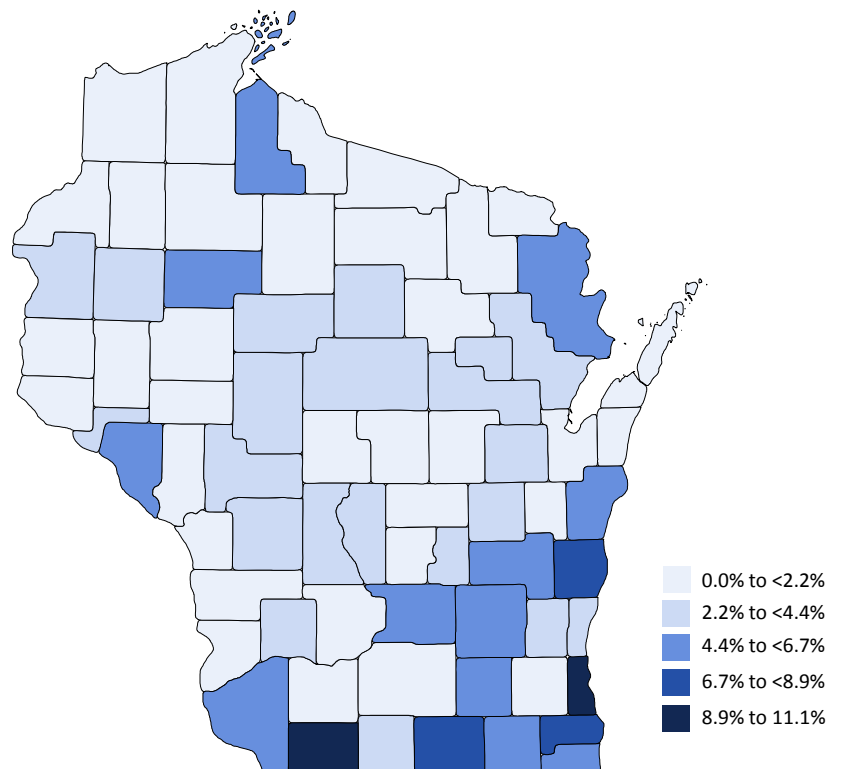
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE SAWYER COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

26.3

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

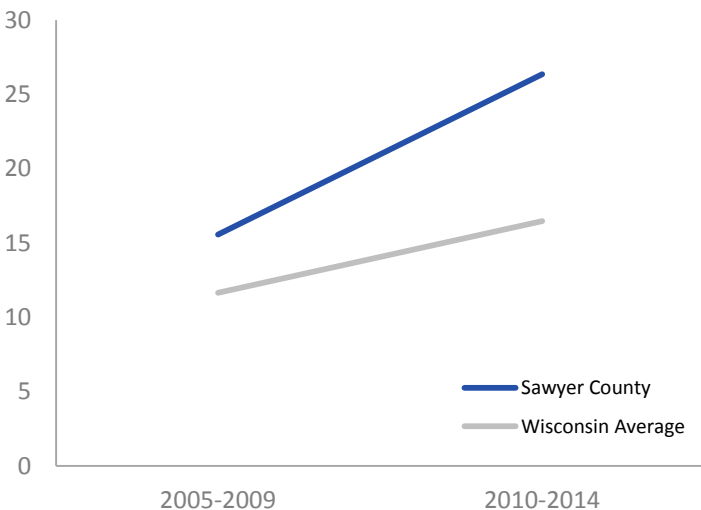
73.3

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

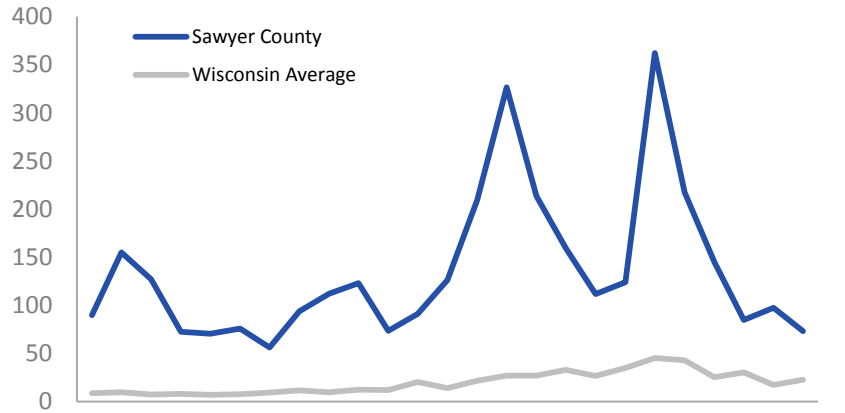
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

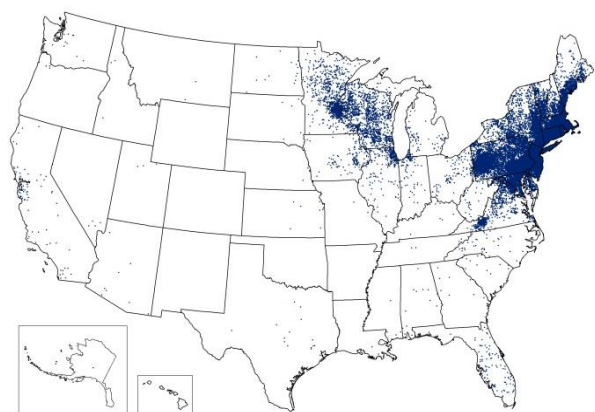
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

SAWYER COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

83.0
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

26.2
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

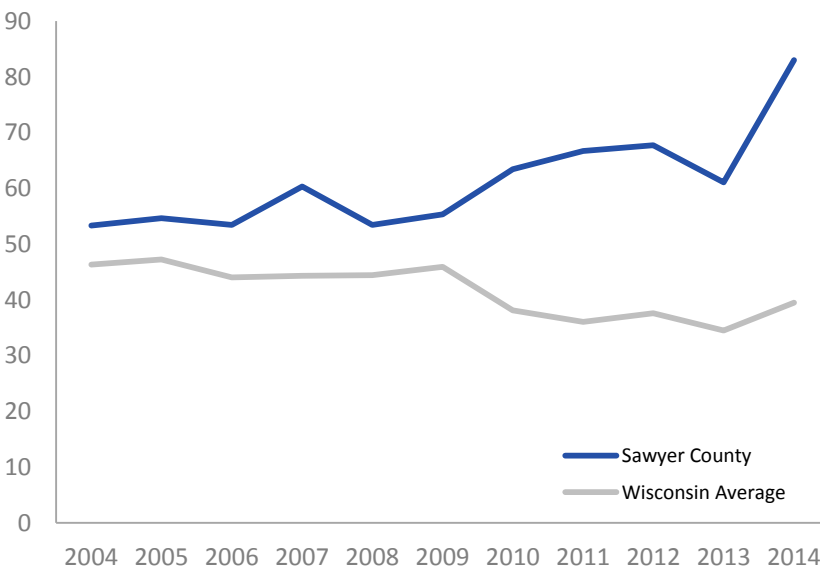
67.4
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

31.0
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

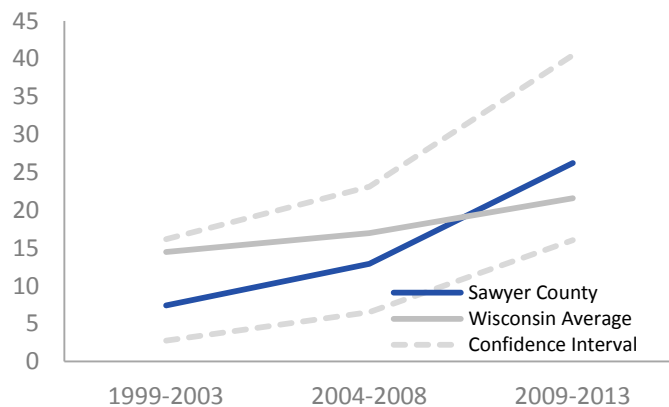
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

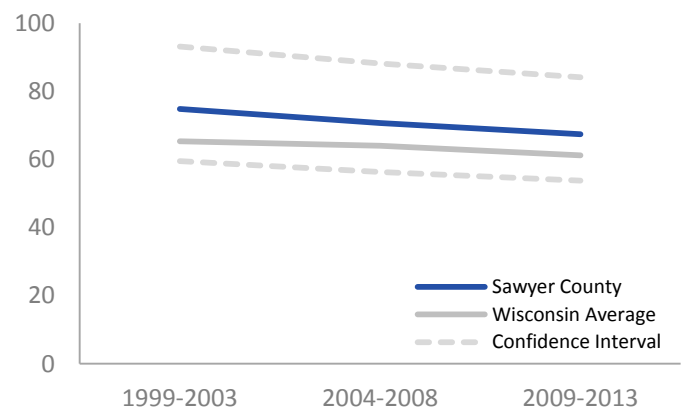
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

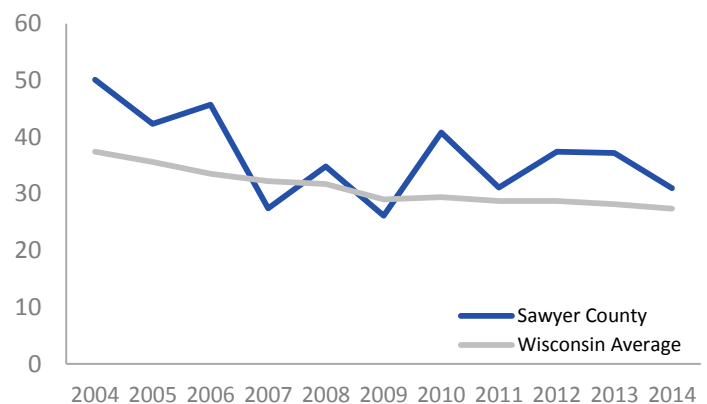
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY SAWYER COUNTY

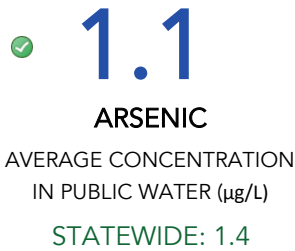
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

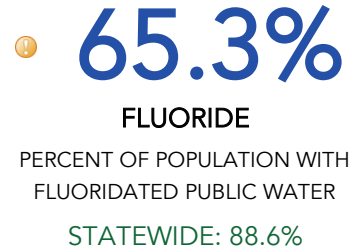
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



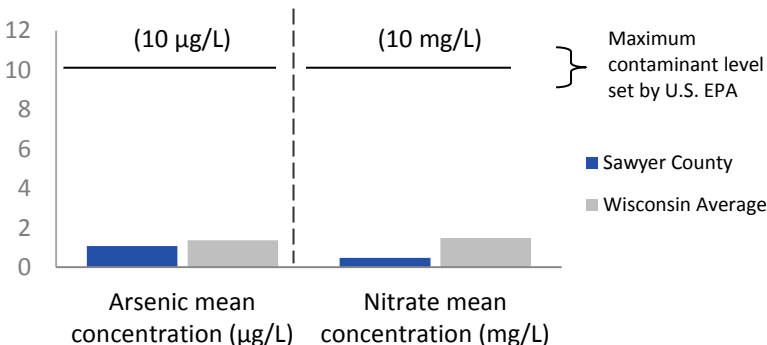
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.



WATER QUALITY SAWYER COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

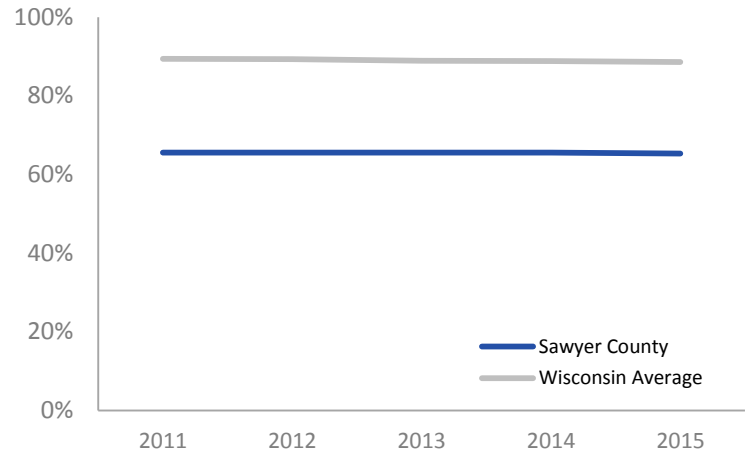
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

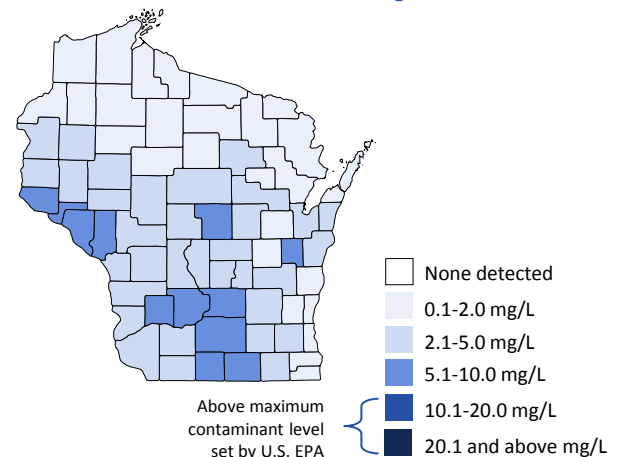
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



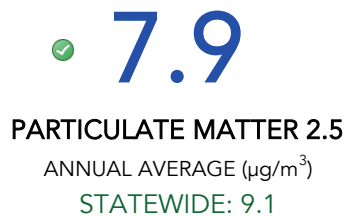
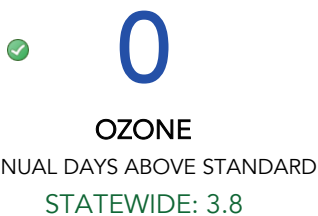


AIR QUALITY SAWYER COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

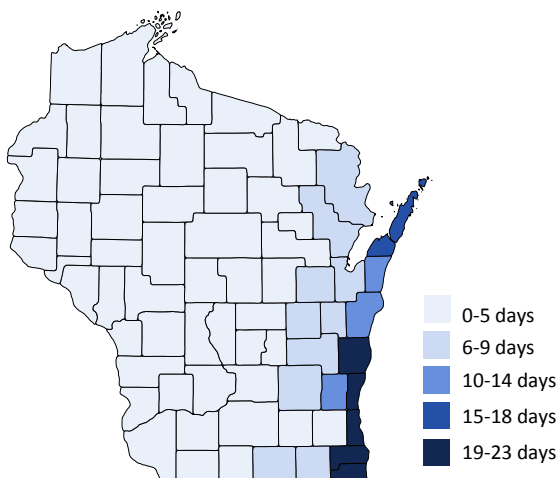
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

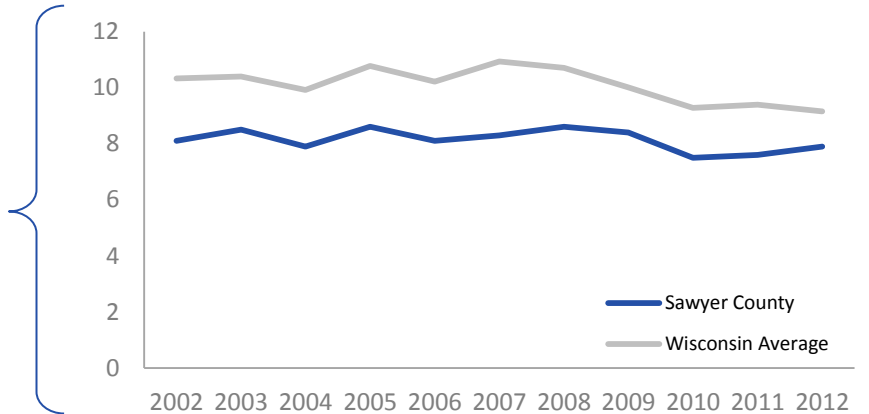


AIR QUALITY SAWYER COUNTY

PARTICULATE MATTER 2.5

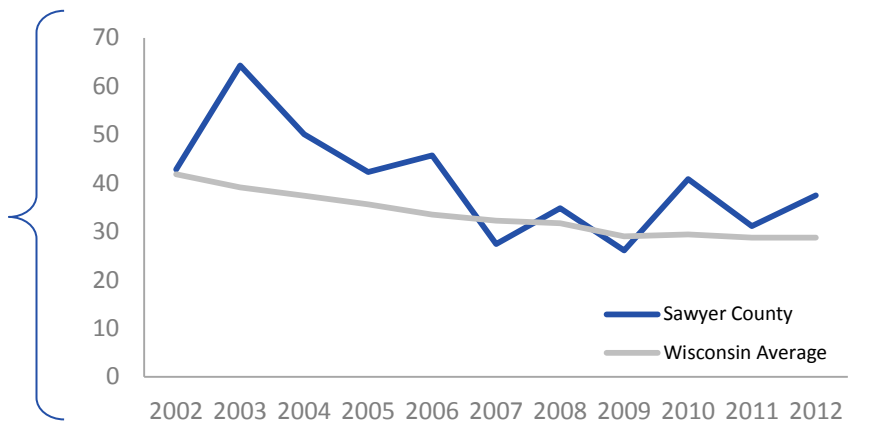
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



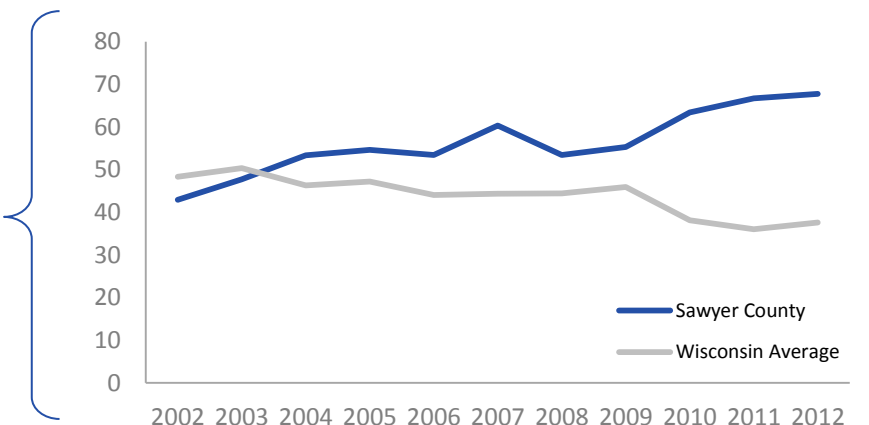
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: Averaged data from 2005-2014

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population. These data were averaged over ten years for five counties in order to minimize suppression.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



SHAWANO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



SHAWANO COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

✓ 2.9% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 16.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

⚠ 25.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 36.3 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

⚠ 46.0 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 23.4 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 32.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

⚠ 4.9 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 1.7 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 11.2% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

✓ 3 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS SHAWANO COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **16.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.9%**

CHILDHOOD LEAD POISONING

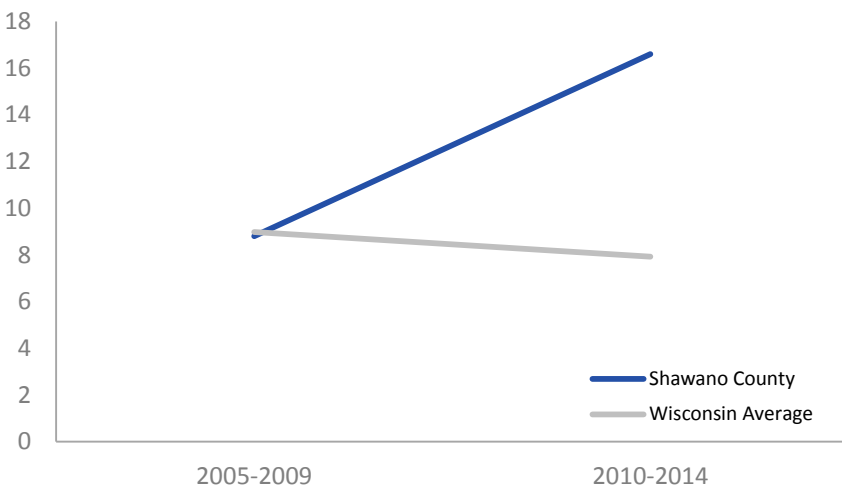
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS SHAWANO COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

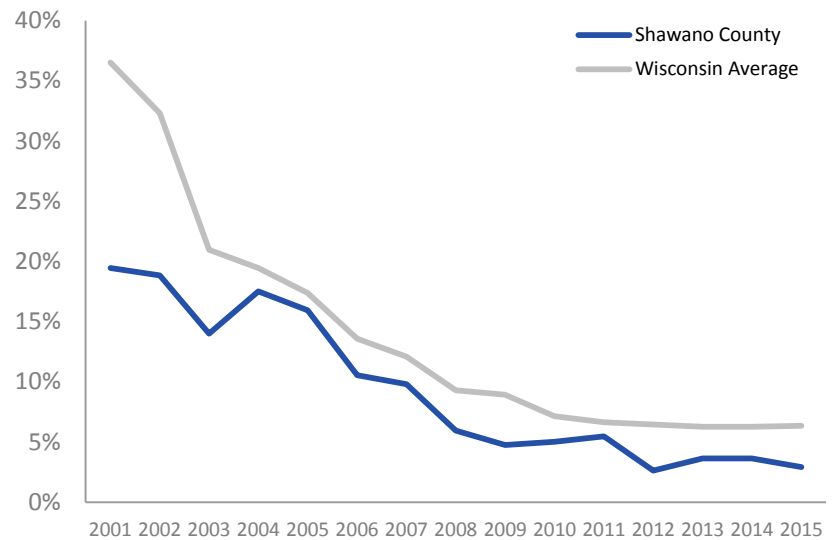
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

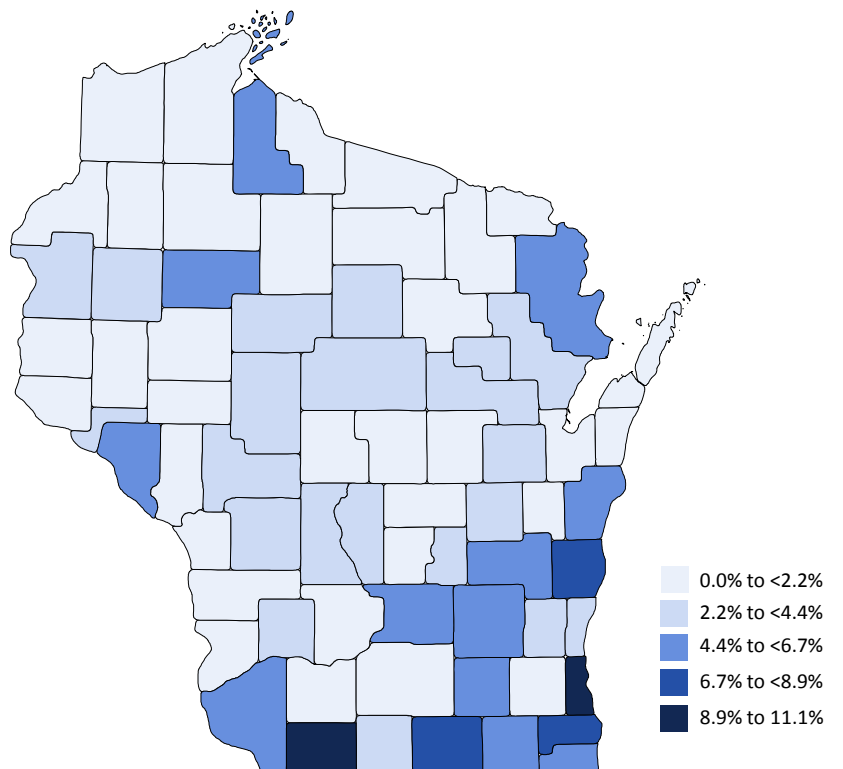
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE SHAWANO COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

25.2

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

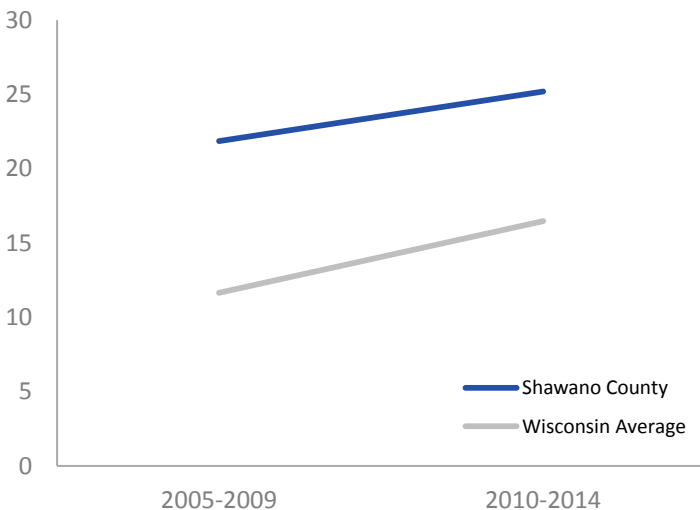
36.3

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

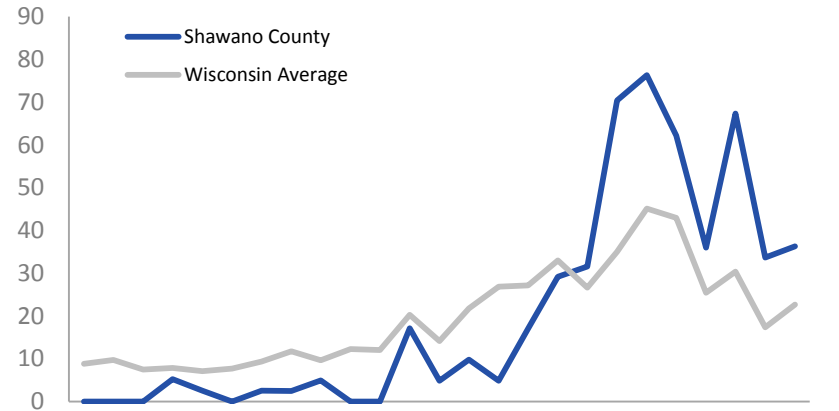
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE

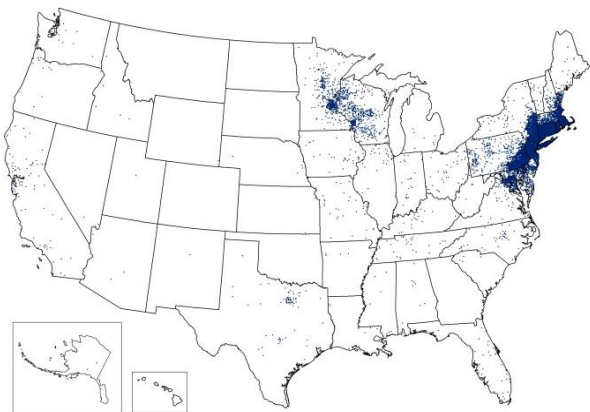


1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

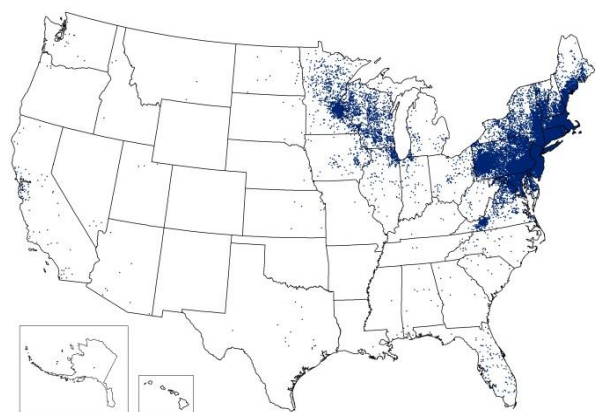
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES SHAWANO COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

46.0
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

23.4
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

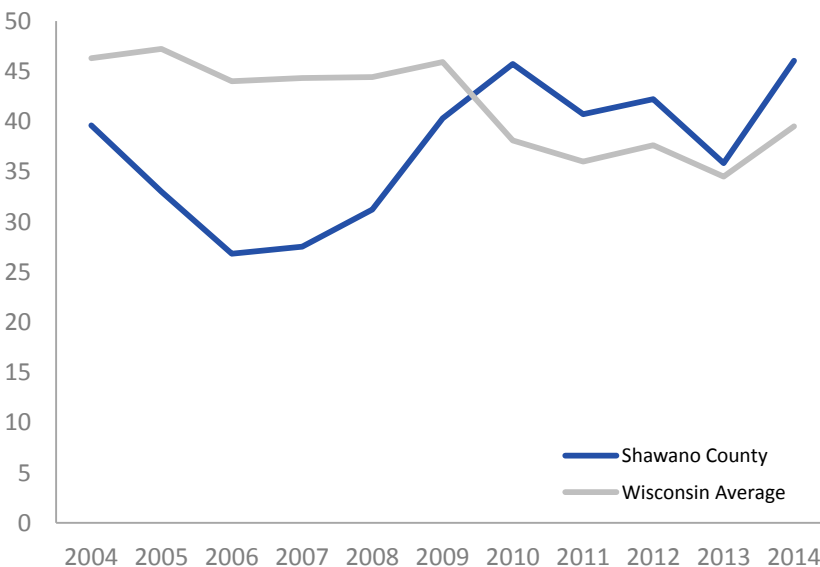
55.0
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

32.8
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

🔴 Above state value 🟢 At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

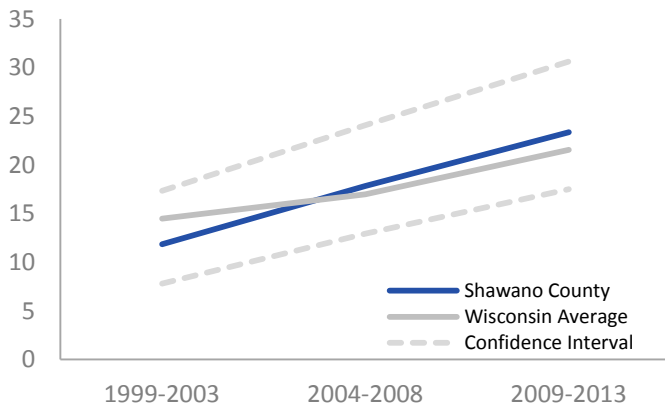
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

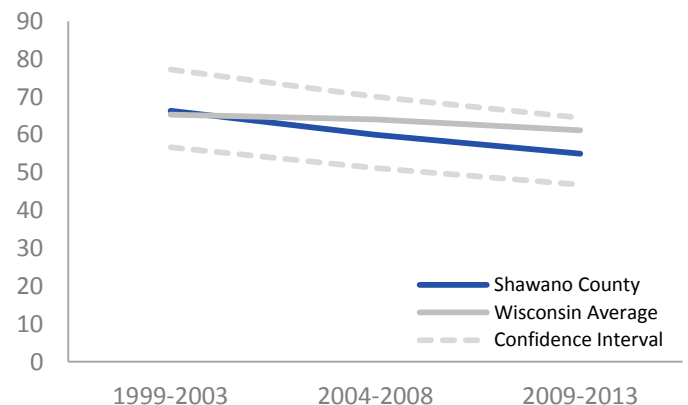
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

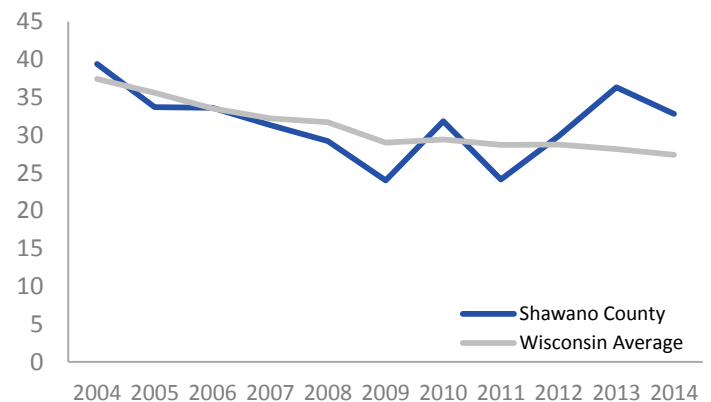
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY SHAWANO COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

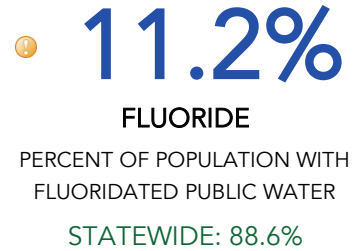
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



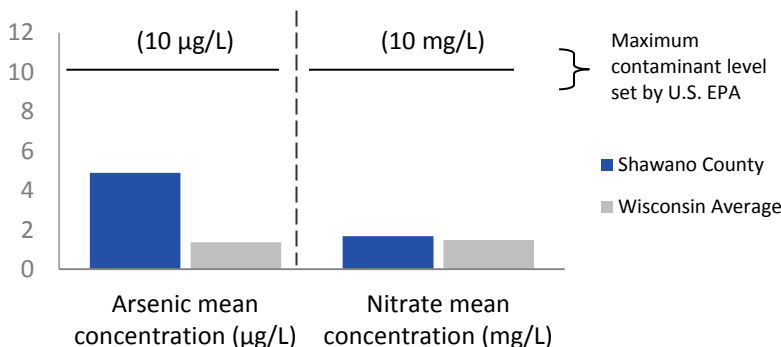
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY SHAWANO COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

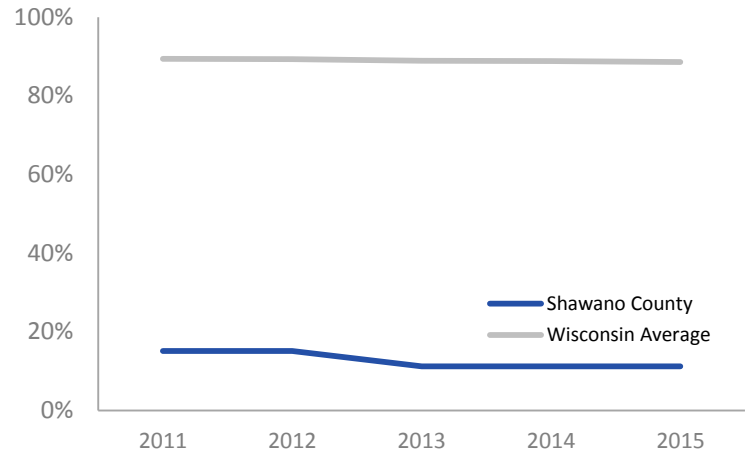
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

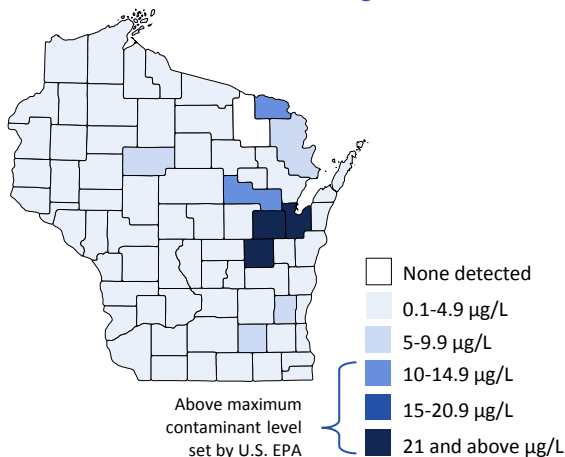
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

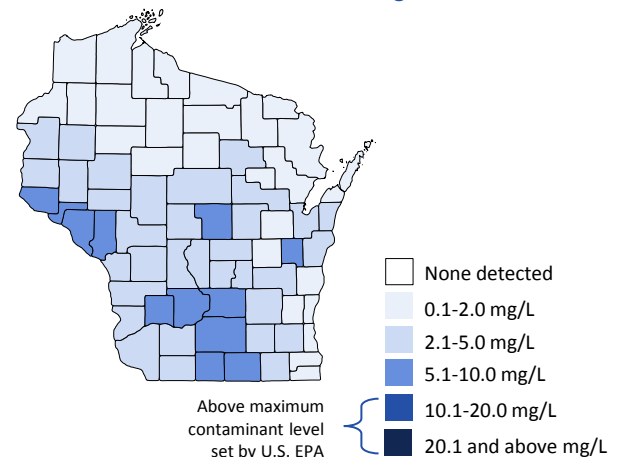
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY SHAWANO COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



3

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



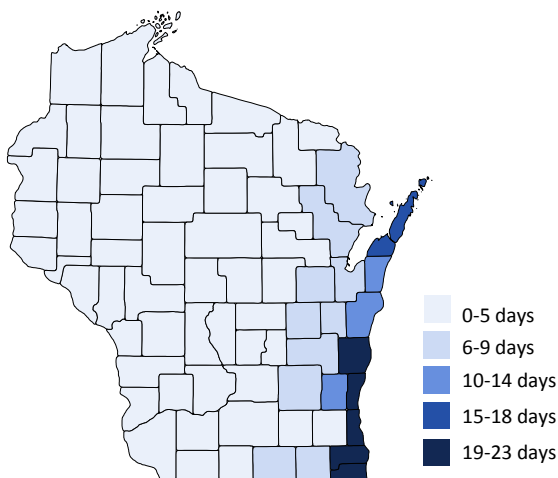
8.9

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

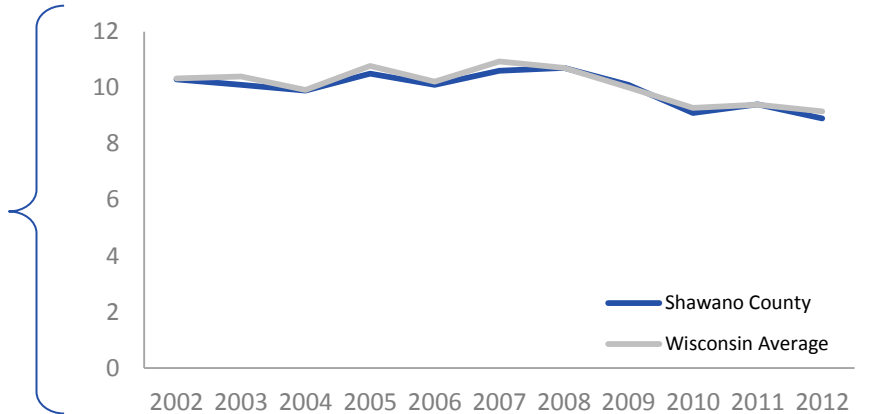


AIR QUALITY SHAWANO COUNTY

PARTICULATE MATTER 2.5

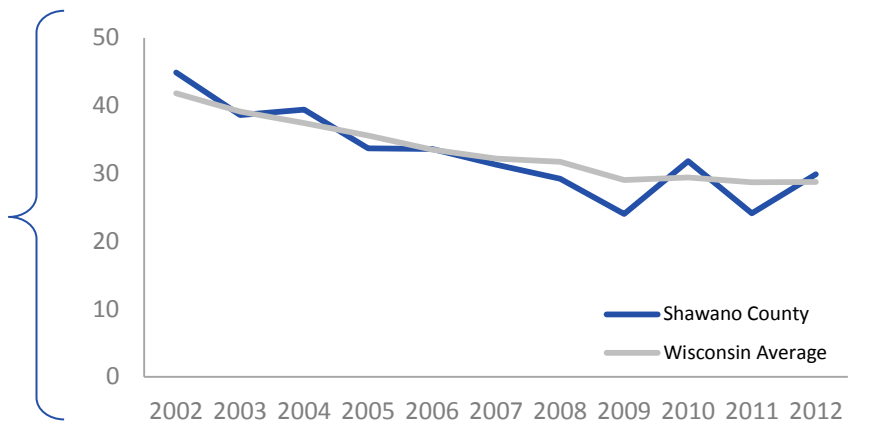
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



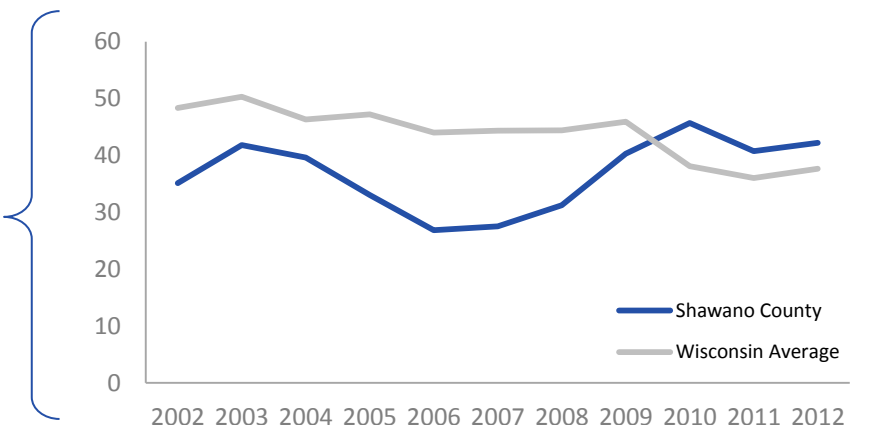
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



SHEBOYGAN COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



SHEBOYGAN COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

7.2% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

11.8 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

18.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

1.7 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

27.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

23.9 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

23.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

1.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

0.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

82.9% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

23 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⬆ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS SHEBOYGAN COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

⚠️ **11.8**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

⚠️ **7.2%**

CHILDHOOD LEAD POISONING

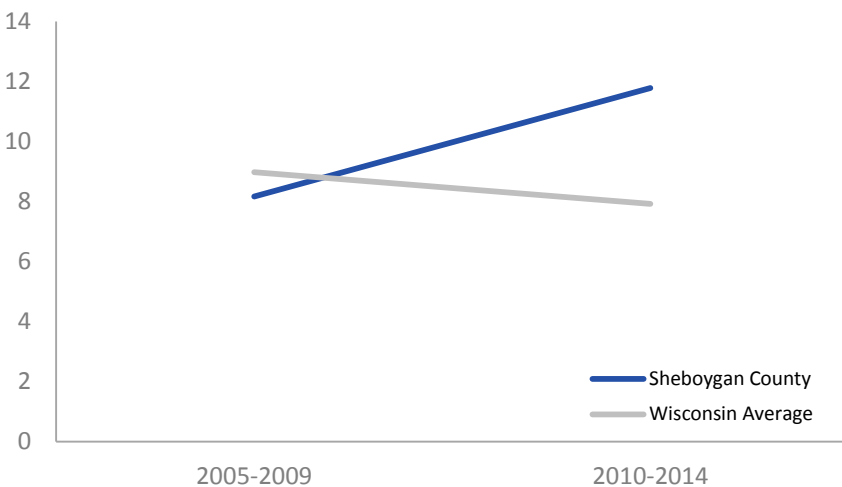
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

⚠️ Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS SHEBOYGAN COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

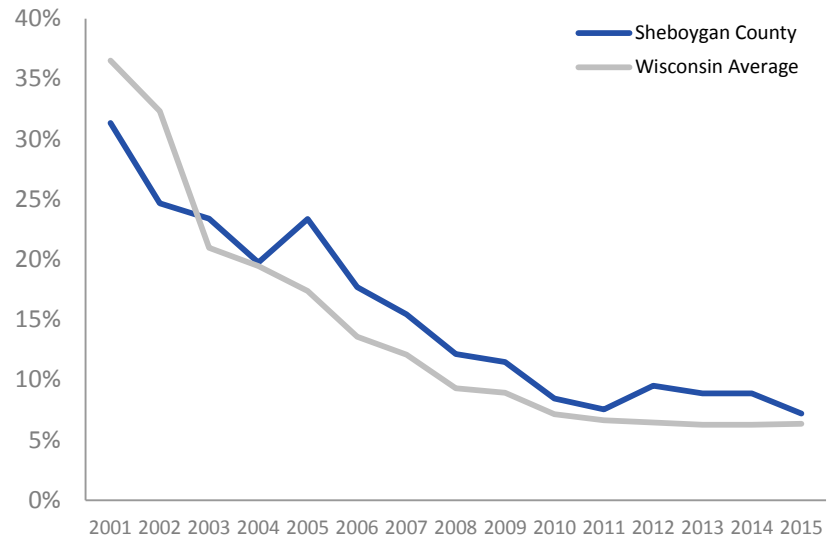
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

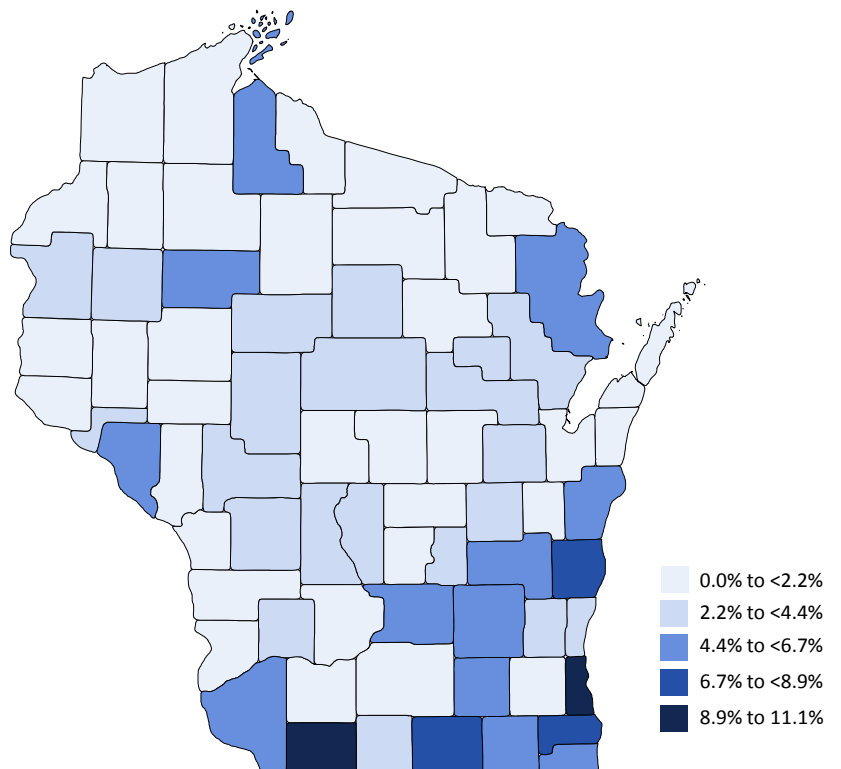
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE SHEBOYGAN COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

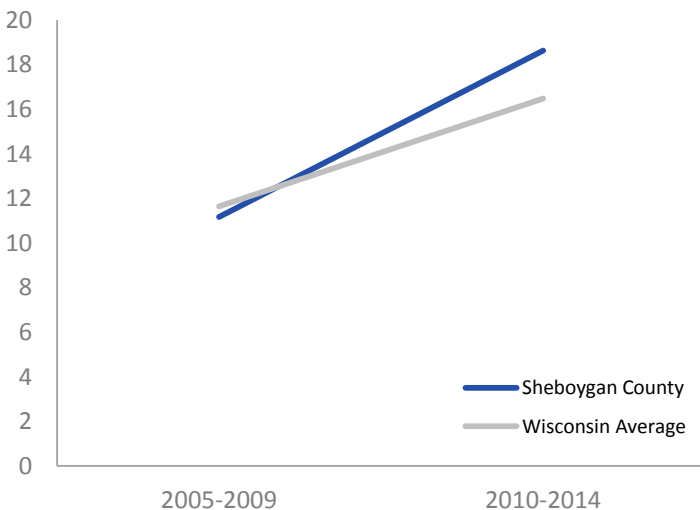
⚠️ **18.6**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✅ **1.7**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠️ Above state value ✅ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

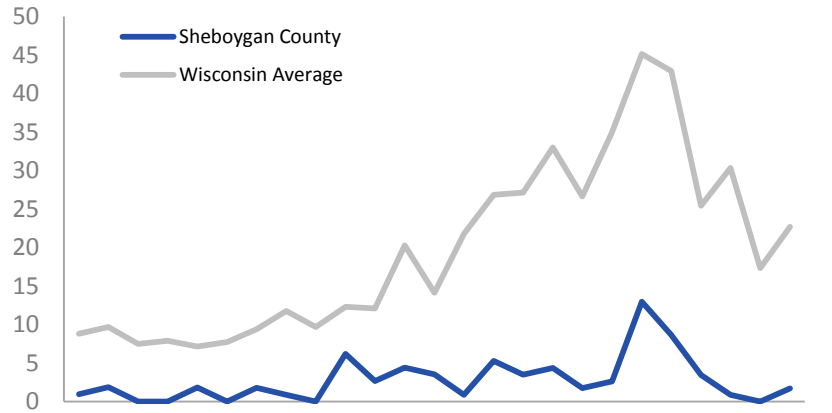
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

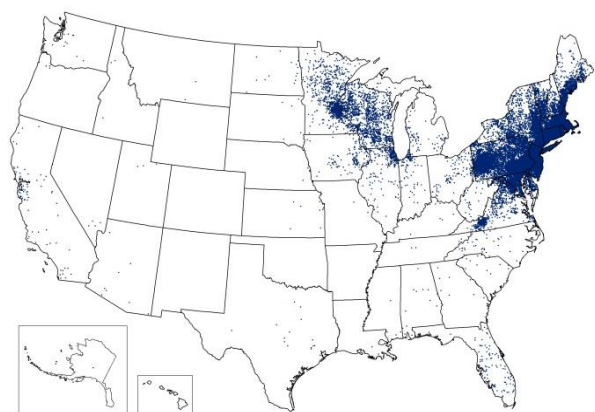
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

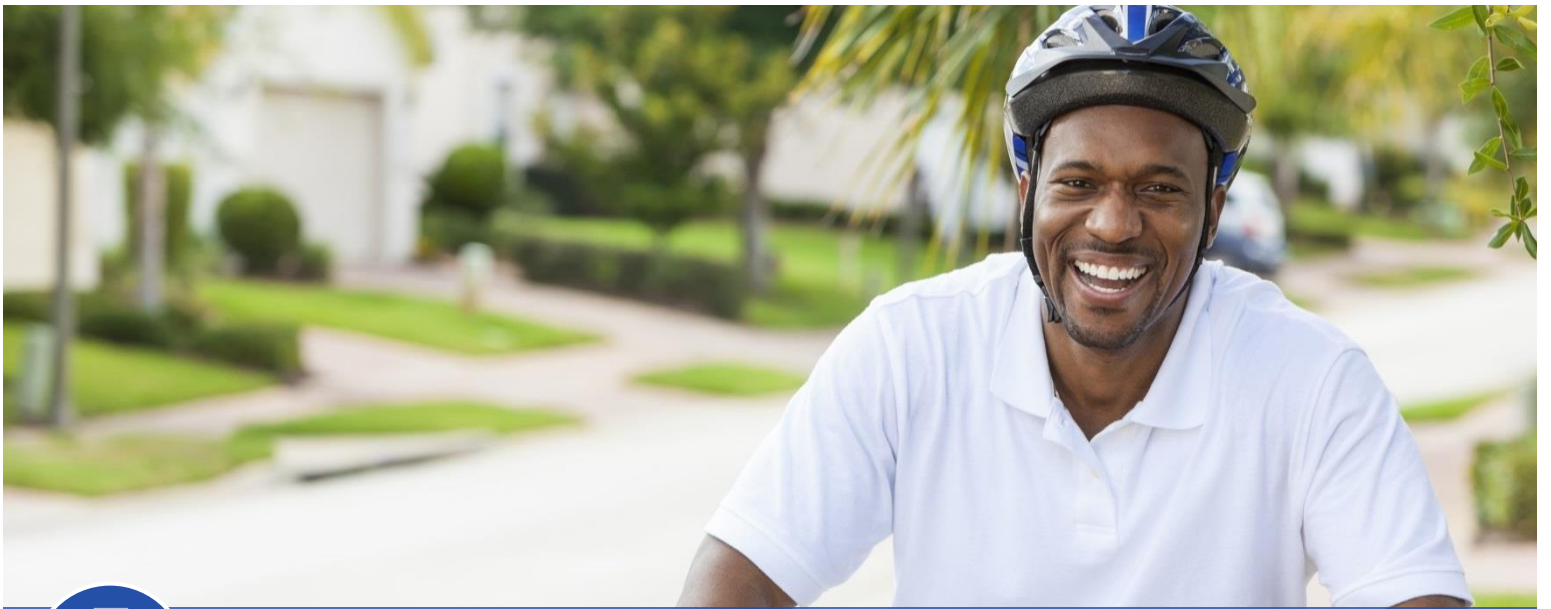


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

SHEBOYGAN COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **27.5**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

⚠ **23.9**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

✓ **60.7**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

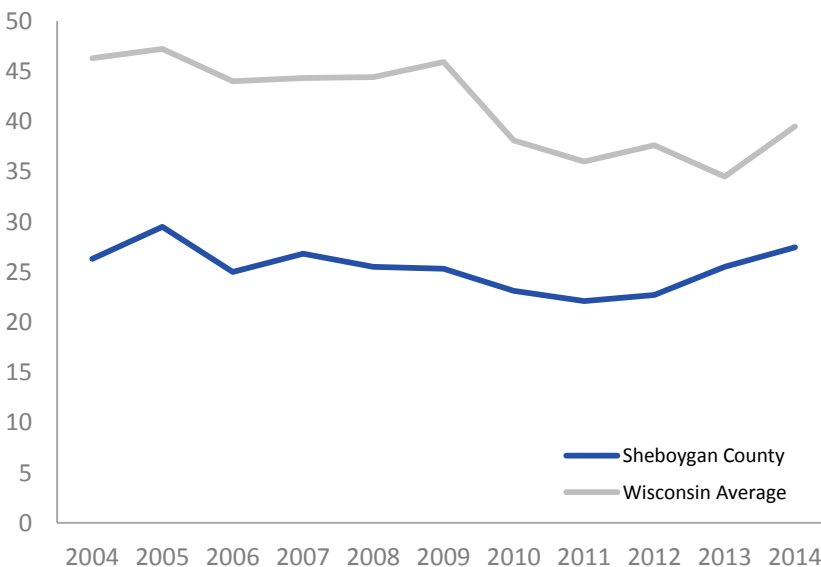
✓ **23.8**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

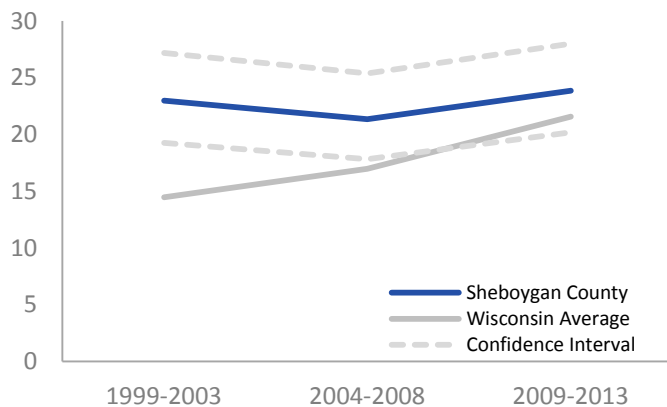
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

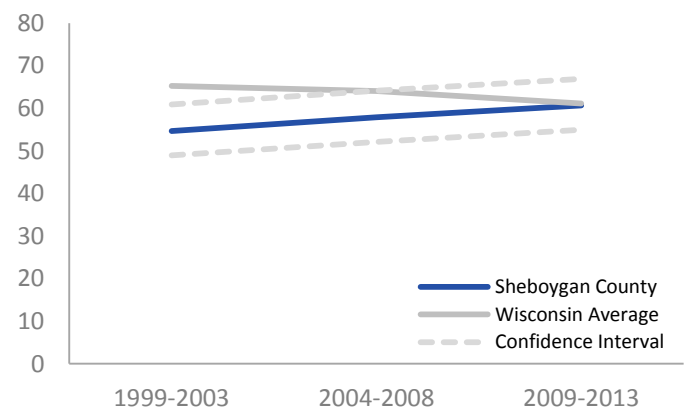
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

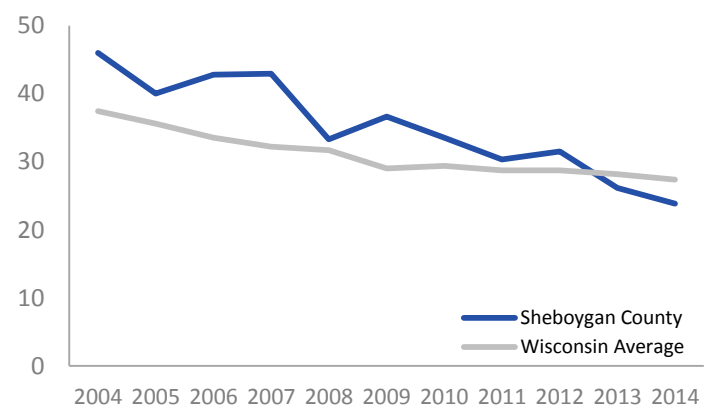
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY SHEBOYGAN

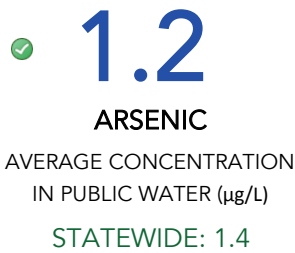
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

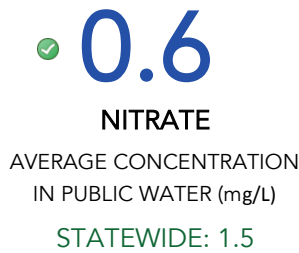
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

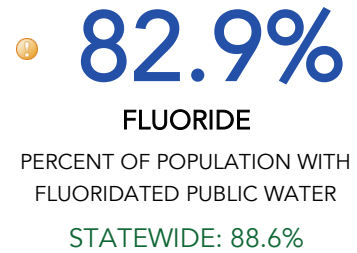
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



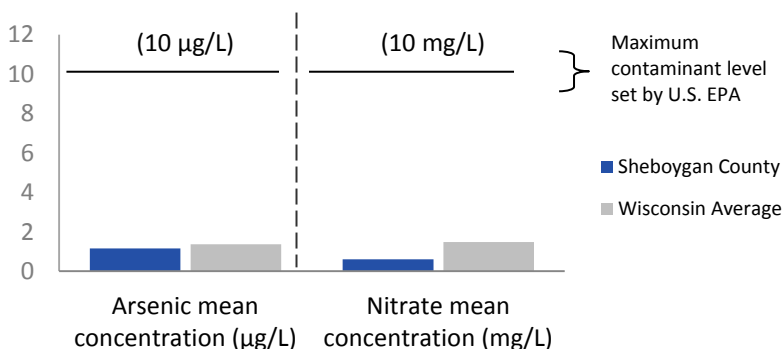
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY SHEBOYGAN COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

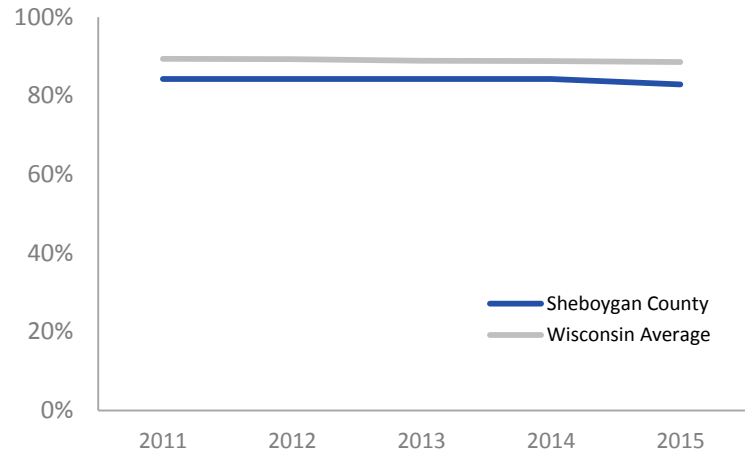
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

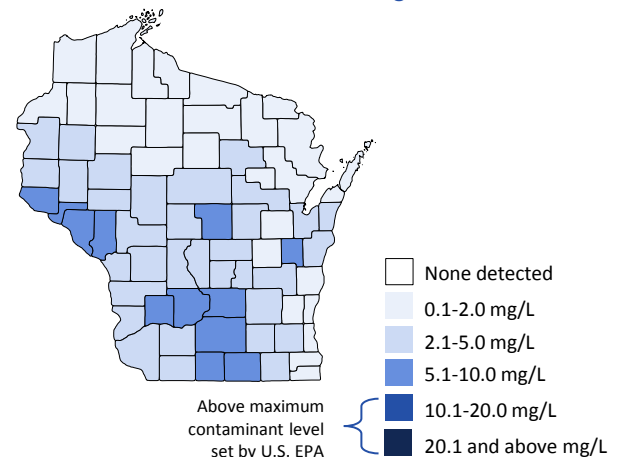
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



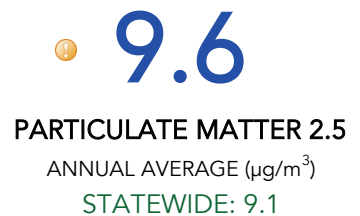
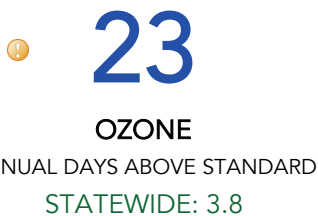


AIR QUALITY SHEBOYGAN COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

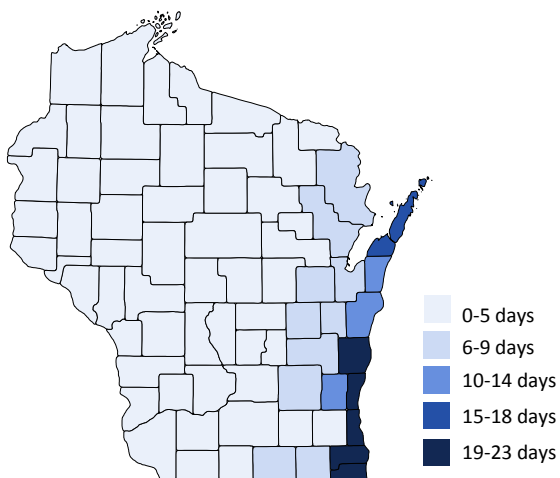
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



⚠ Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

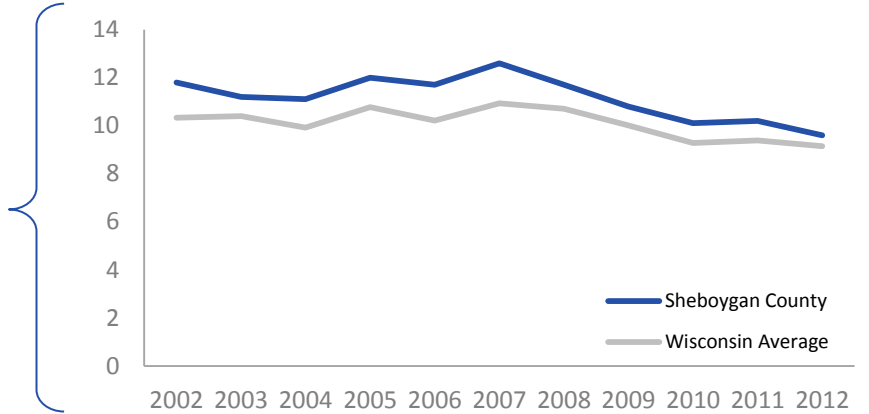
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

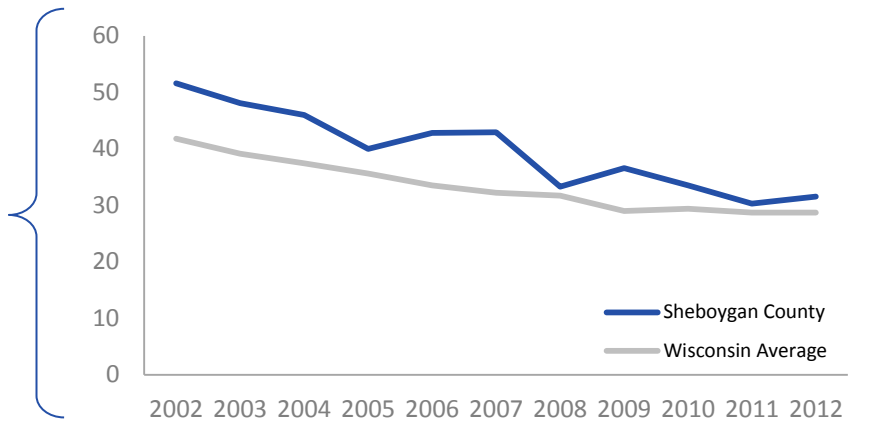
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



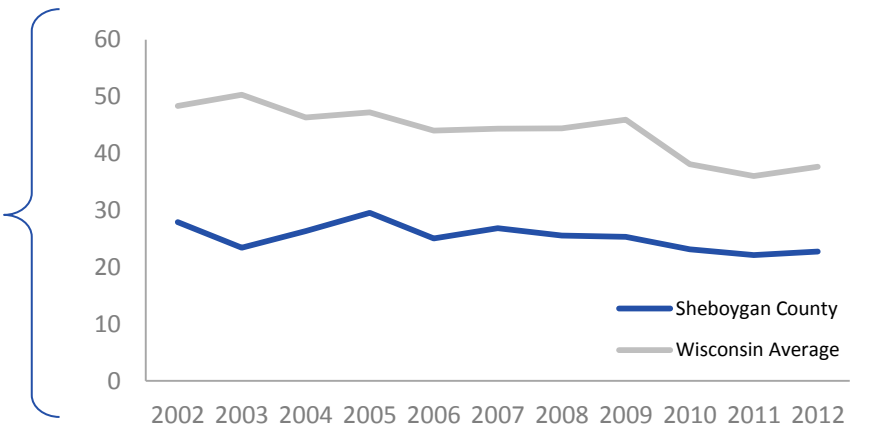
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



ST.CROIX COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



ST. CROIX COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 5.0 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 16.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 54.9 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 19.8 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 11.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 24.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 3.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 75.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS ST. CROIX COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **5.0**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **0.0%**

CHILDHOOD LEAD POISONING

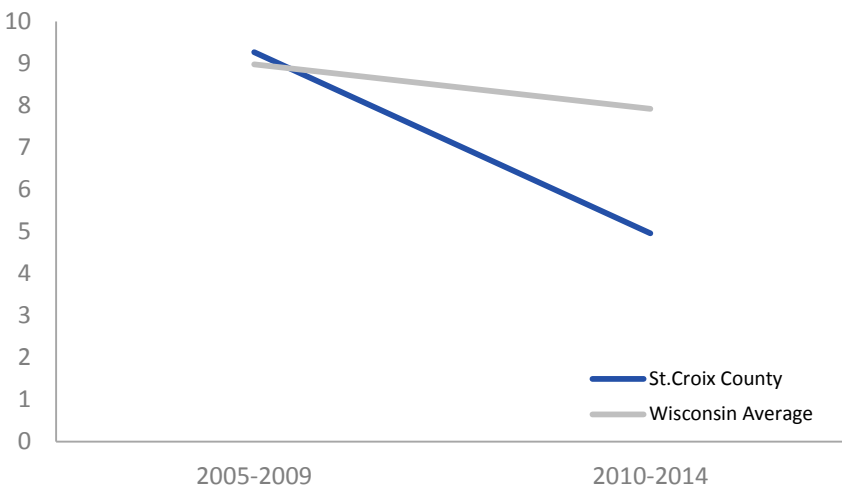
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS ST. CROIX COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

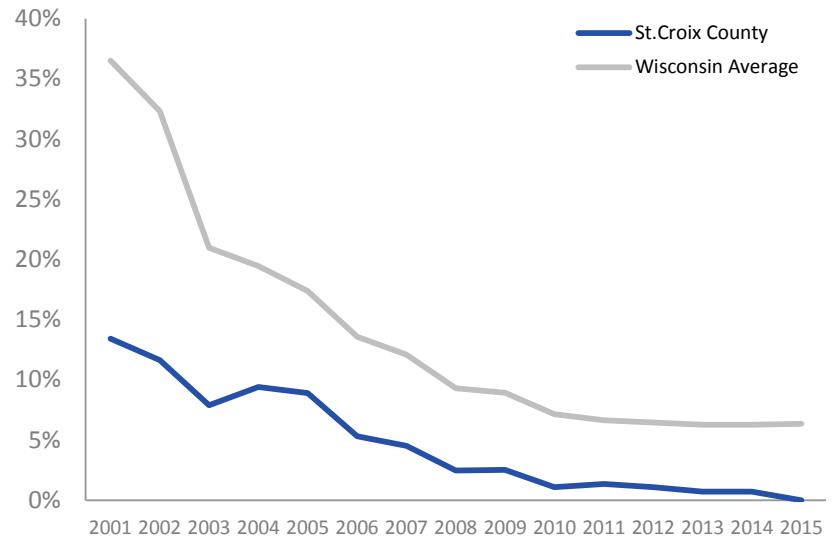
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

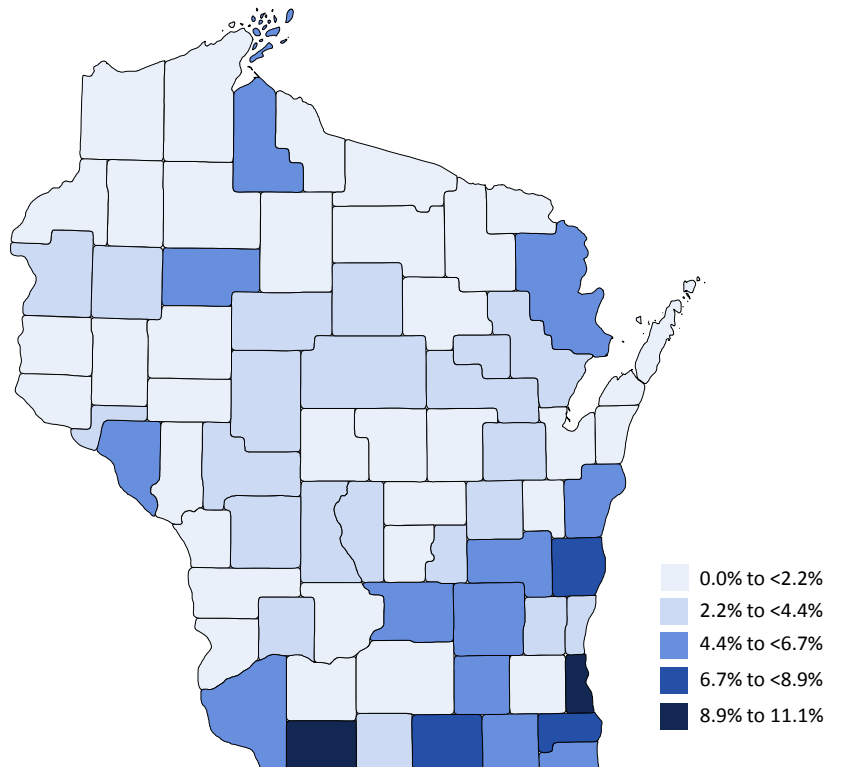
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE ST. CROIX COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

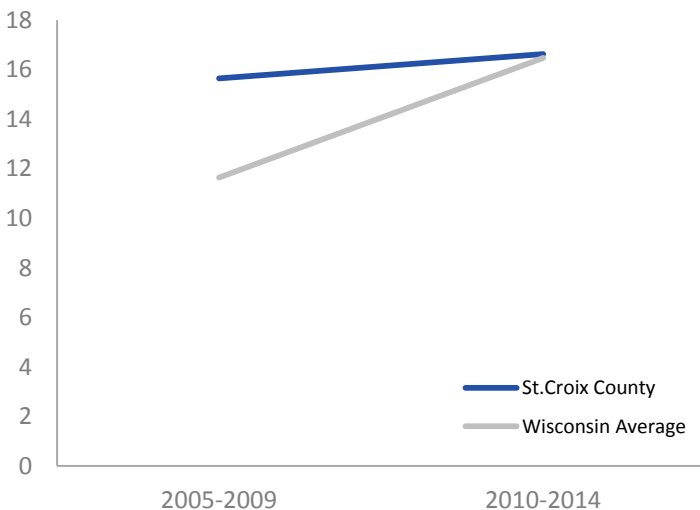
16.6
HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

54.9
LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

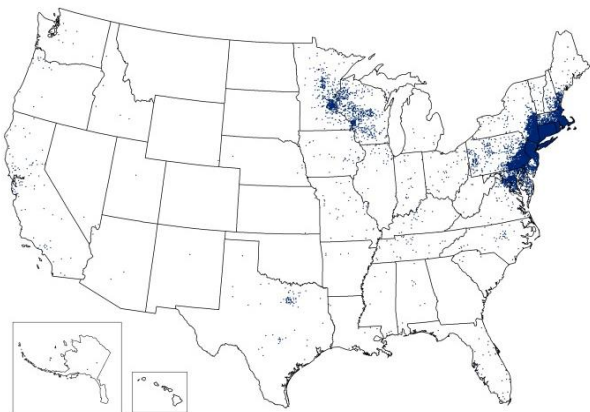
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

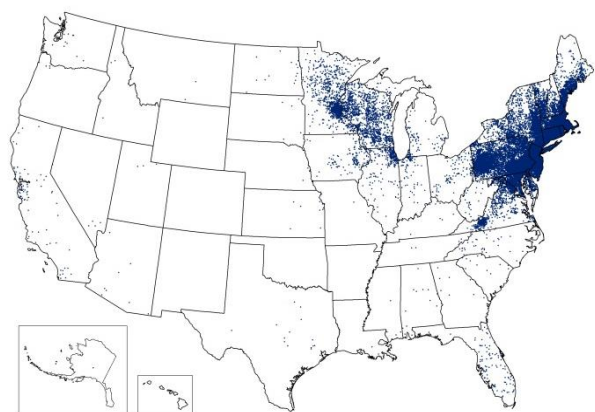
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

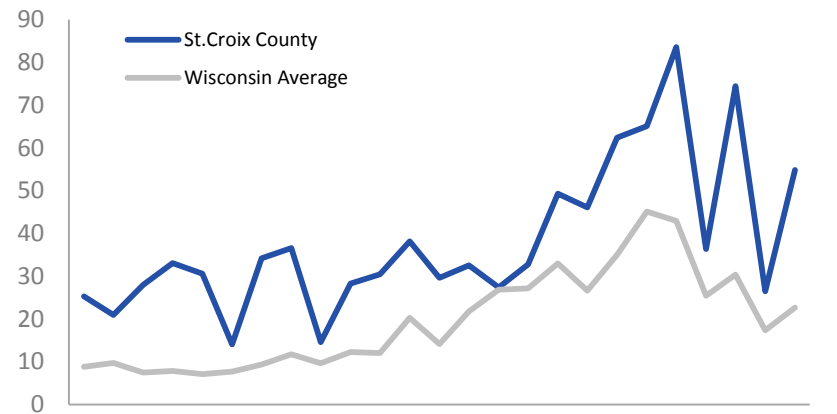


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES ST. CROIX COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **19.8**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **11.0**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

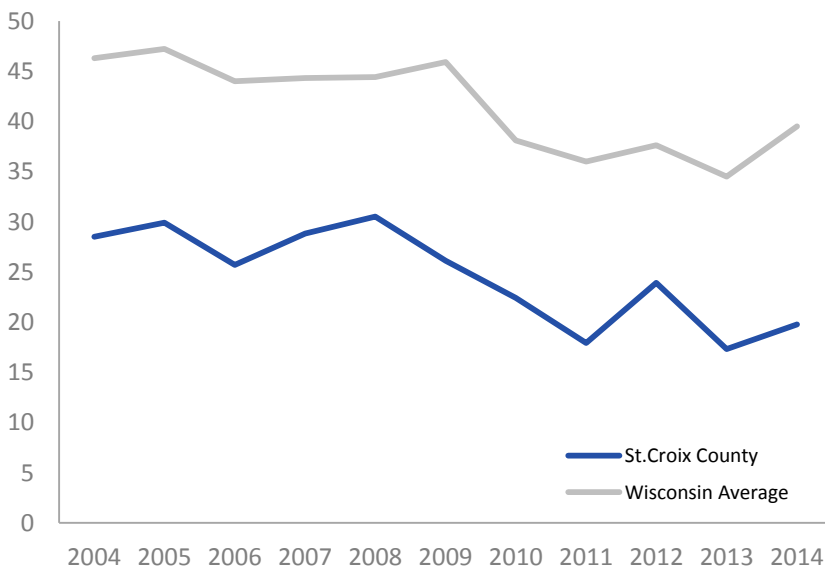
✓ **45.5**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **24.2**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

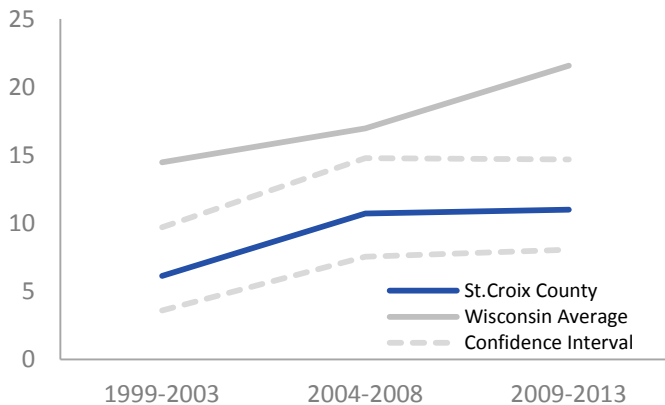
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

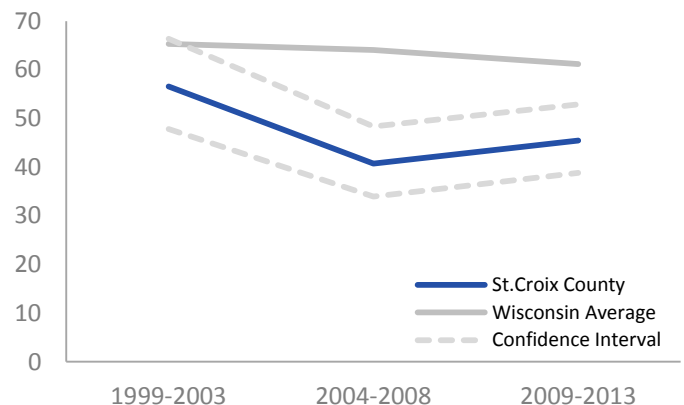
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

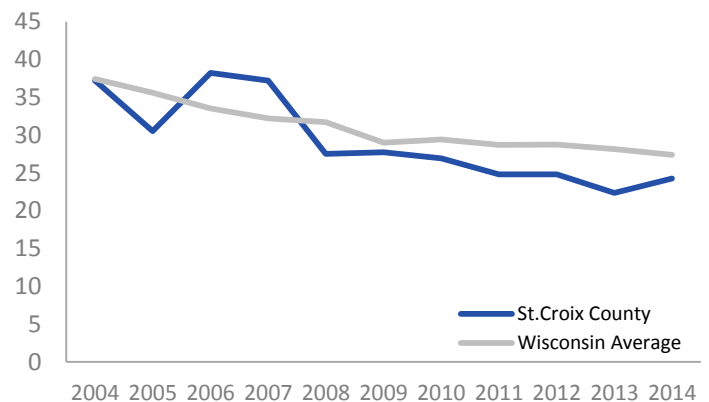
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY ST. CROIX COUNTY

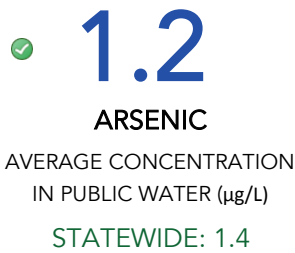
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

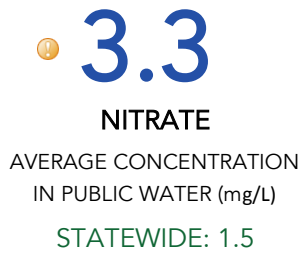
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

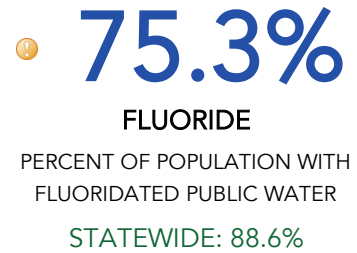
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



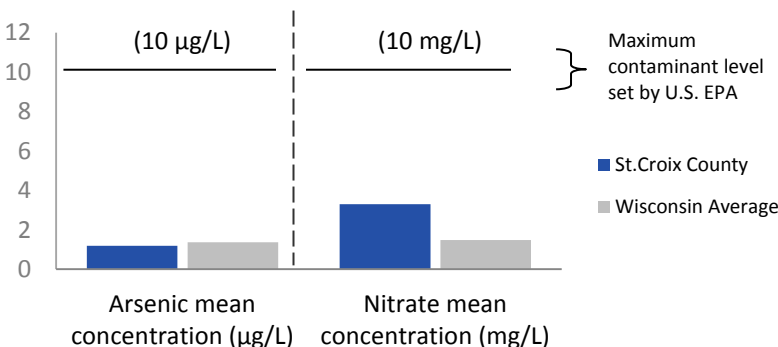
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY ST. CROIX COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

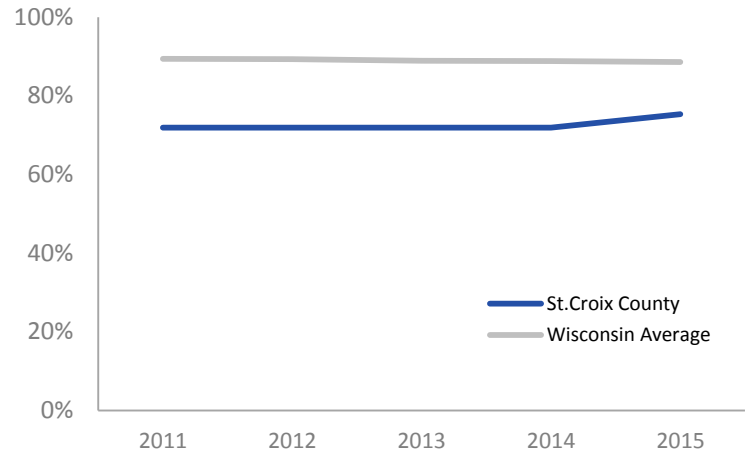
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

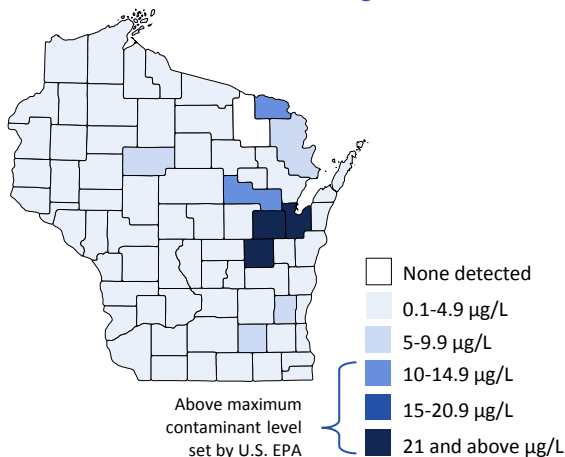
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

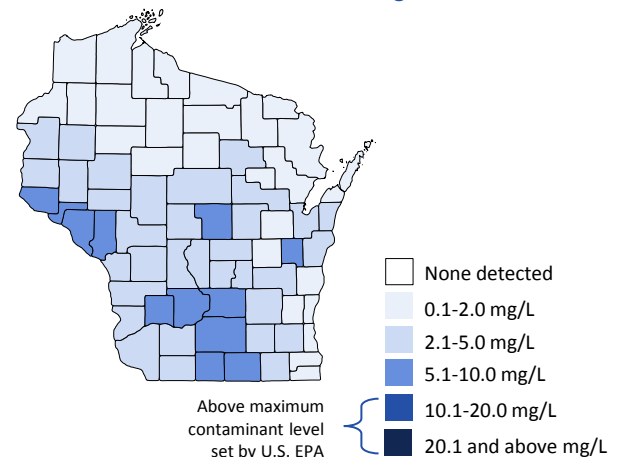
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY ST. CROIX COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



0

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



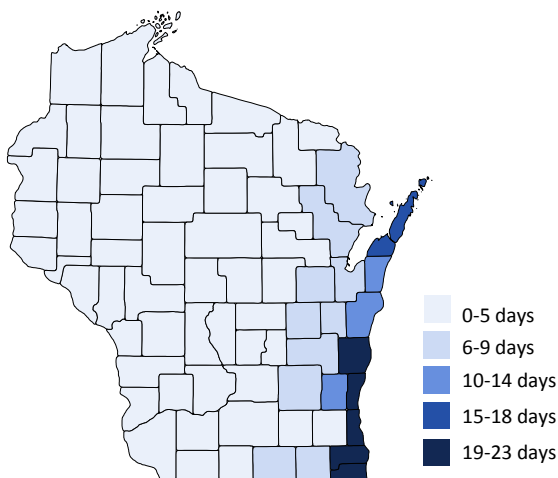
10.1

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

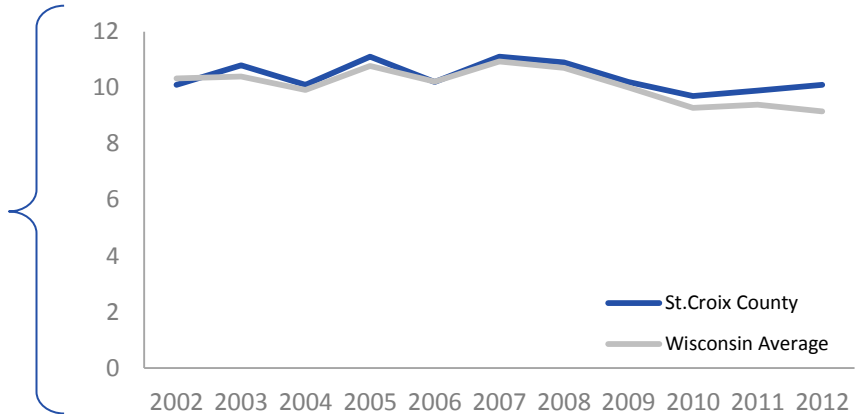
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

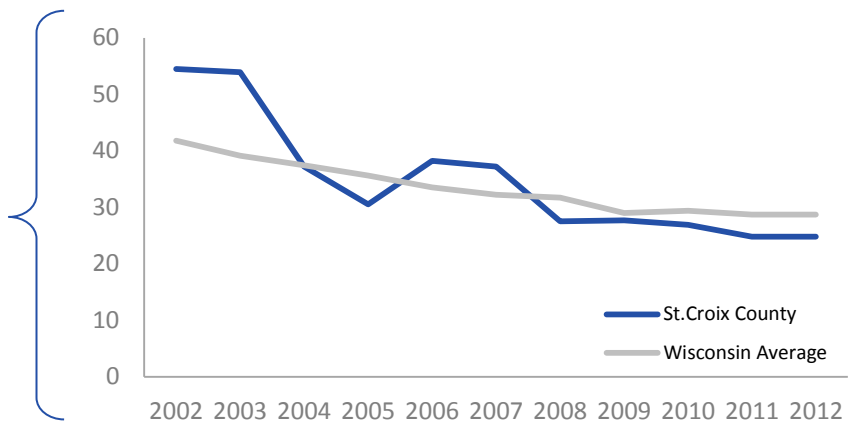
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



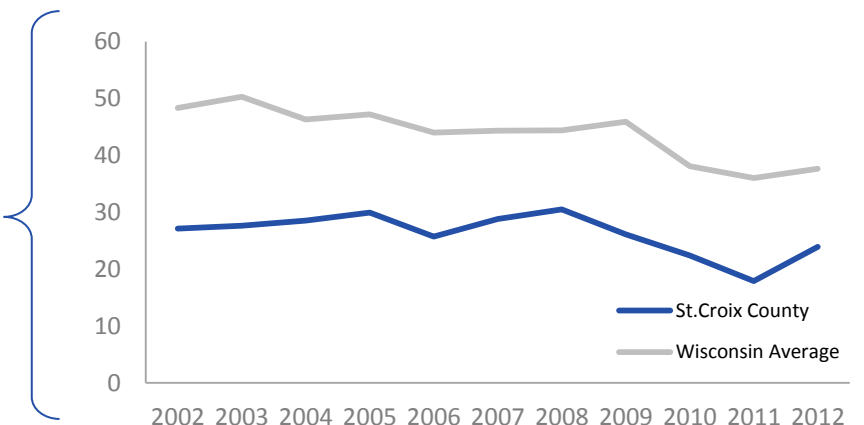
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



TAYLOR COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



TAYLOR COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 3.2% | Percent with blood lead ≥ 5 $\mu\text{g/dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.7 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 9.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 58.7 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 23.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 14.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 17.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 1.5 | Average concentration in $\mu\text{g/L}$
Wisconsin: 1.4

Nitrate

✓ 0.7 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS TAYLOR COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.7**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **3.2%**

CHILDHOOD LEAD POISONING

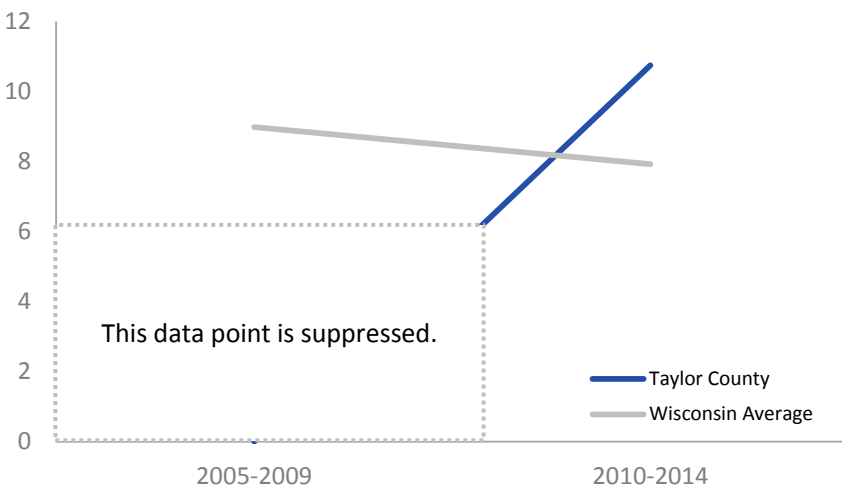
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS TAYLOR COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

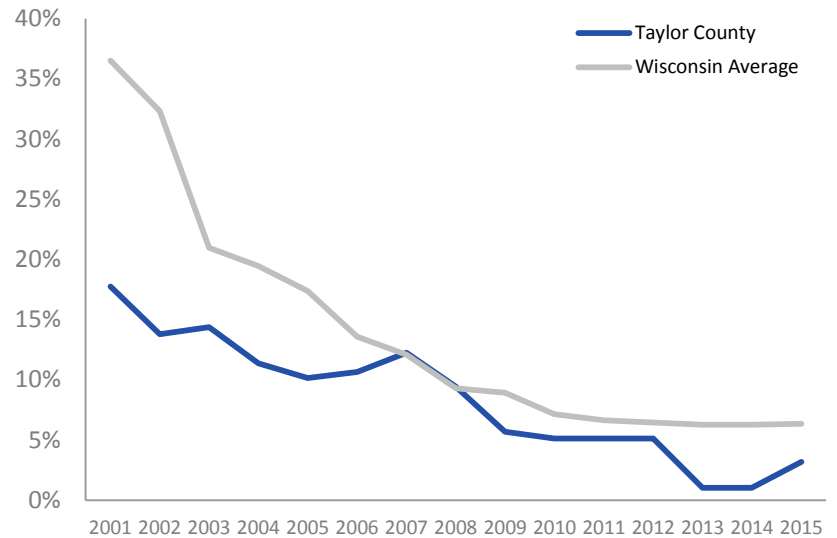
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

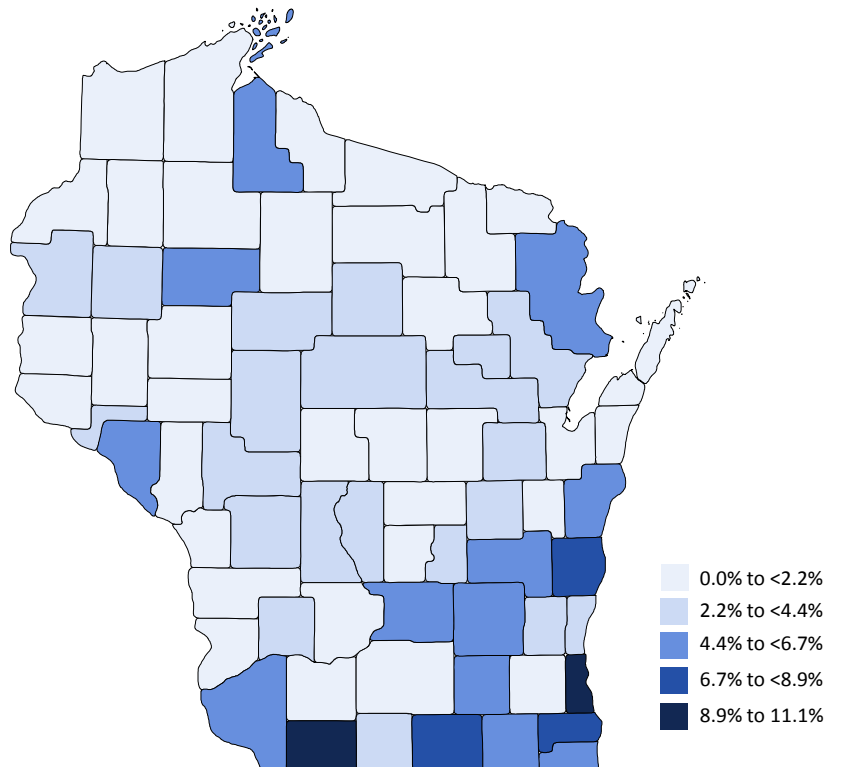
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE TAYLOR COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

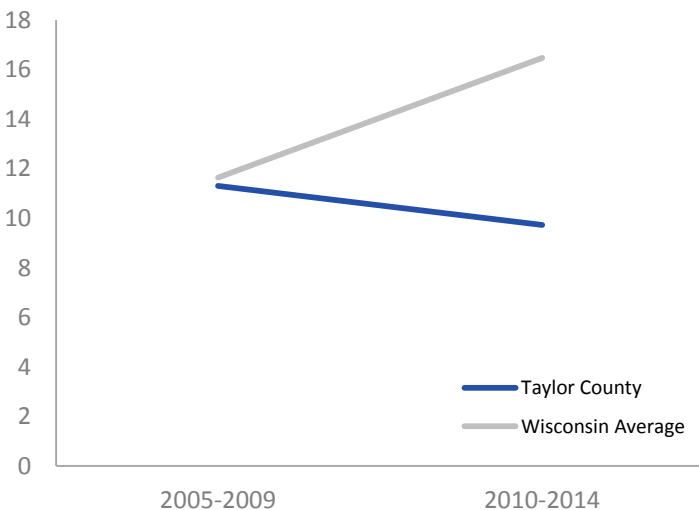
✔ **9.7**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

⚠ **58.7**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✔ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

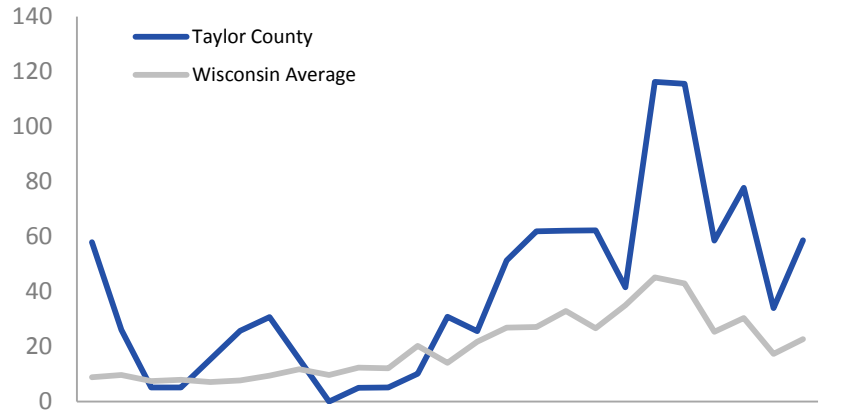
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

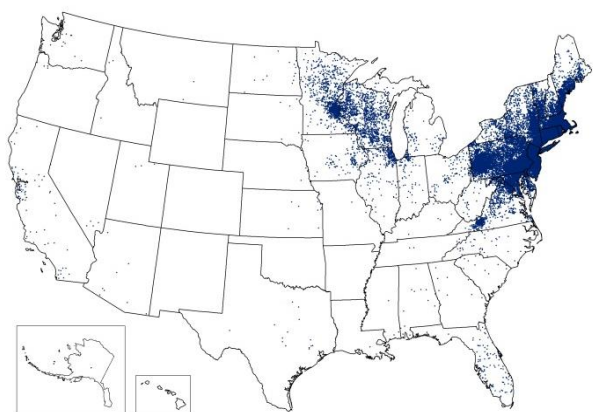
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

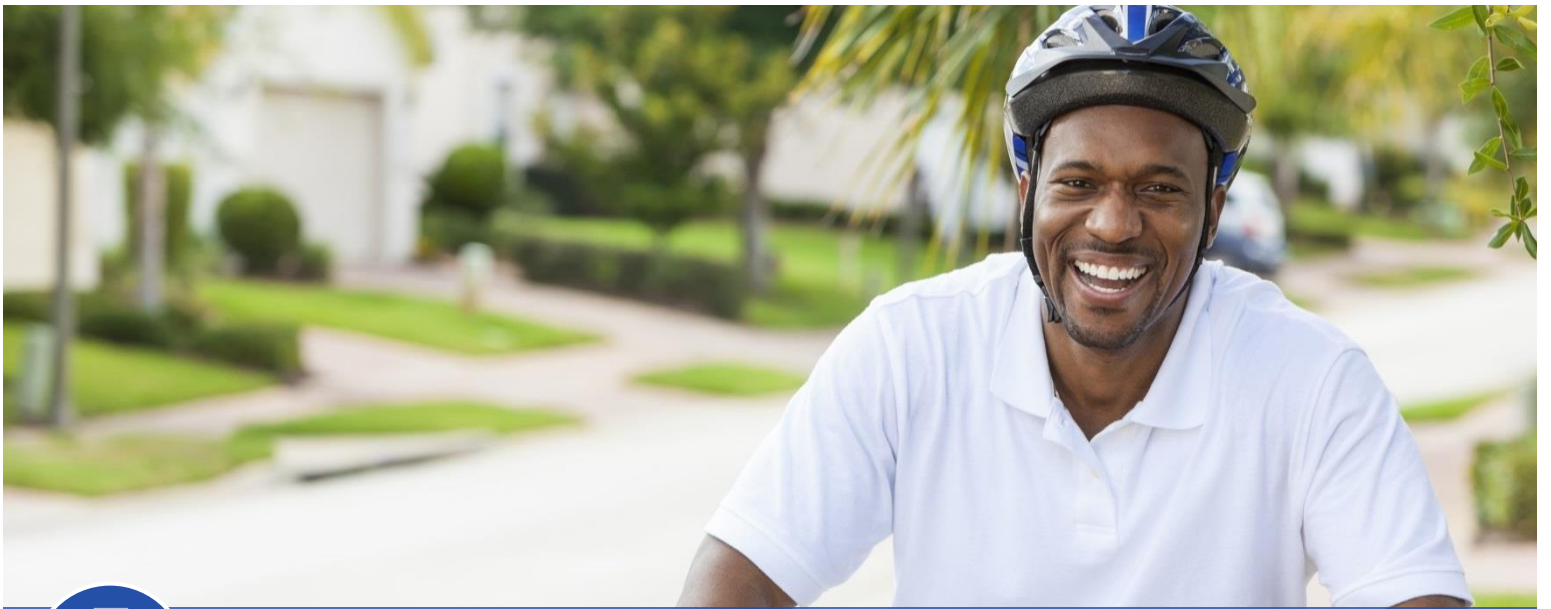


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES TAYLOR COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **23.3**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **14.0**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

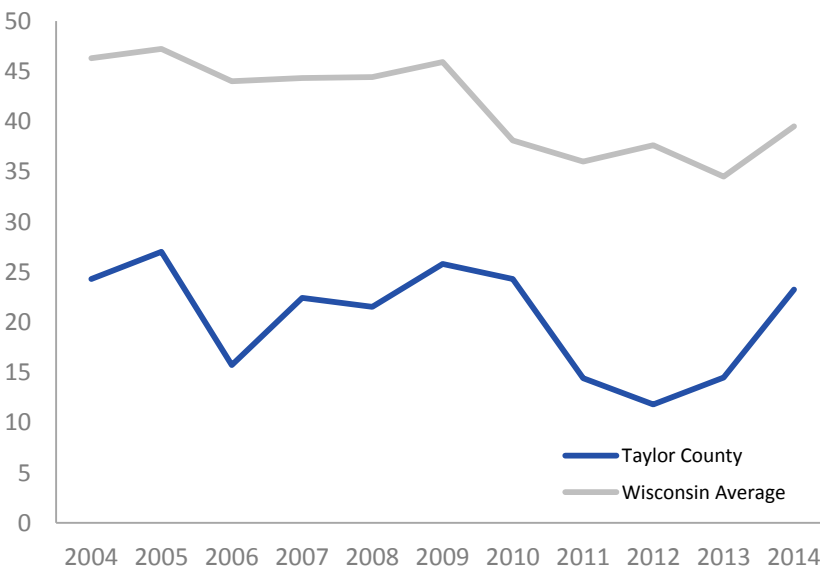
✓ **47.4**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **17.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

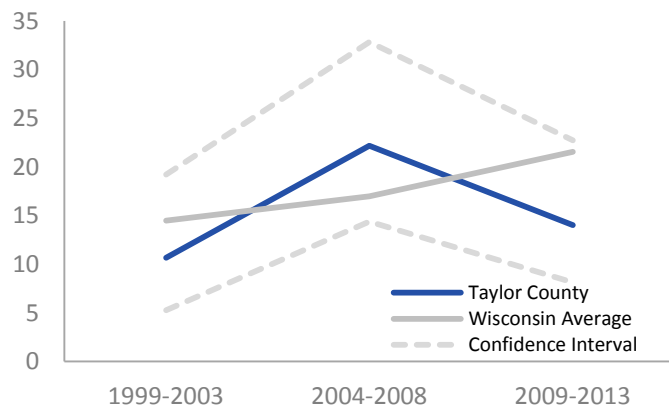
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

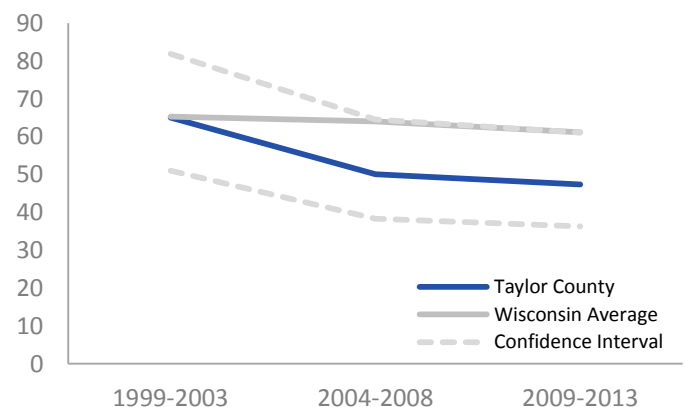
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

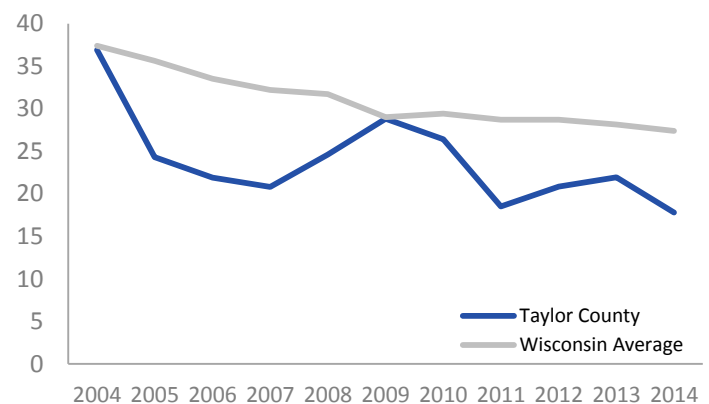
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY TAYLOR COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

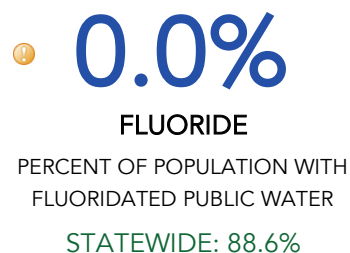
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



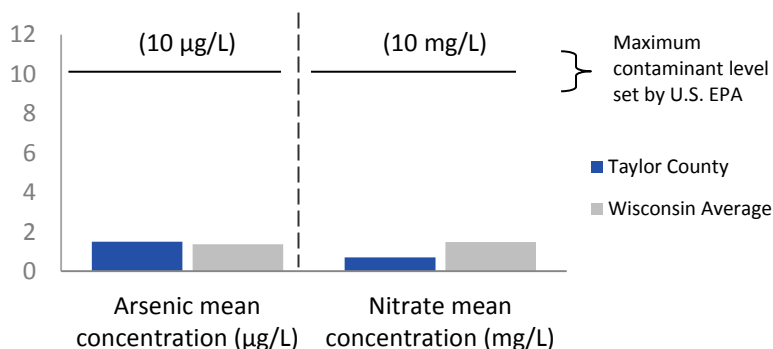
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY TAYLOR COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

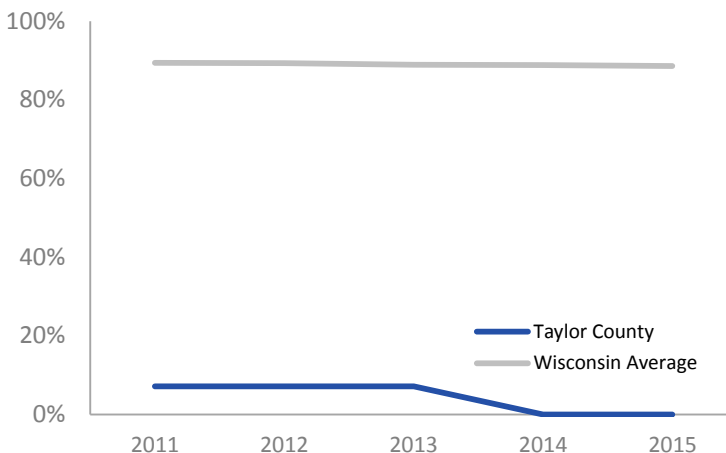
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

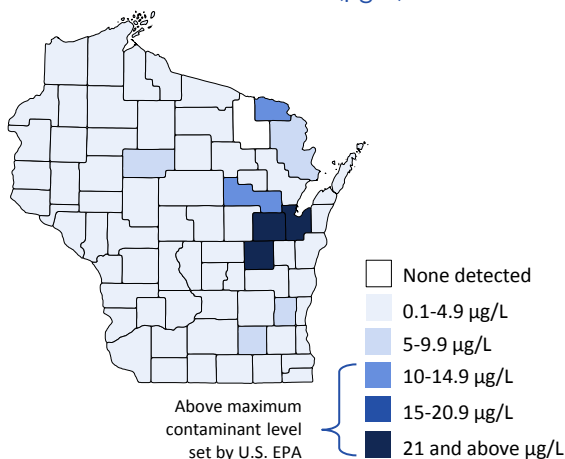
Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

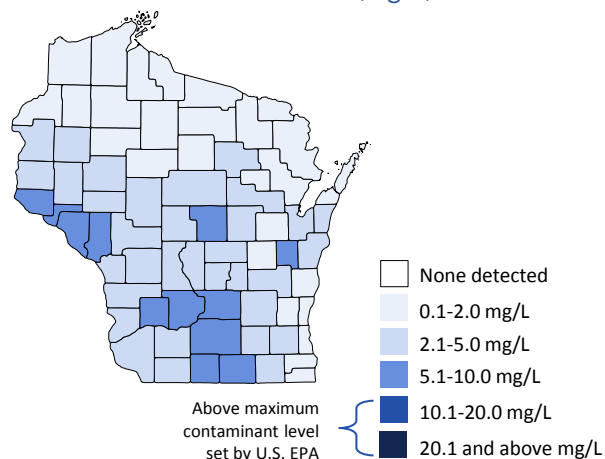
ARSENIC IN PRIVATE WELLS

AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS

AVERAGE CONCENTRATION (mg/L)



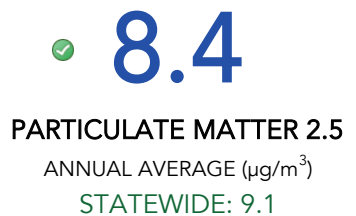
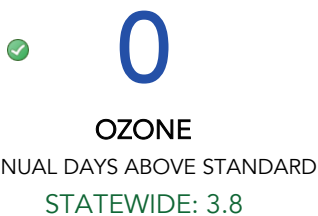


AIR QUALITY TAYLOR COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

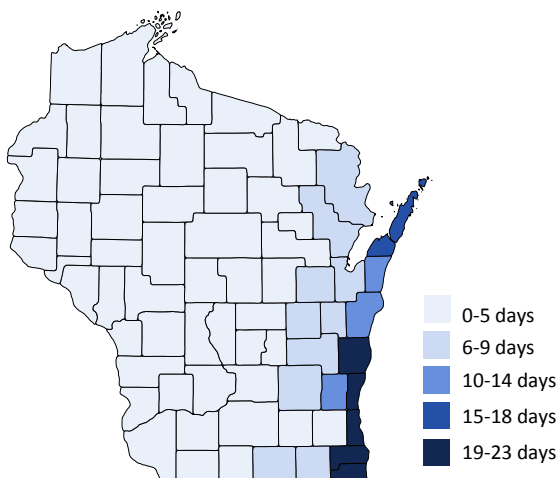
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

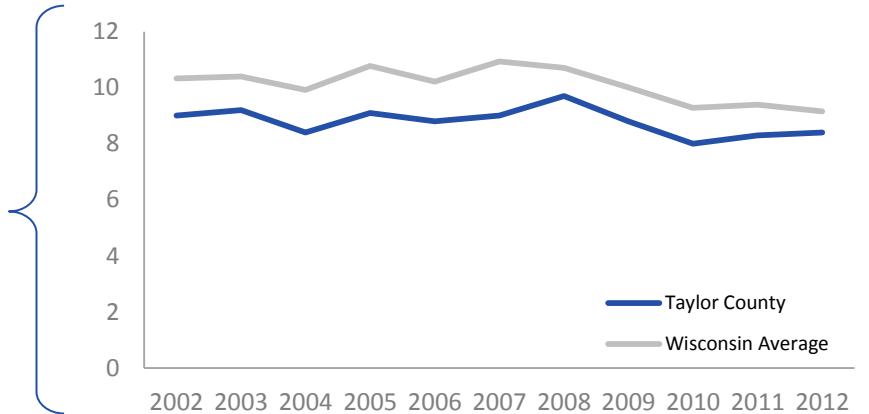
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

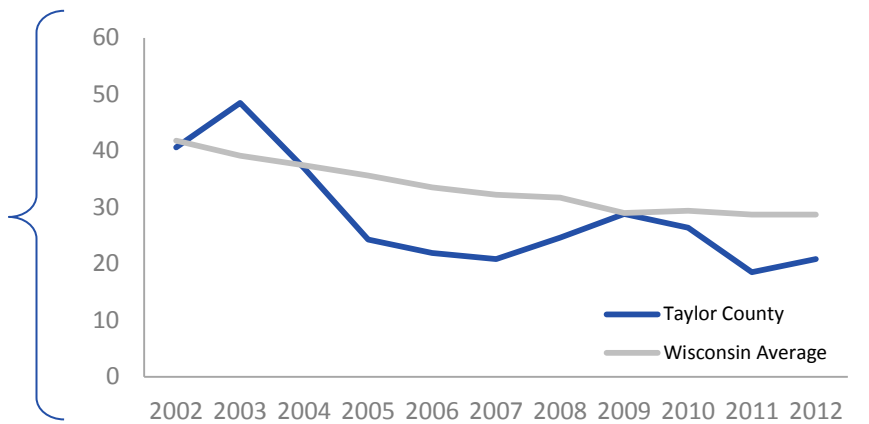
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



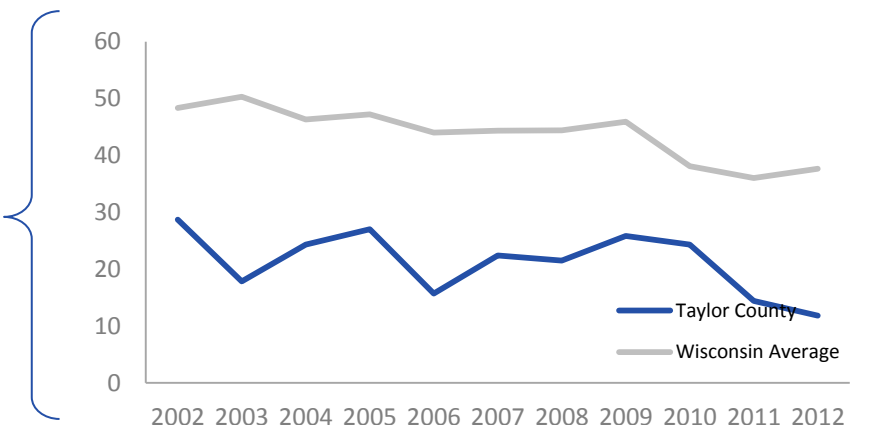
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



TREMPEALEAU COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



TREMPEALEAU COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.6% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 24.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 22.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 13.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 16.7 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 23.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 29.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.3 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 1.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 61.6% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS

TREMPEALEAU COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **24.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.6%**

CHILDHOOD LEAD POISONING

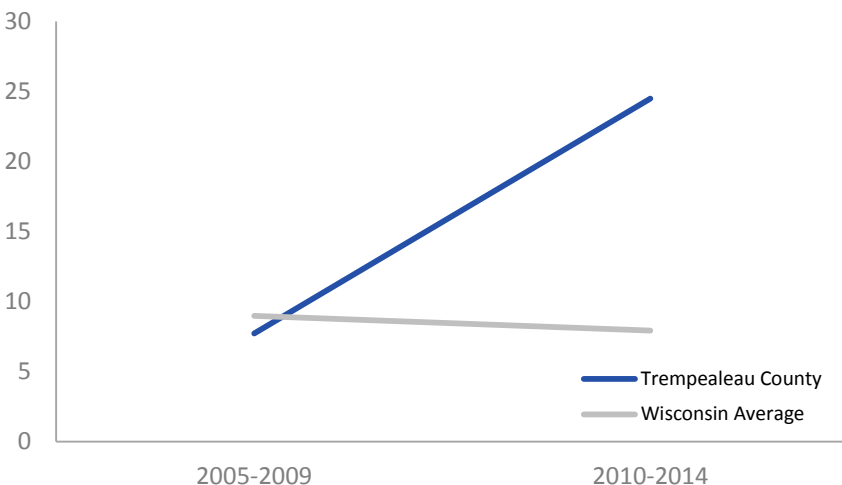
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS TREMPEALEAU COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

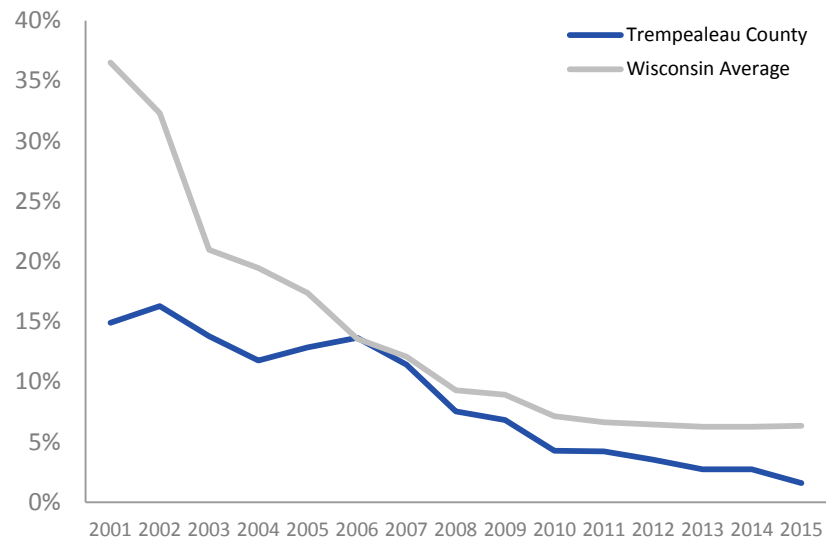
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

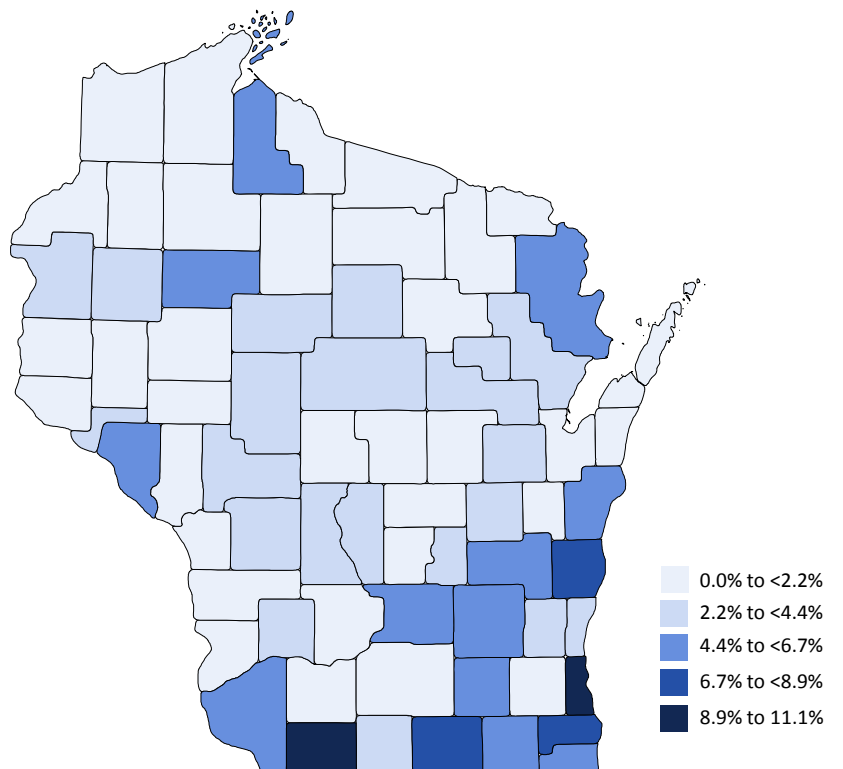
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE TREMPEALEAU COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

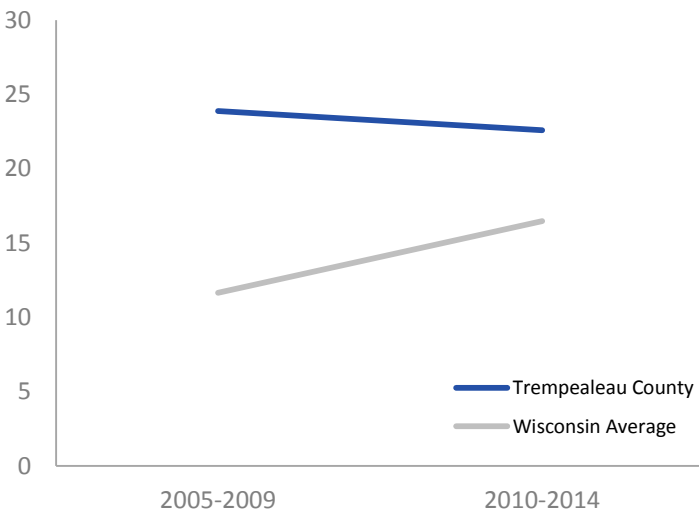
⚠ **22.6**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✓ **13.5**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✓ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

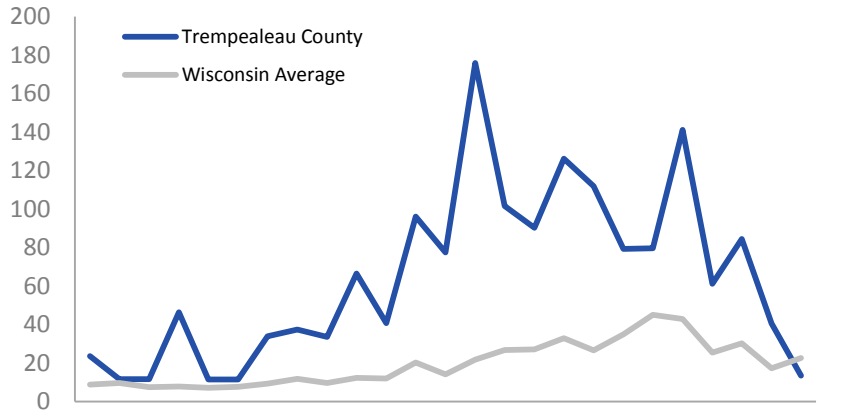
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE

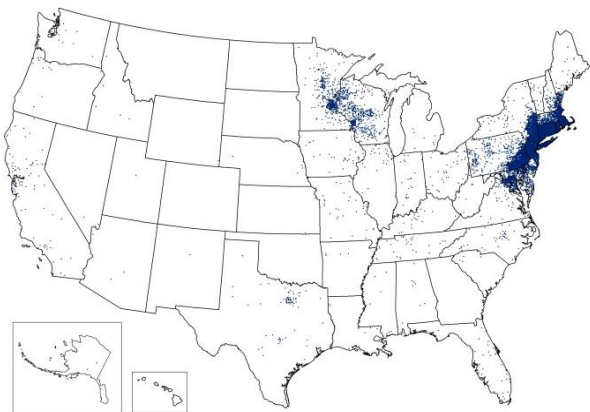


1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

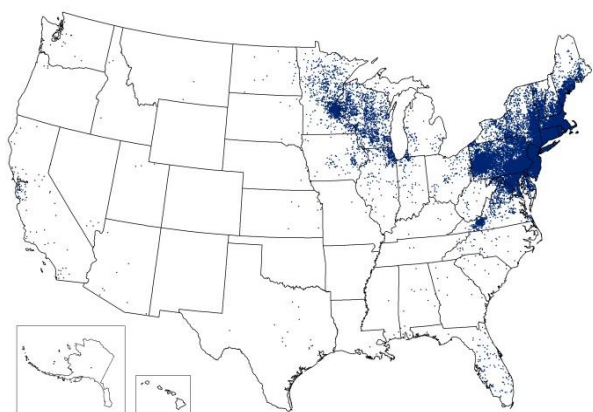
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

TREMPEALEAU COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **16.7**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **23.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

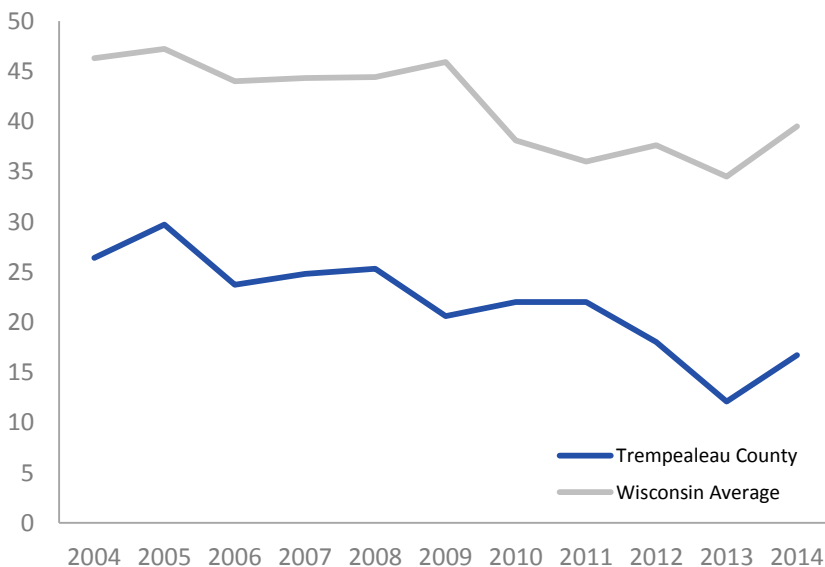
✓ **57.8**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **29.2**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

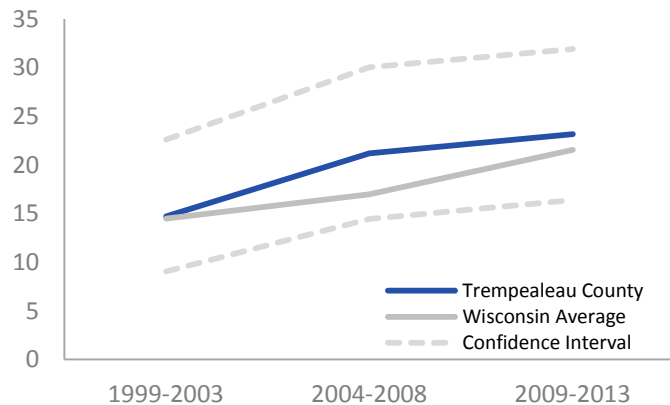
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

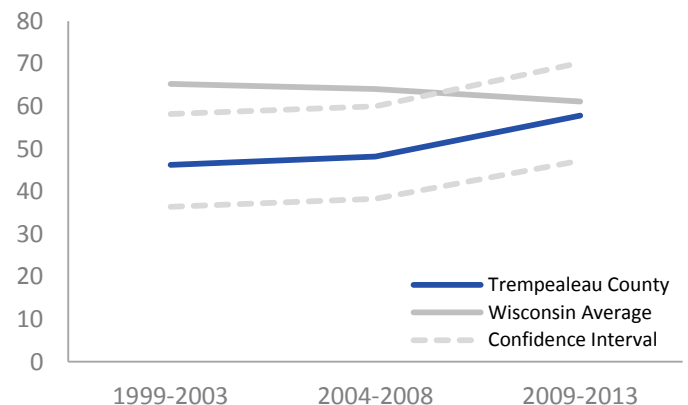
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

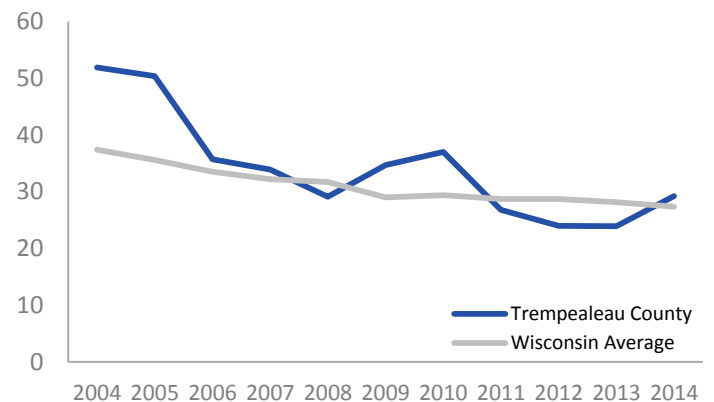
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY TREMPPEALEAU

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

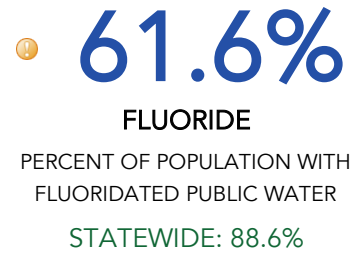
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



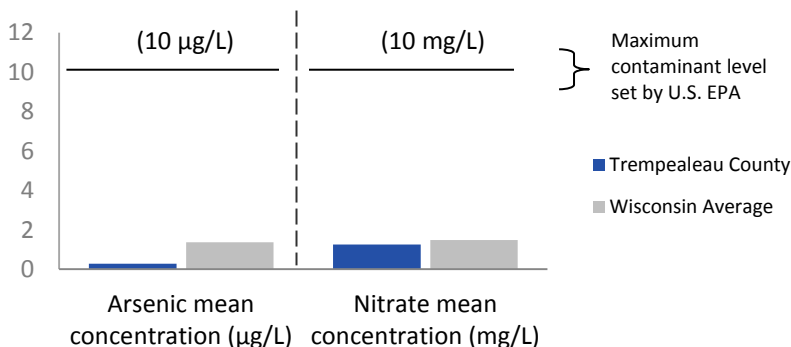
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY TREMPEALEAU COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

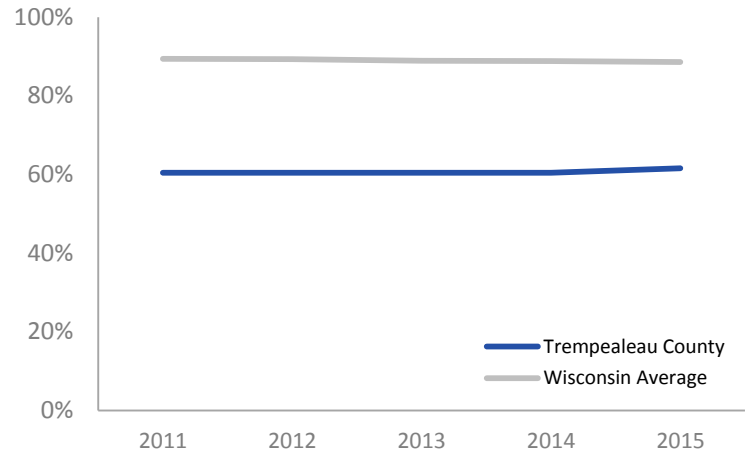
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

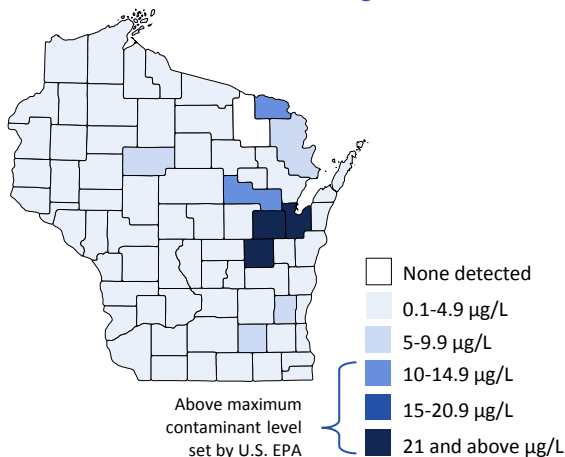
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

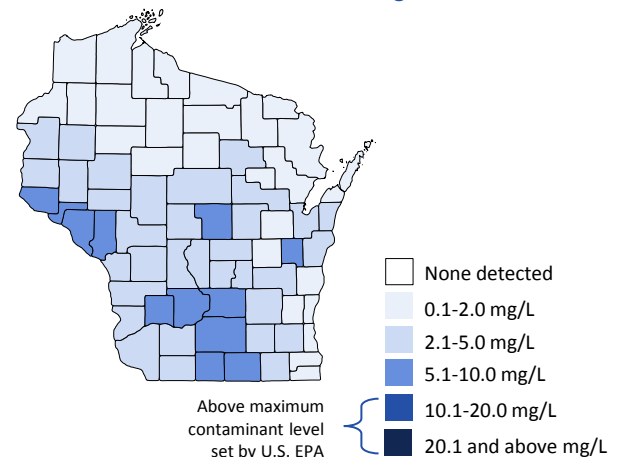
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





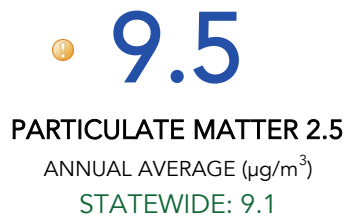
AIR QUALITY

TREMPEALEAU COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

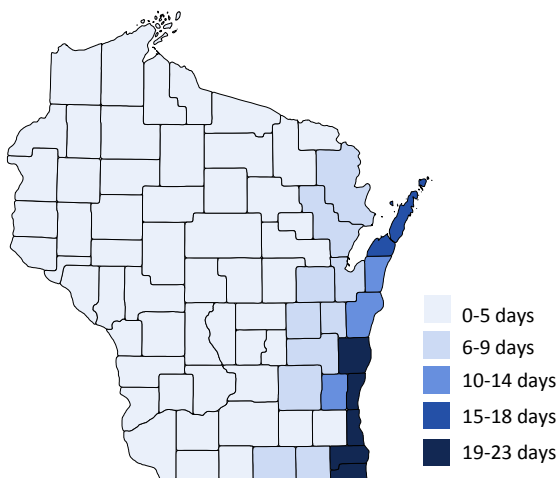
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

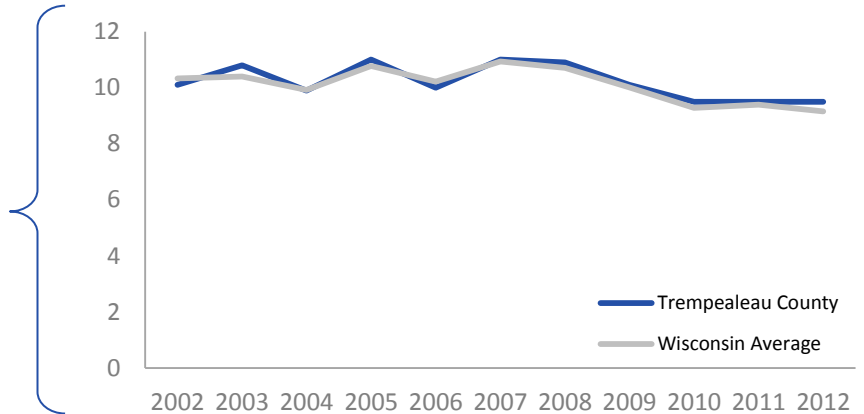
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

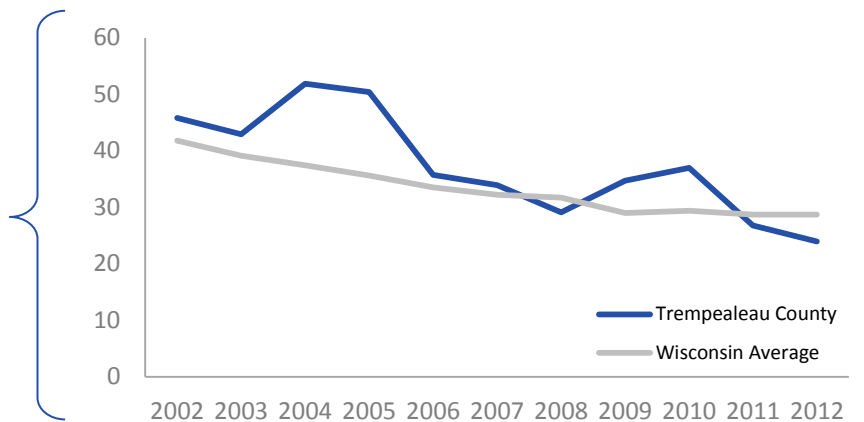
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



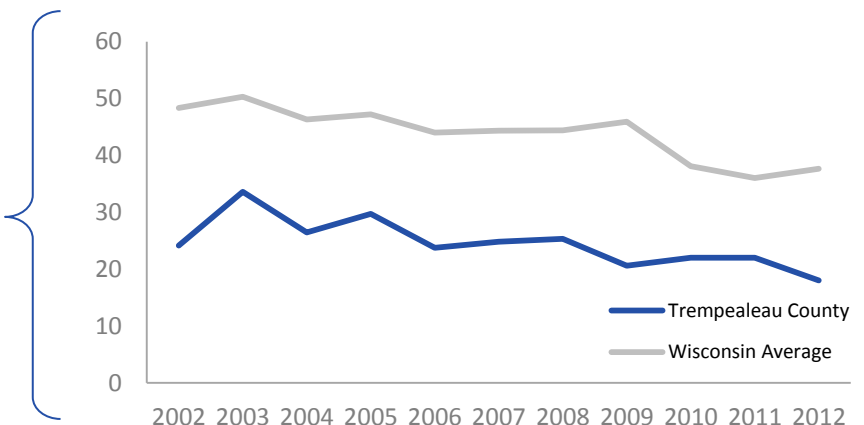
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.

WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



VERNON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



VERNON COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning

0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

3.9 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress

26.8 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

91.8 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES

Asthma

35.6 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

13.6 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

26.0 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY

Arsenic

0.5 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

1.0 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

0.0% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY

Ozone

1 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✅ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed
[Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS VERNON COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **3.9**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **0.0%**

CHILDHOOD LEAD POISONING

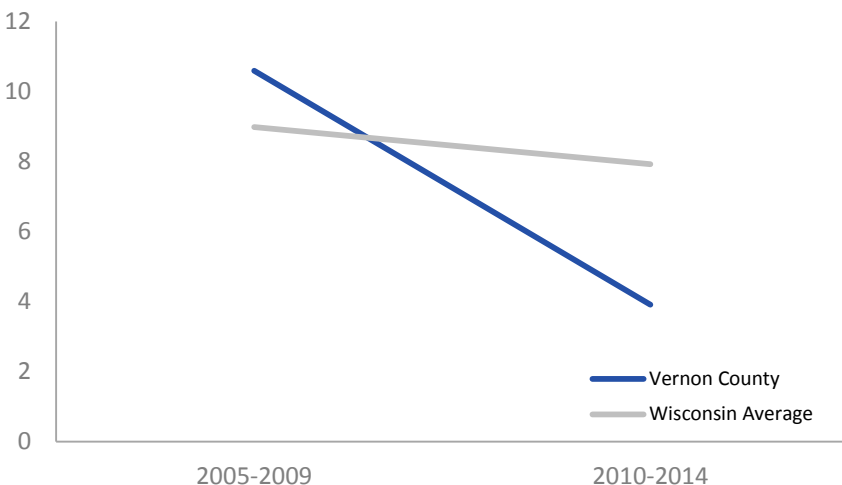
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS VERNON COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

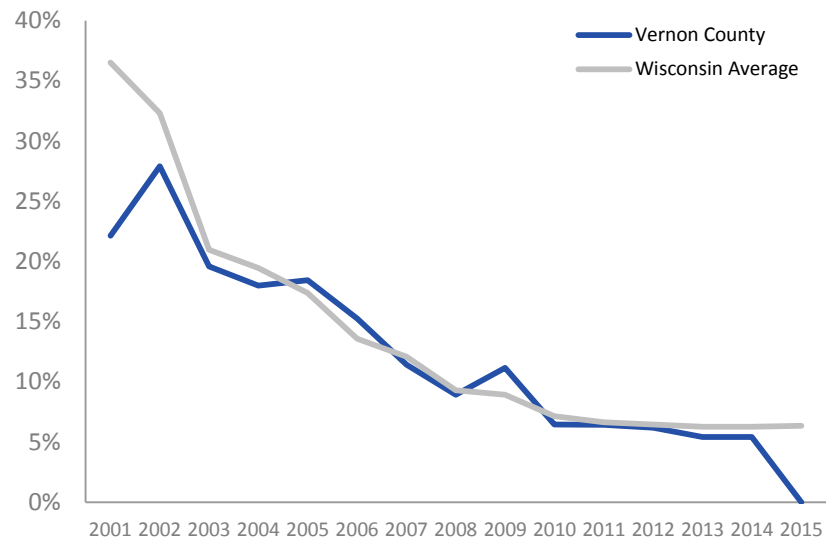
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

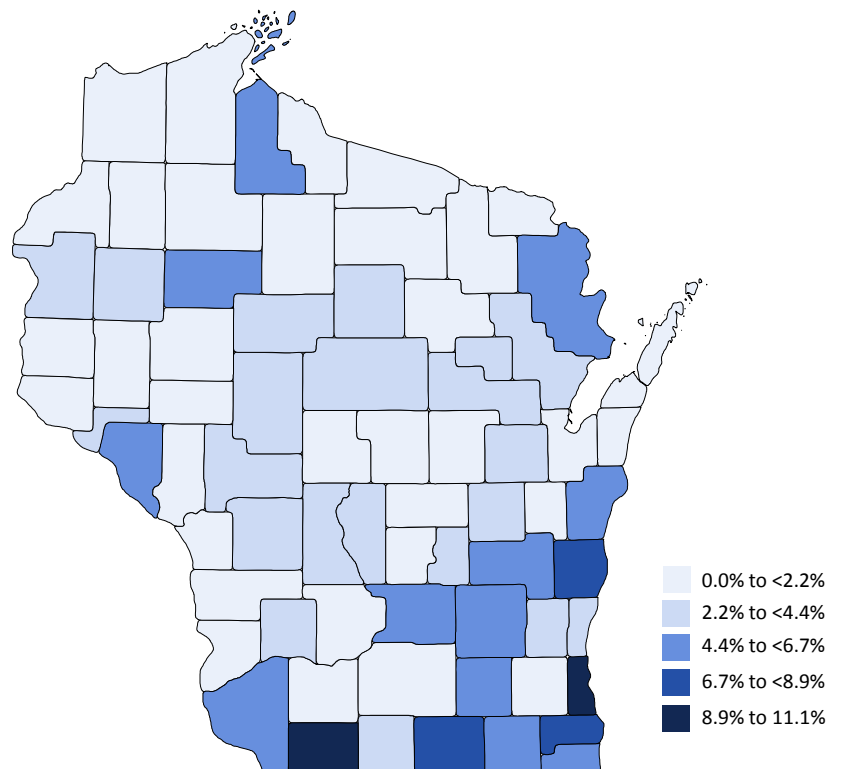
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE VERNON COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

26.8

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

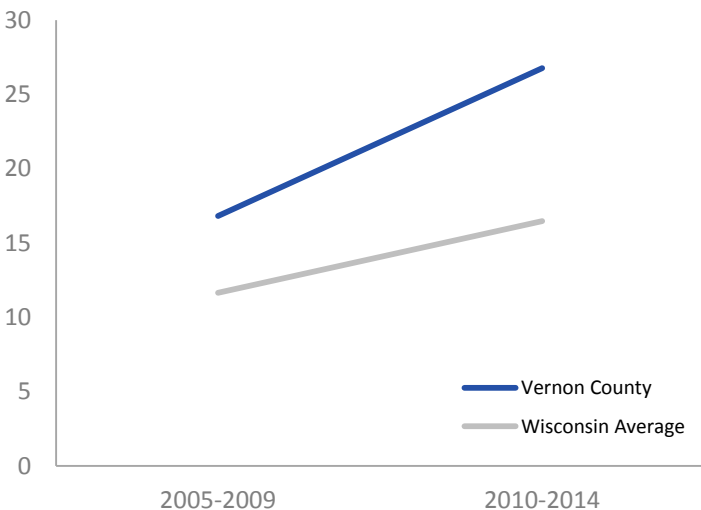
91.8

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

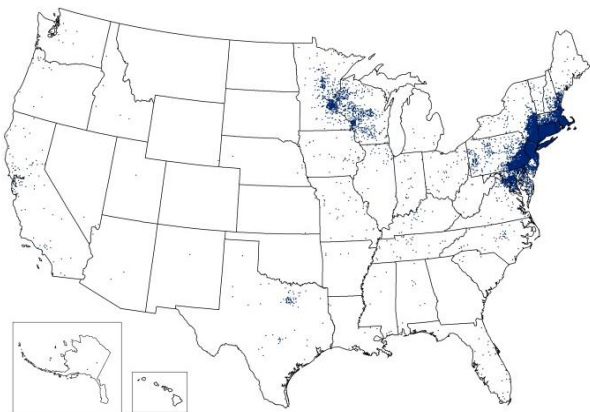
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

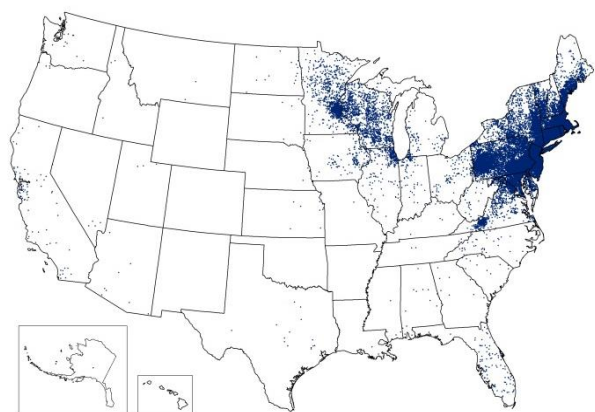
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

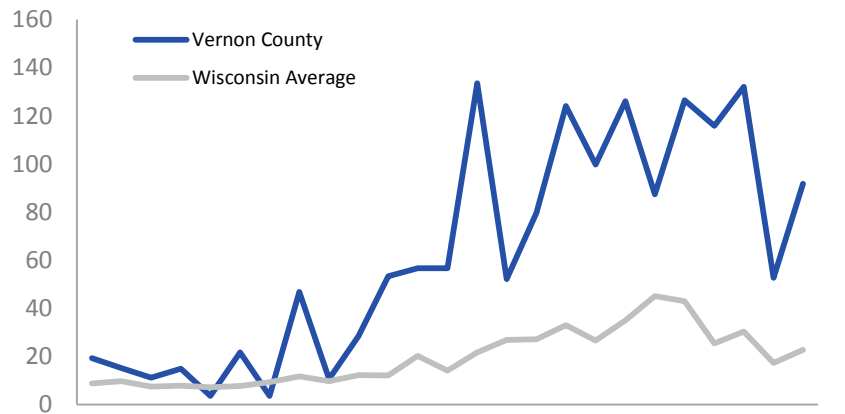


Maps courtesy of Centers for Disease Control and Prevention.

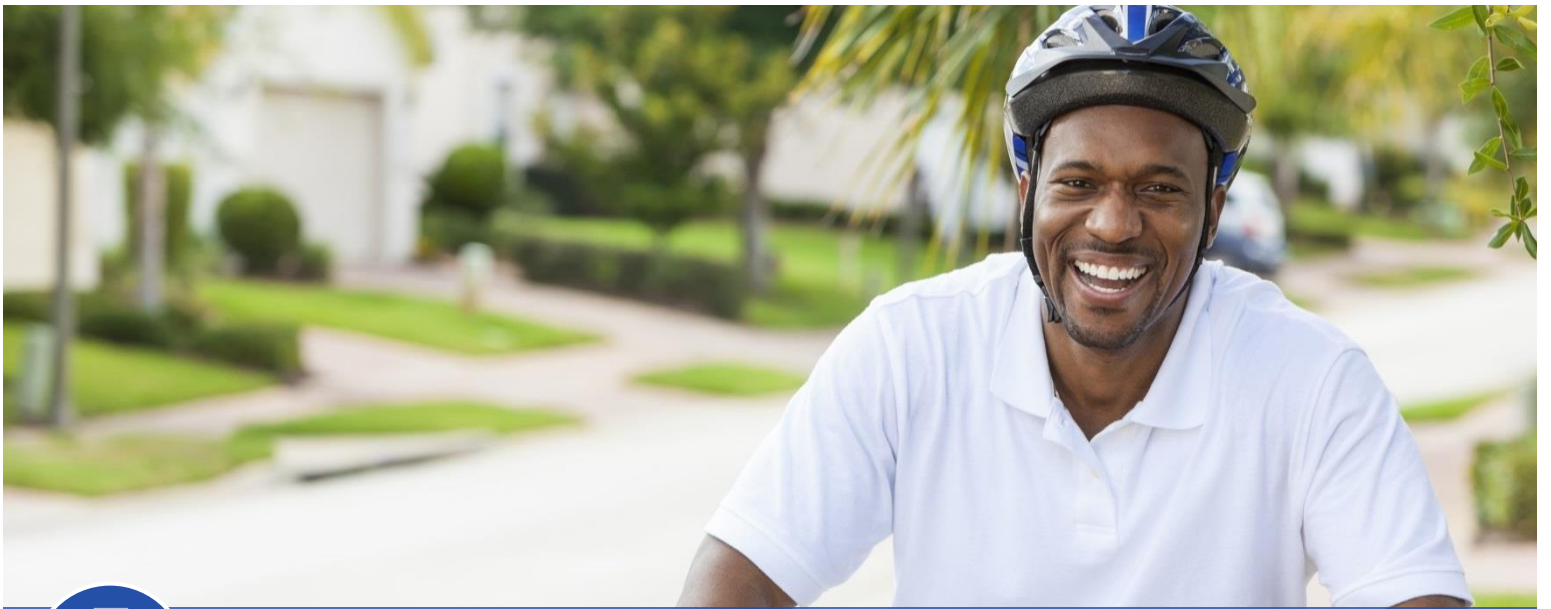
Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES VERNON COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **35.6**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **13.6**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

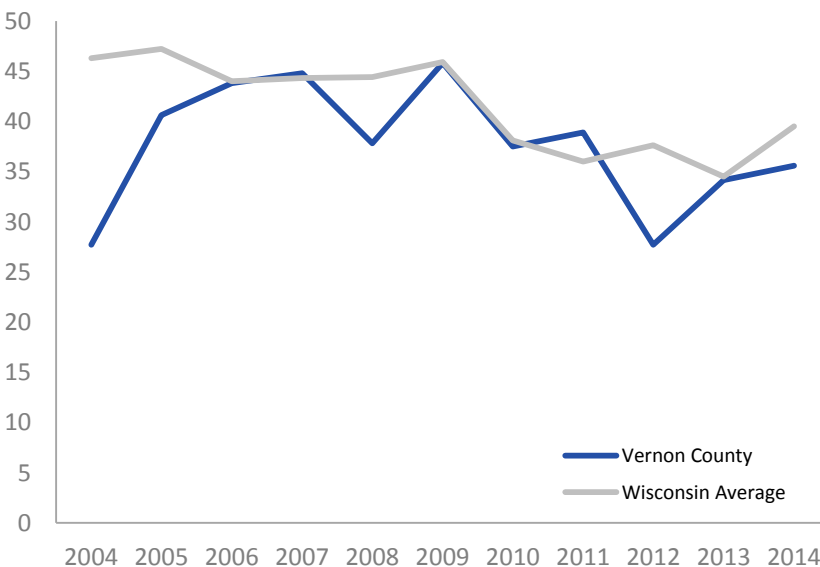
✓ **55.0**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **26.0**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

ⓘ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

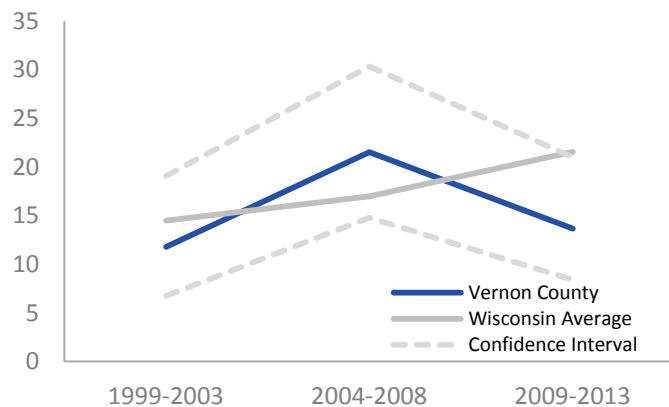
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

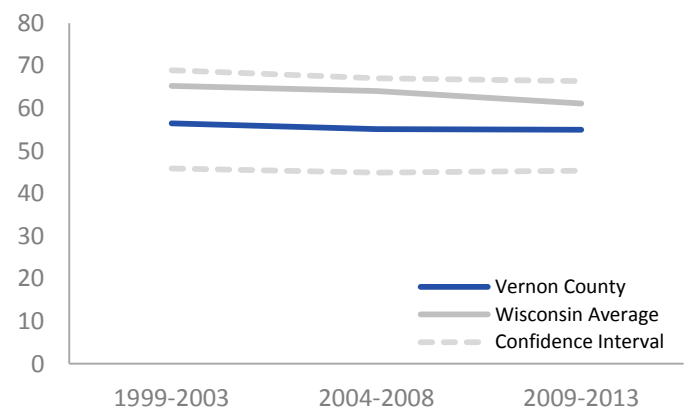
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

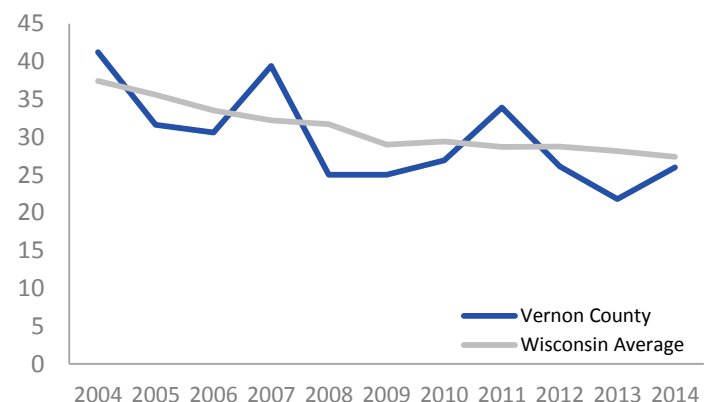
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY VERNON COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

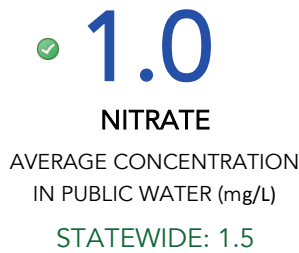
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

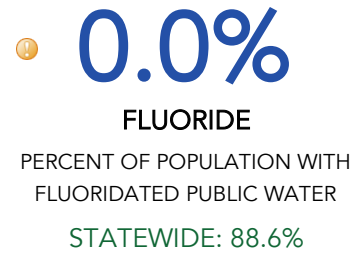
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



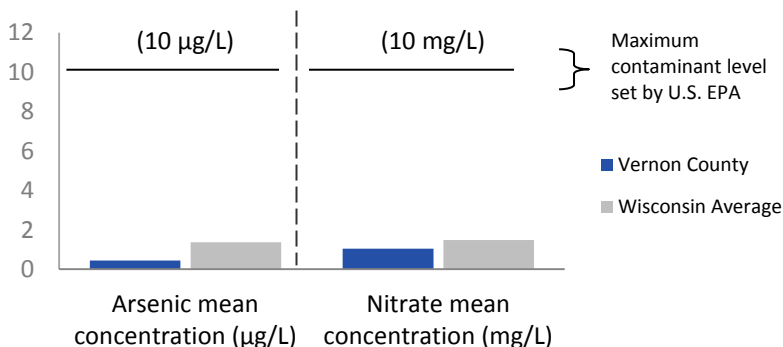
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY VERNON COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

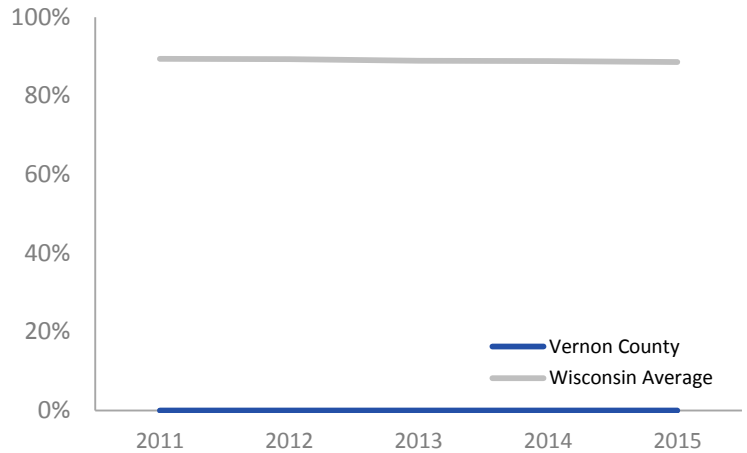
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

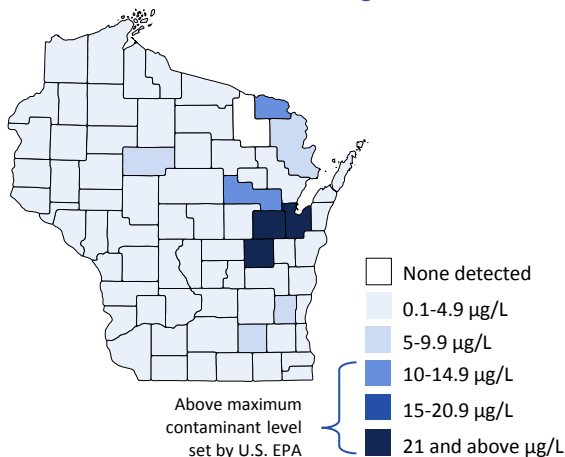
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

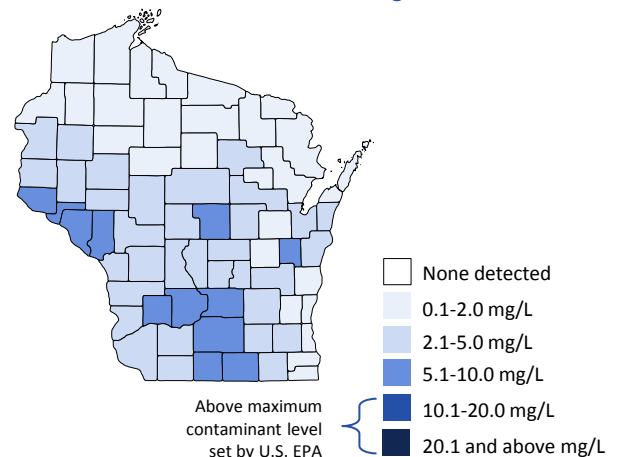
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY VERNON COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



1

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



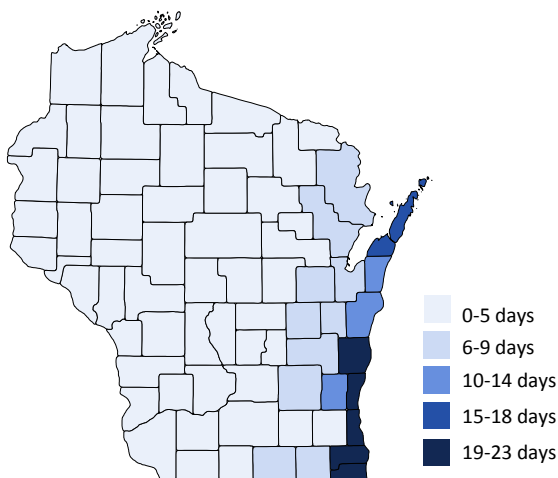
9.4

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

Above state value At or below state value Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

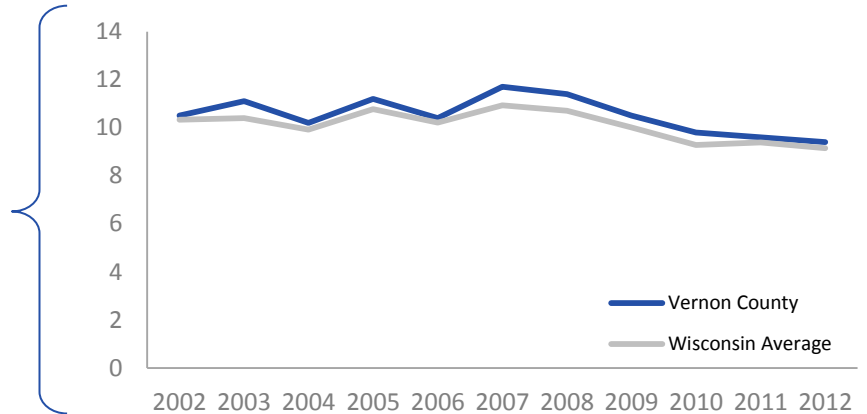


AIR QUALITY VERNON COUNTY

PARTICULATE MATTER 2.5

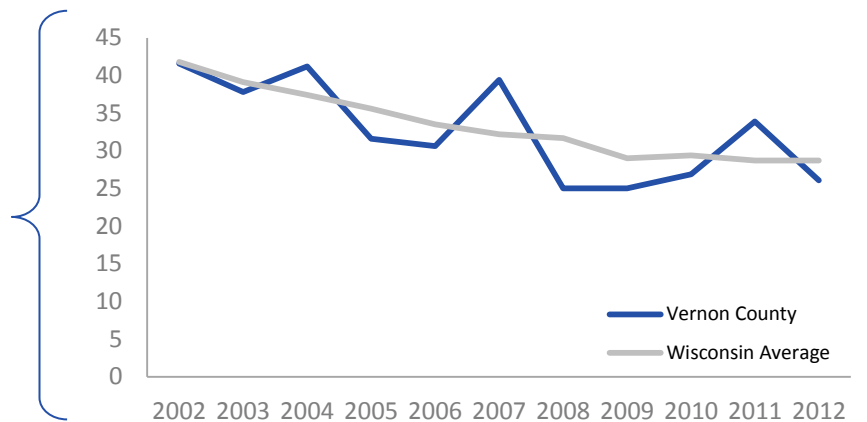
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



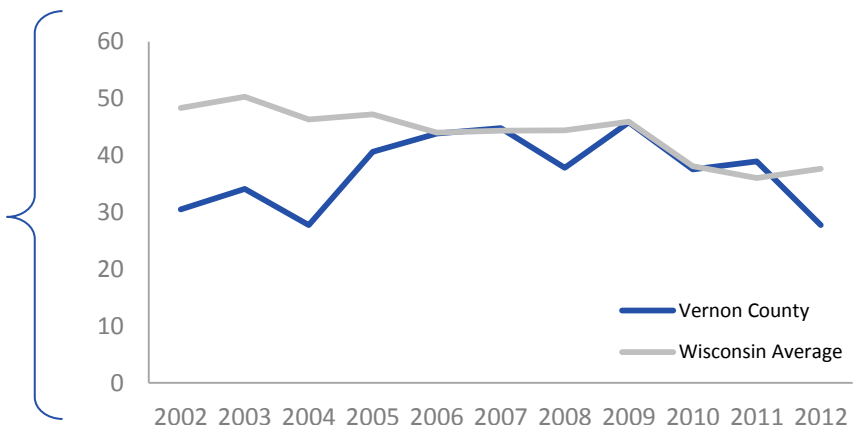
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



VILAS COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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VILAS COUNTY


DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE

HOME HAZARDS

Childhood Lead Poisoning


 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning


 17.5 | Rate of ER visits per 100,000 people
Wisconsin: 7.9

CLIMATE

Heat Stress


 24.7 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease


 51.4 | Crude rate per 100,000 people
Wisconsin: 22.7

HEALTH OUTCOMES


Asthma

 41.2 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma


 10.7 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

 38.4 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4

WATER QUALITY


Arsenic

 1.1 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate


 0.8 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride


 62.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%

AIR QUALITY


Ozone


 0 | Annual days above standard
Wisconsin: 3.8


Particulate Matter (PM) 2.5

 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

 Above state value (with exception of fluoride where below state value is not preferred)

 At or below state value (with exception of fluoride where above state value is preferred)

 Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS VILAS COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **17.5**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **0.0%**

CHILDHOOD LEAD POISONING

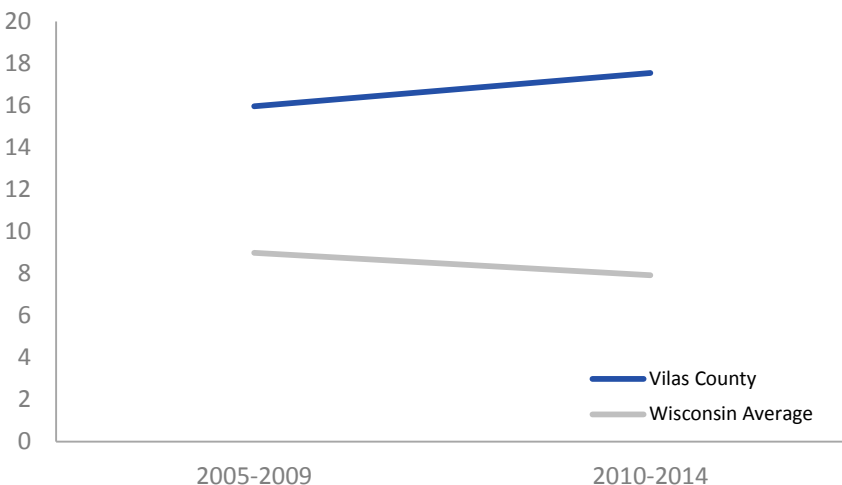
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS VILAS COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

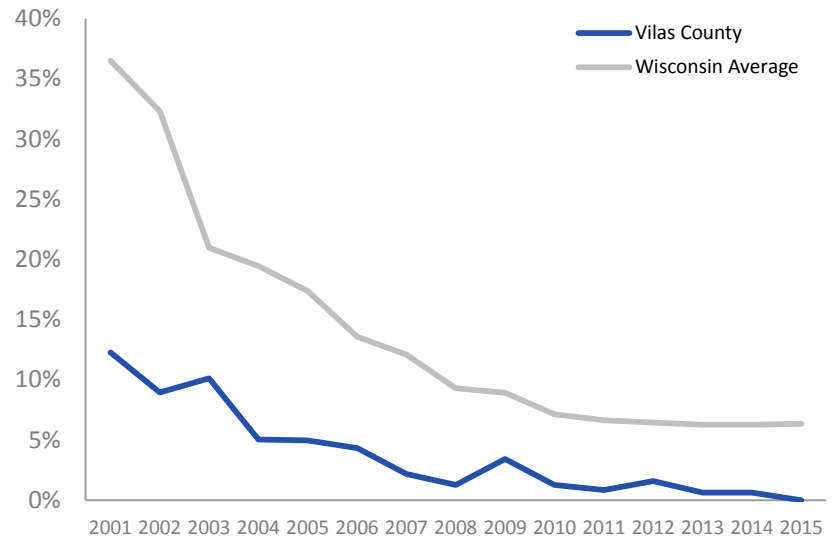
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

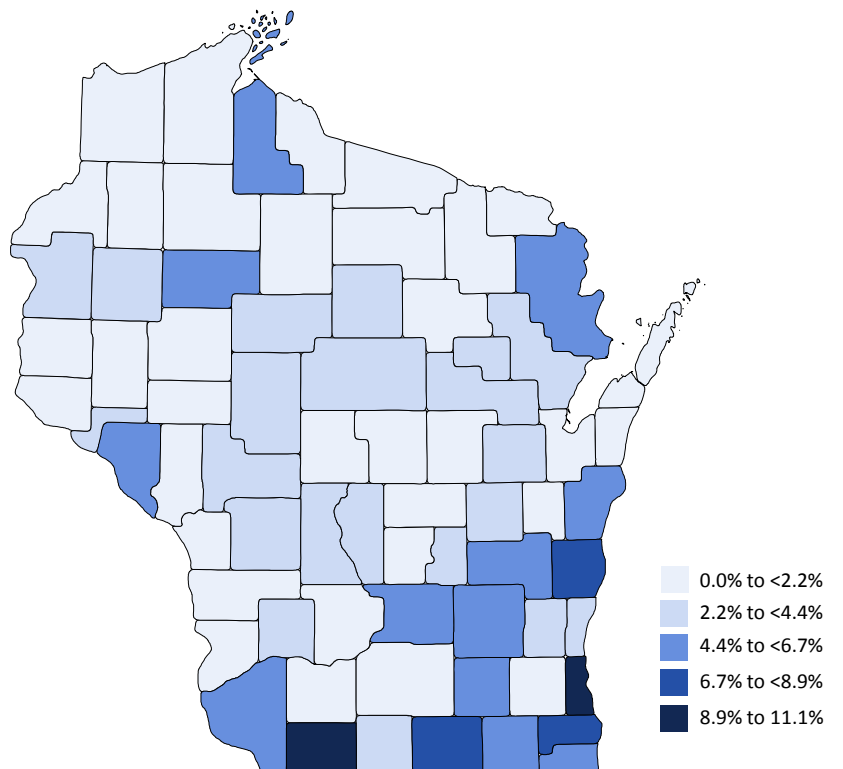
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE VILAS COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

24.7

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

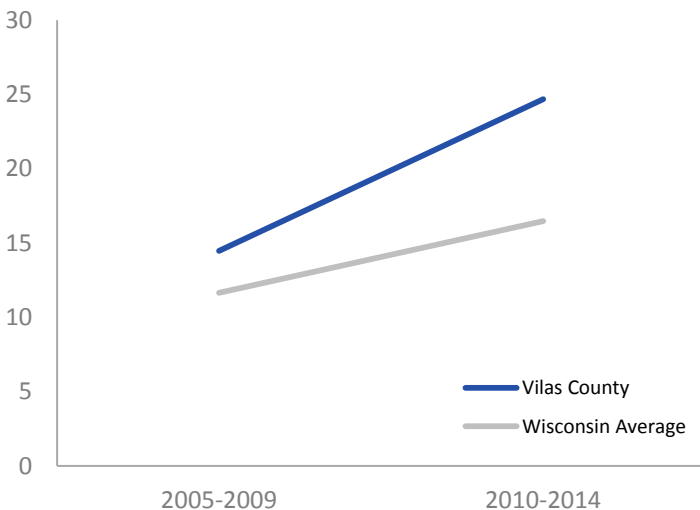
51.4

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

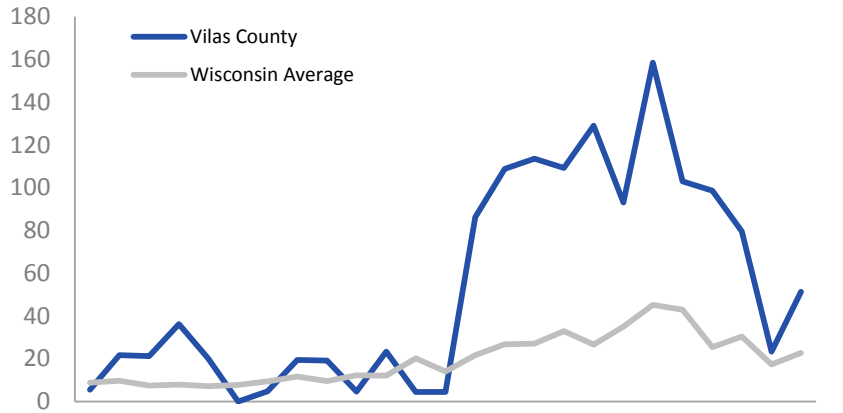
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

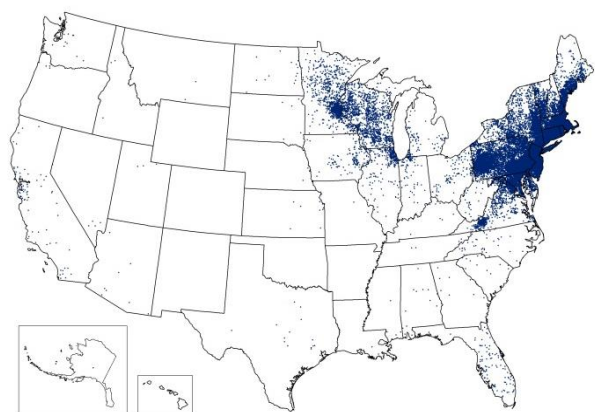
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES VILAS COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

41.2

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

10.7

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

66.7

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

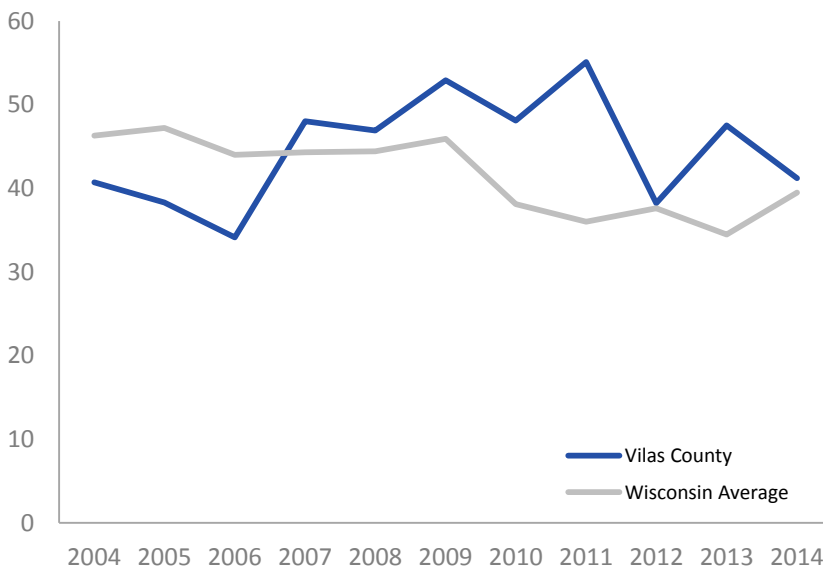
38.4

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⬇ Above state value ✔ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

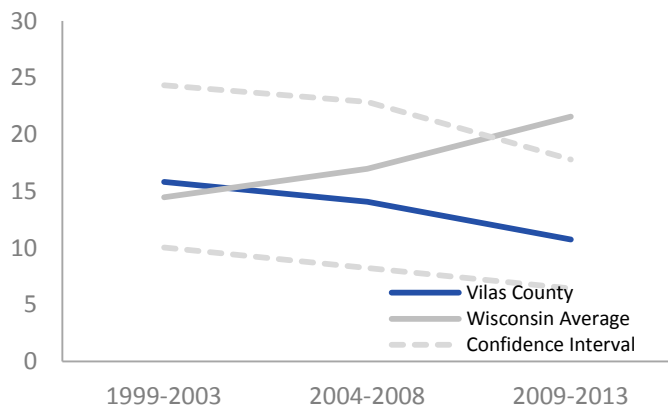
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

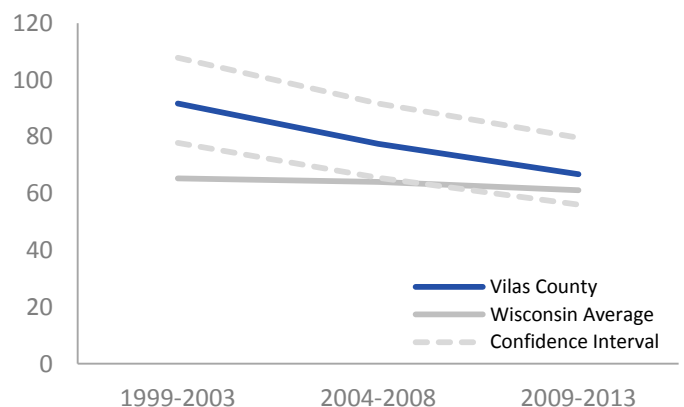
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

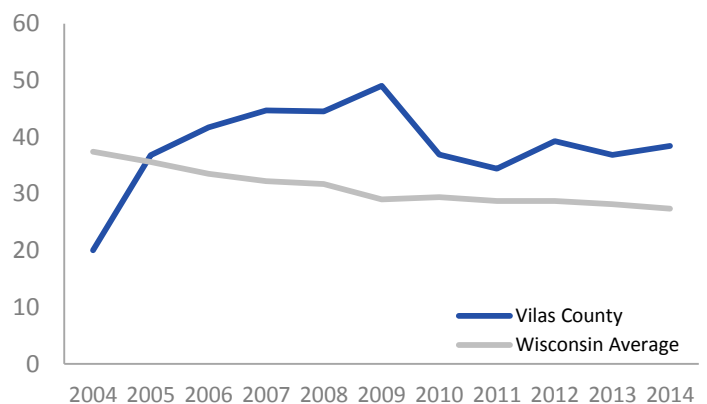
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY VILAS COUNTY

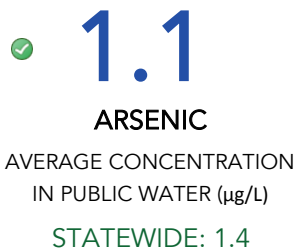
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

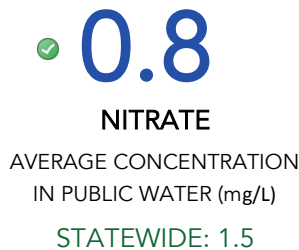
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

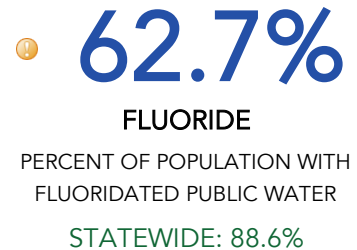
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



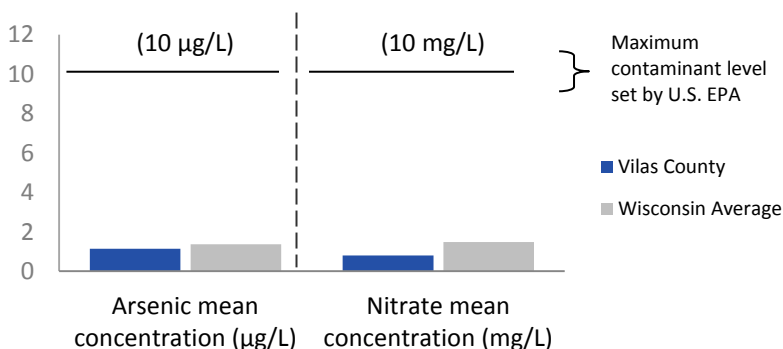
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY VILAS COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

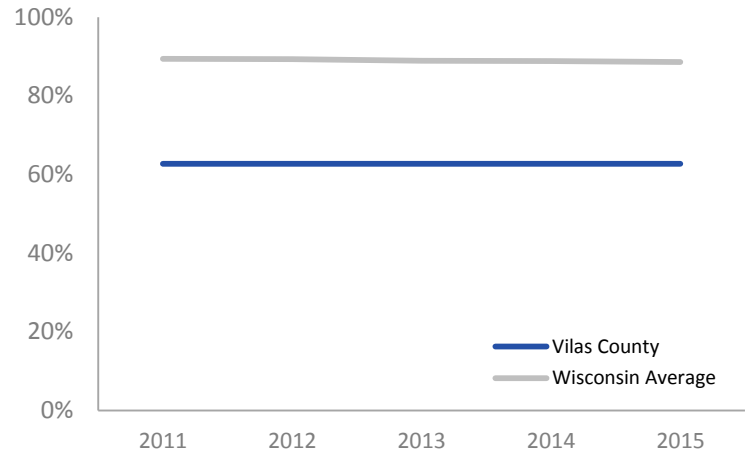
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

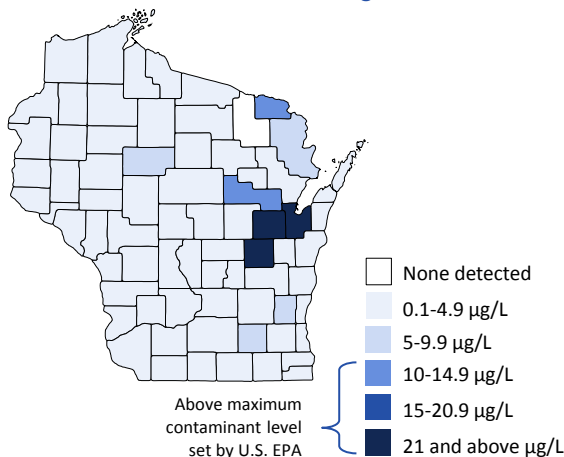
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

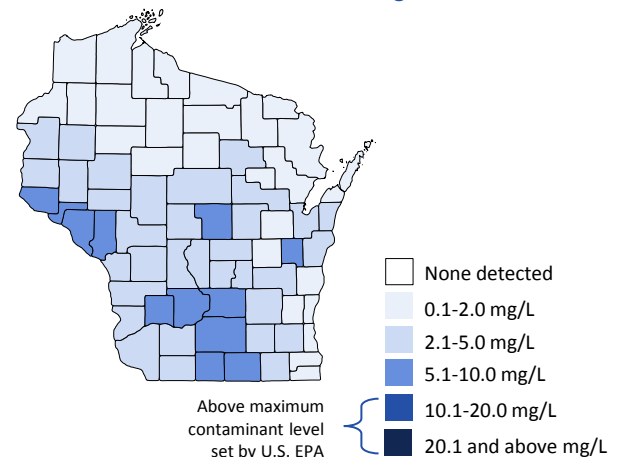
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



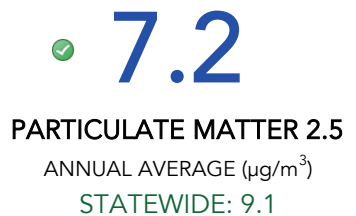


AIR QUALITY VILAS COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

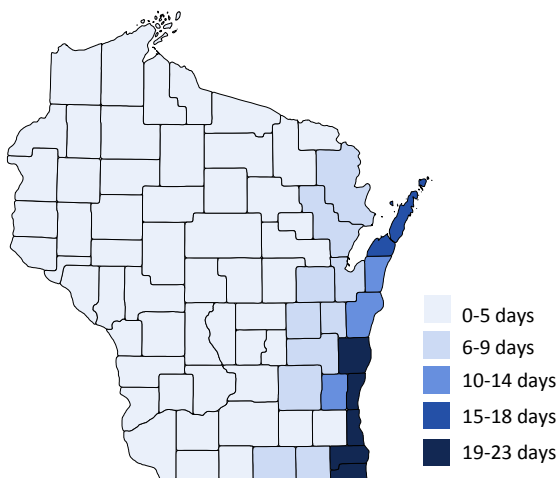
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

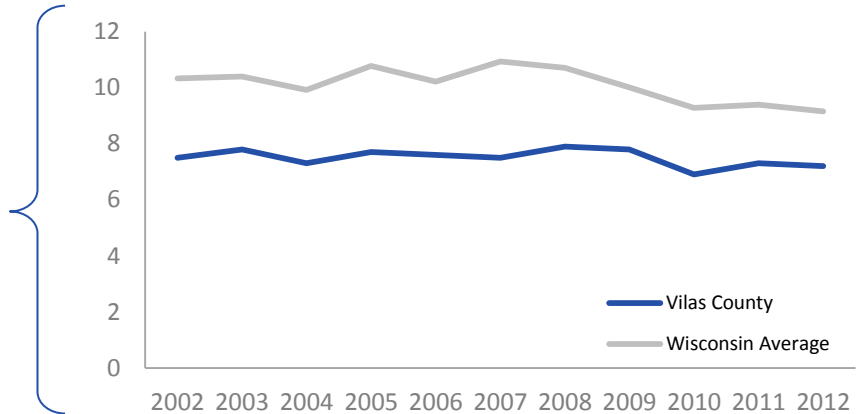
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

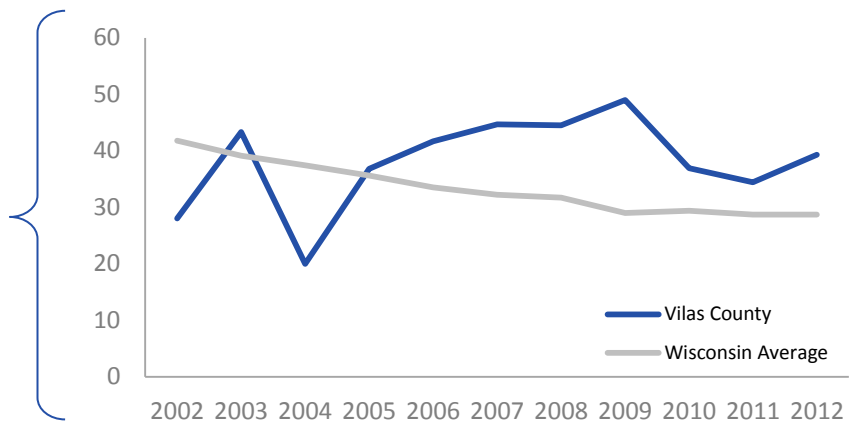
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



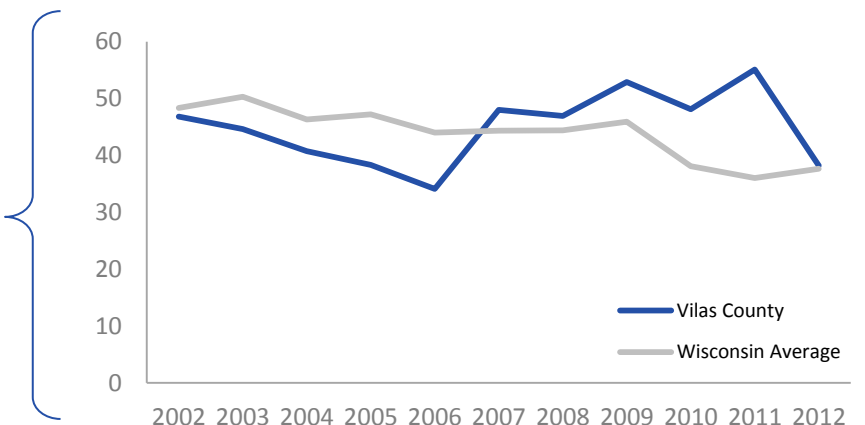
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WALWORTH COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WALWORTH COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 5.5% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 4.9 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 16.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 9.7 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 32.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 26.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 30.2 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.5 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 61.4% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 5 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 2 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WALWORTH COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **4.9**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **5.5%**

CHILDHOOD LEAD POISONING

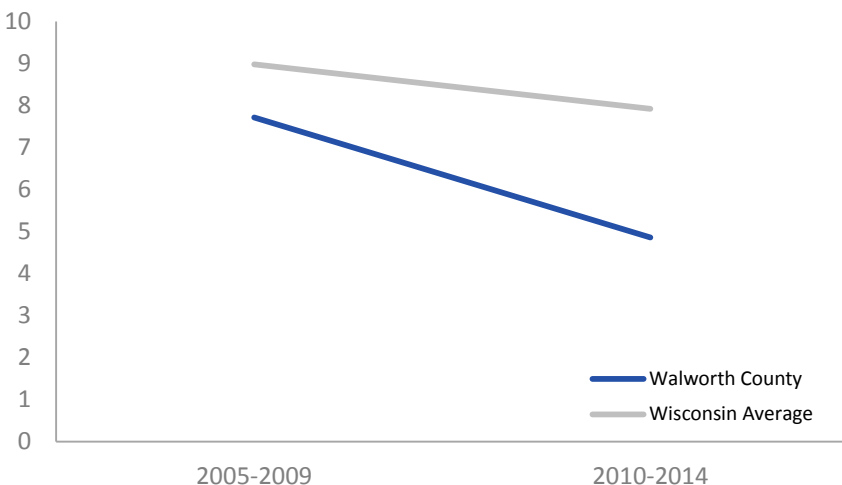
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WALWORTH COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

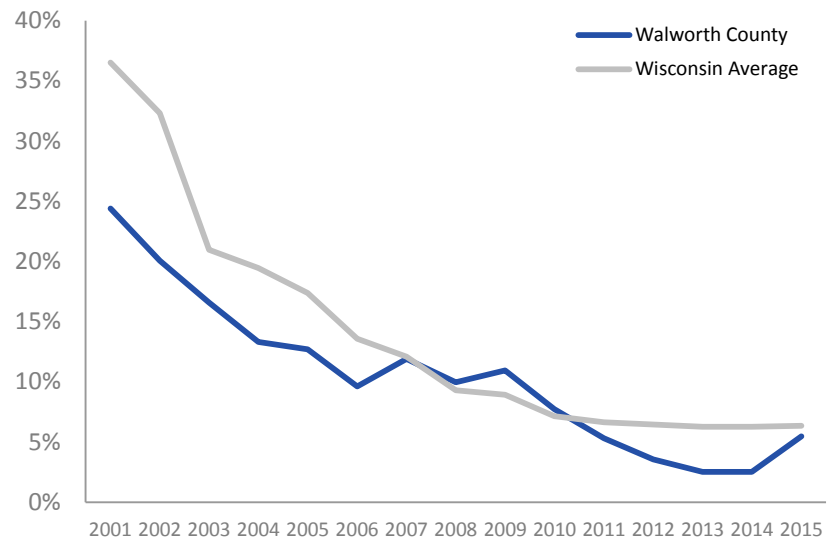
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

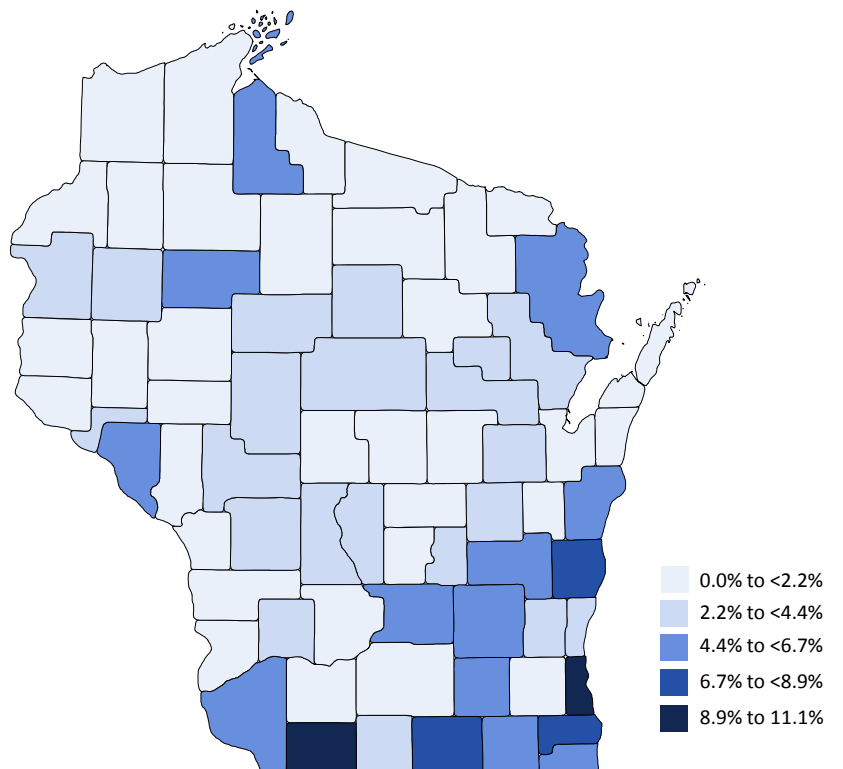
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WALWORTH COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

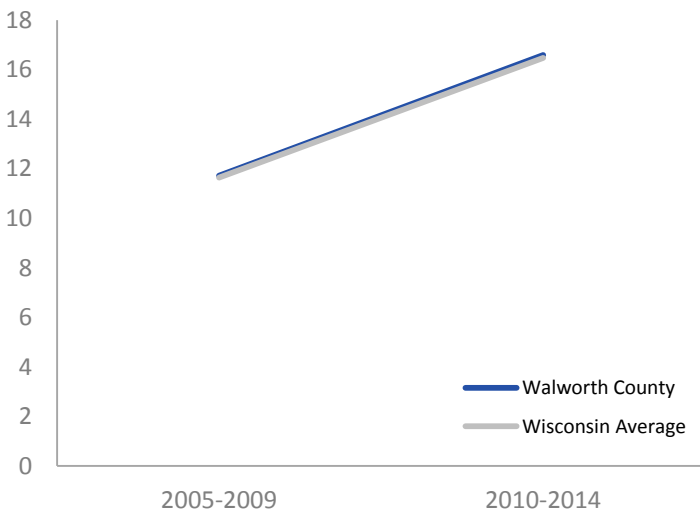
⚠ **16.6**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✓ **9.7**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✓ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

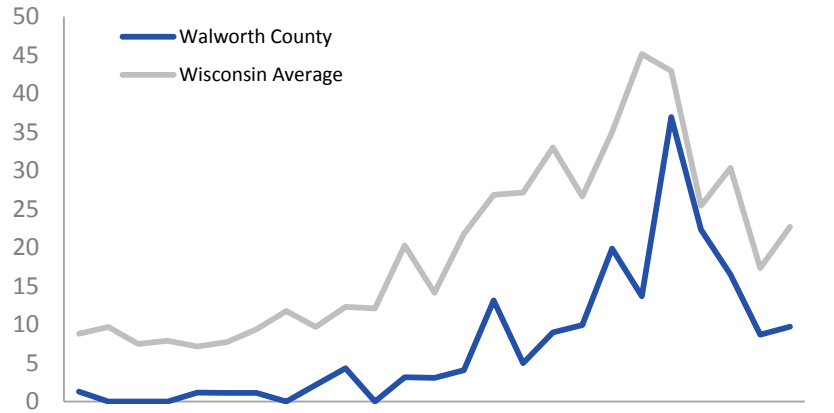
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

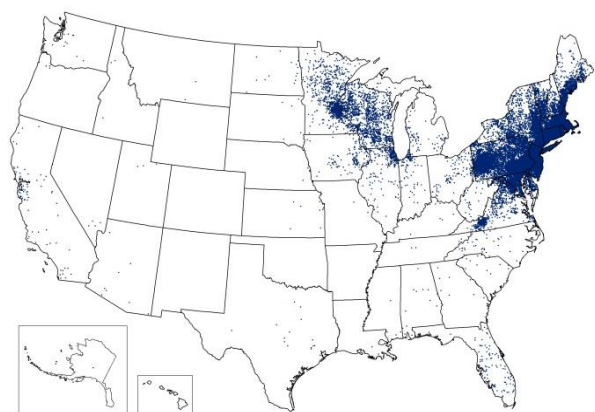
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES WALWORTH COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **32.5**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **26.0**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

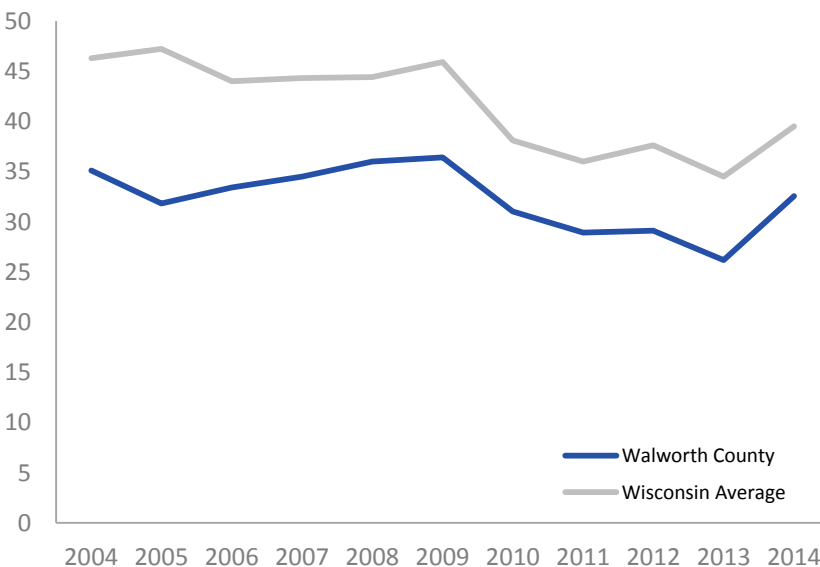
⚠ **64.0**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **30.2**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

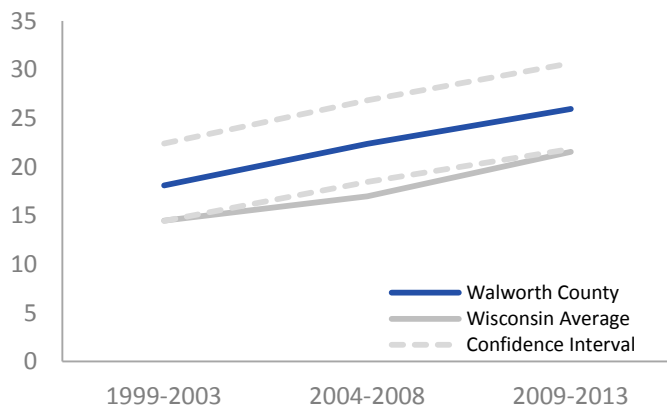
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

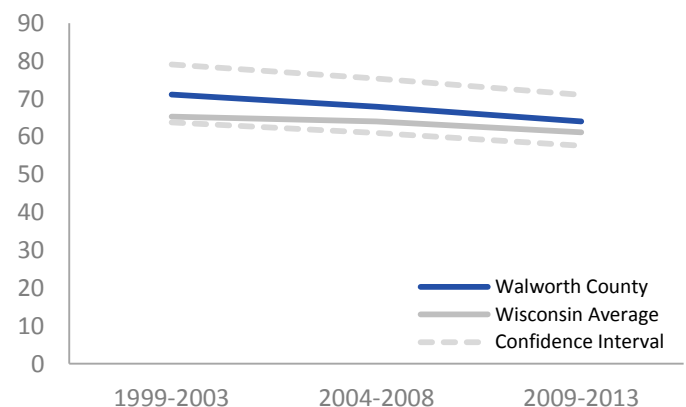
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

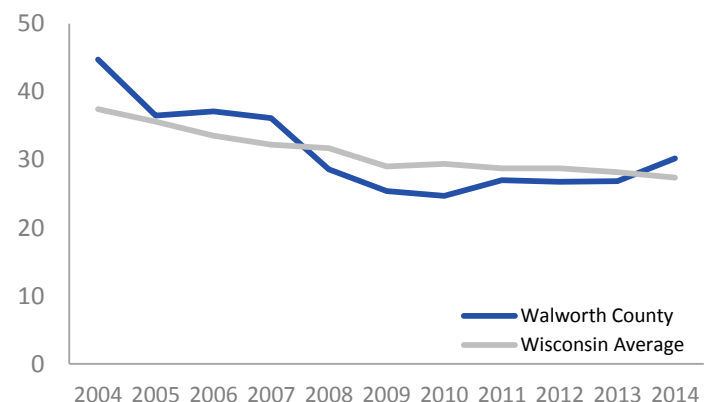
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WALWORTH

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

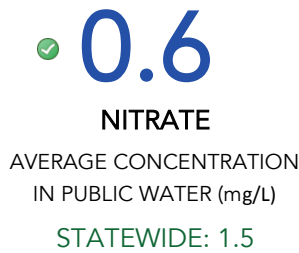
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

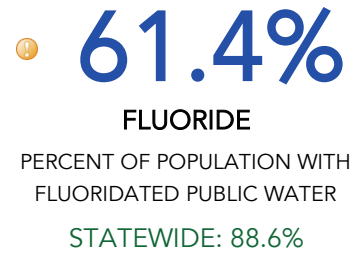
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



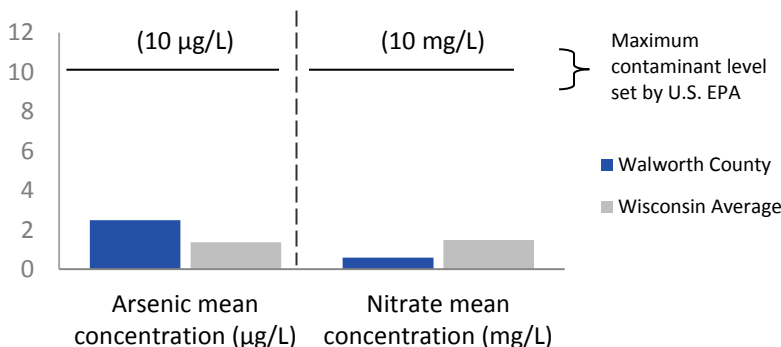
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY WALWORTH COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

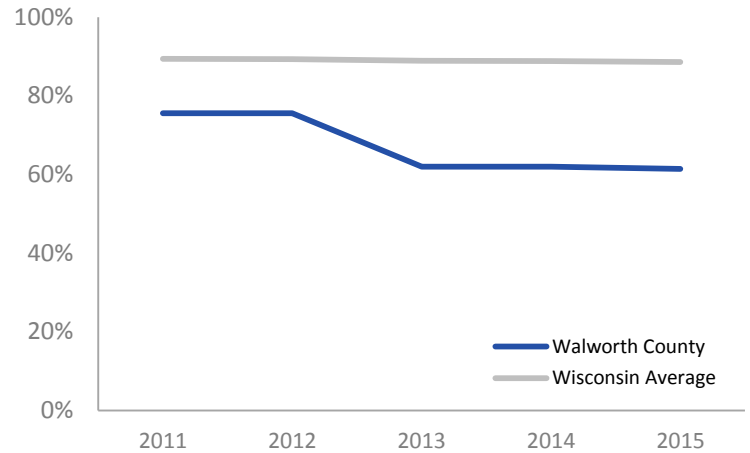
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

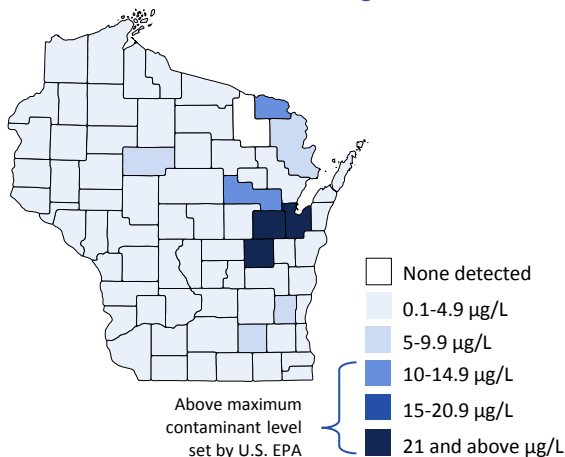
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

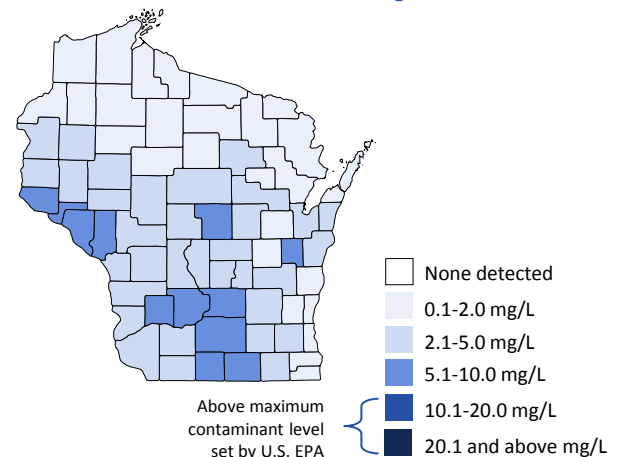
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY WALWORTH COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



5

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



2

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



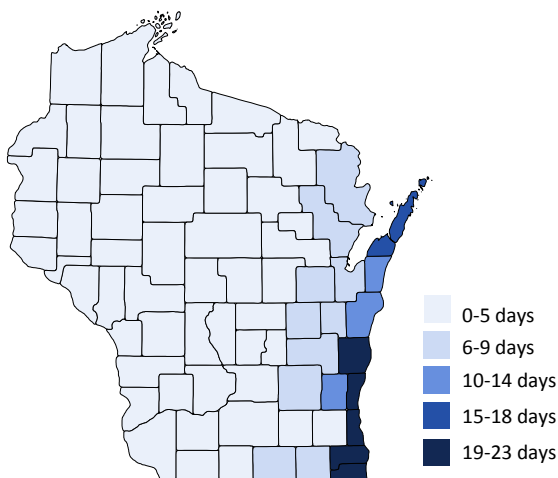
10.9

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

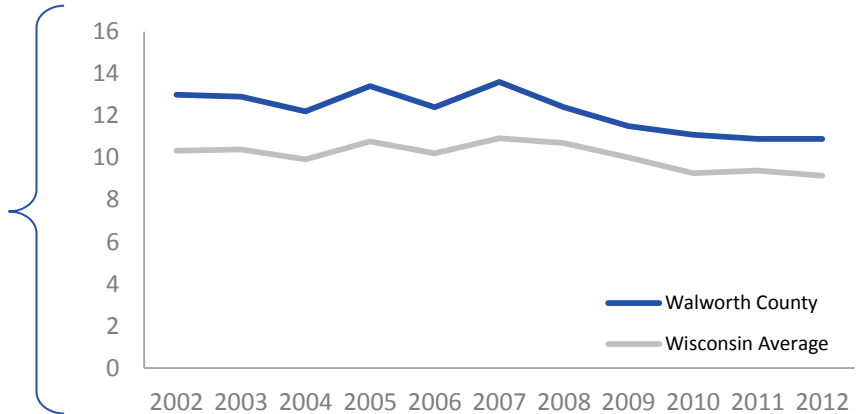


AIR QUALITY WALWORTH COUNTY

PARTICULATE MATTER 2.5

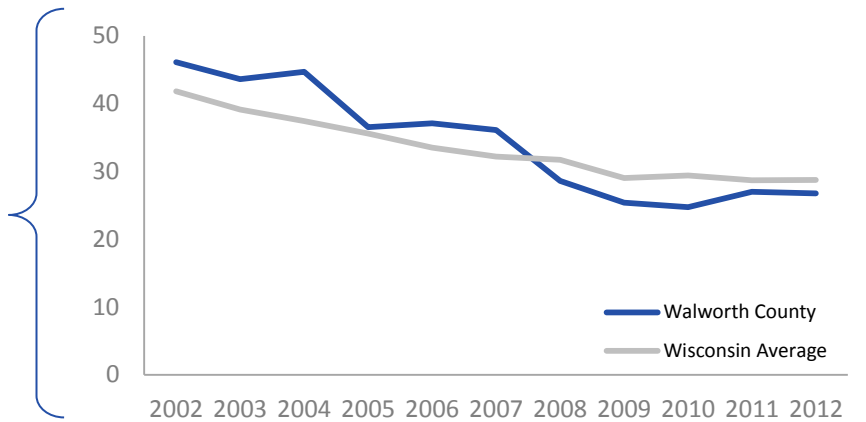
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



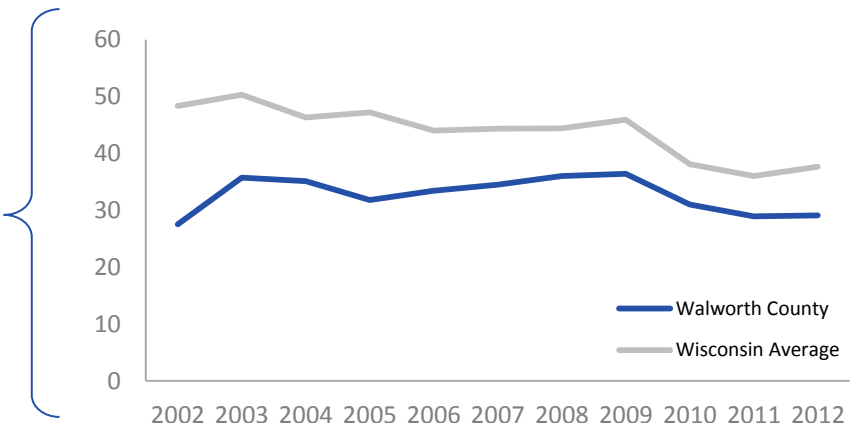
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WASHBURN COUNTY ENVIRONMENTAL HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WASHBURN COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 0.0% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 28.1 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 18.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 257.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 43.1 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 9.5 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 31.5 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 1.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 1.4 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 69.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WASHBURN COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **28.1**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **0.0%**

CHILDHOOD LEAD POISONING

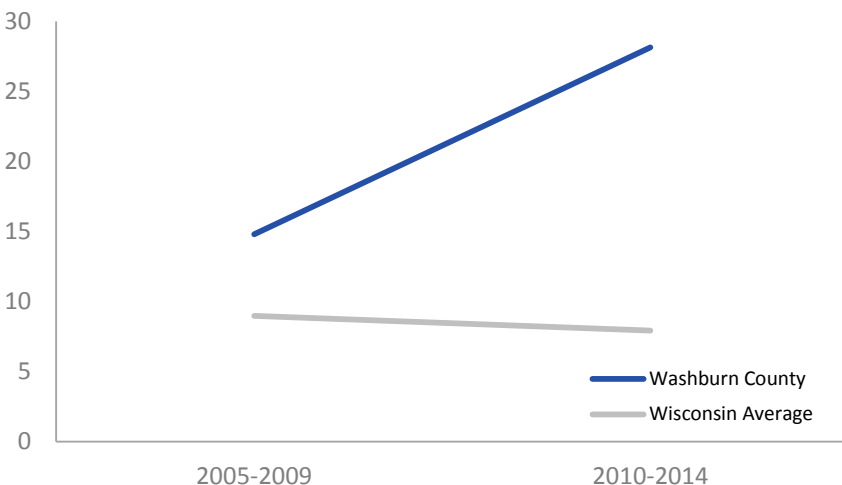
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WASHBURN COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

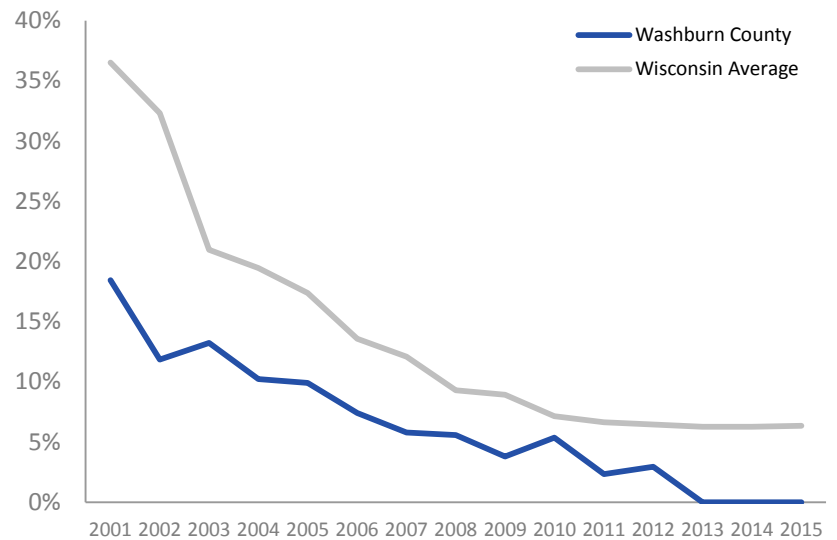
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

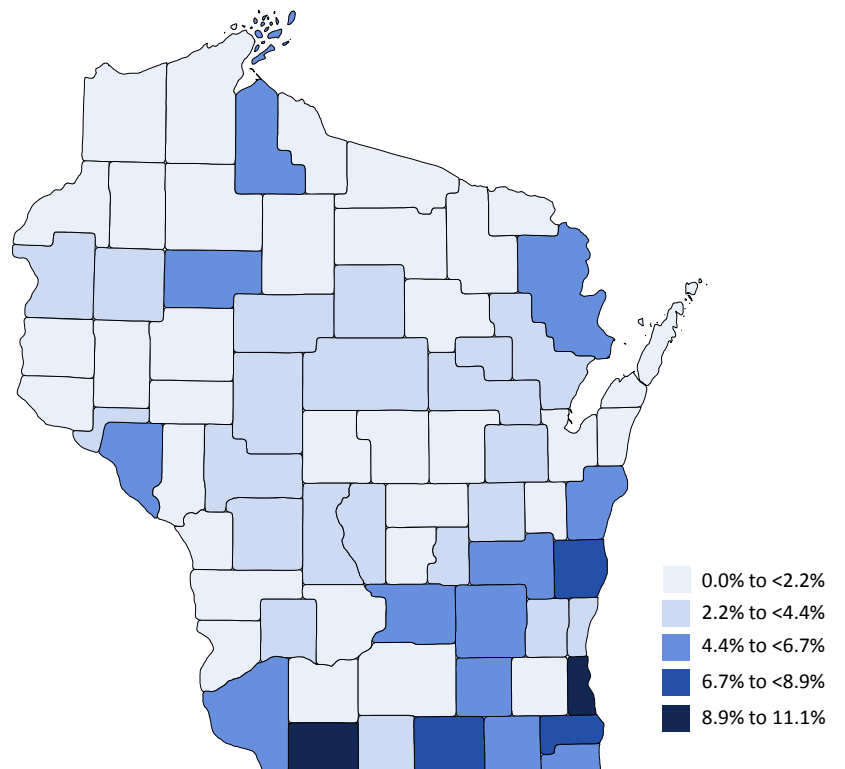
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WASHBURN COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

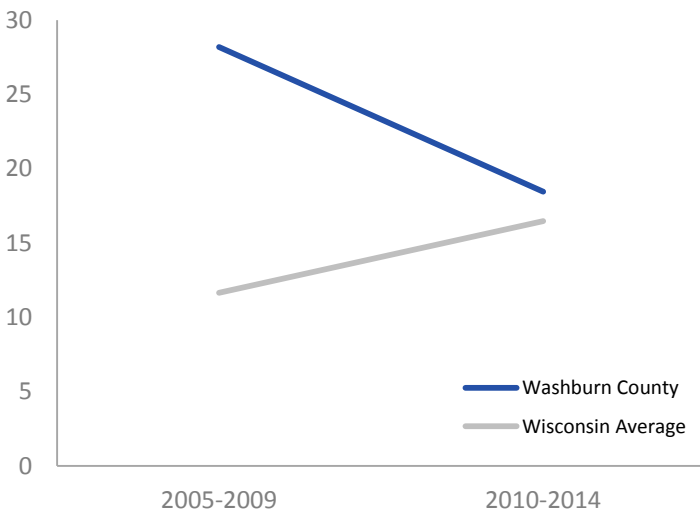
18.4
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

257.2
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

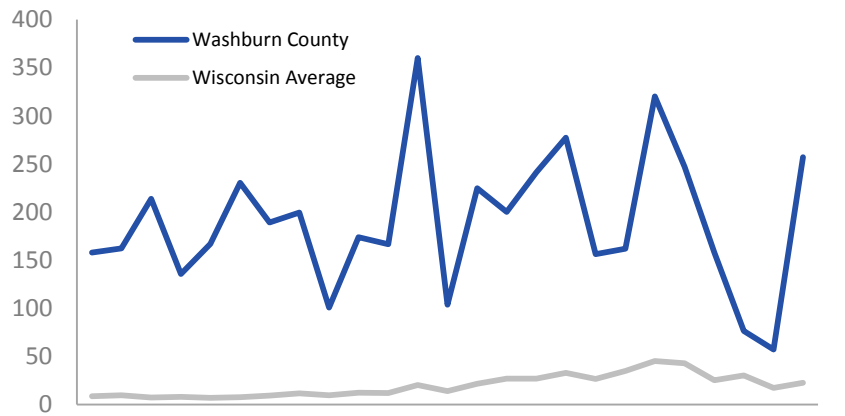
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE

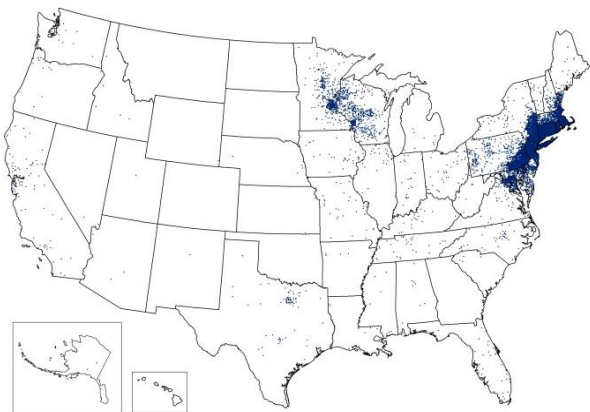


1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

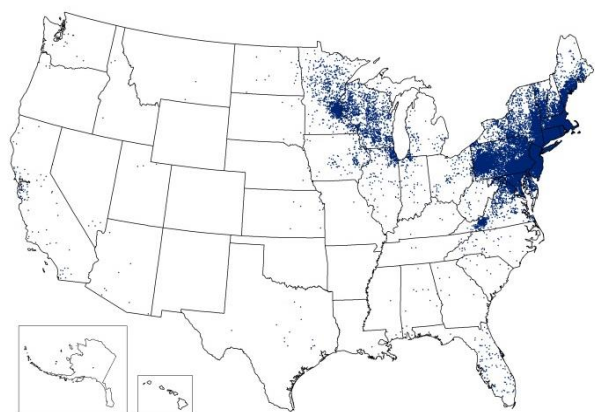
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES WASHBURN COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

43.1
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

9.5
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

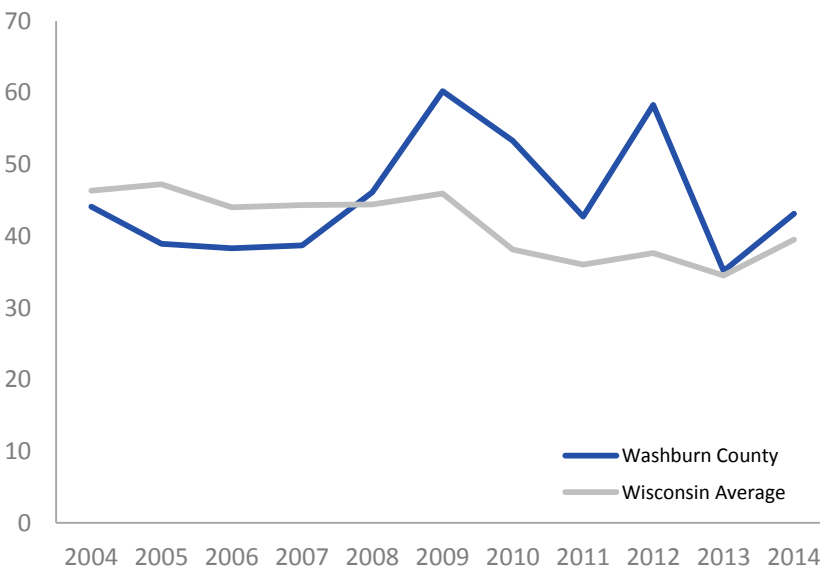
71.5
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

31.5
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬇ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

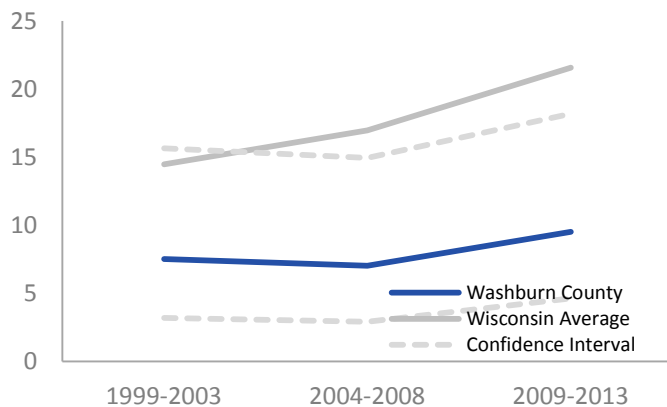
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

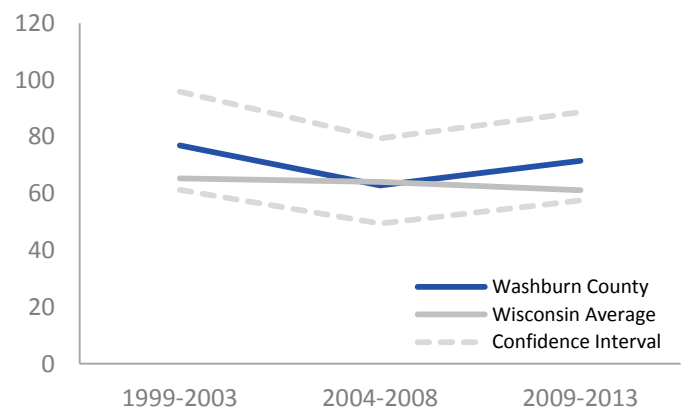
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

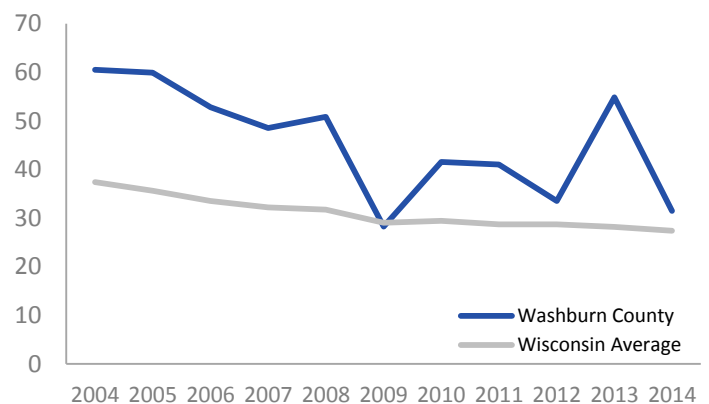
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WASHBURN COUNTY

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

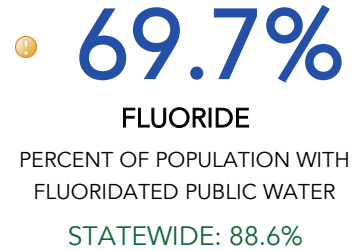
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



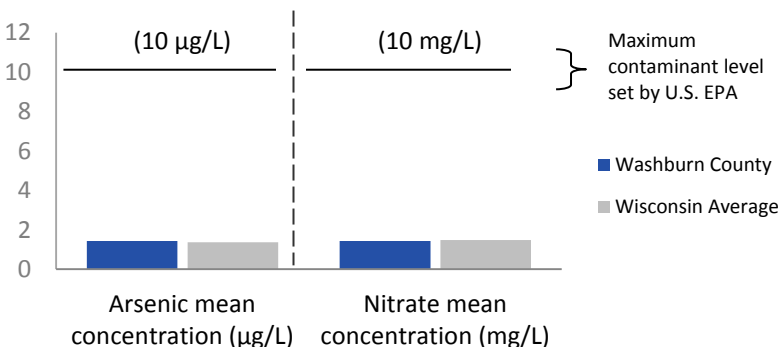
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.



WATER QUALITY WASHBURN COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

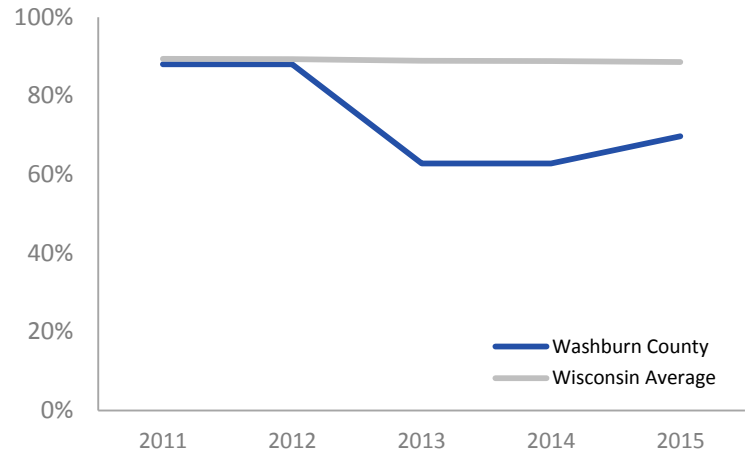
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

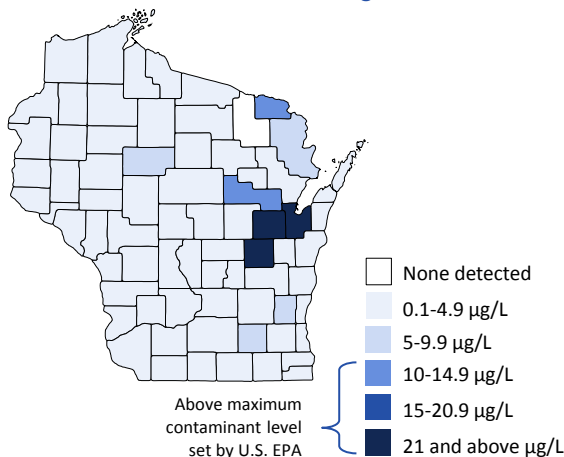
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

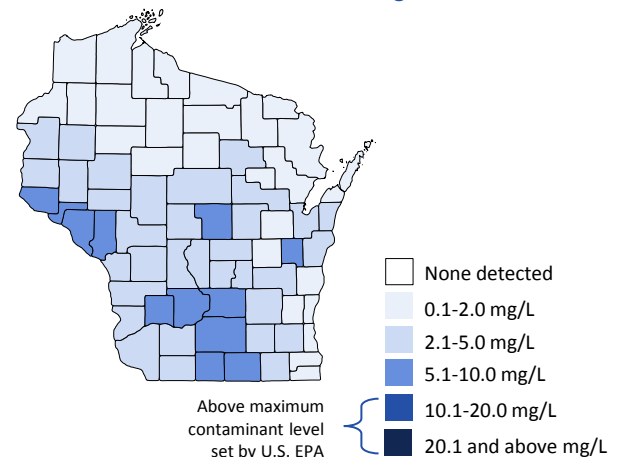
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



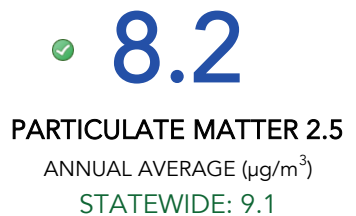


AIR QUALITY WASHBURN COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

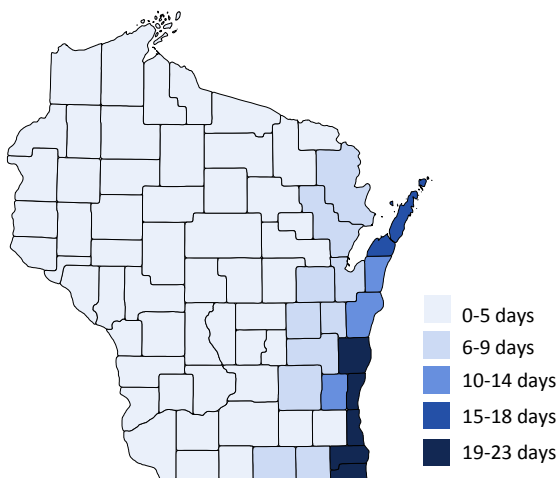
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

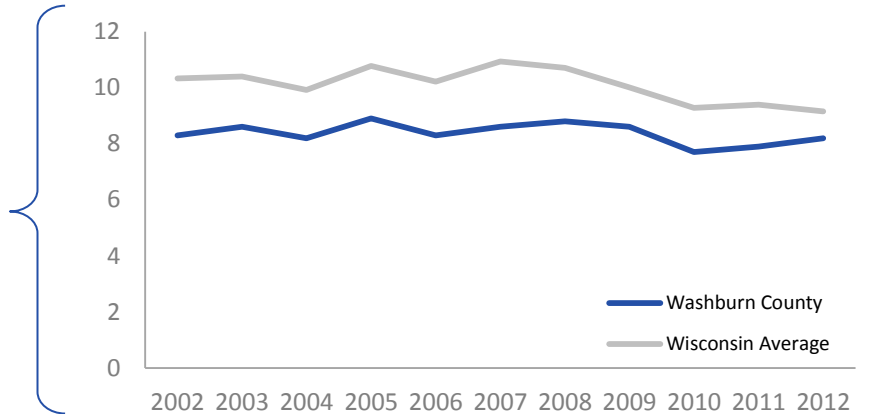
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

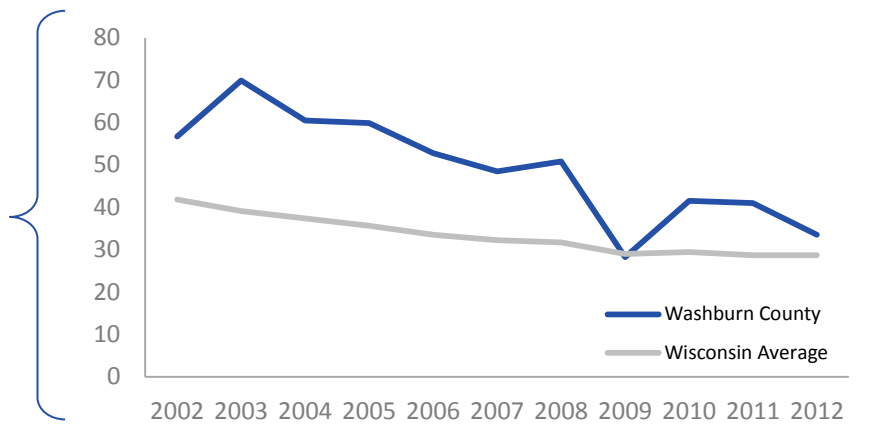
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



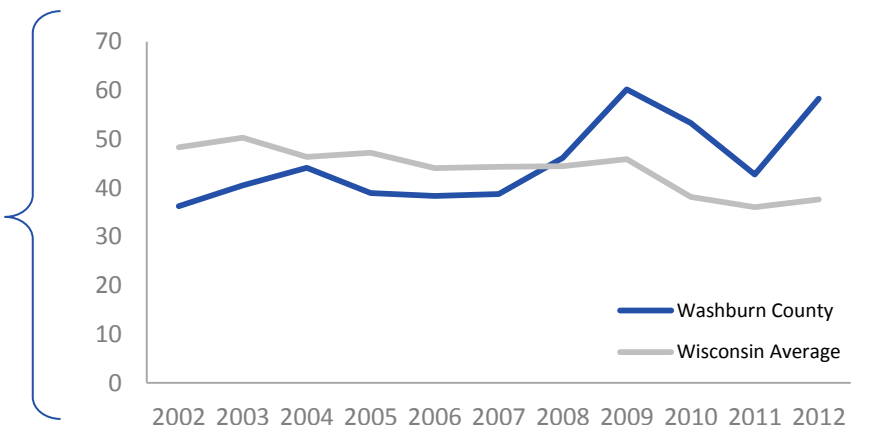
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.

WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WASHINGTON COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WASHINGTON COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 4.4% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 4.0 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 9.9 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 2.2 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 17.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 23.9 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 26.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 1.7 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.4 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 82.4% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 12 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WASHINGTON COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **4.0**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **4.4%**

CHILDHOOD LEAD POISONING

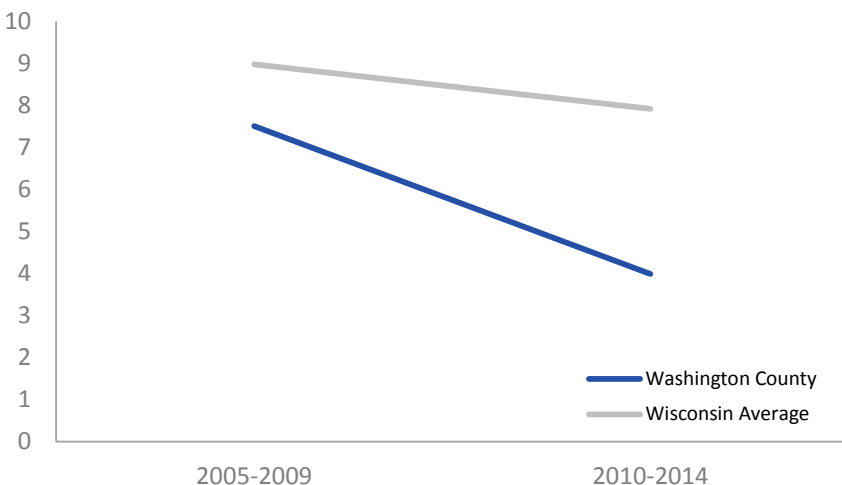
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g}/\text{dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WASHINGTON COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

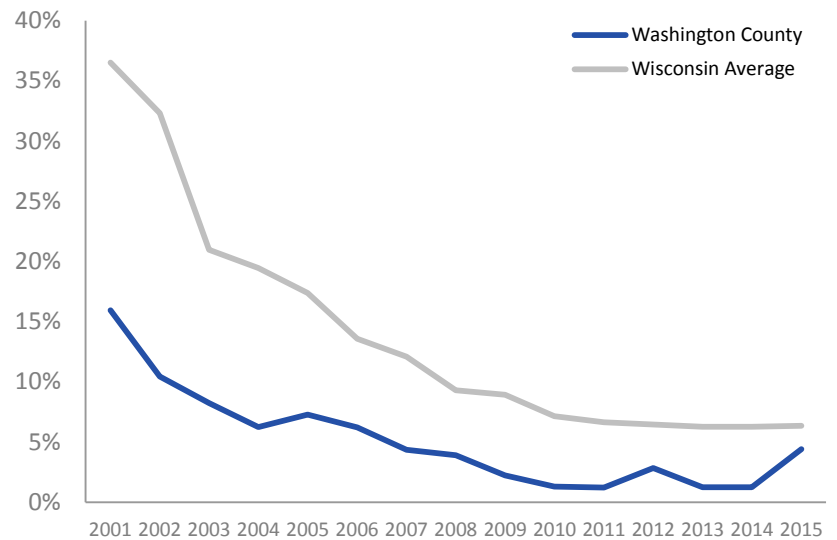
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

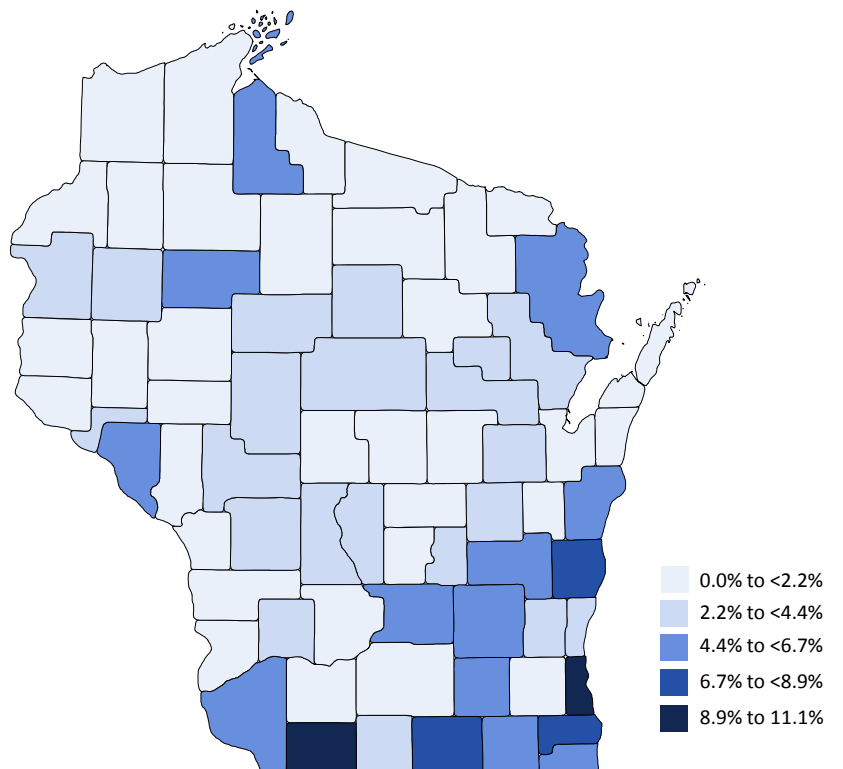
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WASHINGTON COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

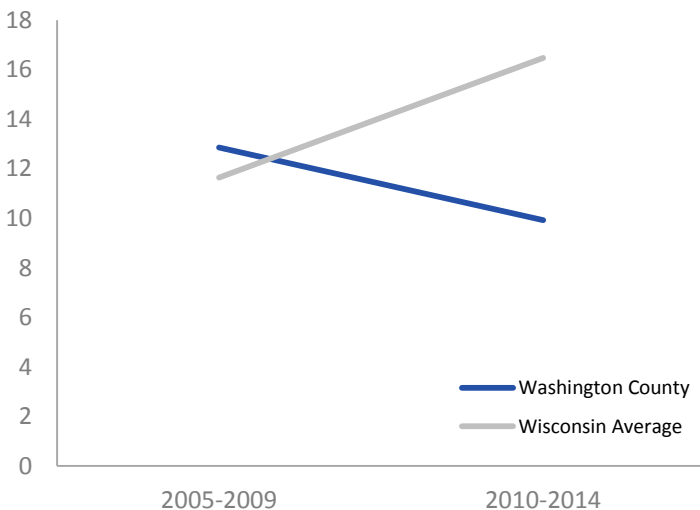
✔ **9.9**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✔ **2.2**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✔ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

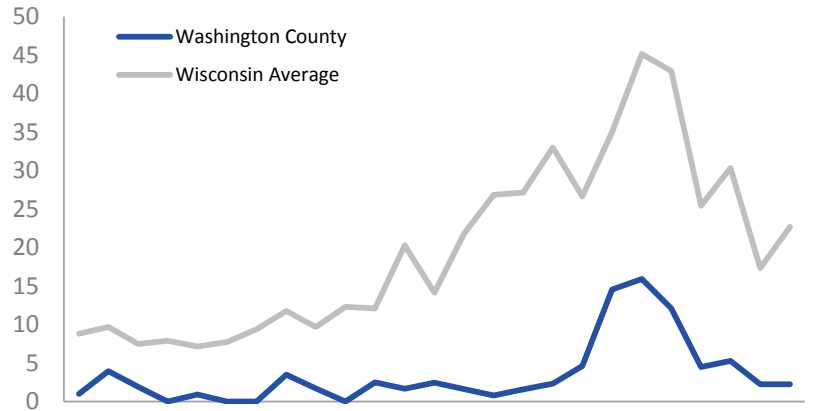
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

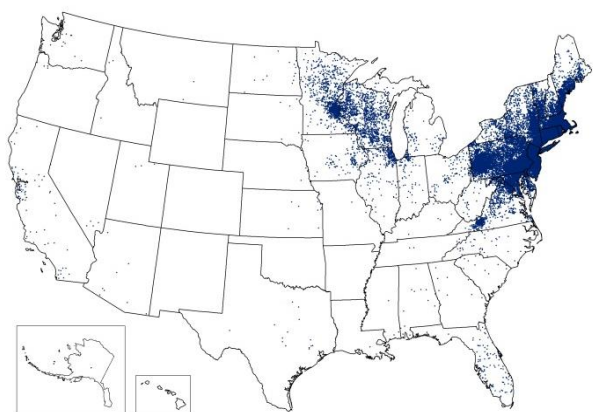
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001

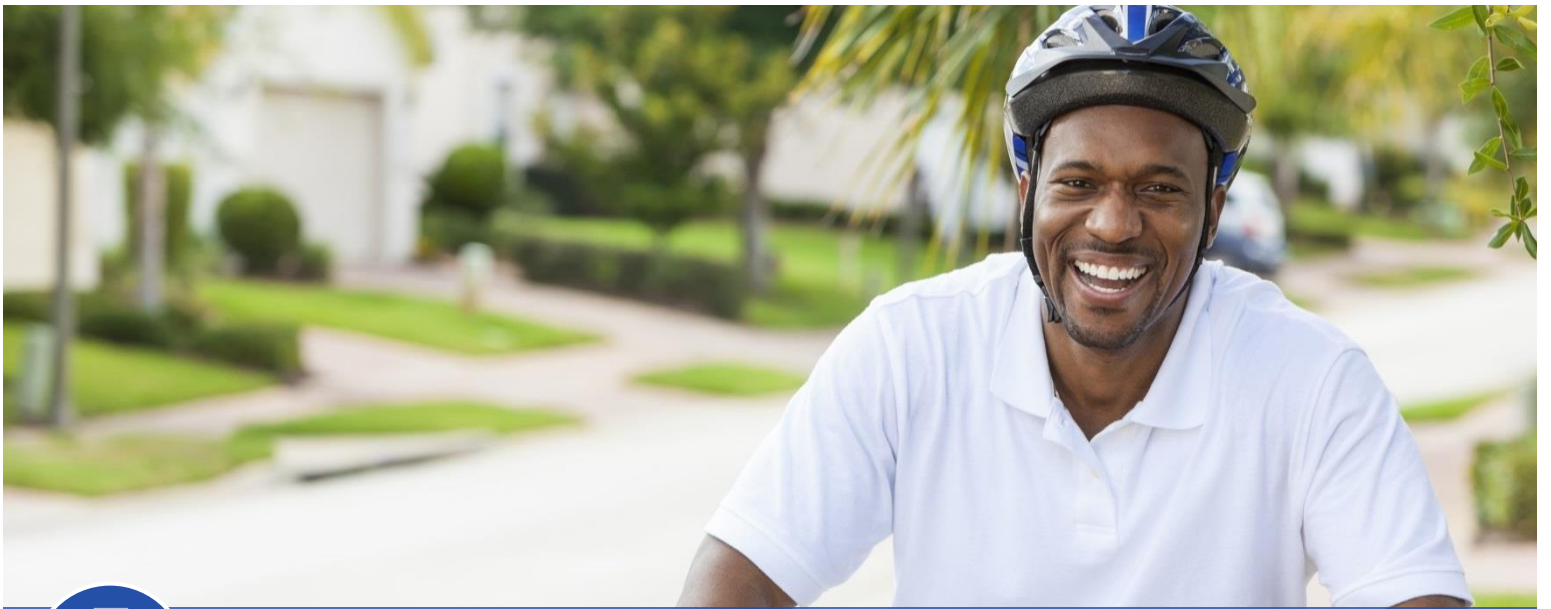


2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES WASHINGTON COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **17.5**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **23.9**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

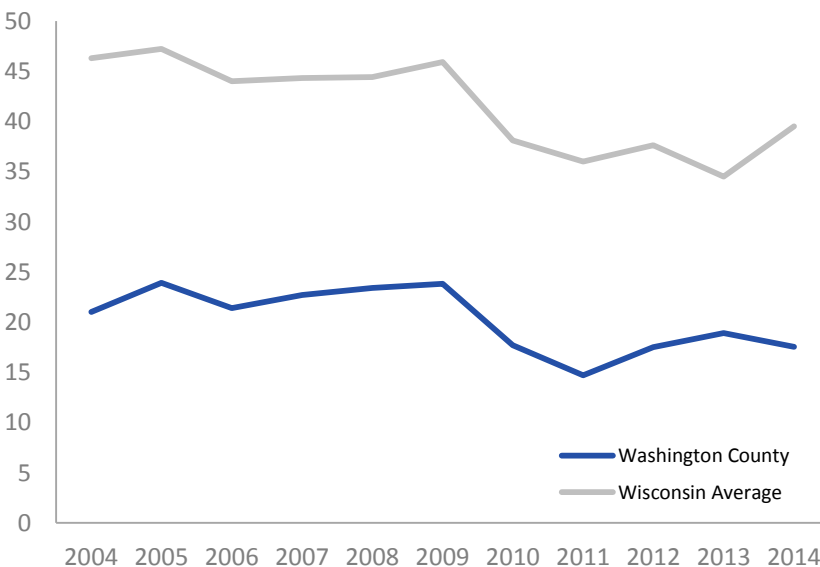
✓ **57.3**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **26.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

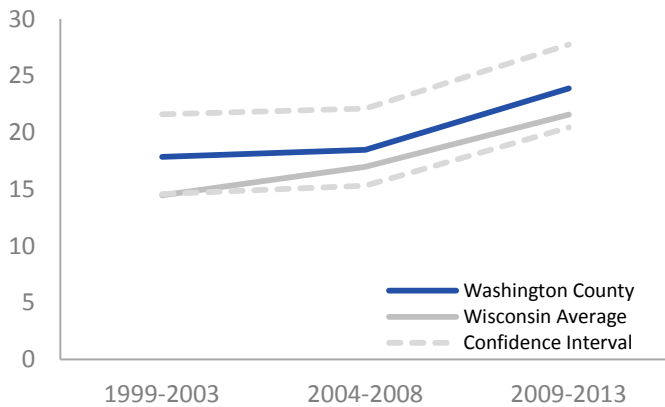
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

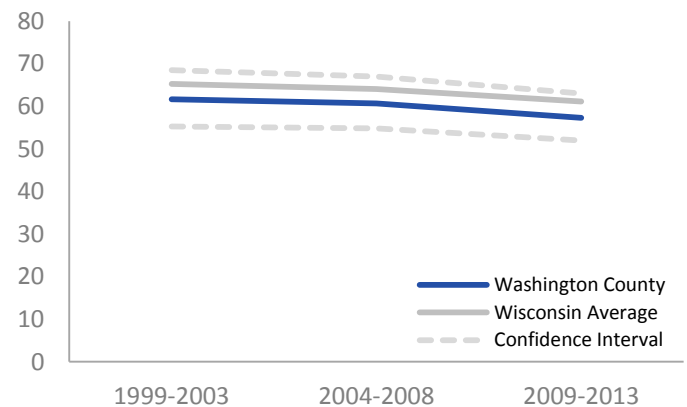
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

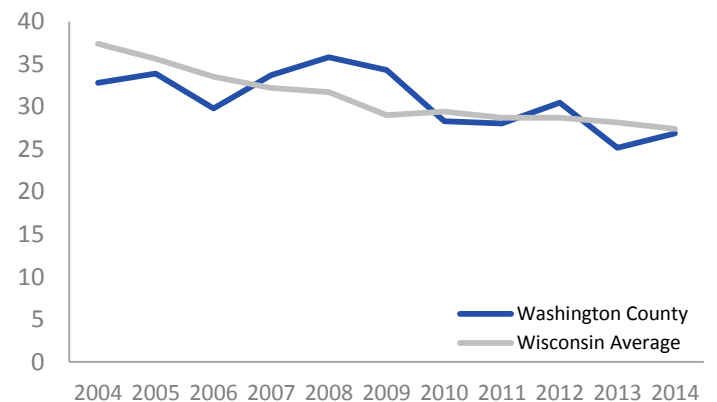
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WASHINGTON

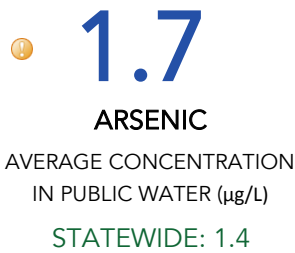
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

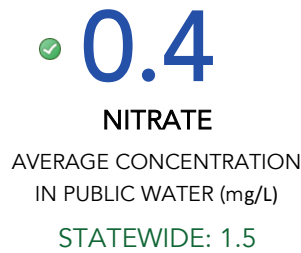
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

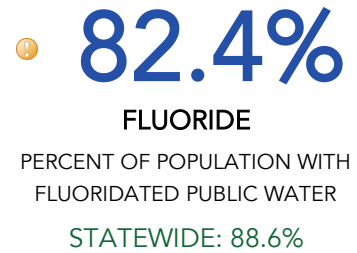
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



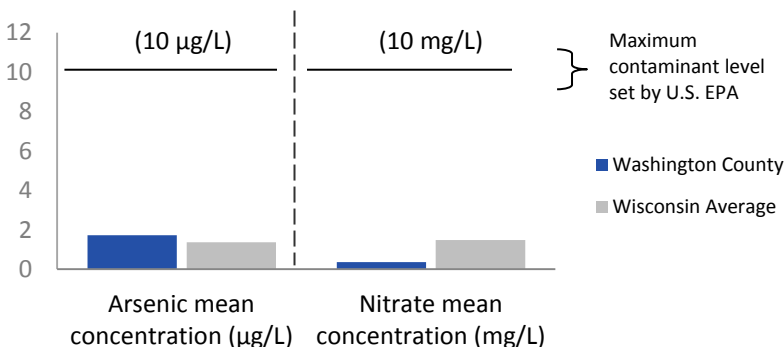
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY WASHINGTON COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

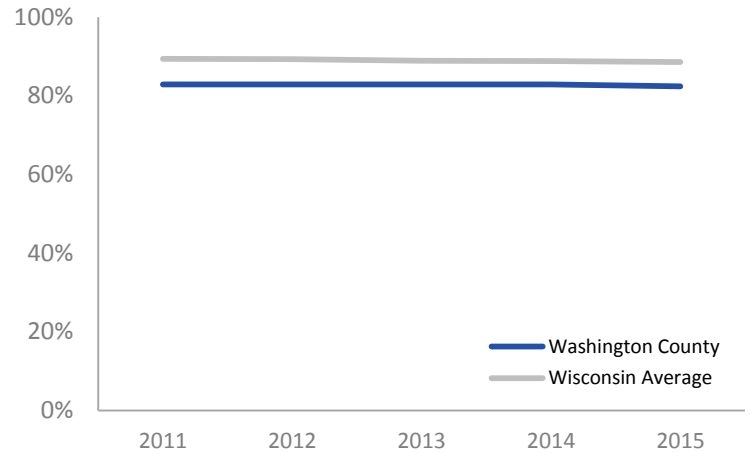
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

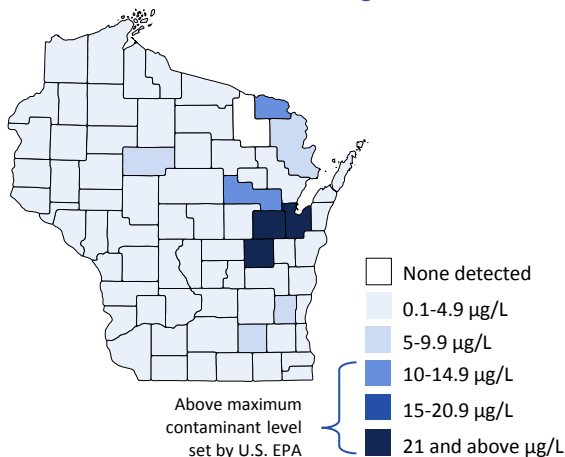
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

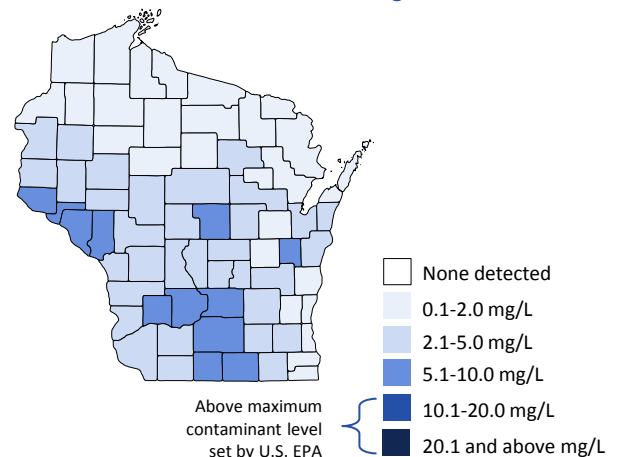
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



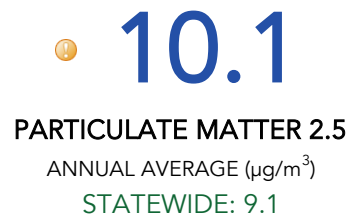


AIR QUALITY WASHINGTON COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

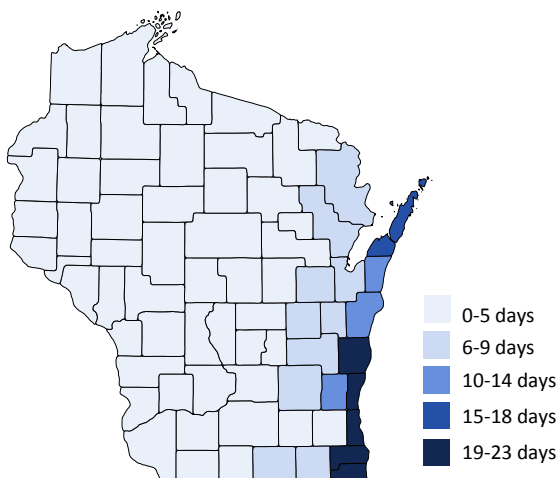
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

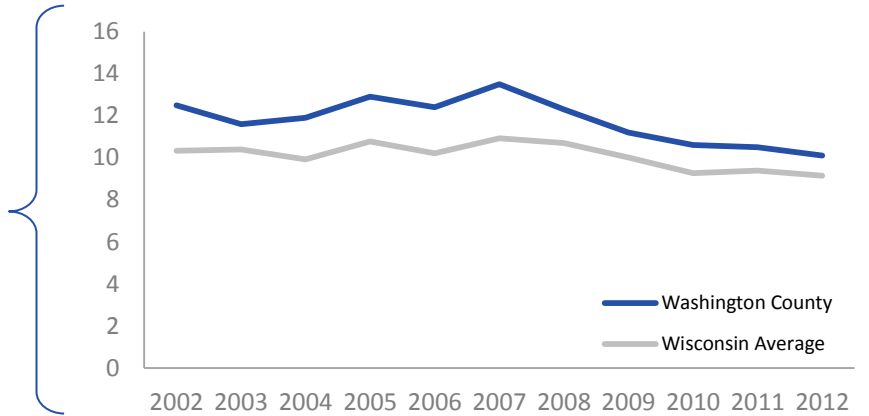


AIR QUALITY WASHINGTON COUNTY

PARTICULATE MATTER 2.5

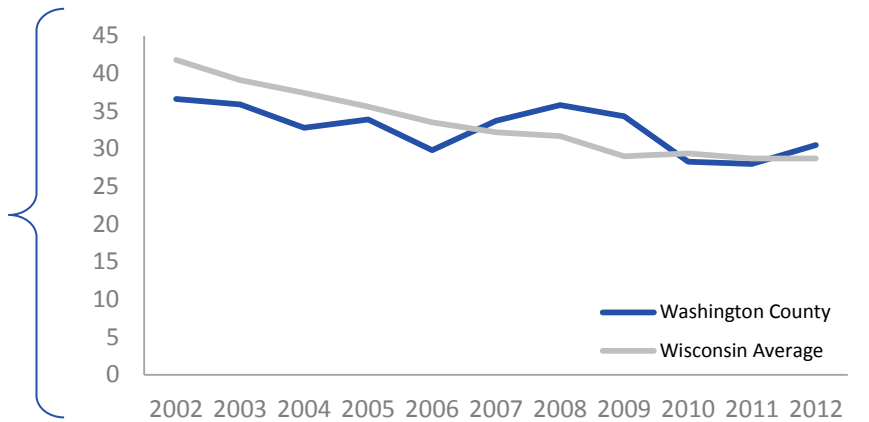
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



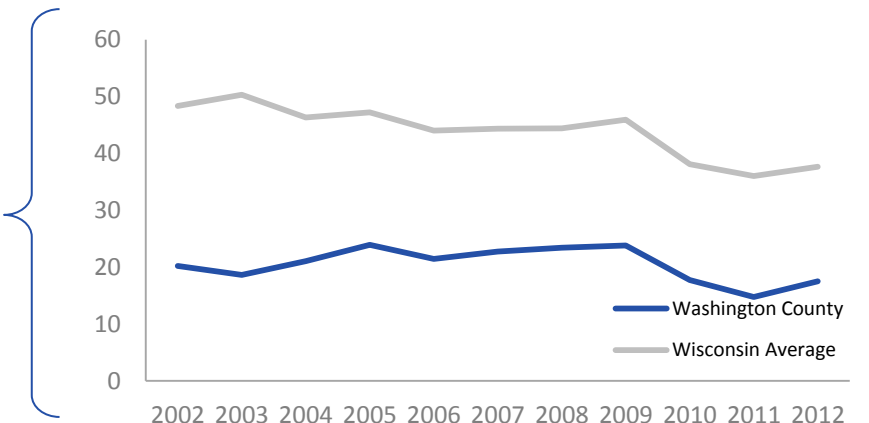
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WAUKESHA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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WAUKESHA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.2% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

✓ 6.4 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 11.0 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 10.3 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 16.7 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 25.1 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 19.7 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 2.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.5 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 80.5% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 2 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WAUKESHA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

✓ **6.4**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✓ **1.2%**

CHILDHOOD LEAD POISONING

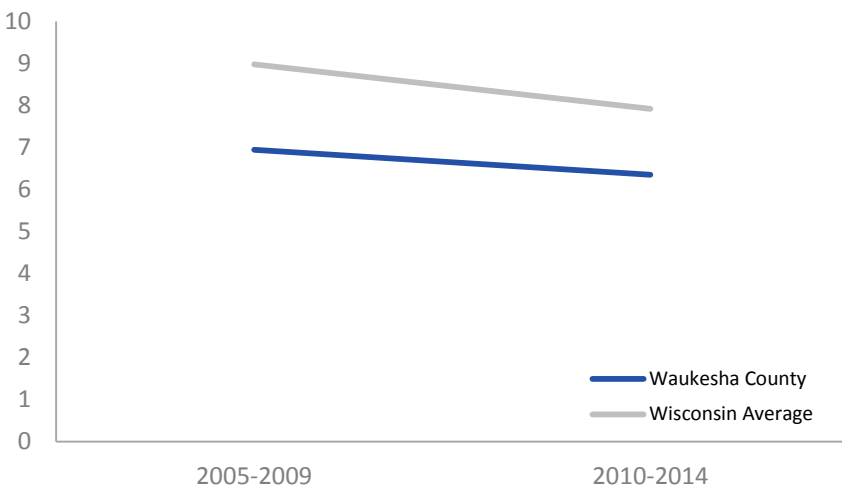
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🔴 Above state value ✓ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WAUKESHA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

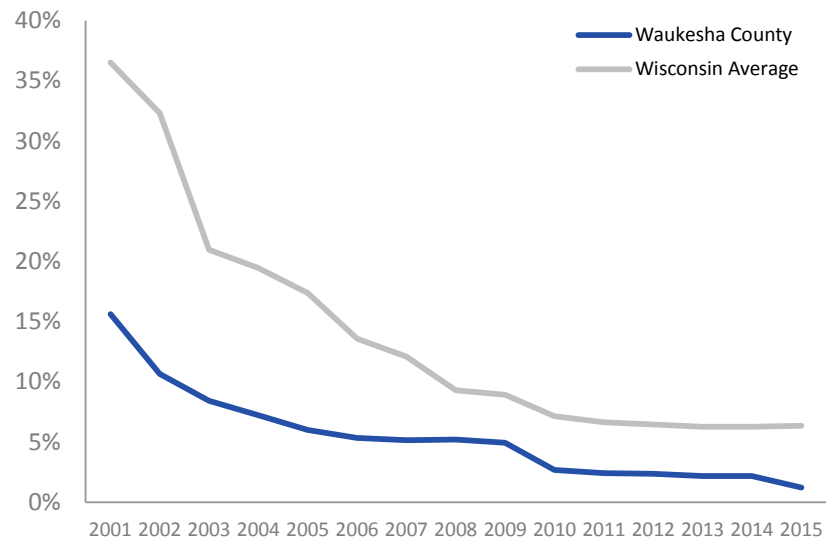
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

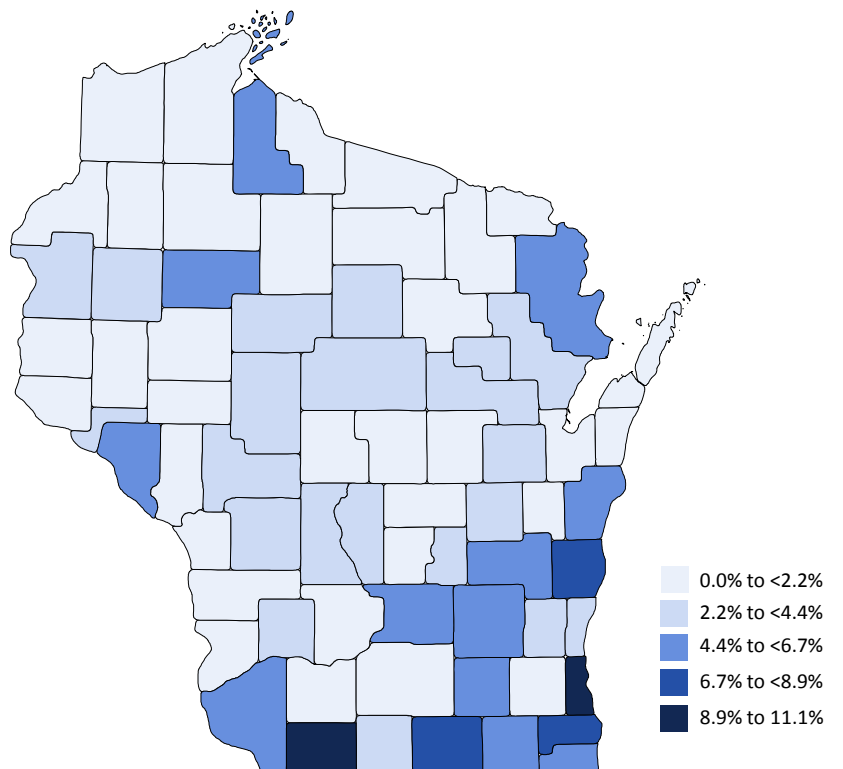
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WAUKESHA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

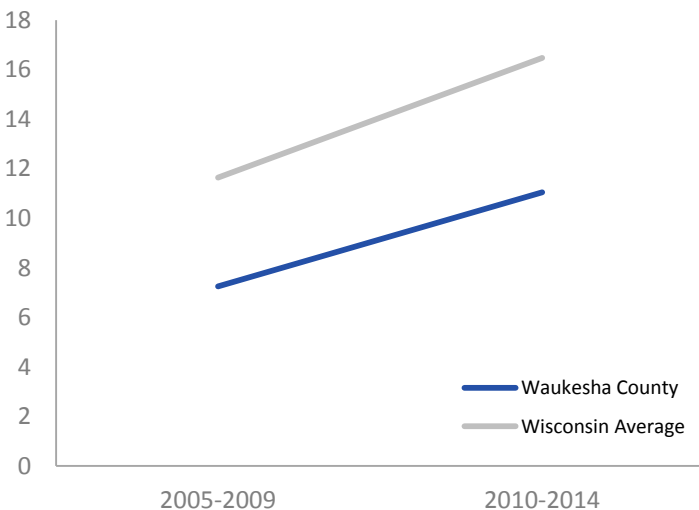
✔ **11.0**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✔ **10.3**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⚠ Above state value
 ✔ At or below state value
 ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

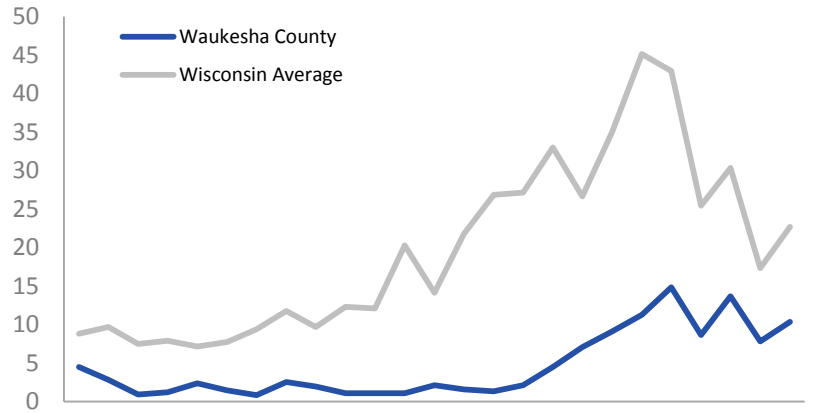
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

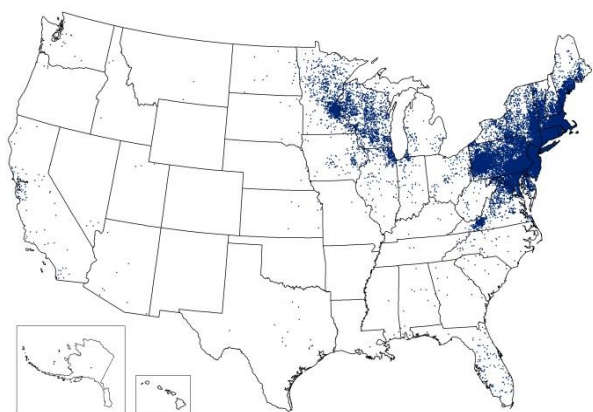
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES WAUKESHA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **16.7**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

⚠ **25.1**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

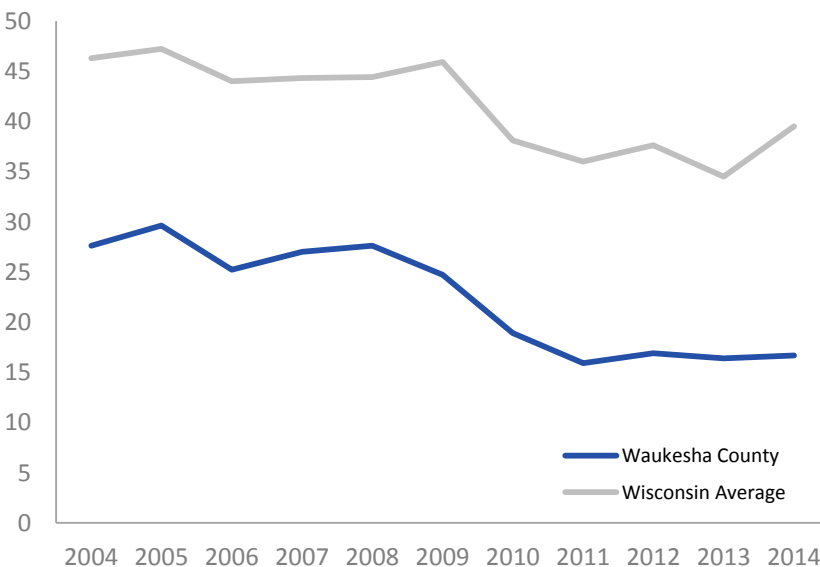
✓ **54.7**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

✓ **19.7**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

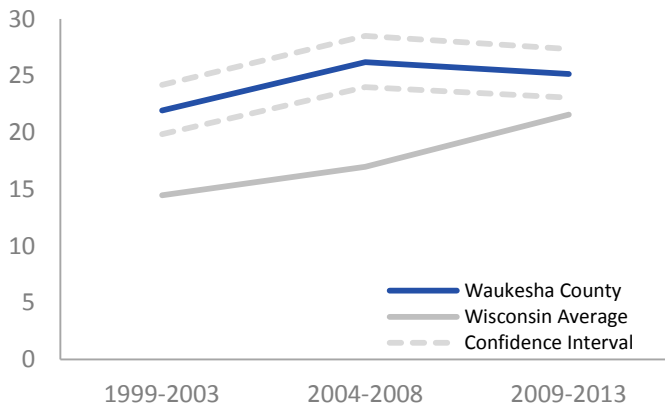
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

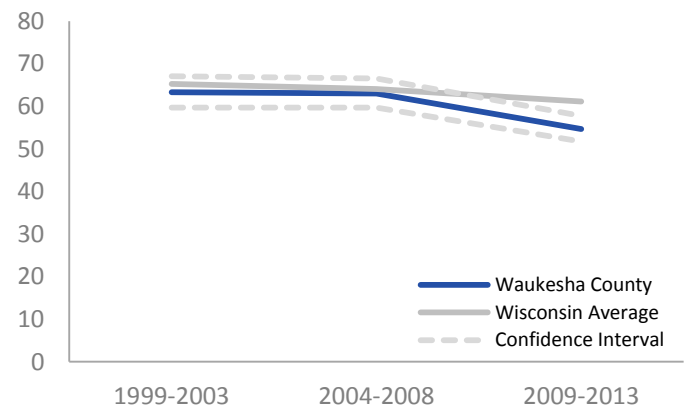
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

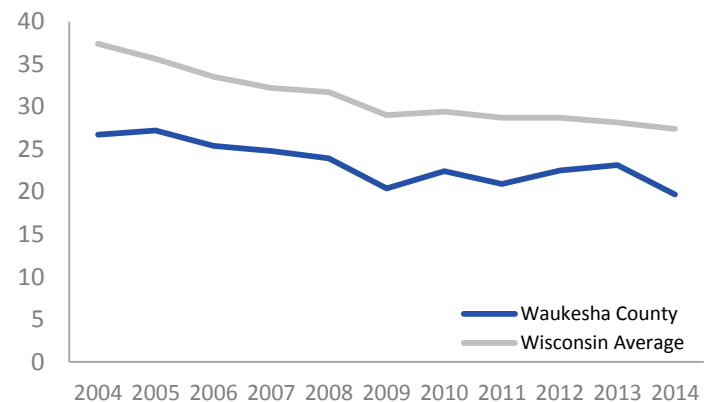
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WAUKESHA COUNTY

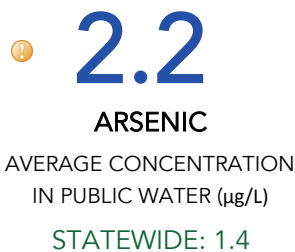
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

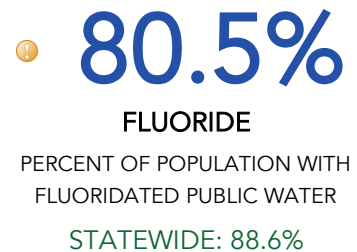
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



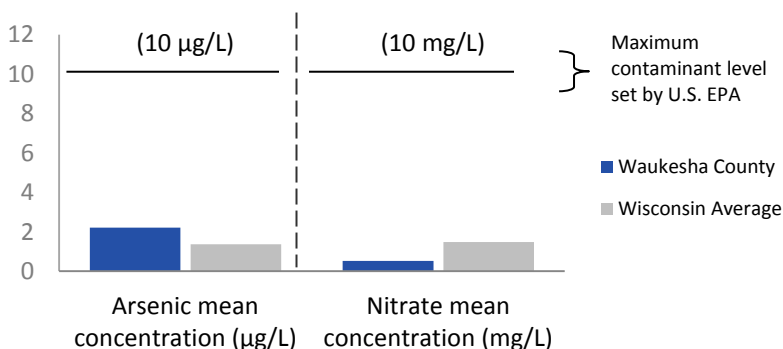
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY WAUKESHA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

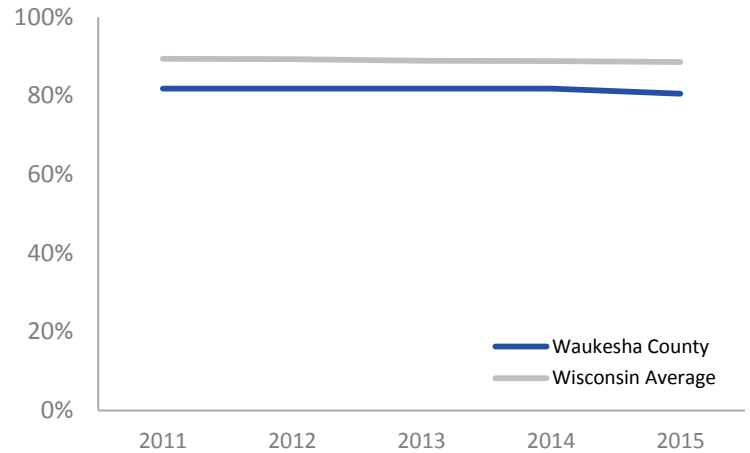
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

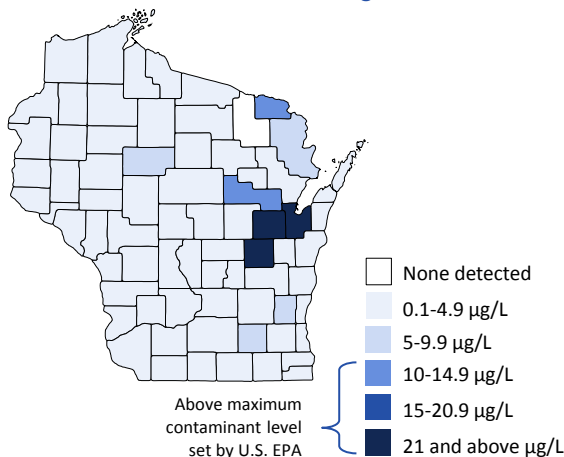
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

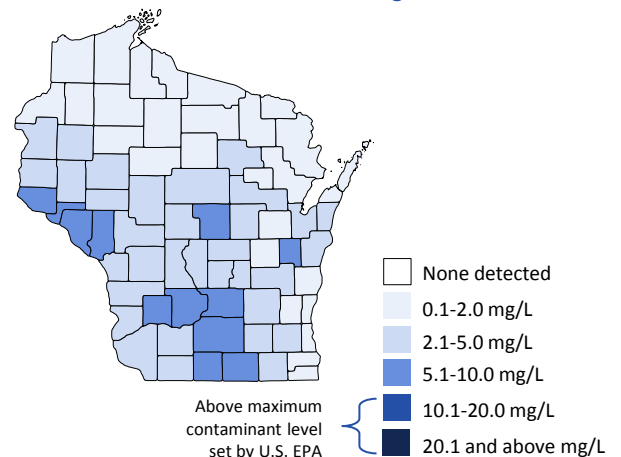
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY WAUKESHA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



2

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



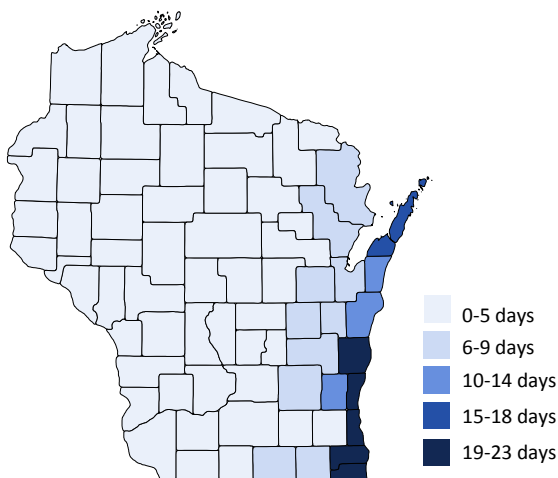
10.7

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value
 ✔ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

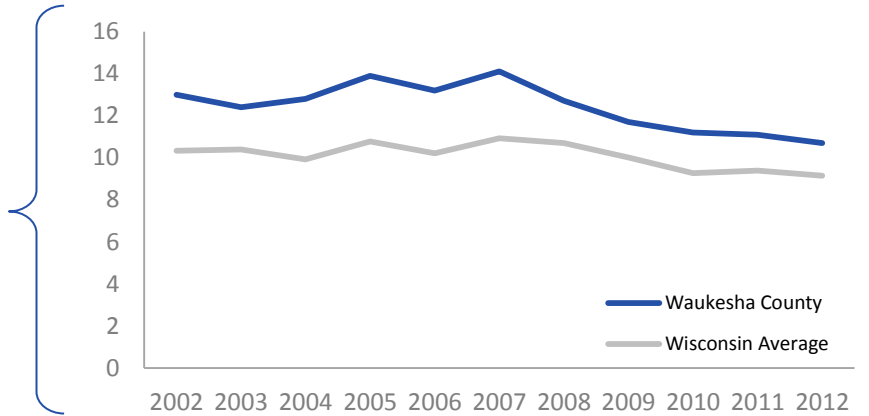
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

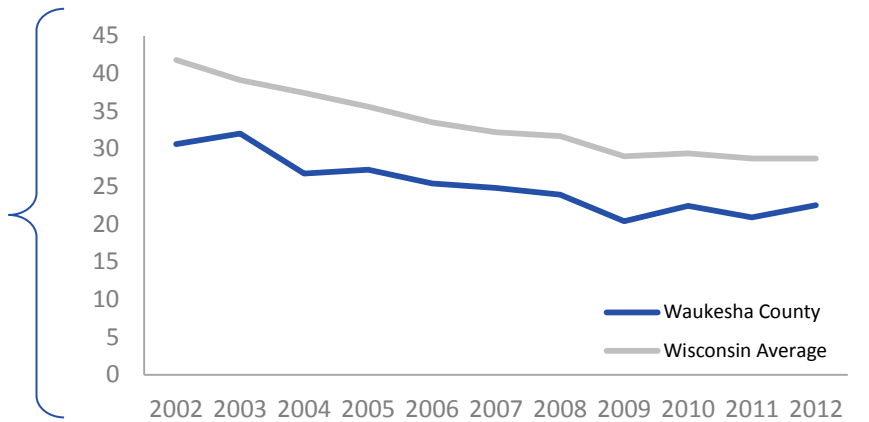
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



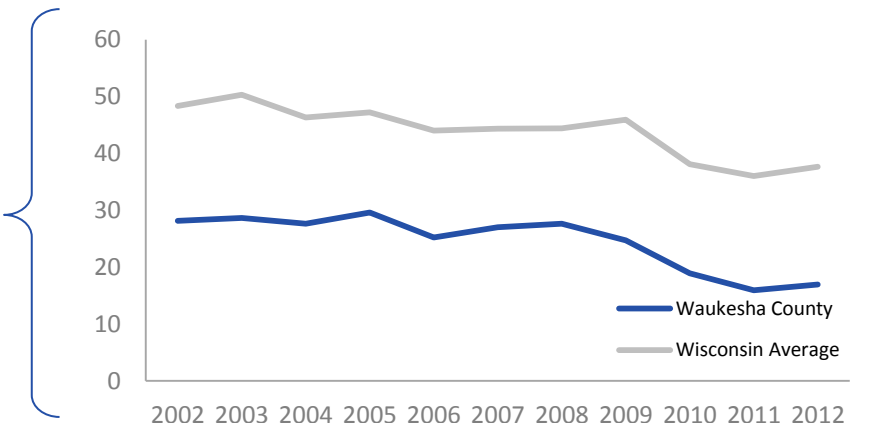
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WAUPACA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WAUPACA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.3% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.8 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 22.2 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 38.5 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

⚠ 45.5 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 25.0 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 21.1 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

⚠ 3.2 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.7 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 67.7% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 3 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 1 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WAUPACA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **8.8**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.3%**

CHILDHOOD LEAD POISONING

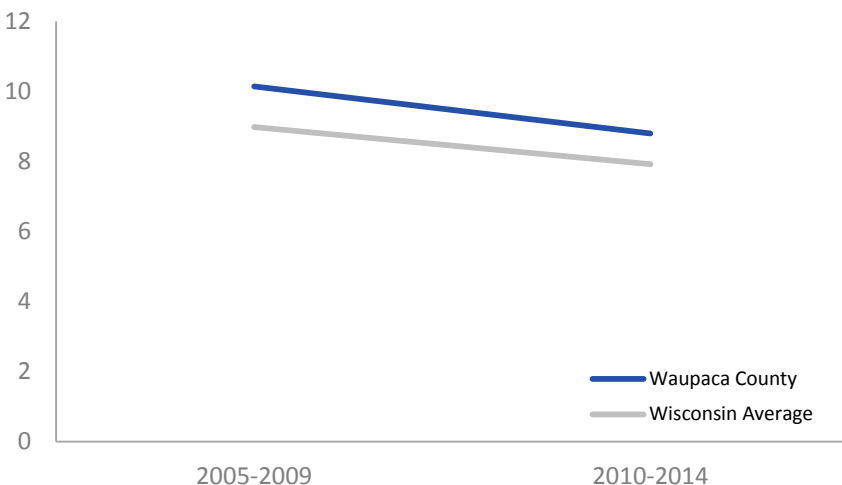
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WAUPACA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

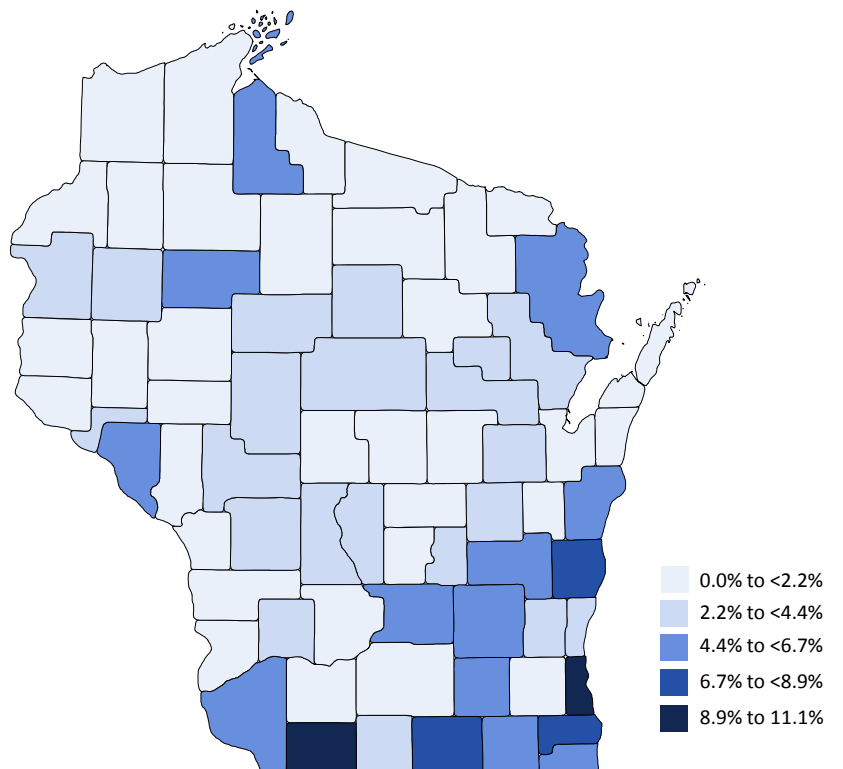
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WAUPACA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

22.2

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

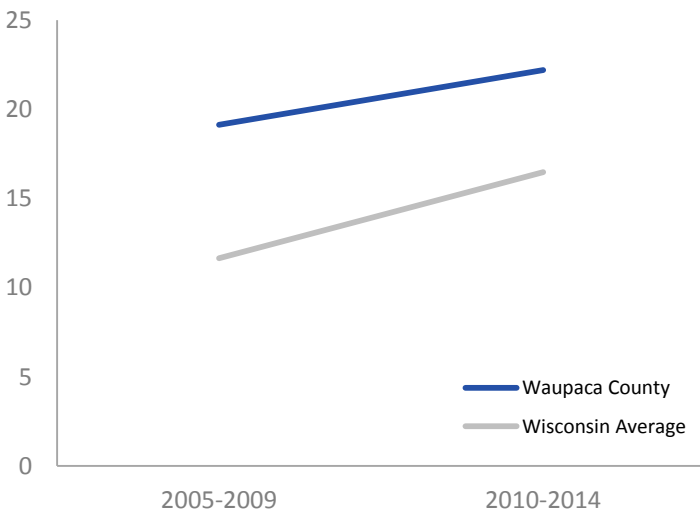
38.5

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

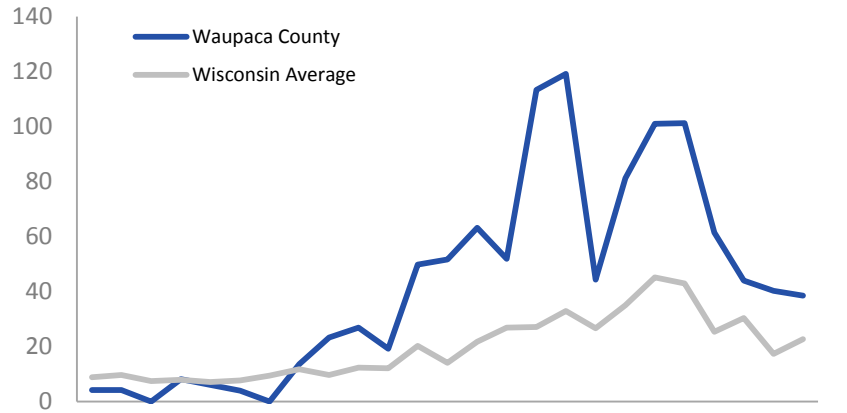
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

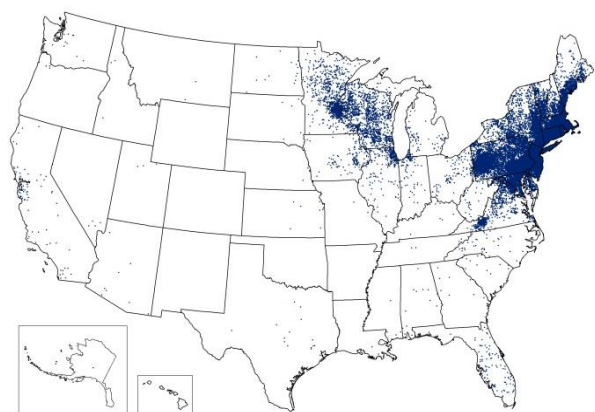
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES

WAUPACA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

45.5
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

25.0
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

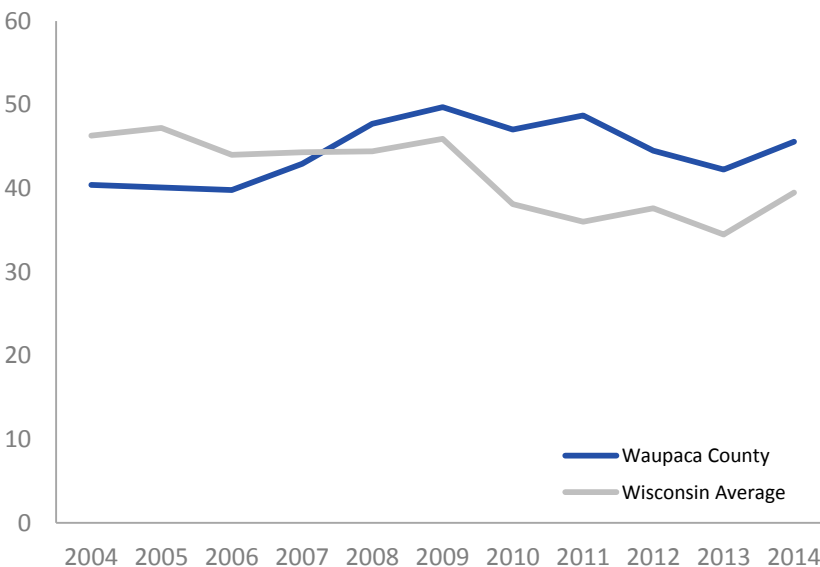
64.7
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

21.1
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⬇️ Above state value ✔️ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

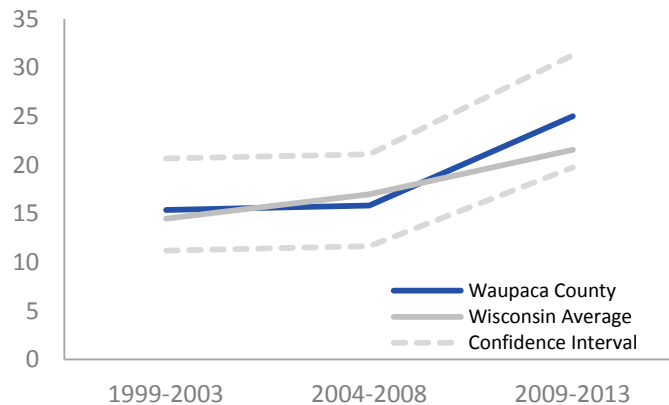
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

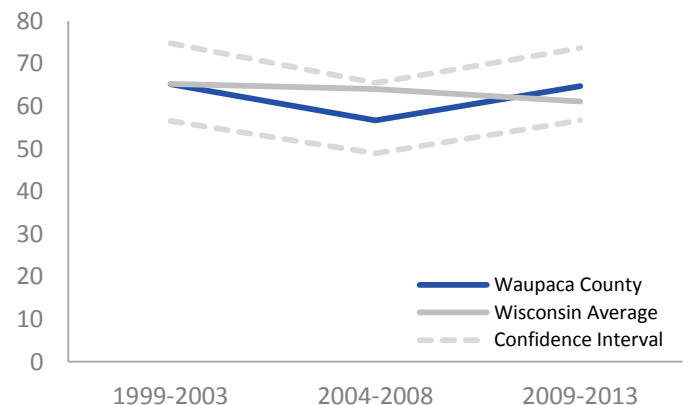
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

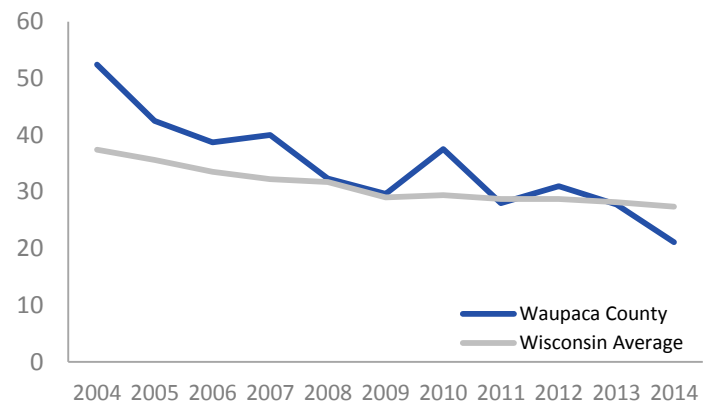
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WAUPACA COUNTY

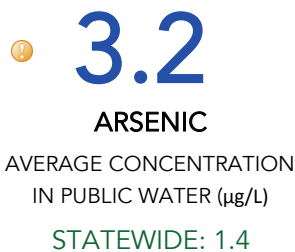
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

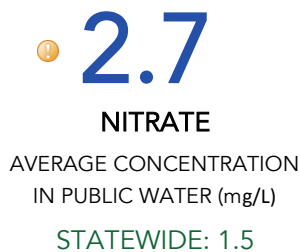
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

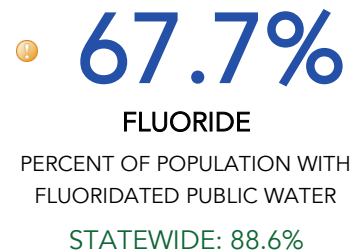
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



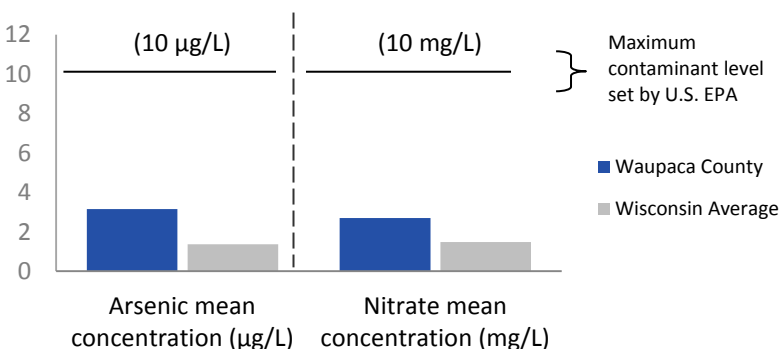
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY WAUPACA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

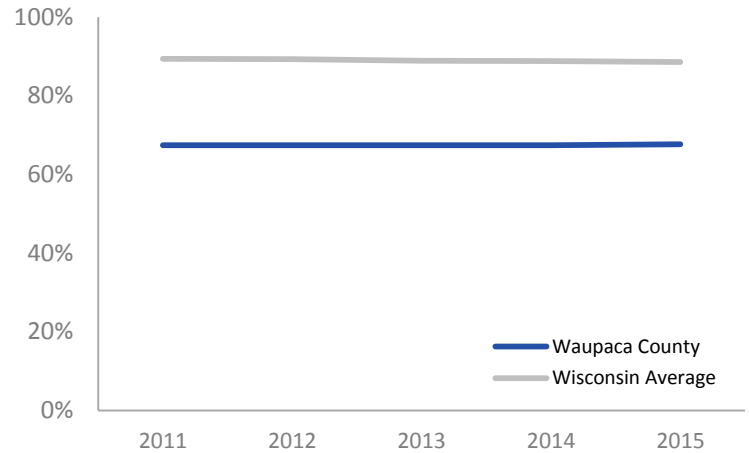
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

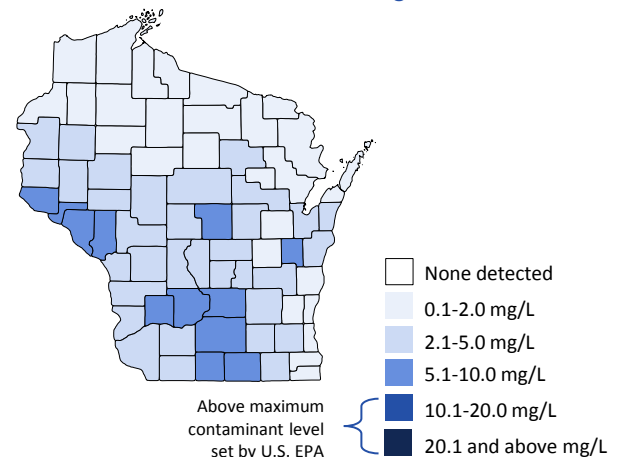
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY WAUPACA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



3

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



1

PARTICULATE MATTER 2.5
ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



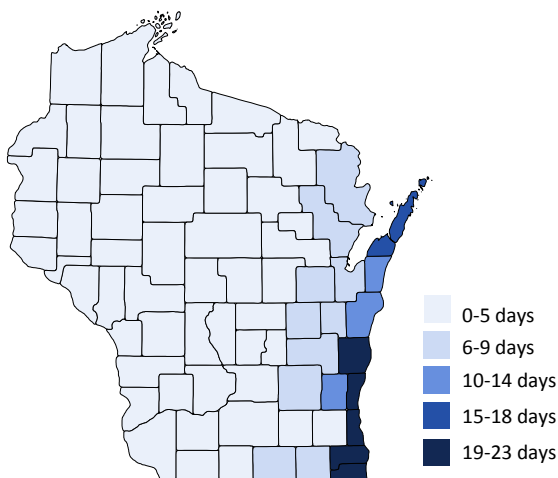
9.2

PARTICULATE MATTER 2.5
ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

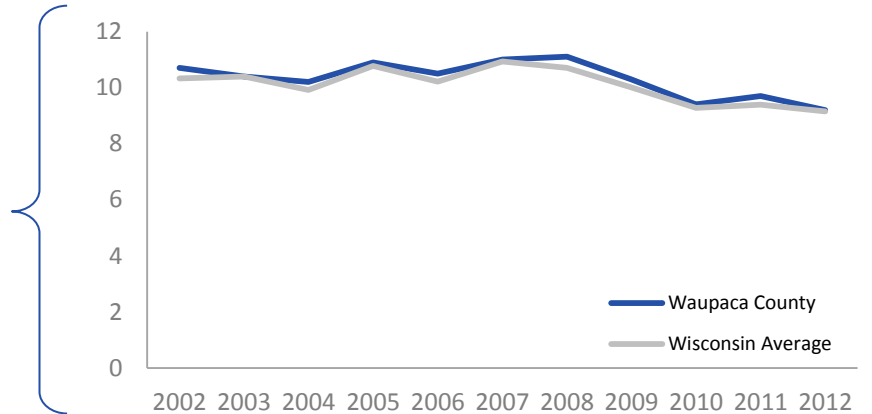


AIR QUALITY WAUPACA COUNTY

PARTICULATE MATTER 2.5

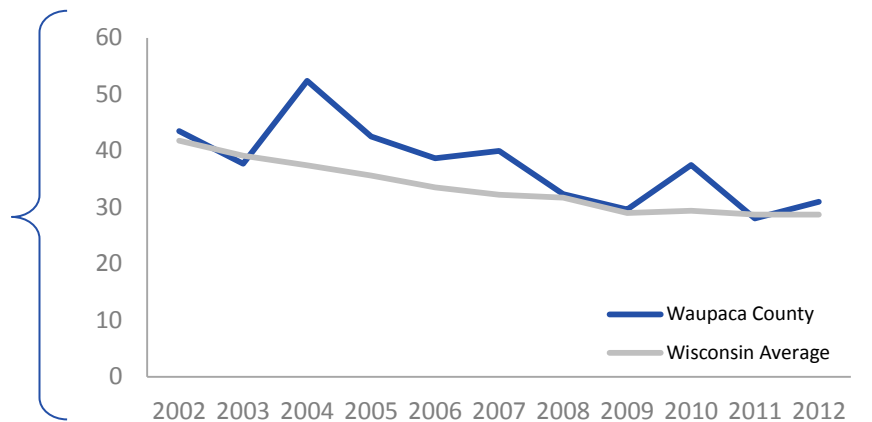
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



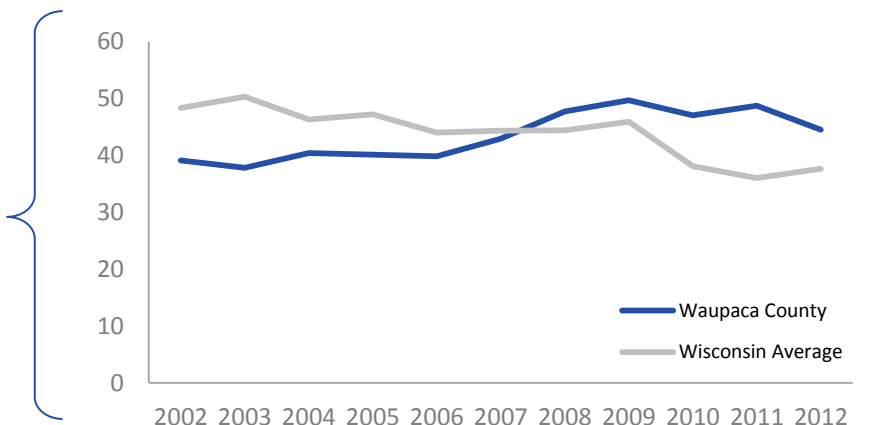
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WAUSHARA COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WAUSHARA COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 2.1% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 10.9 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 23.1 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 58.3 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 25.4 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 20.5 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 28.6 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.1 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

⚠ 2.6 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

⚠ 40.8% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 3 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WAUSHARA COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **10.9**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **2.1%**

CHILDHOOD LEAD POISONING

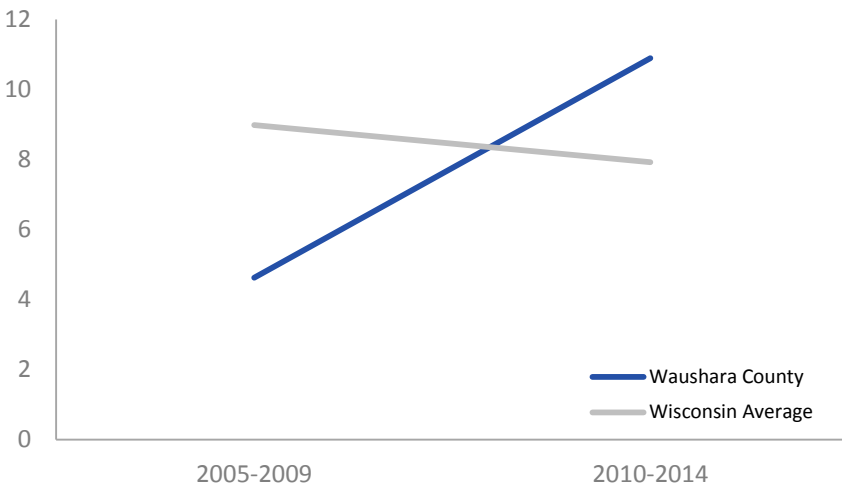
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WAUSHARA COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above $5 \mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to $5 \mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

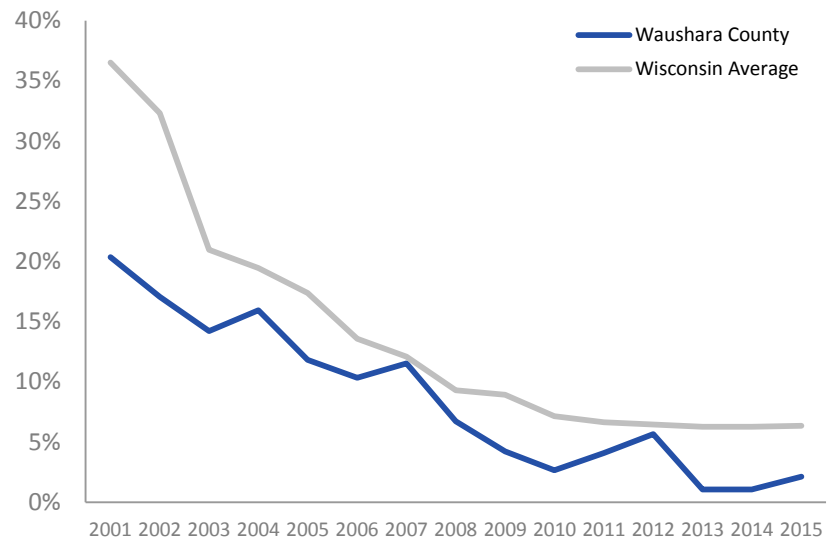
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

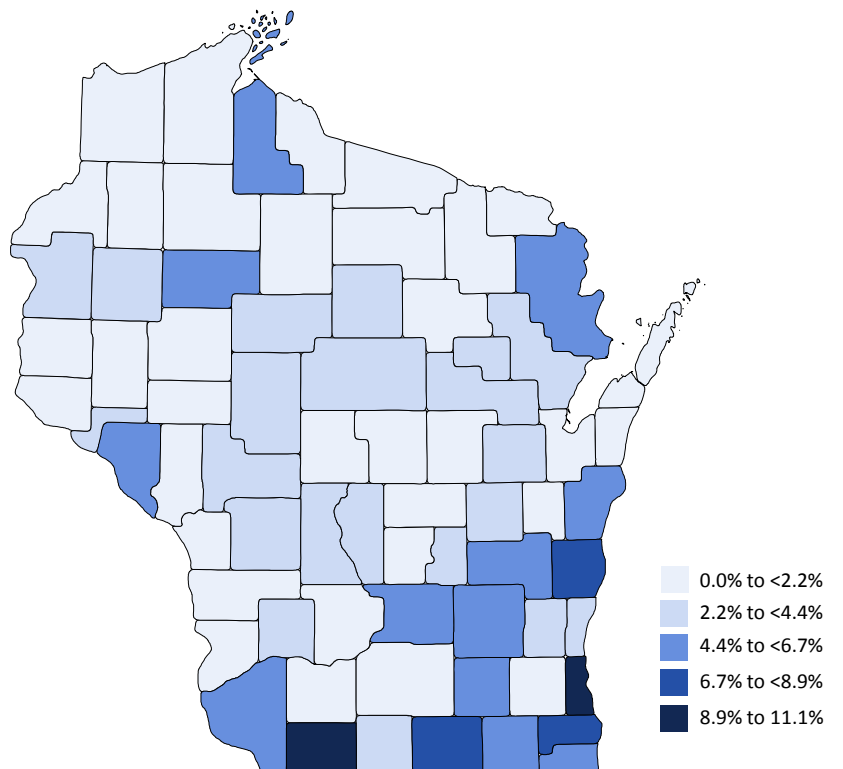
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WAUSHARA COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

23.1

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

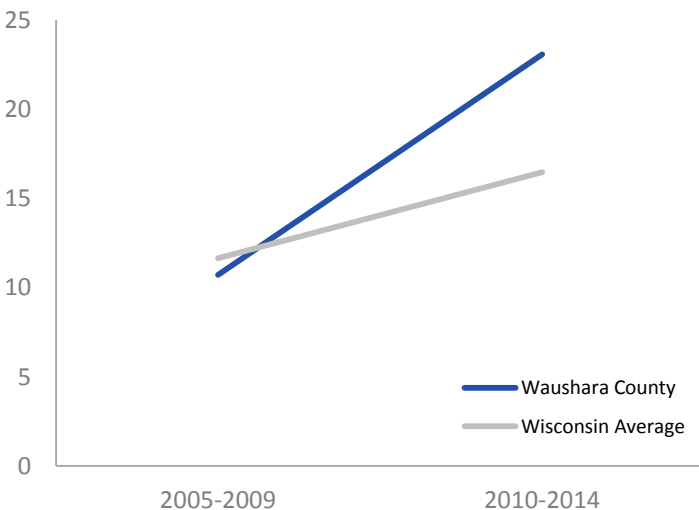
58.3

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

Above state value At or below state value Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

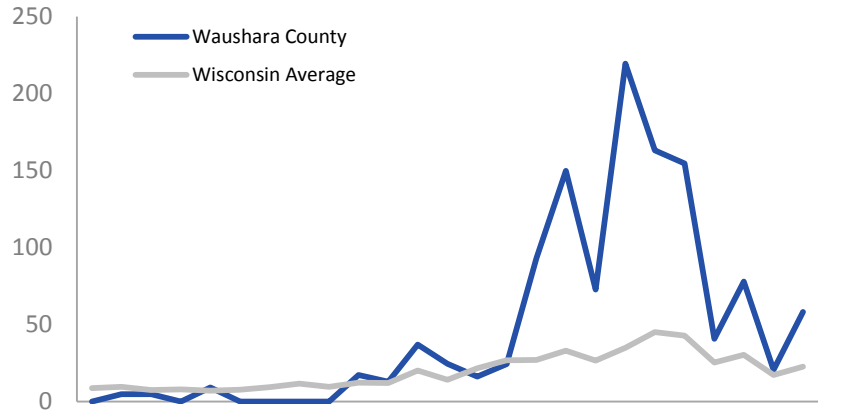
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

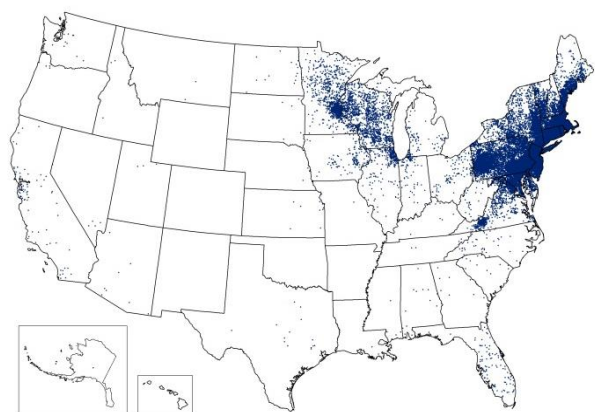
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES WAUSHARA COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **25.4**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **20.5**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

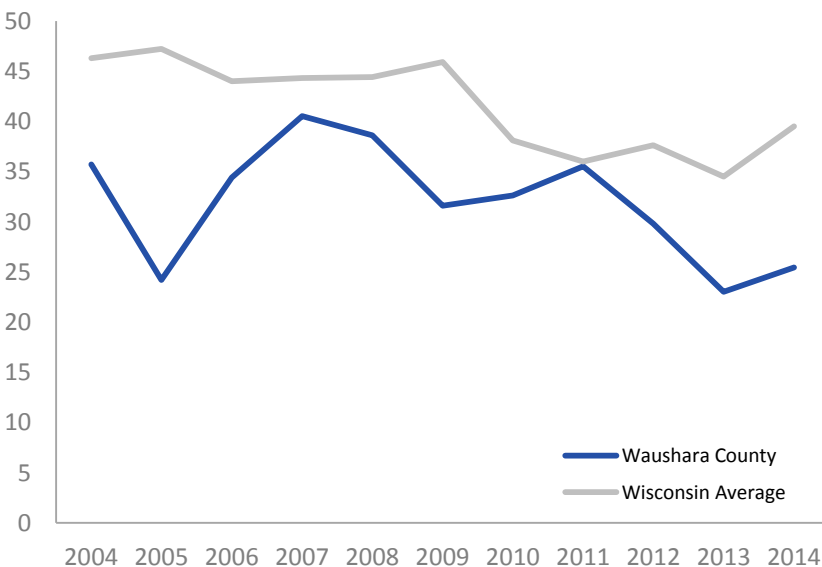
⚠ **72.0**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **28.6**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

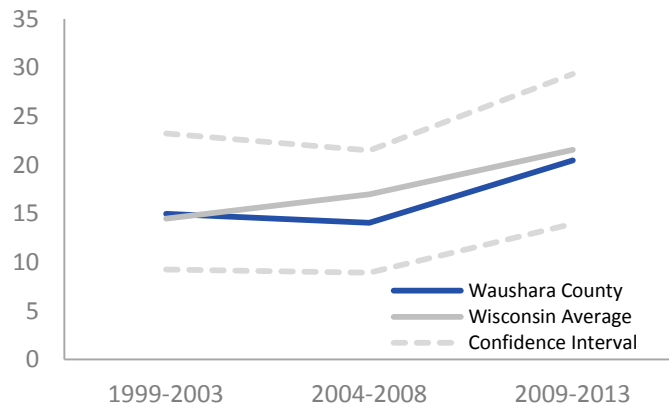
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

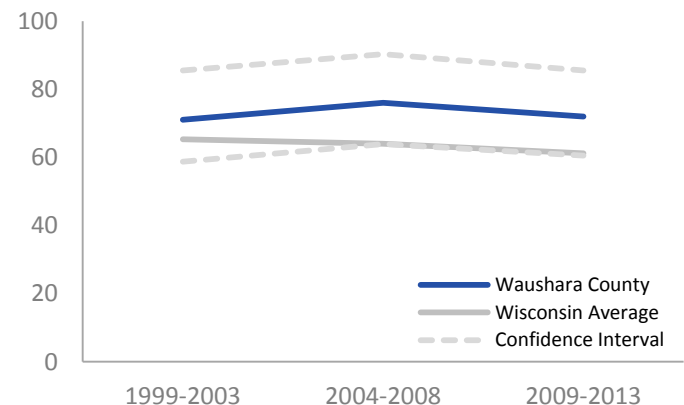
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

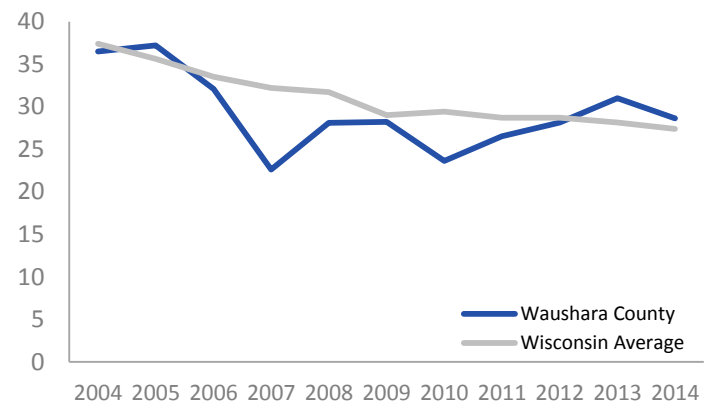
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WAUSHARA COUNTY

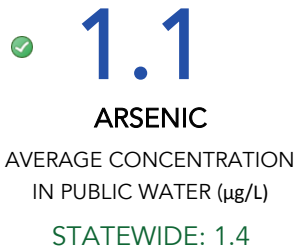
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

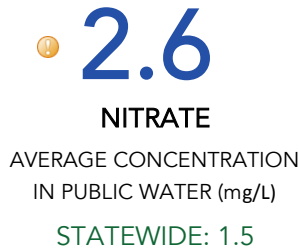
Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

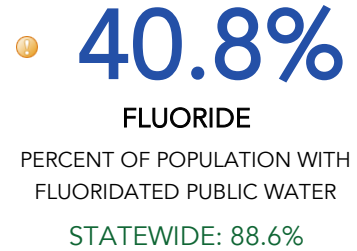
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⚠ Above state value (with exception of fluoride where below state value is not preferred)



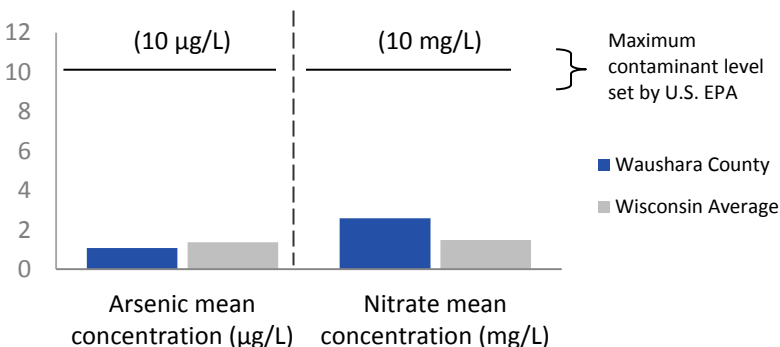
✅ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY WAUSHARA COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

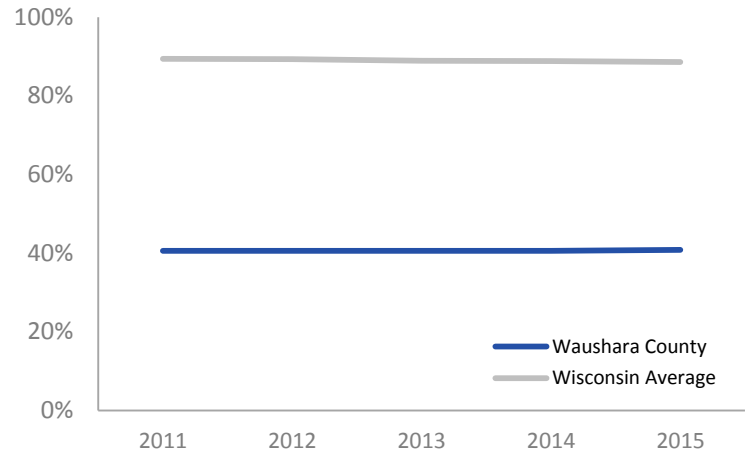
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

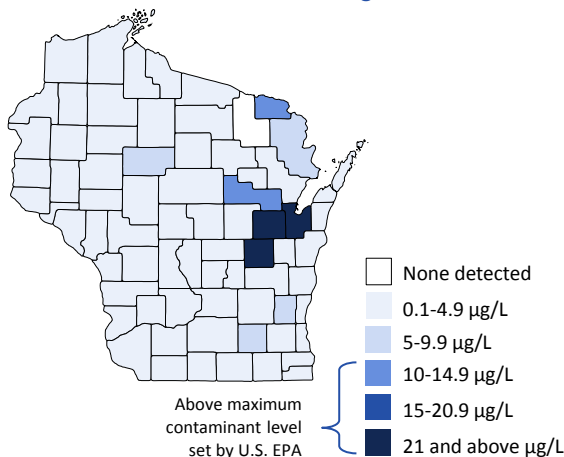
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

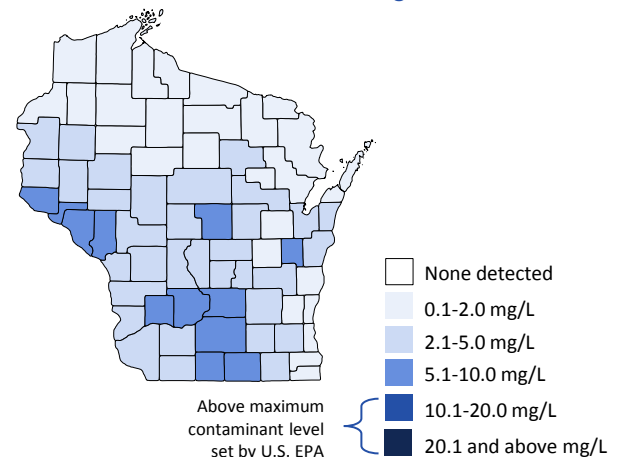
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)





AIR QUALITY WAUSHARA COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



3

OZONE

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 3.8



0

PARTICULATE MATTER 2.5

ANNUAL DAYS ABOVE STANDARD
STATEWIDE: 0.3



9.2

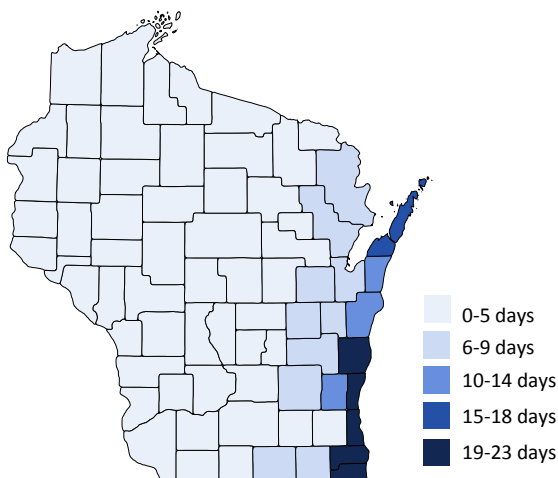
PARTICULATE MATTER 2.5

ANNUAL AVERAGE (µg/m³)
STATEWIDE: 9.1

● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

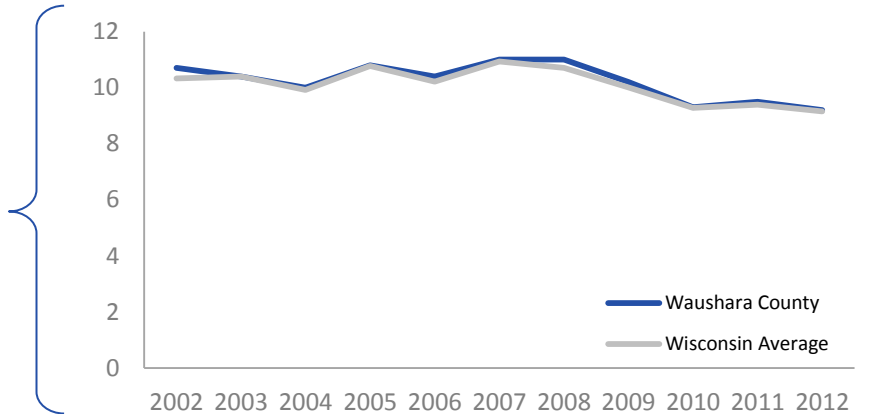
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

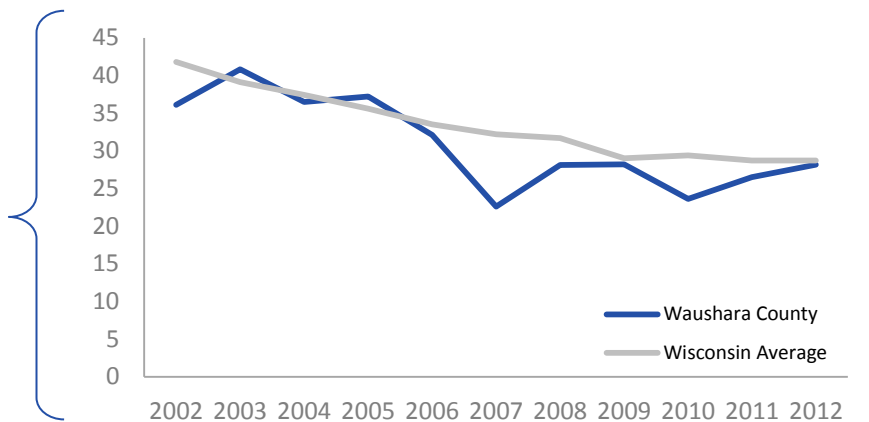
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



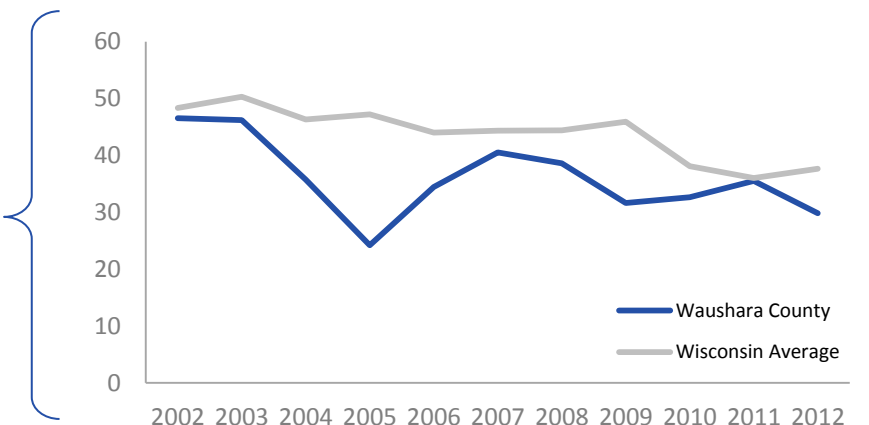
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

Wisconsin Environmental Public Health Tracking Program's Technical Advisory Group

Kevin Masarik, Center for Watershed Science and Education, University of Wisconsin-Extension

ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WINNEBAGO COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

dhstracking@wi.gov
608-267-2488



WINNEBAGO COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 3.7% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.7 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

✓ 16.4 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

✓ 4.1 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 27.2 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

⚠ 28.6 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

✓ 20.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 0.4 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 0.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 94.3% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

⚠ 5 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

⚠ 2 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WINNEBAGO COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚨 **8.7**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **3.7%**

CHILDHOOD LEAD POISONING

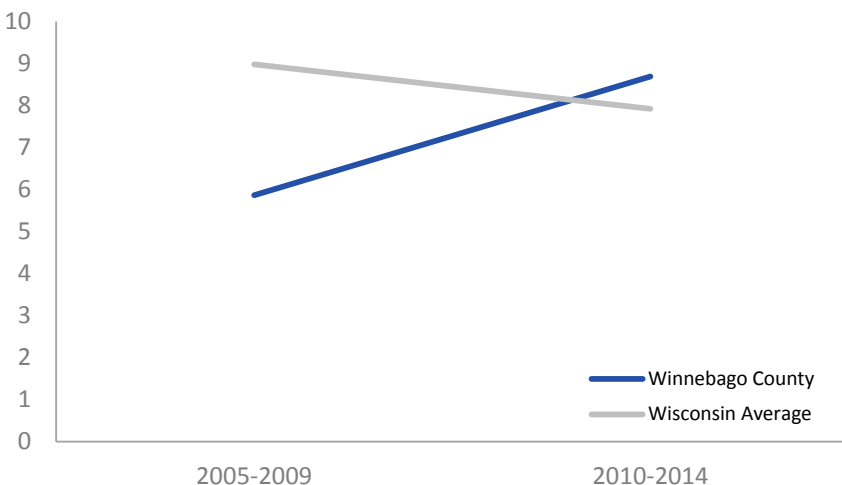
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚨 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WINNEBAGO COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

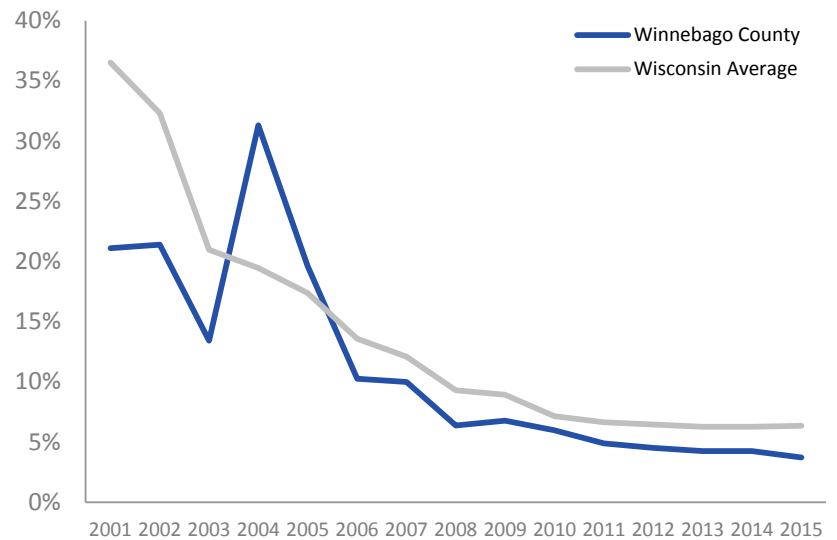
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

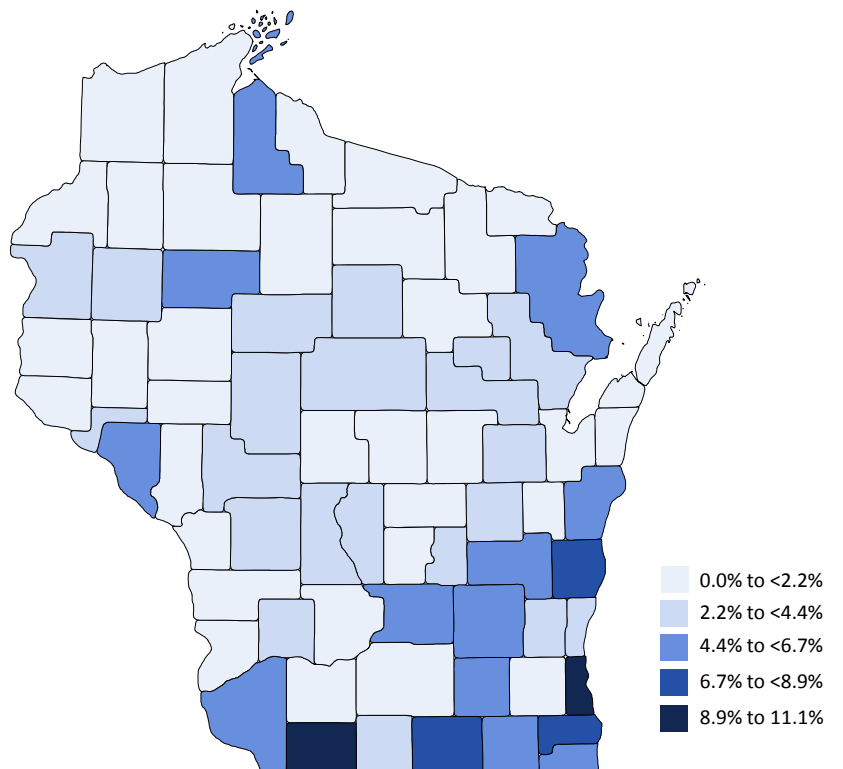
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WINNEBAGO COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

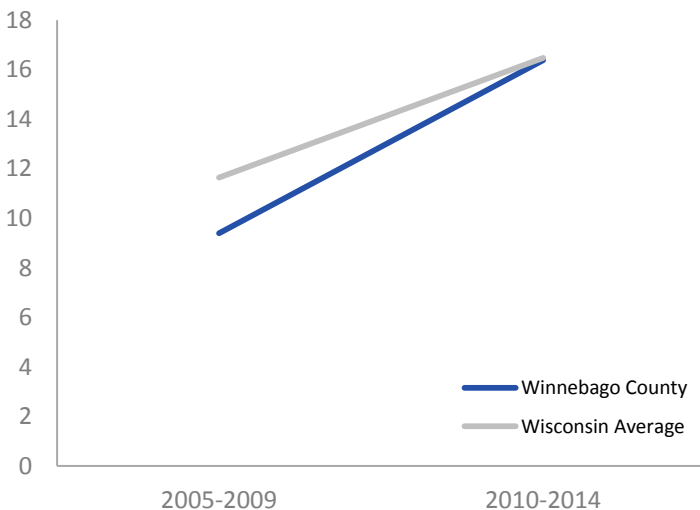
✓ **16.4**
HEAT STRESS
 RATE OF ER VISITS
 PER 100,000 PEOPLE
 STATEWIDE: 16.5

✓ **4.1**
LYME DISEASE
 RATE OF CASES
 PER 100,000 PEOPLE
 STATEWIDE: 22.7

⬆ Above state value ✓ At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

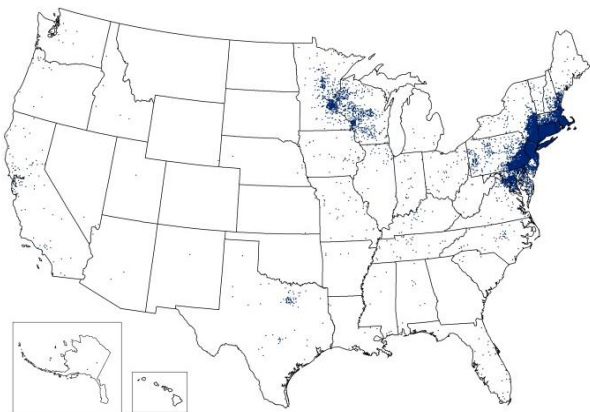
The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

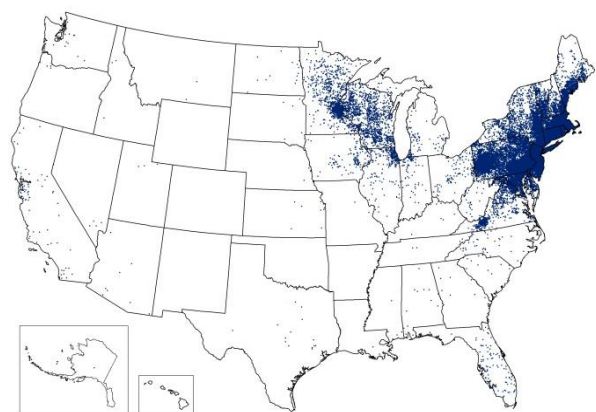
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015

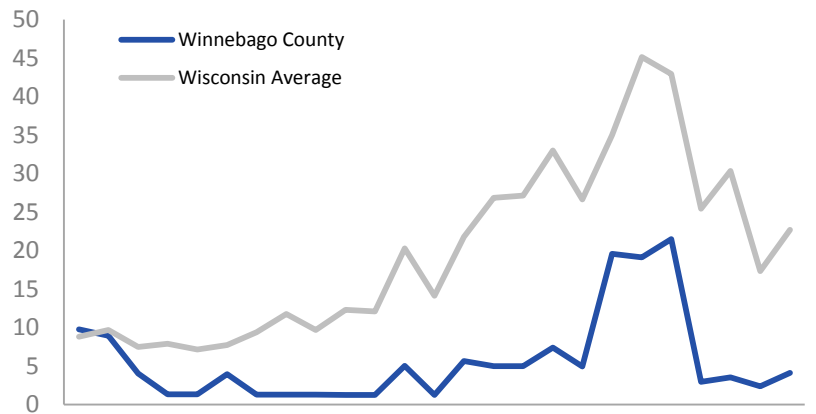


Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.



HEALTH OUTCOMES WINNEBAGO COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **27.2**

ASTHMA
RATE OF ER VISITS
PER 10,000 PEOPLE
STATEWIDE: 39.5

⚠ **28.6**

MELANOMA
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 21.6

⚠ **62.2**

LUNG CANCER
RATE OF NEW CASES
PER 100,000 PEOPLE
STATEWIDE: 61.1

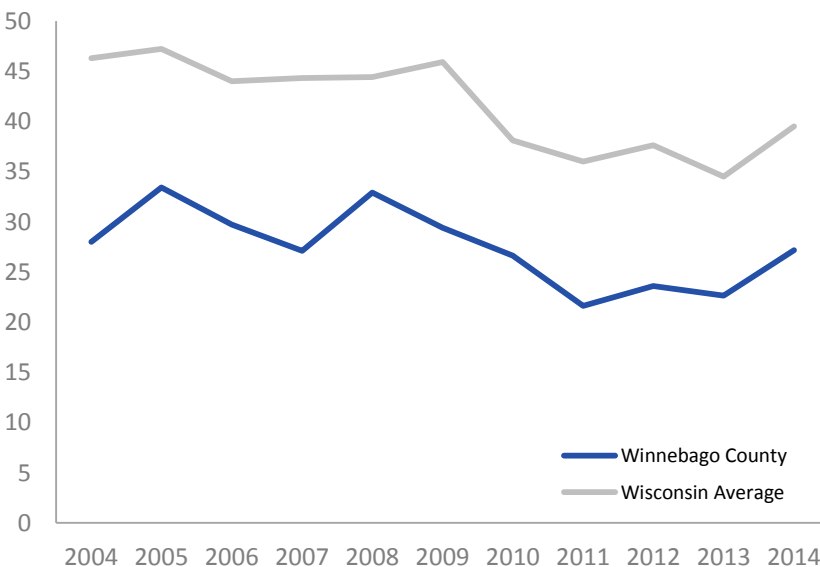
✓ **20.8**

HEART ATTACK
RATE OF HOSPITALIZATIONS
PER 10,000 PEOPLE
STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

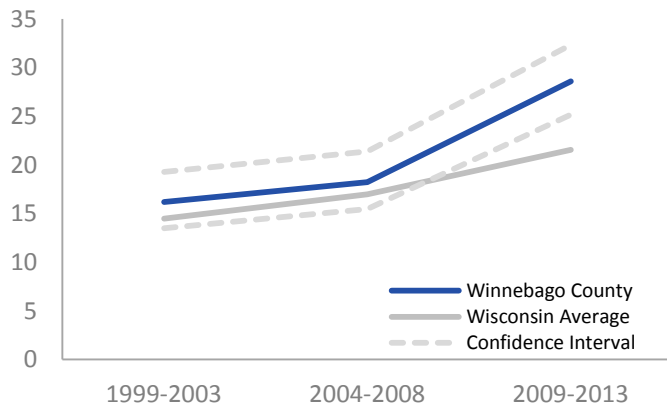
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

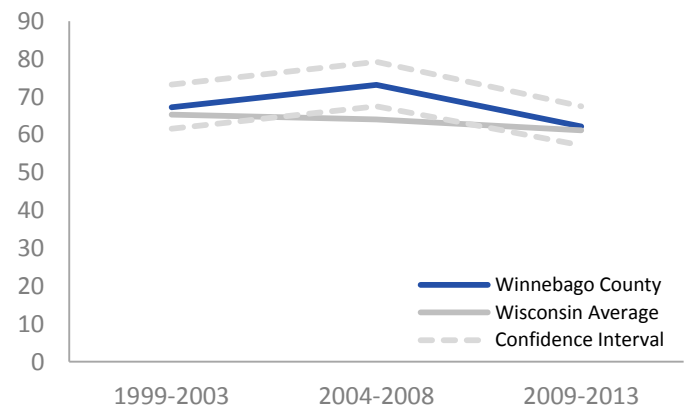
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

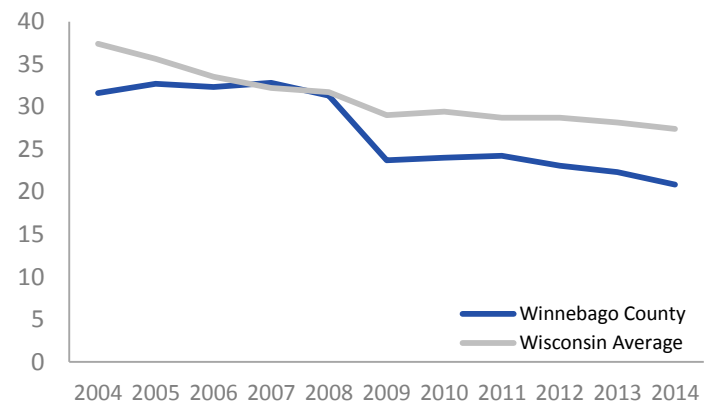
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WINNEBAGO

BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.

✓ **0.4**
ARSENIC
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (µg/L)
 STATEWIDE: 1.4

⊕ Above state value (with exception of fluoride where below state value is not preferred)

✓ **0.3**
NITRATE
 AVERAGE CONCENTRATION
 IN PUBLIC WATER (mg/L)
 STATEWIDE: 1.5

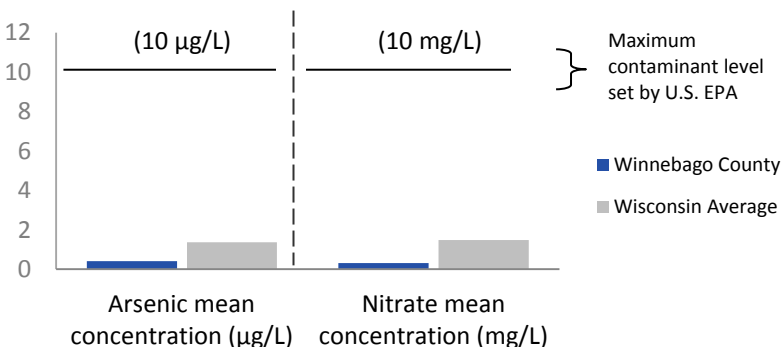
✓ At or below state value (with exception of fluoride where above state value is preferred)

✓ **94.3%**
FLUORIDE
 PERCENT OF POPULATION WITH
 FLUORIDATED PUBLIC WATER
 STATEWIDE: 88.6%

^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY WINNEBAGO COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

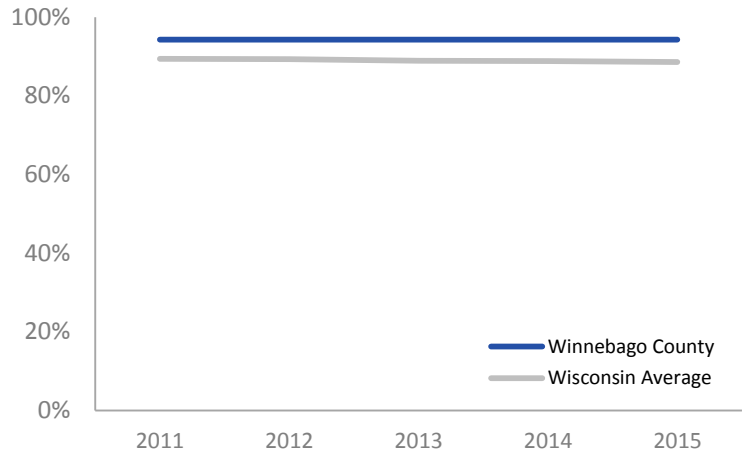
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

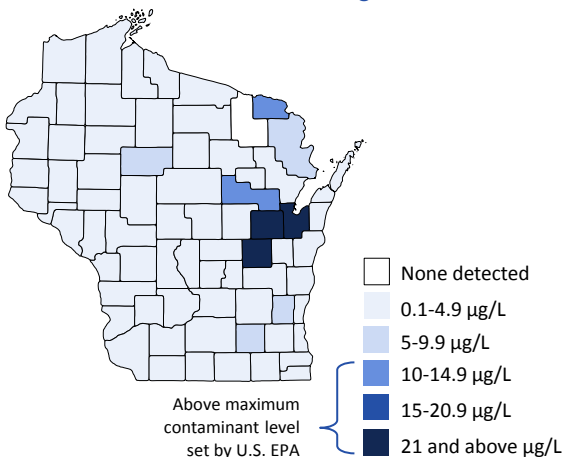
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

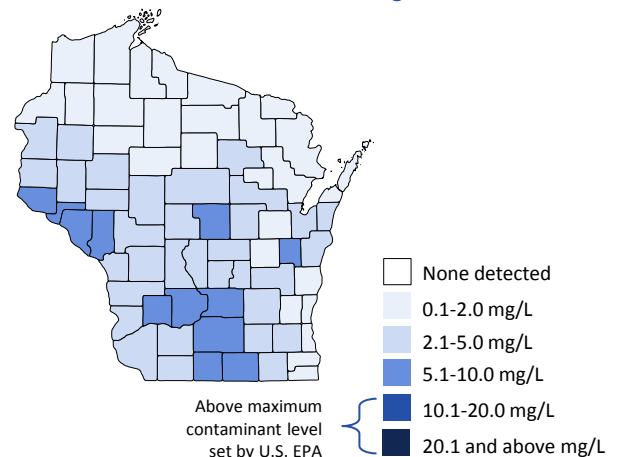
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



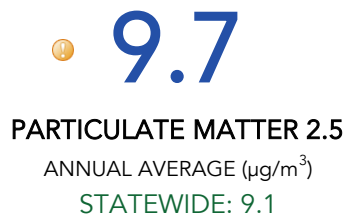


AIR QUALITY WINNEBAGO COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

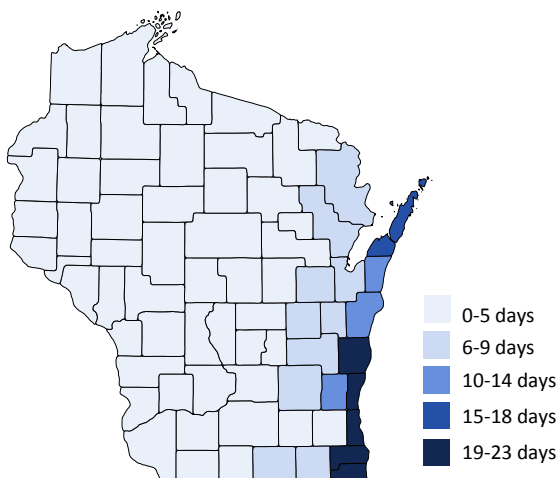
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value ✓ At or below state value ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

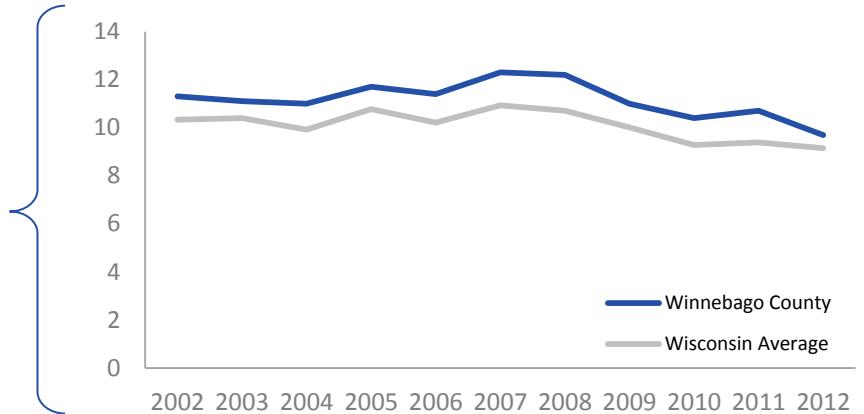
*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.



PARTICULATE MATTER 2.5

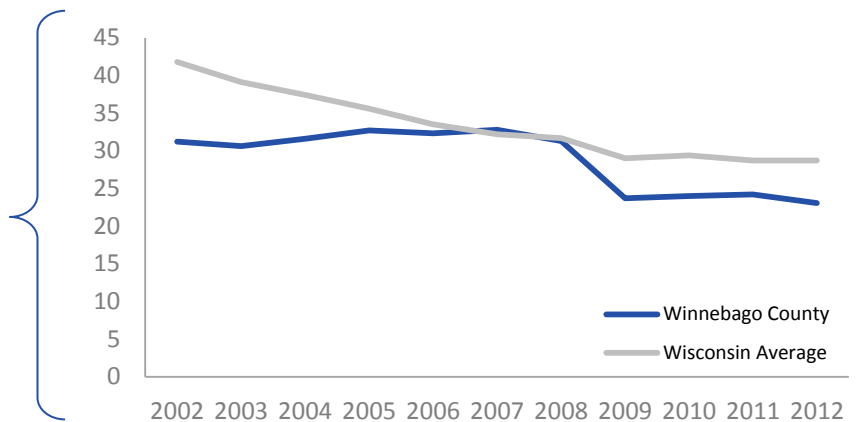
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



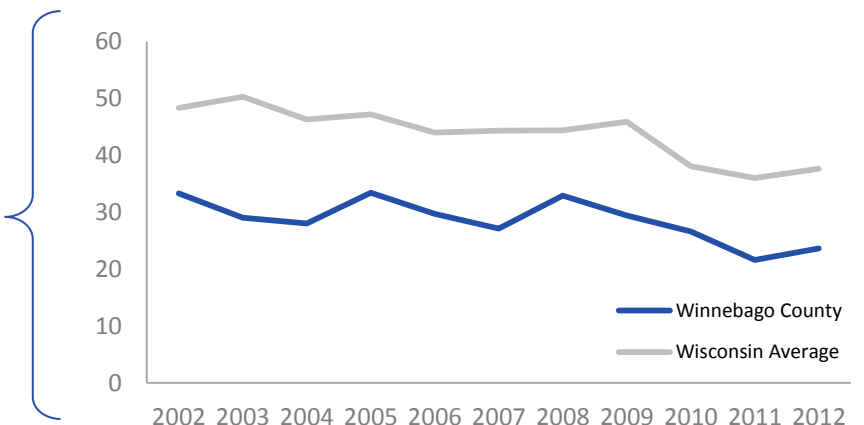
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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SPECIAL THANKS

Iowa Environmental Public Health Tracking Program

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH TRACKING PROGRAM

Bureau of Environmental and Occupational Health

State of Wisconsin | Department of Health Services | Division of Public Health

dhstracking@wi.gov | dhs.wisconsin.gov/epht

MAY 2017 | P-00719 (Rev. 05/2017)



WOOD COUNTY
ENVIRONMENTAL
HEALTH PROFILE

2017



WISCONSIN ENVIRONMENTAL PUBLIC HEALTH
TRACKING PROGRAM





HOW TO USE ENVIRONMENTAL PUBLIC HEALTH TRACKING DATA

COMMUNITY HEALTH ASSESSMENTS

Tracking data can help flesh out your community health assessment and help meet state requirements.

COMMUNITY HEALTH IMPROVEMENT PLANS

Use Tracking data and [Ideas for Taking Action](#) to help prioritize environmental health and plan strategies for community improvement. Use the data to track progress in meeting your goals.

RESEARCH

Tracking data can be used to explore answers to environmental health research questions.

MEDIA STORIES

Strengthen your interview or article with facts and figures from Tracking and our resources.

SOCIAL MEDIA

Localize your posts with data from your community.

ACCREDITATION

The profiles can be used to address Public Health Accreditation Board standards; for example, [Standard 1.3](#)—*Analyze public health data to identify trends in health problems, environmental public health hazards, and social and economic factors that affect the public's health.*

GRANT PROPOSALS

Tracking data and resources can help you and your team develop rationale for funding requests. These data can help justify existing programs and show where work needs to be done.

EDUCATION AND OUTREACH

When creating programs and outreach materials for your community, Tracking data can help you make your case and show the extent of the problem.

POLICY DEVELOPMENT

Tracking data and profiles contain measures that can be used to identify the need for a policy. Once a policy is in place, the data can be used as a baseline to track progress over time.



If you have questions about how to integrate the data into your work, [let us know!](#)

How have you used your county's profile?
[Tell us about it!](#)

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WOOD COUNTY

DASHBOARD | 2017 ENVIRONMENTAL HEALTH PROFILE



HOME HAZARDS

Childhood Lead Poisoning

✓ 1.7% | Percent with blood lead ≥ 5 $\mu\text{g}/\text{dL}$
Wisconsin: 6.4%

Carbon Monoxide Poisoning

⚠ 8.6 | Rate of ER visits per 100,000 people
Wisconsin: 7.9



CLIMATE

Heat Stress

⚠ 27.6 | Rate of ER visits per 100,000 people
Wisconsin: 16.5

Lyme Disease

⚠ 59.9 | Crude rate per 100,000 people
Wisconsin: 22.7



HEALTH OUTCOMES

Asthma

✓ 31.3 | Rate of ER visits per 10,000 people*
Wisconsin: 39.5

Melanoma

✓ 19.2 | Rate of cases per 100,000 people
Wisconsin: 21.6

Heart Attack

⚠ 42.8 | Rate of hospitalizations per 10,000 people*
Wisconsin: 27.4



WATER QUALITY

Arsenic

✓ 1.1 | Average concentration in $\mu\text{g}/\text{L}$
Wisconsin: 1.4

Nitrate

✓ 1.3 | Average concentration in mg/L
Wisconsin: 1.5

Fluoride

✓ 96.9% | Percent of population with fluoridated public water
Wisconsin: 88.6%



AIR QUALITY

Ozone

✓ 0 | Annual days above standard
Wisconsin: 3.8

Particulate Matter (PM) 2.5

✓ 0 | Annual days above standard
Wisconsin: 0.3

*Note these rates are per 10,000 people, while the others are per 100,000. To compare these measures to others, be sure to multiply the rates by 10.

⚠ Above state value (with exception of fluoride where below state value is not preferred)

✓ At or below state value (with exception of fluoride where above state value is preferred)

^ Data are suppressed [Data details on next page](#)



DASHBOARD DATA DETAILS

Below are the abbreviated references for the data presented in the dashboard. Note that some measures have more years of data available on the Wisconsin Tracking portal. For additional details on the data, see page 15. For more information about age-adjustment and other terms referenced in this profile, visit the Wisconsin Tracking Program's Glossary of Terms or our Tracking 270 tutorial, both available on our website (dhs.wisconsin.gov/epht).



HOME HAZARDS

Childhood Lead Poisoning: Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$
Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Carbon Monoxide (CO) Poisoning: Age-adjusted rate of emergency room visits related to CO poisoning
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



CLIMATE

Lyme Disease: Crude rate of confirmed Lyme disease cases
Source: Wisconsin Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015

Heat Stress: Age-adjusted rate of emergency room visits related to heat stress
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: Averaged data from 2010-2014



HEALTH OUTCOMES

Melanoma: Age-adjusted rate of new cases reported by health care providers
Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Years displayed: 2009-2013

Asthma: Age-adjusted rate of emergency room visits related to asthma
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014

Heart Attack: Age-adjusted rate of emergency room visits related to heart attack
Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2014



WATER QUALITY

Arsenic and Nitrate: Measured concentrations from active public water systems
Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources
Years displayed: Averaged data from 2013-2015

Fluoride: Percent of population with access to fluoridated public water
Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services
Year displayed: 2015



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) and Ozone: Monitored and modeled estimates of air quality readings
Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention
Year displayed: 2012



HOME HAZARDS WOOD COUNTY

BACKGROUND

Lead and carbon monoxide (CO) poisoning are two home hazards monitored by the Wisconsin Environmental Public Health Tracking Program.

Carbon monoxide poisoning prevents oxygen from getting to the body, which can damage tissue and even cause death.

In children, lead poisoning slows growth and development, particularly in the brain. Lead poisoning is also associated with increased incarceration and poor academic outcomes.

🚩 **8.6**

CARBON MONOXIDE POISONING

RATE OF ER VISITS RELATED TO CO PER 100,000

STATEWIDE: 7.9

✅ **1.7%**

CHILDHOOD LEAD POISONING

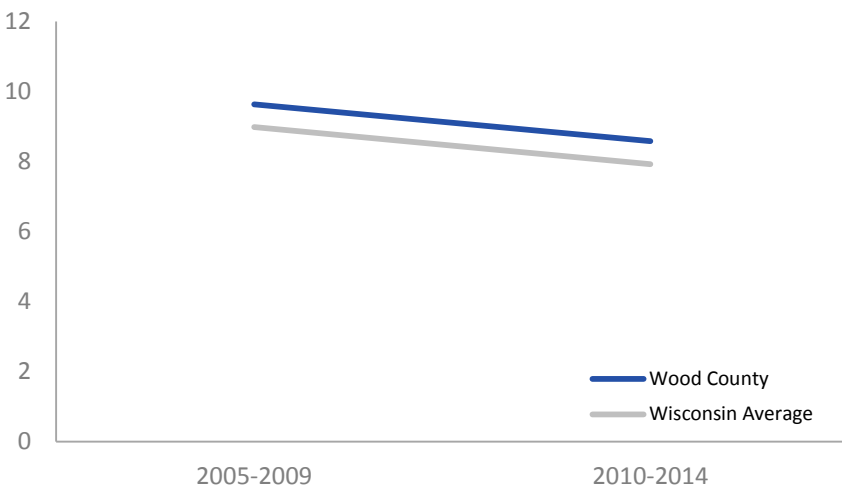
PERCENT OF TESTED CHILDREN WITH BLOOD LEAD ≥ 5 $\mu\text{g/dL}$

STATEWIDE: 6.4%

🚩 Above state value ✅ At or below state value ^ Suppressed

CARBON MONOXIDE

RATE OF ER VISITS PER 100,000 PEOPLE



CARBON MONOXIDE POISONING

Carbon monoxide (CO) is a toxic gas that cannot be seen or smelled. CO is created whenever fuel or other materials are burned. Wisconsin state law requires that all homes have a carbon monoxide detector on every level.

CO poisoning is also a risk in indoor ice arenas or recreational facilities where fuel-powered equipment (e.g., ice resurfacers, cars, motorbikes, go carts, etc.) is used. These facilities are not required to have CO detectors.



HOME HAZARDS WOOD COUNTY

CHILDHOOD LEAD POISONING

There is no safe level of lead in the human body. Even very low levels of exposure can cause harmful health effects. Blood lead levels are measured in micrograms per deciliter ($\mu\text{g}/\text{dL}$). The Centers for Disease Control and Prevention defines lead poisoning at or above 5 $\mu\text{g}/\text{dL}$.

The percentage of children (less than six years of age) tested with a blood lead level greater than or equal to 5 $\mu\text{g}/\text{dL}$ has declined over the past 14 years in most Wisconsin counties. This decline is due in part to prevention and outreach efforts that have happened throughout the state.

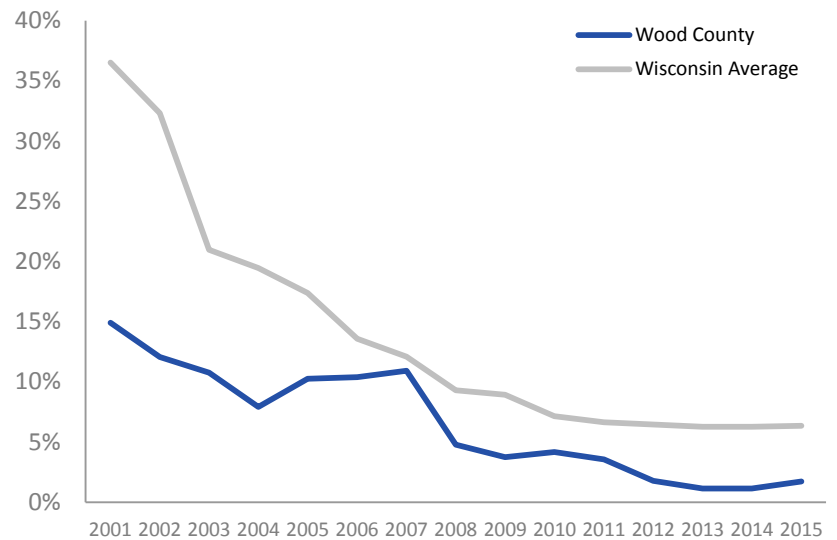
Together we have made great progress, but there is still work to be done to eliminate lead poisoning for all children.

In most counties, the percentage of children poisoned is below 5%. However, counties vary greatly in the number of children they have tested for lead poisoning. It should be noted that high rates may reflect fewer children tested. For example, if a county tested eight children and one was poisoned, the percentage poisoned will be quite high.

To explore your county rate and see how many children were tested, how many were poisoned, and view data at the census tract level, take a look at our data portal (dhs.wisconsin.gov/epht).

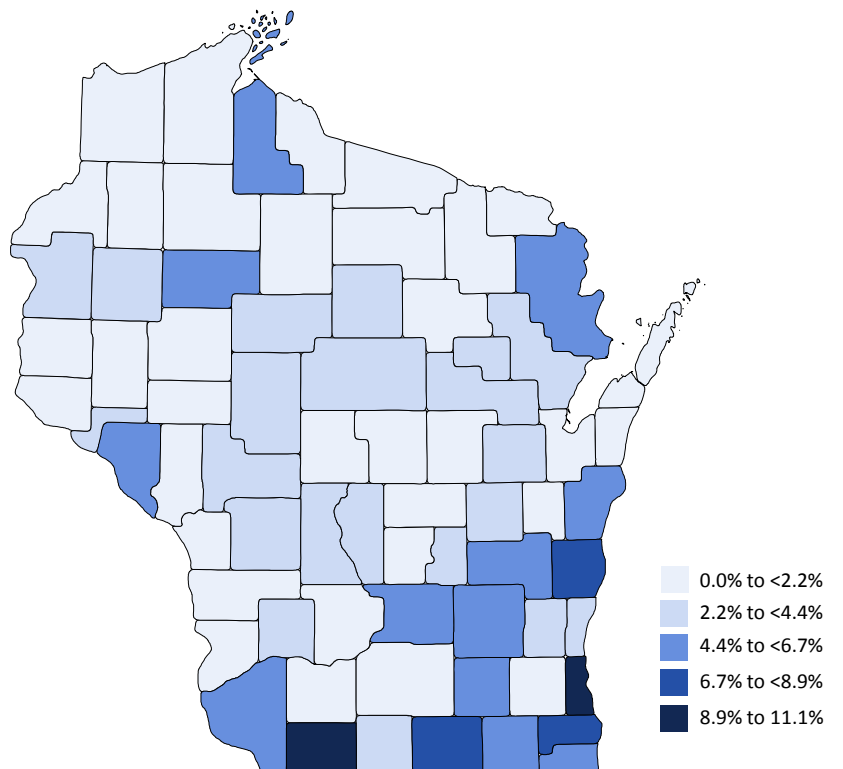
CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$



CHILDHOOD LEAD POISONING

PERCENT OF TESTED CHILDREN WITH BLOOD LEAD $\geq 5 \mu\text{g}/\text{dL}$ 2015





CLIMATE WOOD COUNTY

BACKGROUND

Over the past 60 years, Wisconsin has become generally warmer and wetter. Changes in the climate may lead to more precipitation and flooding, temperature extremes (very hot and very cold days), drought, and more carriers of disease (e.g., mosquitoes and ticks). Extreme weather can contribute to mental health problems, water and vectorborne diseases, allergies, water and food insecurity, and even death.

In this section, we focus on heat stress and Lyme disease, two climate-related health outcomes.

To learn more about the climate and health connection and work being done by the Wisconsin Climate and Health Program, visit dhs.wisconsin.gov/climate.

27.6

HEAT STRESS
RATE OF ER VISITS
PER 100,000 PEOPLE
STATEWIDE: 16.5

59.9

LYME DISEASE
RATE OF CASES
PER 100,000 PEOPLE
STATEWIDE: 22.7

🔴 Above state value 🟢 At or below state value ^ Suppressed

HEAT STRESS

RATE OF ER VISITS PER 100,000 PEOPLE



HEAT STRESS

Heat stress encompasses a range of conditions including heat rash, heat syncope (fainting), heat cramps, and heat exhaustion.

Any individual can develop heat stress when involved in intense physical activity or when it is hot.

Certain populations, such as older adults who live alone or have limited social contacts, people who work or play outside, and people without access to air conditioning are at increased risk of heat-related injury.

To learn more about historical extreme heat—such as the number of days in which the heat index was at or above 90°F—visit our data portal.



LYME DISEASE

Lyme disease is spread by the bite of an infected black-legged tick (*Ixodes scapularis*) and is becoming more common in Wisconsin. Lyme disease was the fourth highest reported notifiable communicable disease in 2015.

The highest number of cases are typically reported in the northwestern region of Wisconsin, but in recent years cases have increased in the central and eastern regions.

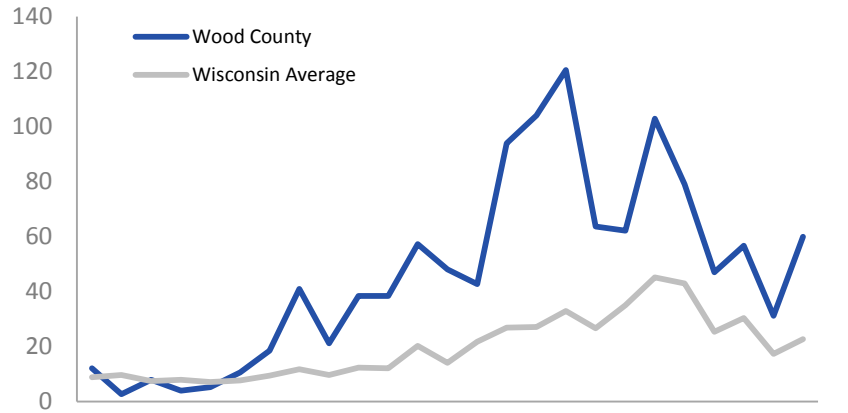
The data in the crude rate include confirmed cases of Lyme disease—not probable or estimated cases. It should be noted that in 2008 and 2012, Wisconsin’s criteria for reporting Lyme were revised (see data details on page 15 for more information).

The new criteria in 2012 require reporting and follow-up only for cases with an erythema migrans (EM) rash. To compensate for this change, epidemiologists used a statistical method to estimate the true number of cases based on the number of total laboratory reports for each year since 2012. As such, rates of confirmed cases might appear to decrease since 2012, but this is likely due to the change in case definition, not from a reduced burden of Lyme disease.

Estimated and probable cases are available at the state-level on the Tracking portal. The crude rate of confirmed cases reported here is an underestimate of the true rate of Lyme disease.

LYME DISEASE

RATE OF CONFIRMED CASES PER 100,000 PEOPLE



1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015
Case definition changed in 2008 and again in 2012; see data details on page 15 for more information.

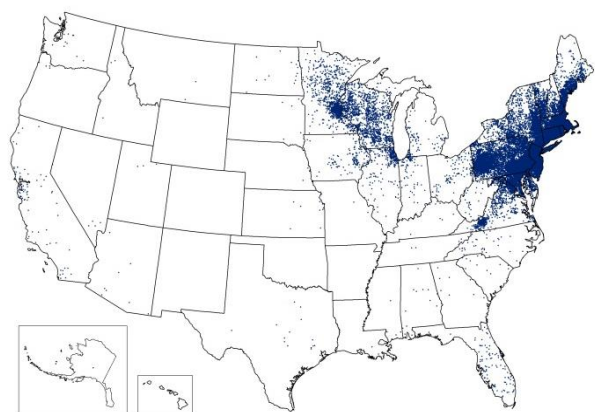
LYME DISEASE AT THE NATIONAL LEVEL

ONE DOT PLACED RANDOMLY WITHIN COUNTY OF RESIDENCE FOR EACH REPORTED CASE

2001



2015



Maps courtesy of Centers for Disease Control and Prevention.

Wisconsin’s climate has become generally warmer and wetter in recent decades, and these changes in weather patterns can provide favorable conditions for ticks. Increased temperatures with higher humidity can enhance tick survival. Climatic shifts contribute toward the expanded geographic distribution of ticks as well as a longer season of tick activity and potential for Lyme disease transmission. Other factors such as host populations (e.g., deer and mice), awareness of Lyme disease, and land use changes also impact Lyme disease rates.



HEALTH OUTCOMES WOOD COUNTY

BACKGROUND

Asthma, melanoma (a type of skin cancer), lung cancer, and heart attack are four of the many health topics collected by the Wisconsin Environmental Public Health Tracking Program. Each of these measures is strongly linked to one or more environmental factors.

✓ **31.3**
ASTHMA
 RATE OF ER VISITS
 PER 10,000 PEOPLE
 STATEWIDE: 39.5

✓ **19.2**
MELANOMA
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 21.6

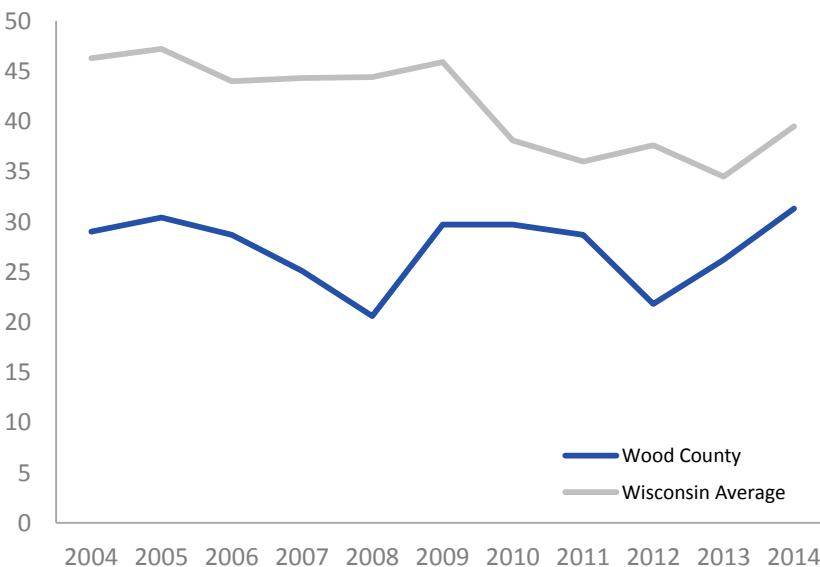
✓ **57.4**
LUNG CANCER
 RATE OF NEW CASES
 PER 100,000 PEOPLE
 STATEWIDE: 61.1

⚠ **42.8**
HEART ATTACK
 RATE OF HOSPITALIZATIONS
 PER 10,000 PEOPLE
 STATEWIDE: 27.4

⚠ Above state value ✓ At or below state value ^ Suppressed

ASTHMA

RATE OF ER VISITS PER 10,000 PEOPLE



ASTHMA

Asthma is a disease that affects breathing and limits the ability to get oxygen to the lungs. Asthma symptoms often happen because a person came in contact with a trigger, such as outdoor air pollution.

The overall rate of asthma emergency room visits in Wisconsin has declined slightly since 2004. Rates at the county level are more variable.

In Wisconsin, asthma rates vary considerably by race and ethnicity. Read more about these differences in our [asthma disparities surveillance brief](#), available in the resources section of our website.



MELANOMA AND LUNG CANCER

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other body parts. There are more than 100 different types of cancer. Melanoma is a cancer of the skin pigment cells and is the most deadly type of skin cancer. Lung cancer forms in the lung, usually in the cells lining the air passages, and is the leading cause of cancer deaths in the United States.

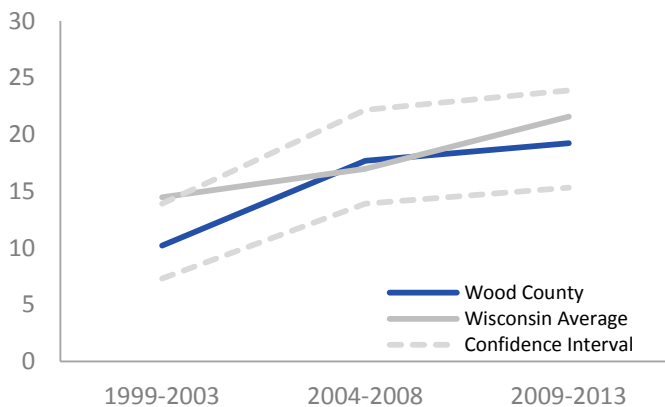
Both melanoma and lung cancer are strongly linked to environmental causes. Melanoma is linked to ultraviolet (UV) radiation, and lung cancer is related to radon and secondhand smoke. In addition to environmental exposures, lung cancer is also caused by smoking.

The rate of melanoma in Wisconsin is increasing over time, and nearly all Wisconsin counties are following the same upward trend. The Wisconsin rate of lung cancer has held relatively steady in recent years, with more variability by county.

Confidence intervals based on the county rate are on the charts below and are denoted with dotted gray lines. The closer the dotted lines are to the county line, the better (or more precise) the estimated county rate. For more information on interpreting confidence intervals, watch our Tracking 270 tutorial, available on the training tab of our website (dhs.wisconsin.gov/epht).

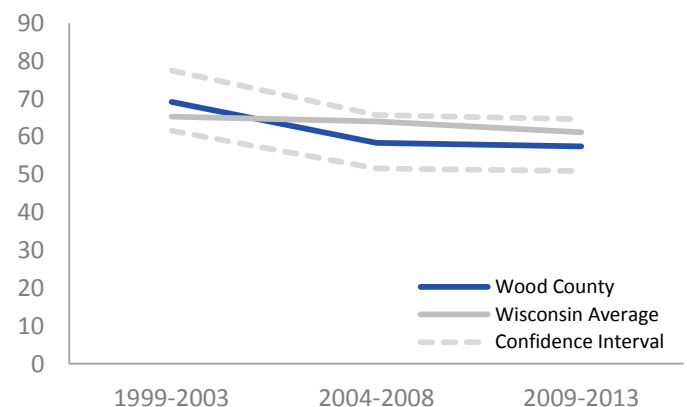
MELANOMA

RATE OF NEW CASES PER 100,000 PEOPLE



LUNG CANCER

RATE OF NEW CASES PER 100,000 PEOPLE



HEART ATTACK

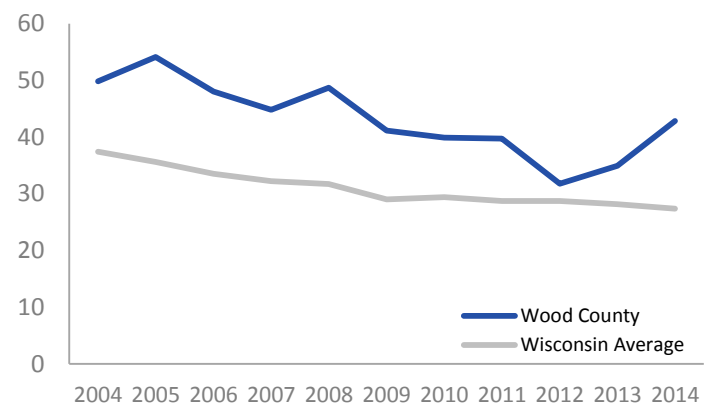
A heart attack is a brief and severe health event in which the heart does not get enough oxygen because of a block in blood flow.

A number of studies have shown that high levels of air pollution can increase the number of hospital visits for heart attacks.

The overall rate of heart attack hospitalizations in Wisconsin has declined since 2004. Rates at the county level are more variable.

HEART ATTACK

RATE OF HOSPITALIZATIONS PER 10,000 PEOPLE





WATER QUALITY WOOD COUNTY

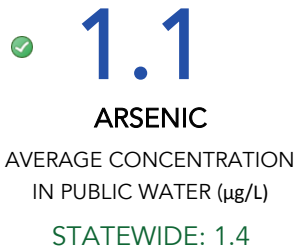
BACKGROUND

Water piped into your home, school, or workplace comes from either a public water system or a private well.

Two water contaminants of concern are arsenic and nitrate. Potential health effects of drinking water with high levels of arsenic include skin damage, circulatory system problems, and cancers (e.g., bladder and lung cancer). High nitrate levels may be linked with certain birth defects. Infants who consume drinking water with

high nitrate levels are at risk of blue baby syndrome, a condition that limits the blood's ability to carry oxygen.

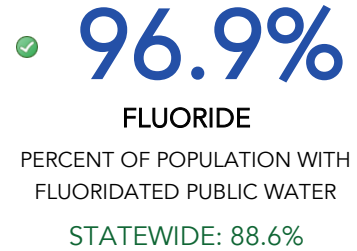
Communities should also know their levels of fluoride, a mineral in water that is often naturally-occurring and offers protection against tooth decay. You can read about your water's fluoridation levels in a consumer confidence report, which you can request from your water utility.



⊕ Above state value (with exception of fluoride where below state value is not preferred)



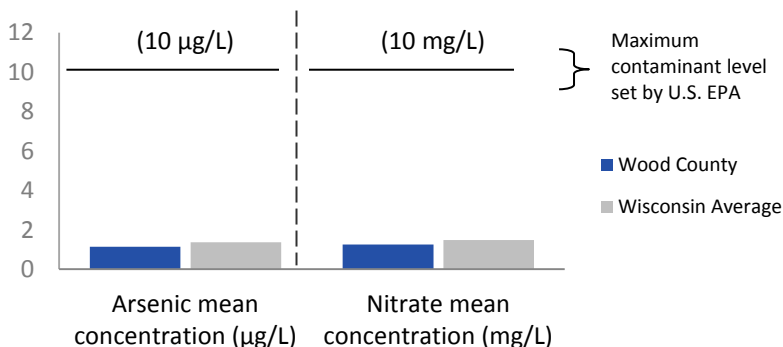
✓ At or below state value (with exception of fluoride where above state value is preferred)



^ Suppressed

ARSENIC AND NITRATE

MEAN CONCENTRATION LEVELS IN PUBLIC WATER (2013-2015)



ARSENIC AND NITRATE IN PUBLIC DRINKING WATER

Over half of Wisconsin households rely on public water for their water source. Public water is monitored and regulated by the Wisconsin Department of Natural Resources. All counties reported average arsenic and nitrate levels below the maximum contaminant levels set by the U.S. Environmental Protection Agency.

DIVE DEEPER INTO THE DATA: dhs.wisconsin.gov/epht



WATER QUALITY WOOD COUNTY

FLUORIDE IN PUBLIC DRINKING WATER

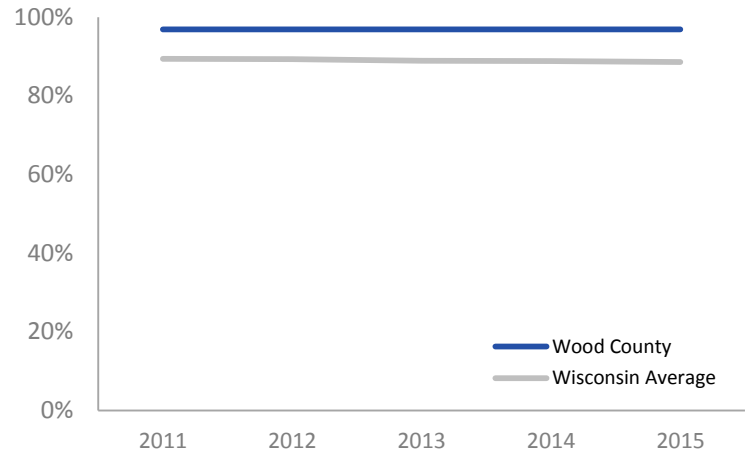
Community water fluoridation was selected as one of the 10 greatest public health achievements of the 20th century since it offers a low-cost, effective way of providing fluoride to a broad population to prevent tooth decay.*

Some water systems may not have enough natural fluoride to offer protection, so community water systems can add fluoride to bring the levels up to the U.S. Department of Health and Human Services' recommended level of 0.7 milligrams per liter (mg/L).

The fluoride data in this profile are collected from public water systems. The data include the percentage of the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.

FLUORIDE

PERCENT OF POPULATION WITH ACCESS TO FLUORIDATED PUBLIC WATER



*Centers for Disease Control and Prevention. Ten Great Public Health Achievements in the 20th Century. <https://www.cdc.gov/about/history/tengpha.htm>

ARSENIC AND NITRATE IN PRIVATE DRINKING WATER

About four in 10 Wisconsin homes get their water from private wells. Well owners are responsible for monitoring and testing their wells. All private wells should be tested regularly to ensure the water is safe to use and drink.

The University of Wisconsin-Stevens Point's Center for Watershed Science created a mapping tool to improve access to private well water data. The well data are voluntarily submitted by homeowners and do not include water quality information for all known wells.

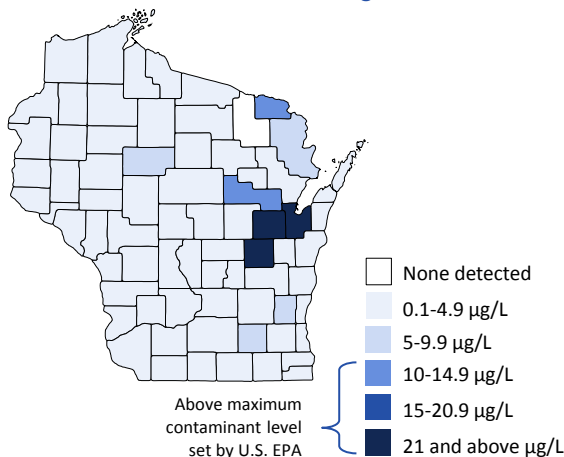
County-specific measures for arsenic and nitrate in private wells are displayed below.

Five counties have average concentrations of arsenic above the 10 µg/L maximum contaminant level. For nitrate, all counties are below the 10 mg/L maximum contaminant level.

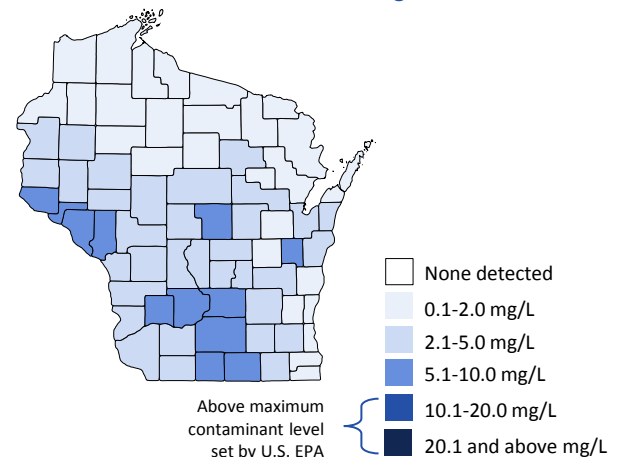
The data displayed represent samples collected from 1988 to March 2017. The maps include results of 14,699 arsenic samples and 73,517 nitrate samples. The number of samples collected varies from year to year; accordingly, some years are better represented than others.

To explore data for the other water contaminants, search "UW Stevens Point Well Water Viewer" in your search engine.

ARSENIC IN PRIVATE WELLS AVERAGE CONCENTRATION (µg/L)



NITRATE IN PRIVATE WELLS AVERAGE CONCENTRATION (mg/L)



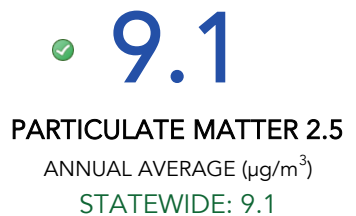


AIR QUALITY WOOD COUNTY

BACKGROUND

Air pollution means that there are particles or gases in the air that should not be there. Two pollutants of concern are fine particulate matter and ozone. Particulate matter describes very tiny particles that settle in our lungs after being inhaled. The "2.5" in "particulate matter 2.5 (PM_{2.5})" refers to the size of the particles, which are smaller than the width of a human hair.

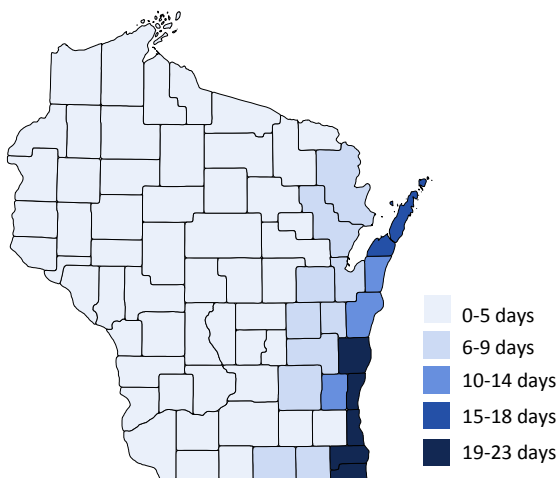
Ozone comes from vehicle emissions and industrial facilities. Both particulate matter and ozone can trigger health problems, especially in people with breathing conditions like asthma. Levels of these pollutants are measured by monitoring stations set up around the state. Counties without monitoring stations have estimated values.



● Above state value
 ✓ At or below state value
 ^ Suppressed

OZONE

ANNUAL DAYS ABOVE STANDARD (2012)



OZONE

The map to the left illustrates the annual number of days in which ozone was above the standard set by the U.S. Environmental Protection Agency. The fewer days above the standard, the better.

Counties on Wisconsin's eastern edge tend to have more days above the standard. Scientists hypothesize cool lake air can trap emissions. During warmer months, emissions can be pushed north by lake breezes, even from as far as Illinois and Indiana.*

*Pierce, B., et al. White Paper: Lake Michigan Ozone Study 2017.

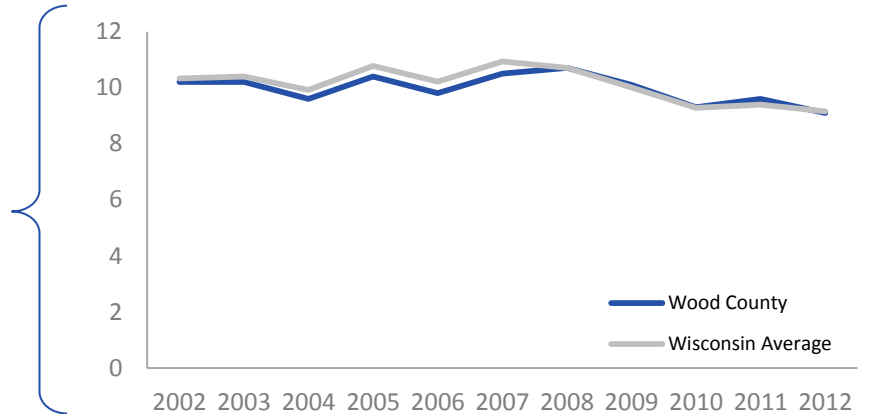


AIR QUALITY WOOD COUNTY

PARTICULATE MATTER 2.5

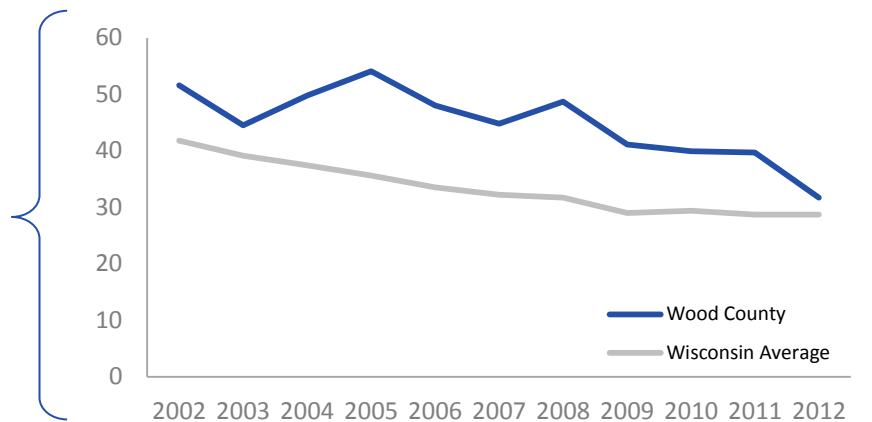
Particulate matter 2.5 (PM_{2.5}) is so tiny that it can settle in a person's lungs or bloodstream after being inhaled. These particles are more common near busy roads and in areas with dusty industries. PM_{2.5} has been linked to heart attacks and asthma attacks. Below are three charts showing how the annual average of PM_{2.5}, heart attack hospitalization rates, and asthma emergency room visits have fluctuated over the 2002-2012 time period (note the scales are different). In most Wisconsin counties, there has been a downward trend in all three measures over time.

PARTICULATE MATTER 2.5 ANNUAL AVERAGE (µg/m³)



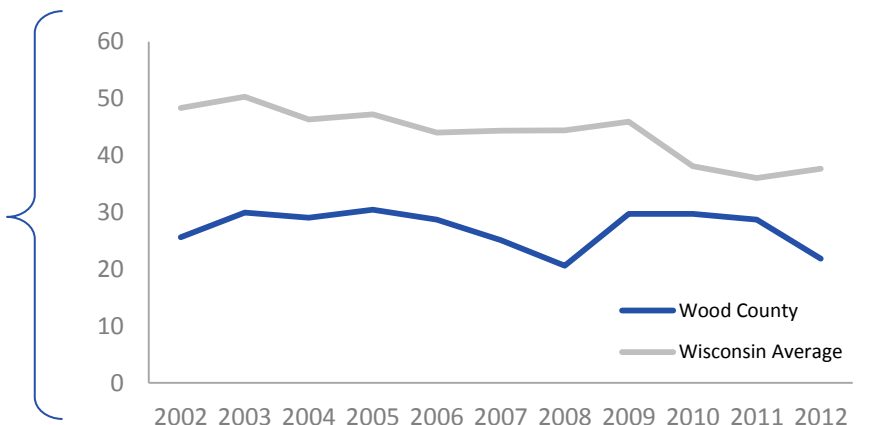
HEART ATTACK HOSPITALIZATIONS Rate per 10,000 people

Note the years displayed here are different than those on page 10.



ASTHMA EMERGENCY ROOM VISITS Rate per 10,000 people

Note the years displayed here are different than those on page 9.



DATA DETAILS



HOME HAZARDS

Lead Poisoning | Percent of children (less than six years of age) tested who had a blood lead level ≥ 5 $\mu\text{g}/\text{dL}$

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2001-2015, data from 2015 displayed on dashboard

Data details: Wisconsin blood lead testing data from children less than six years of age are reported to the Wisconsin Childhood Lead Poisoning Prevention Program. Data are de-duplicated such that they contain the most recent confirmatory (venous) test following an elevated screening (capillary) test. If no confirmatory test for the individual is available, the most recent screening test result is used.

Carbon Monoxide Poisoning | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data averaged from 2010-2014 displayed on dashboard

Data details: This measure includes carbon monoxide poisonings that were unintentional (fire- or non-fire-related) and of unknown intent. These data are from emergency room visit records. The measure includes cases with an ICD-9 code of 986 or cause of injury code E868.2, E868.3, E868.8, E868.9, E982.0, E982.1, E818, E825, E838, E844, E867, E868, or E890-E899. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



CLIMATE

Heat Stress | Annual average rate of emergency room visits, age-adjusted per 100,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2005-2014, data from 2010-2014 are displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 992.0-992.9, or cause of injury code E900.0 or E900.9. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Lyme Disease | Crude rate of confirmed Lyme disease cases per 100,000 people

Source: Vectorborne Disease Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1991-2015, data from 2015 are displayed on the dashboard

Data details: These data are from the Wisconsin Electronic Disease Surveillance System (WEDSS). County-level data are based on the county of residence of the case; some infections may have been acquired during travel to other areas. The crude rate numerator includes only confirmed cases and does not include probable or estimated cases. Confirmed cases of Lyme disease include: 1) those with an erythema migrans (EM) rash that is greater than or equal to 5 cm in diameter and diagnosed by a medical professional or 2) those with at least one non-EM confirmatory sign or symptom indicating late manifestation of disease (arthritis, Bell's palsy or other cranial neuritis, encephalomyelitis, lymphocytic meningitis, radiculoneuropathy, or 2nd or 3rd degree atrioventricular block) that also has laboratory evidence of infection that meets criteria. In 2008, the national surveillance case definition for Lyme disease introduced probable cases. In 2012, the criteria for reporting Lyme disease changed so only cases with an EM rash required follow-up. Read the data details on our data portal for more information.



HEALTH OUTCOMES

Asthma | Age-adjusted rate of emergency room visits per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 9), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from emergency room visit records. This measure includes cases with an ICD-9 code of 493. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.

Melanoma and Lung Cancer | Annual average rate of new cases, age-adjusted per 100,000 people

Source: Wisconsin Cancer Reporting System, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 1999-2013, data from 2009-2013 displayed on the dashboard

Data details: Rates are calculated from counts of new cancer cases reported to the Wisconsin Cancer Reporting System by health care providers in Wisconsin. Data for counties with fewer than six cases are suppressed to protect confidentiality. However, counties with zero cases are not suppressed. Direct age-adjustment is conducted using the 2000 U.S. standard population.



HEALTH OUTCOMES (continued)

Heart Attack | Age-adjusted rate of hospitalizations among persons age 35 and over per 10,000 people

Source: Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2004-2014 (page 10), 2002-2012 (page 14), data from 2014 displayed on the dashboard

Data details: These data are collected from inpatient hospital discharge records. This measure includes cases with an ICD-9 code of 410.0-410.92. Data for counties with fewer than five visits are suppressed to protect confidentiality. However, data from counties with zero visits are not suppressed. Our data do not include records from Wisconsin residents who seek care in border states and as such, are underrepresenting rates from border counties. See our portal data details for more information. Direct age-adjustment is conducted using the 2000 U.S. standard population.



WATER QUALITY

Arsenic | Mean concentration of arsenic ($\mu\text{g/L}$) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Arsenic concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple arsenic mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Nitrate | Mean concentration of nitrate (mg/L) in public drinking water

Source: Bureau of Drinking Water and Groundwater, Wisconsin Department of Natural Resources

Years displayed: Averaged data from 2013-2015

Data details: Nitrate concentrations in drinking water are based on samples taken from active public community water systems. Because many counties did not have any samples for a given year, three years of data were aggregated (2013-2015). Some counties had multiple nitrate mean values (from different water systems), so the values were first averaged within a given county and then averaged across the years.

Fluoride | Percent of population with access to fluoridated public drinking water

Source: Wisconsin Oral Health Program, Division of Public Health, Wisconsin Department of Health Services

Years displayed: 2011-2015, data from 2015 displayed on dashboard

Data details: Data on fluoride in drinking water are based on samples taken from active public community water systems. The data represent the population on public drinking water that have access to fluoridated water, regardless of whether it is at the recommended level.



AIR QUALITY

Particulate Matter 2.5 (PM_{2.5}) | Annual Average PM_{2.5} ($\mu\text{g}/\text{m}^3$); Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Years displayed: 2002-2012, data from 2012 are displayed on the dashboard

Data details: These measures include monitored and modeled estimates of PM_{2.5} levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist. The data downloaded from the National Environmental Public Health Tracking portal (cdc.gov/ephtracking) for percent of days above standard were multiplied by 365 to get the annual number of days above U.S. Environmental Protection Agency standard. The U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) for a 24-hour average PM_{2.5} concentration is 35 $\mu\text{g}/\text{m}^3$.

Ozone | Annual number of days above standard set by the U.S. Environmental Protection Agency

Source: National Environmental Public Health Tracking Network, Centers for Disease Control and Prevention

Year displayed: 2012

Data details: This measure is the annual number of days with maximum eight-hour average ozone concentration over the U.S. Environmental Protection Agency's National Ambient Air Quality Standard (NAAQS) of 0.075 ppm. This measure includes monitored and modeled estimates of ozone levels. Modeled estimates are used to fill in gaps for days when monitoring does not occur or in counties where monitors do not exist.



TAKING THE NEXT STEP

Present to Stakeholders and Partners

We created a Profile Template Slide Deck as a guide for presentations. The slide deck is free to use and completely customizable. The notes section is full of ideas and considerations for tailoring your talk. Let us know if you need help making the slide deck work for you. Visit dhs.wisconsin.gov/epht/profiles.htm to download the template.

Plan Strategies for Taking Action

We know it's a challenge to translate data into action. To help get you started, we created a short menu of potential strategies for addressing the topics in this profile, called *Ideas for Taking Action*. To help communities of all sizes and resource levels, we organized by the scope of the strategy, from addressing knowledge, attitudes and skills to addressing laws and policies. Visit dhs.wisconsin.gov/epht/profiles.htm to access *Ideas for Taking Action*.

Join Our Quarterly Newsletter

Stay up-to-date on the latest Wisconsin Environmental Public Health Tracking news and resources by subscribing to our newsletter. Head to dhs.wisconsin.gov/epht and click the link to subscribe.

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ACCESS DATA AND RESOURCES
dhs.wisconsin.gov/epht



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