

Hepatitis C in Wisconsin

Wisconsin Hepatitis C Virus Surveillance Annual Review, 2021

Trends in New Infections, Estimated Prevalence, and Care Cascades

Wisconsin Department of Health Services
Division of Public Health | Hepatitis C Program
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SUMMARY

Hepatitis C virus infection is the most common blood-borne infection in the U.S., impacting an estimated 1% of the population or 2.4 million people.¹ In the U.S. and Wisconsin, there are two populations most affected by hepatitis C:

- Younger adults (less than or equal to 44 years of age) who were most likely recently infected through injection drug use.
- Older adults, including baby boomers born during 1945–1965, who were most likely infected many years ago but are only now being diagnosed with hepatitis C.

This report summarizes data reported to the Wisconsin Department of Health Services (DHS) regarding people with positive hepatitis C test results and focuses on results reported during 2021.

Trends

Over the past decade, new hepatitis C infections have increased due to increased injection drug use. Most new infections were reported among white people, but rates of new hepatitis C infections are highest and have increased substantially among Native Americans. The number of women of childbearing age with hepatitis C has increased. This is especially concerning considering mothers can pass hepatitis C to their infants perinatally.

The number of baby boomers diagnosed with hepatitis C increased following the 2012 release of national recommendations to screen all people born in this cohort for hepatitis C. In recent years, however, new diagnoses among baby boomers have decreased.

2021 cases

In 2021, there were 2,059 hepatitis C cases newly reported: 4 perinatal cases, 134 acute cases, and 1,921 chronic cases.

- Acute cases: The most commonly reported risk factor among acute cases was injection drug use (IDU).
- Newly reported cases: Most newly reported cases reside in the urban southeastern part of Wisconsin; however, the rates of newly reported hepatitis C were highest in many rural counties in northern Wisconsin.

Prevalence estimates

According to data reported to DHS in 2021, 25,276 people age 18 and older (0.55% of Wisconsin adults) are currently living with hepatitis C infection in Wisconsin. However, because estimates suggest that only about half of people with hepatitis C have been diagnosed and reported, DHS estimates the actual number of Wisconsin adults living with chronic hepatitis C infection is 47,000 (1.0% of Wisconsin adults).

Care cascades

Among people confirmed with hepatitis C in 2019–2021, 31% (1,524 people) had negative hepatitis C RNA results at their most recent test, suggesting they had cleared the infection either naturally or through treatment. Only 26% of people ages 15–29 had test results indicating infection had cleared, compared to 41% of baby boomers.

Limitations of this report

The COVID-19 pandemic had numerous effects on health care and prevention services, especially during 2020. Statewide disruption in hepatitis C testing caused by the COVID-19 pandemic likely caused the total number of C cases reported for 2020 to be lower than expected. This observed decrease in reported cases could be interpreted with caution, as it does not likely reflect a true decrease in hepatitis C occurrence.

DEFINITIONS AND NOTES

Acute hepatitis C case refers to a case of hepatitis C that included evidence indicating the infection occurred within the past twelve months. Cases are subclassified as confirmed (hepatitis C RNA detected) or probable (no hepatitis C RNA result reported). The complete case definition can be found at the [National Notifiable Diseases Surveillance System, Hepatitis C, Acute](#).

Chronic hepatitis C case refers to a case of hepatitis C that did not include evidence indicating the infection occurred within the past six months. Cases are subclassified as confirmed (hepatitis C RNA detected) or probable (no hepatitis C RNA result reported). The complete case definition can be found at the [National Notifiable Diseases Surveillance System, Hepatitis C, Chronic](#).

Perinatal hepatitis C case refers to a case of hepatitis C that occurred in a child aged 2 to 36 months and was assumed to have been transmitted from mother to infant. The complete case definition can be found at the [National Notifiable Diseases Surveillance System, Hepatitis C, Perinatal Infection](#).

All hepatitis C cases refers to all reported cases of hepatitis C, including cases meeting the definition of acute, chronic, and perinatal hepatitis C.

People newly reported with positive hepatitis C test results refers to all people newly reported with a positive hepatitis C antibody result or a positive hepatitis C RNA result or a reported case of confirmed or probable hepatitis C. This definition of hepatitis C occurrence is used for the purpose of monitoring trends because it is not impacted by negative hepatitis C RNA reporting, which began in April 2017.

Baby boomer refers to a person born during the years 1945 through 1965. Because of the high prevalence of hepatitis C among people in this birth cohort, since 2012, the Centers for Disease Control and Prevention (CDC) recommends all baby boomers be tested for hepatitis C.

Rate or Rate per 100,000 people refers to the number of people with hepatitis C in a particular group (for example, Native American people or residents of a particular county) compared to the number of people in that group in Wisconsin. Rates are calculated to compare groups of people of different sizes.

Prevalence refers to the number of people living with the disease in Wisconsin. Prevalence can also be described as a percentage of the population.

Women of childbearing age refers to women aged 15–44. Cases among this population are concerning because there is an approximately 6% risk that babies born to women with hepatitis C will become infected around the time of birth. Since April 2020, the CDC recommends every pregnant person be tested for HCV infection with each pregnancy. Further information on HCV management, including testing and treatment, can be found at the [American Association for the Study of Liver Diseases](#).

Addressing health disparities and inequities is a priority for public health. Race or ethnicity does not make a person more or less likely to acquire hepatitis C. Other factors such as [structural racism](#), stigma, and poverty, as well as unequal access to health care, education, and housing affect communities of color disproportionately and can put individuals at greater risk for acquiring hepatitis C.

IMPACT OF 2020 ON THIS REPORT

During 2020, three events occurred that impacted the number of hepatitis C cases reported in 2020. These events, and how they affected the data in this report, are described below.

Change to hepatitis C screening recommendations

In the spring of 2020, the [U.S. Preventive Services Task Force](#)² and the [CDC](#)³ augmented their existing hepatitis C testing recommendations to recommend that all adults receive at least one-time screening for hepatitis C. CDC also recommends that all pregnant people be screened during every pregnancy. If COVID-19 had not disrupted hepatitis C testing during 2020, as described in the next section, DHS would have expected a higher number of Wisconsin adults to be diagnosed and reported with hepatitis C than what was reported. Preliminary Wisconsin Medicaid claims data from the last quarter of 2020 suggest that the rate of hepatitis C screening is now increasing among adults born after 1965.

Disruption to hepatitis C testing due to the COVID-19 pandemic

In response to COVID-19, hepatitis C testing services were disrupted statewide in both traditional health care and outreach settings. Reports of hepatitis C testing at syringe services programs were approximately 75% and 25% less in 2020 and 2021, respectively, compared to 2019.

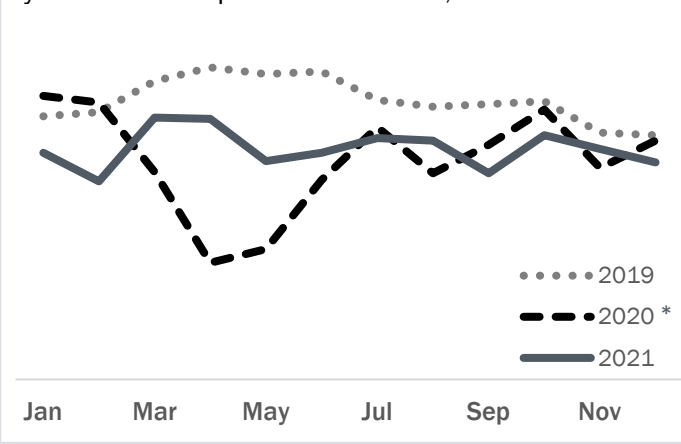
As a result of this decrease in testing, the total number of hepatitis C cases reported to DHS in 2020 (N=1,941) and 2021 (n=2,059) was 21% and 17% less, respectively, than the total number of cases reported in 2019 (N=2,467). The fewest cases were reported during April and May of 2020 (see Figure A) when settings with hepatitis C testing were the most disrupted by COVID-19 closures.

Because the number of cases reported in 2020 is lower than would have been expected if COVID-19 had not disrupted hepatitis C testing, figures in this report showing trends by year include an asterisk "*" next to the year 2020. This has been done to indicate that the decline in the number of hepatitis C cases reported in 2020 is because of decreased hepatitis C testing and should not be interpreted as a decrease in hepatitis C occurrence.

Changes to hepatitis C case definitions

Starting in January 2020, the case definitions for acute and chronic hepatitis C used by the [National Notifiable Diseases Surveillance System](#) were revised to [improve the detection](#), classification, and monitoring of acute cases of hepatitis C. As a result of this change, during 2020, 31 cases that previously would have been classified as chronic hepatitis C were classified as acute hepatitis C. These 31 cases represented 32% of the 96 acute cases reported during 2020.

Figure A. Number of hepatitis C cases reported to DHS by month of first positive test result, 2020-2021.



Trends in new infections

Today, hepatitis C is most commonly transmitted through the sharing of contaminated equipment used to prepare or inject drugs. Since 2010, because of increased injection drug use related to the opioid epidemic, the number of people newly infected with hepatitis C has increased nationwide and in Wisconsin.⁴

Monitoring trends in new hepatitis C infections is challenging for several reasons. Only 1 in 5 people newly infected with hepatitis C develops symptoms of acute hepatitis C infection. As a result, many people newly infected with hepatitis C are not immediately diagnosed or reported to public health. The CDC estimates that for every case of acute hepatitis C reported to public health, another 13 cases go unreported.⁵

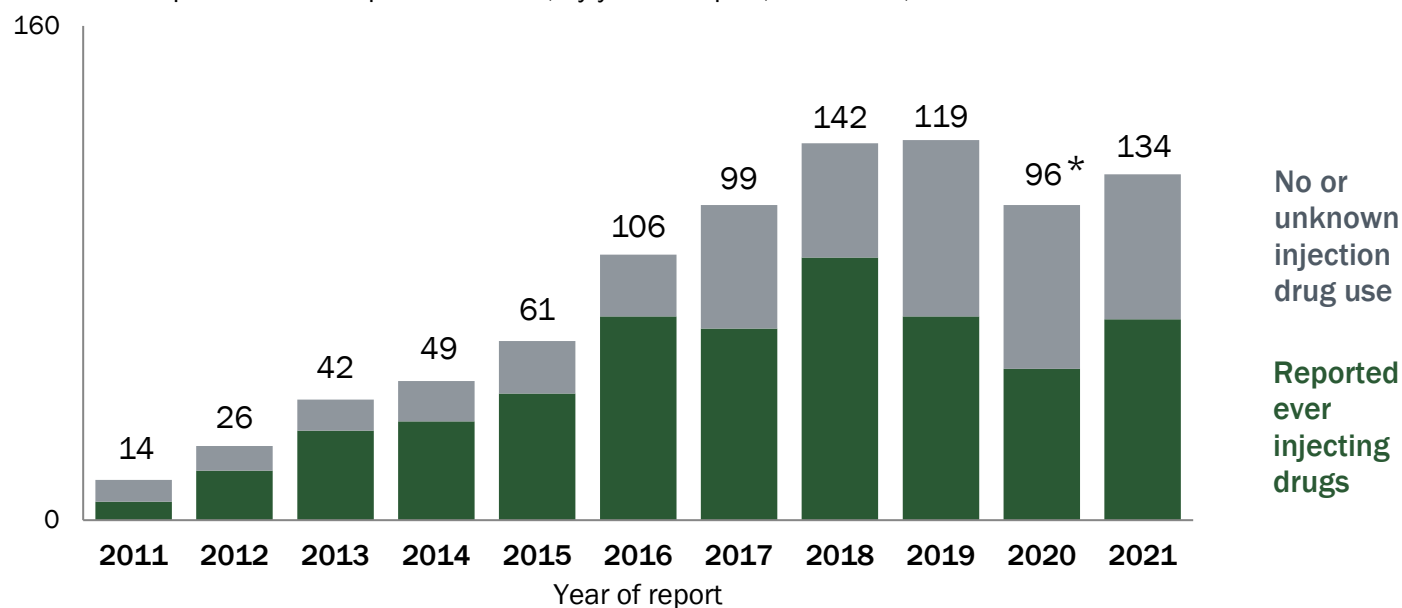
Several trends in new hepatitis C infections are monitored, including trends in reported acute hepatitis C cases. In addition, because local and national data suggest that most hepatitis C infections among young people in recent years have been associated with injection drug use, trends in newly reported positive test results among younger adults are also monitored.^{6,7,8}

Overall, hepatitis C surveillance data indicate the number and rate of new hepatitis C infections have increased substantially in the past 10 years, and both rural and urban areas of Wisconsin have been affected. Rates of hepatitis C are highest and have increased the most among Native Americans.

FIGURE 1

During the past 10 years, the number of acute hepatitis C cases has increased substantially, and many reported injection drug use.

Number of reported acute hepatitis C cases, by year of report, Wisconsin, 2011–2021

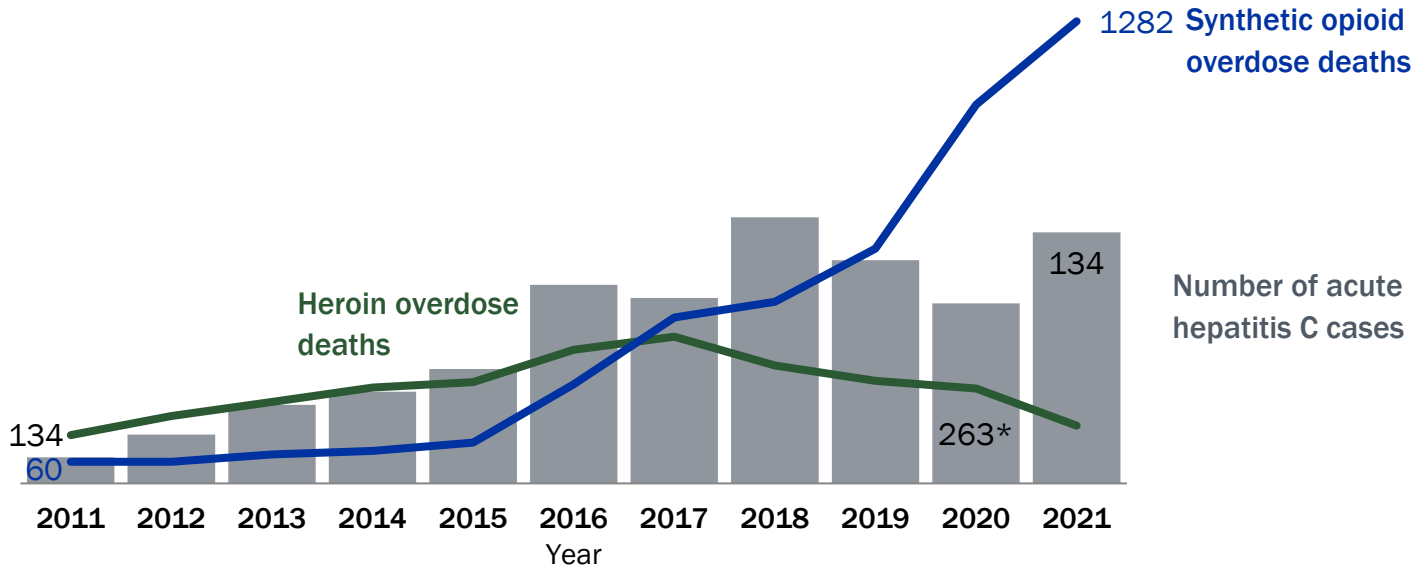


Notes: In 2016 and 2020, the case definition of acute hepatitis C changed to be more inclusive. In 2017, the surveillance system began receiving negative RNA results allowing more acute cases to be detected in subsequent years. In 2018, surveillance procedures changed to identify more acute cases. *In 2020, acute case detection was impacted by reduced testing and reduced case follow-up because of COVID-19 (see page 5).

FIGURE 2

The rise in synthetic opioid overdose deaths is an important consideration in acute hepatitis C cases in Wisconsin.

Number of reported acute hepatitis C cases and number of heroin overdose deaths, by year, Wisconsin, 2011–2021



Notes: Synthetic opioid overdose deaths include deaths from fentanyl and fentanyl analogs. Deaths from methadone are excluded. Heroin and synthetic opioid overdose deaths data are from the [Wisconsin Interactive Statistics on Health](#) opioids data. *In 2020, acute case detection was impacted by reduced testing and reduced case follow-up because of COVID-19 (see page 5).

FIGURE 3

In 2021, the number of counties reporting cases of acute hepatitis C was more than four times higher than in 2011.

Number of reported cases of acute hepatitis C, Wisconsin, 2011 and 2021

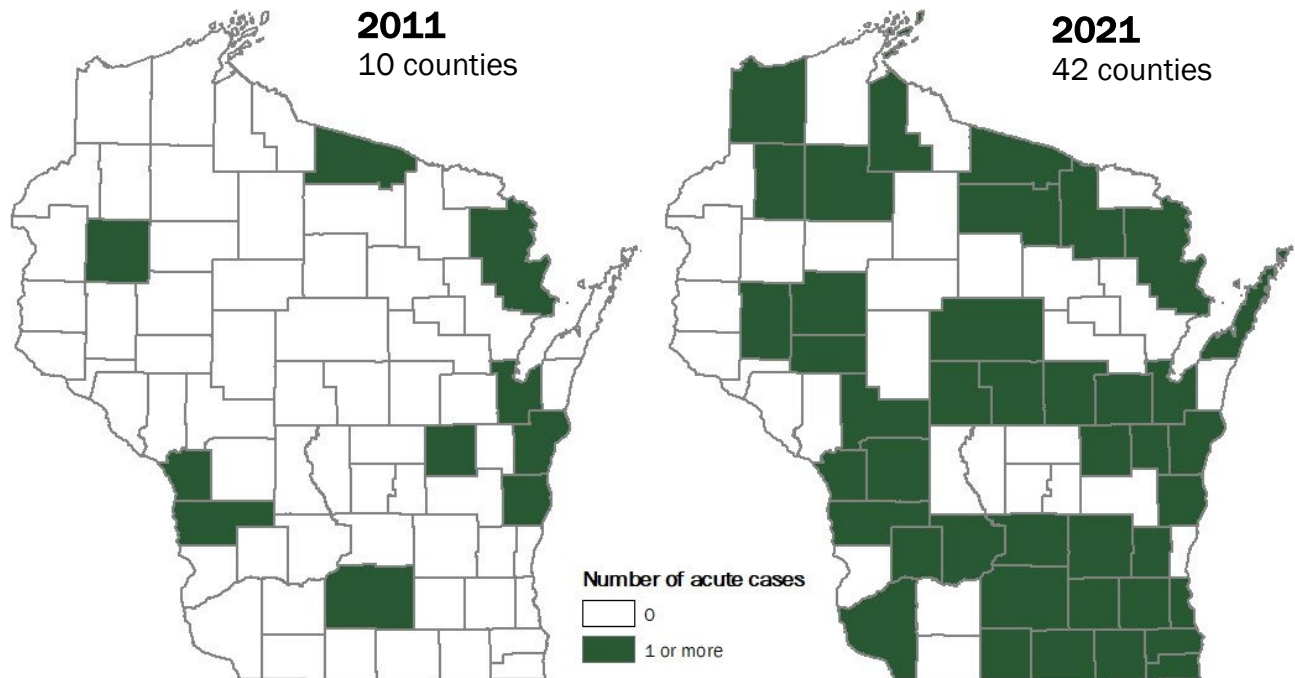
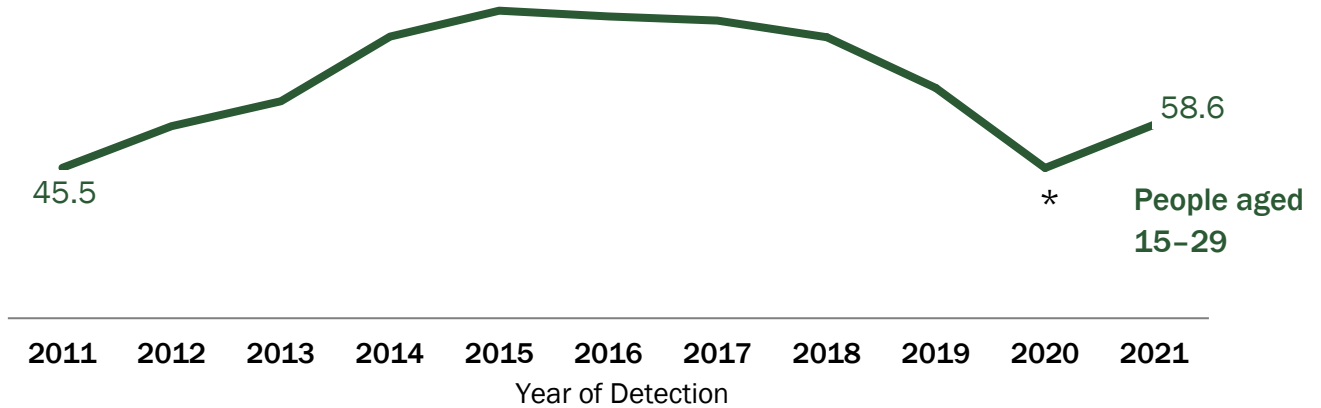


FIGURE 4

The rate of new positive hepatitis C test results among people aged 15–29 was impacted by reduced testing in 2020*. The rate of new positive test results began to rebound in 2021.

Rate per 100,000 of people newly reported with positive hepatitis C test results† among people aged 15–29, Wisconsin, 2011–2021 -

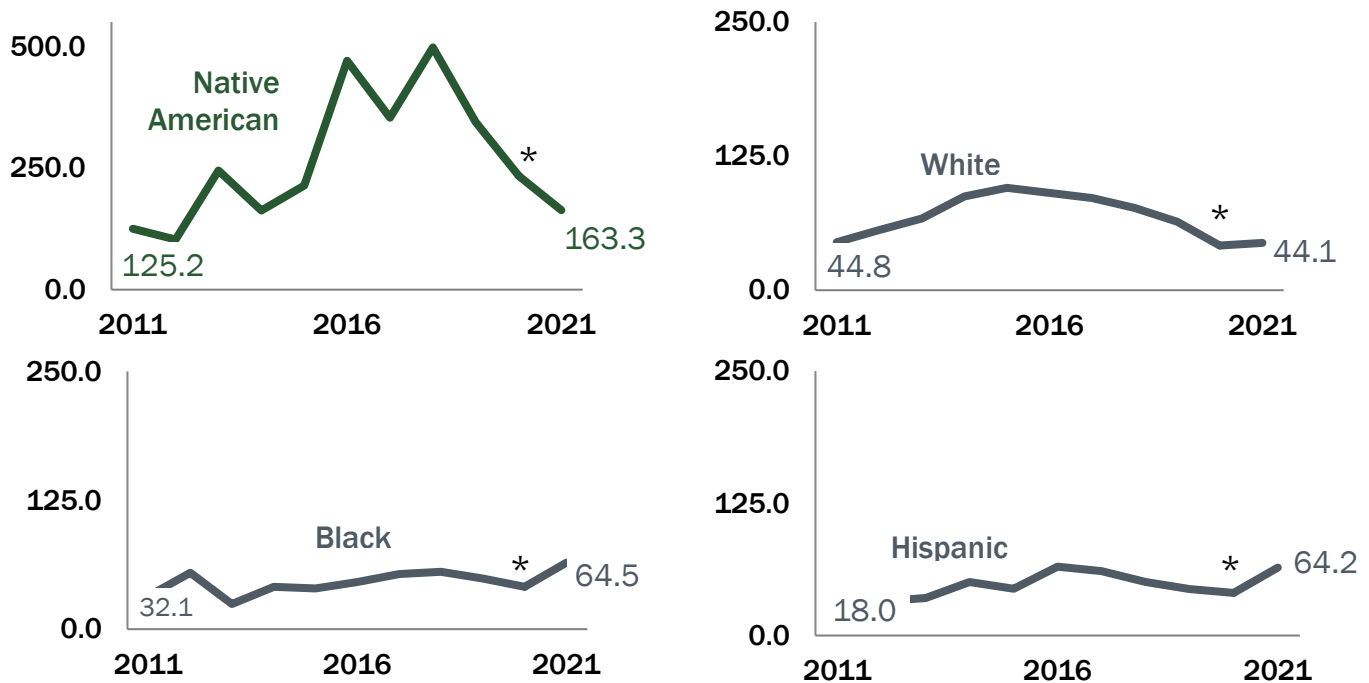


Notes: †The numerator includes people with positive hepatitis C antibody or positive hepatitis C RNA results or a confirmed or probable case of hepatitis C. *In 2020, detection of hepatitis C was impacted by reduced testing because of COVID-19 (see page 5), which began to rebound in 2021.

FIGURE 5

During the past decade, the rate of new positive hepatitis C test results among young people increased the most and was the highest among Native Americans.

Rate per 100,000 of people newly reported with positive hepatitis C test results† among people aged 15–29, by race/ethnicity, Wisconsin, 2011–2021



Notes: †The numerator includes people with positive hepatitis C antibody or positive hepatitis C RNA results or a confirmed or probable case of hepatitis C. *In 2020, detection of hepatitis C was impacted by reduced testing because of COVID-19 (see page 5), which has subsequently begun to rebound.

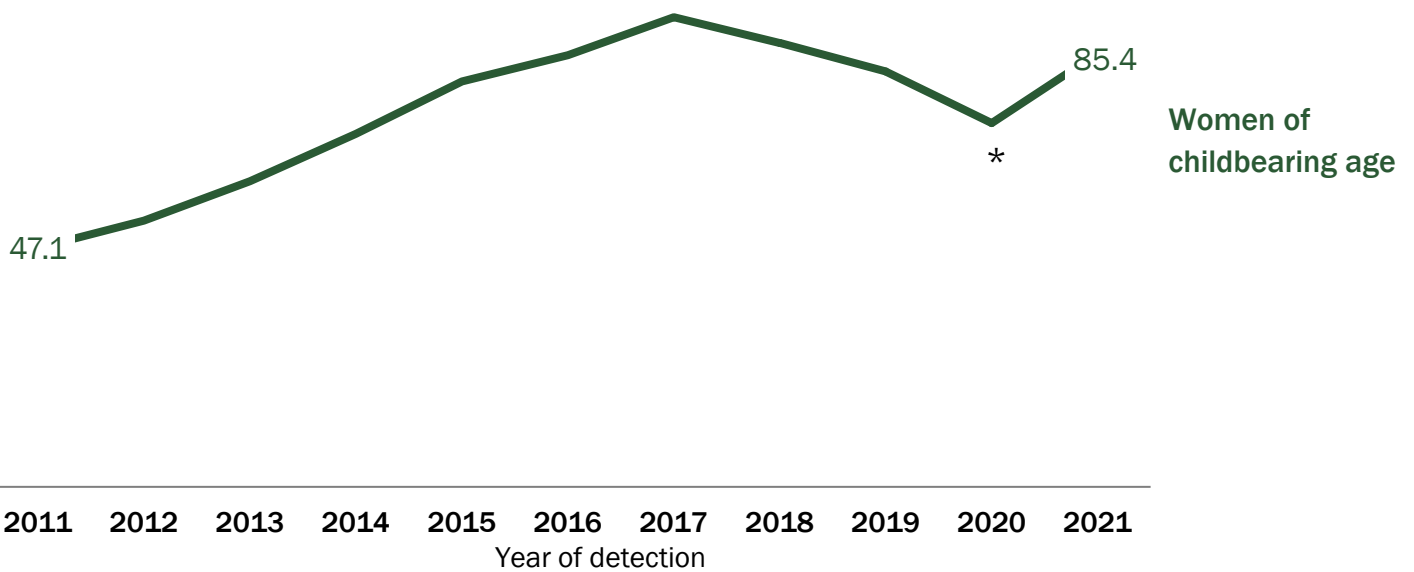
It is important to consider differences in trends in hepatitis C by race and ethnicity to understand which communities are being impacted and where attention is needed to improve health equity. Race or ethnicity does not make a person more or less likely to acquire hepatitis C. Other factors such as [structural racism](#), stigma, and poverty, as well as unequal access to health care, education, and housing affect communities of color disproportionately and can put individuals at greater risk for acquiring hepatitis C.

The increasing trend of new hepatitis C infections among women of childbearing age is concerning because infants born to women with hepatitis C are at risk for perinatal hepatitis C infection. Approximately 6% of infants born to women with hepatitis C will become infected, and the risk is higher among women with a high hepatitis C viral load and women with HIV.

FIGURE 6

Over the last 10 years, the annual rate of new positive hepatitis C test results among women of childbearing age increased substantially and remained elevated.

Rate per 100,000 of people newly reported with positive hepatitis C test results[†] among women aged 15–44, Wisconsin, 2011–2021



Notes: [†]The numerator includes people with positive hepatitis C antibody or positive hepatitis C RNA results or a confirmed or probable case of hepatitis C. *In 2020, detection of hepatitis C was impacted by reduced testing because of COVID-19 (see page 5), which is rebounding in 2021.

Trends in new diagnoses among baby boomers

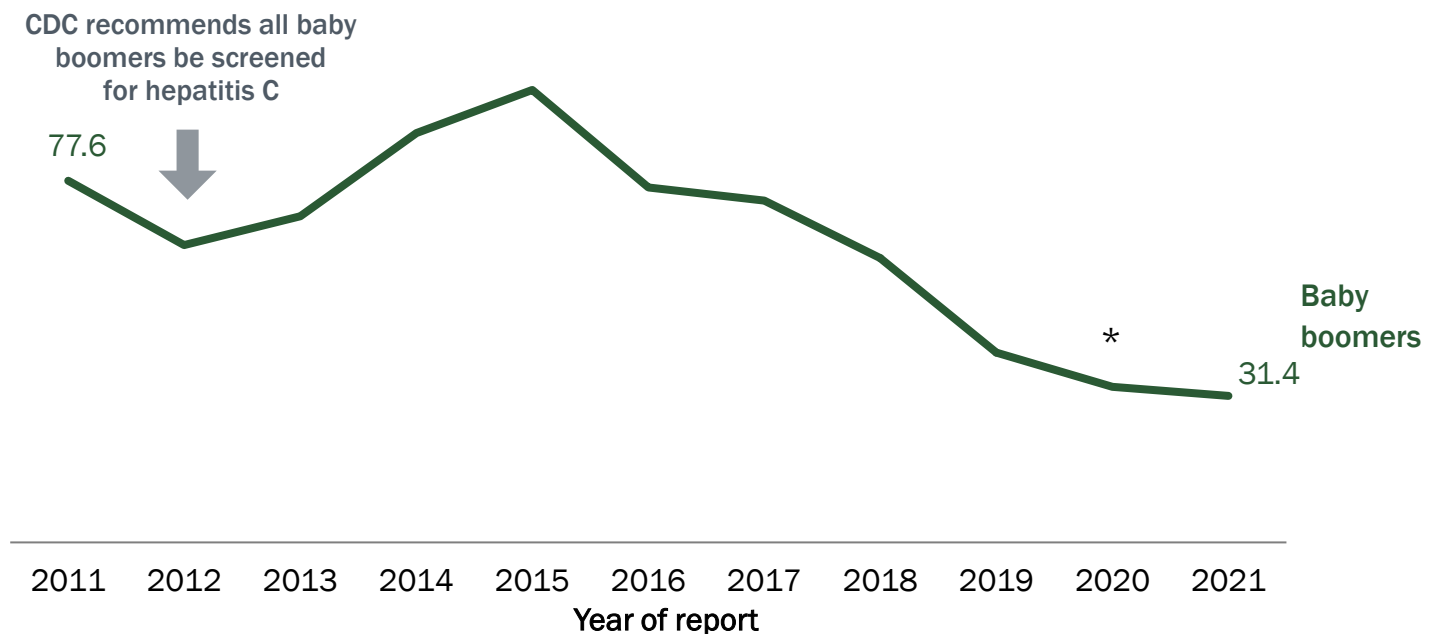
National prevalence data indicate that people born during 1945–1965, so-called “baby boomers,” are five times more likely than other adults to have hepatitis C infection.⁹ The reason that baby boomers have high rates of hepatitis C is not completely understood. Most baby boomers are believed to have become infected during the 1960s through the 1980s when transmission of hepatitis C was highest, and before routine screening of the blood supply for hepatitis C started in 1992.

It has been estimated that approximately half of people with hepatitis C do not know they are infected. Since 2012, CDC has recommended all adults born during 1945–1965 receive one-time testing for hepatitis C, regardless of history of risk.¹⁰ This recommendation was augmented in April 2020 when the [U.S. Preventive Services Task Force](#)¹¹ and the [CDC](#)¹² revised existing hepatitis C testing recommendations to recommend that all adults receive at least one-time screening for hepatitis C.

FIGURE 7

New diagnoses among baby boomers increased after new screening guidelines, but in recent years the rate of new diagnoses has declined.

Rate per 100,000 of confirmed hepatitis C infections among people born during 1945–1965, by year of report, Wisconsin, 2011–2021



Notes: The numerator includes people with a confirmed case of hepatitis C or positive hepatitis C RNA or genotype results. *In 2020, hepatitis C testing was reduced because of COVID-19 (see page 5).

Reasons for the decline in diagnoses among baby boomers are not understood. Other states have reported decreasing rates of hepatitis C screening among this age cohort and speculate it may be a result of decreasing awareness among providers about the recommendation to screen all baby boomers.¹³ Additionally, baby boomers who have not yet been screened might not be engaged in the health care system.¹⁴

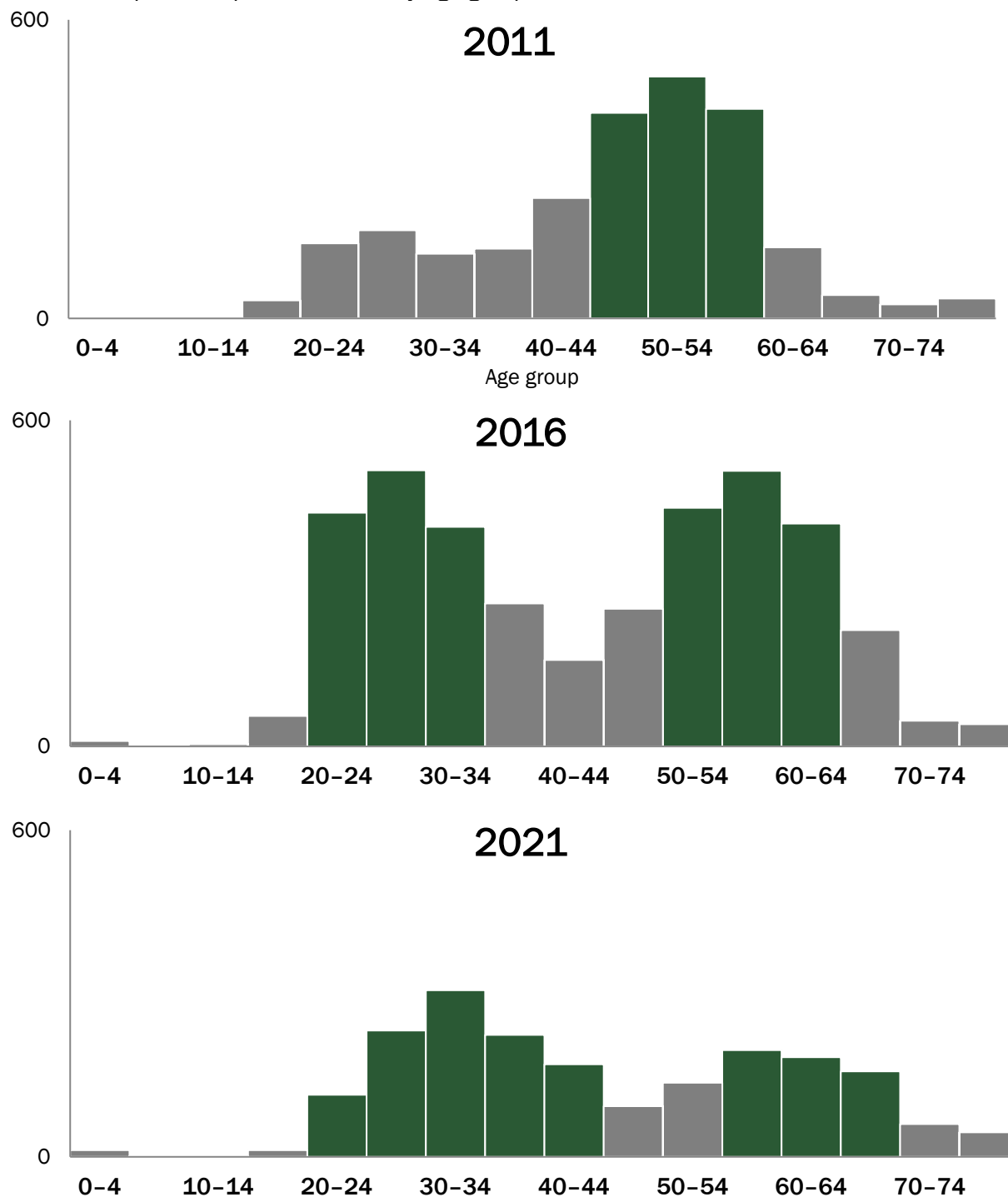
Trends in the age distribution of newly reported cases

As baby boomers continue to be diagnosed with hepatitis C and as more young adults become newly infected with hepatitis C, the age distribution of cases newly reported to public health has shifted from one peak among baby boomers to two peaks among baby boomers and younger adults. In 2020, the peak among young adults was higher than among baby boomers.

FIGURE 8

Over the past 10 years, the age distribution of people newly reported with hepatitis C has shifted.

Number of reported hepatitis C cases, by age group, Wisconsin, 2011, 2016, 2021



2021 CASES

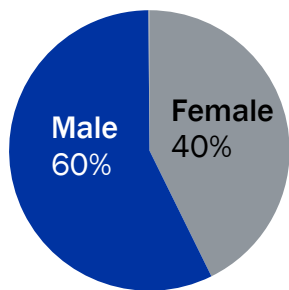
All cases, 2021

In 2021, there were 2,059 hepatitis C cases newly reported: 4 met the definition of confirmed perinatal hepatitis C, 134 (130 confirmed, 4 probable) met the definition of acute hepatitis C, and 1,921 (1,386 confirmed, 535 probable) met the definition of chronic hepatitis C. This section summarizes all 2,059 cases.

FIGURE 9

In 2021, 60% of people newly reported with hepatitis C were male.

Percent of newly reported hepatitis C cases by gender, Wisconsin, 2021

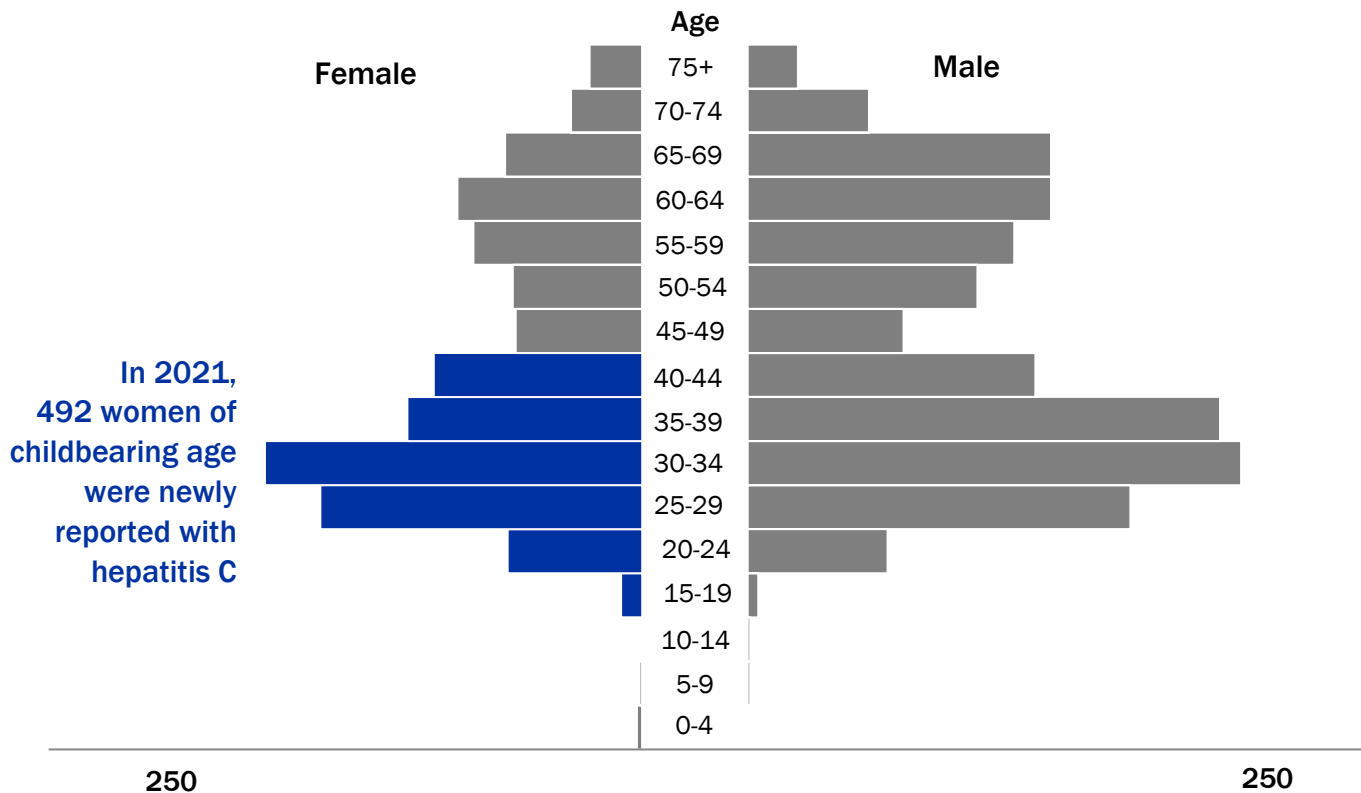


Notes: Two people (<1%) newly reported with hepatitis C had genders of unknown and transgender-woman.

FIGURE 10

There were a high number of cases among young adults and older adults in 2021.

Number of newly reported hepatitis C cases by age group and gender, Wisconsin, 2021

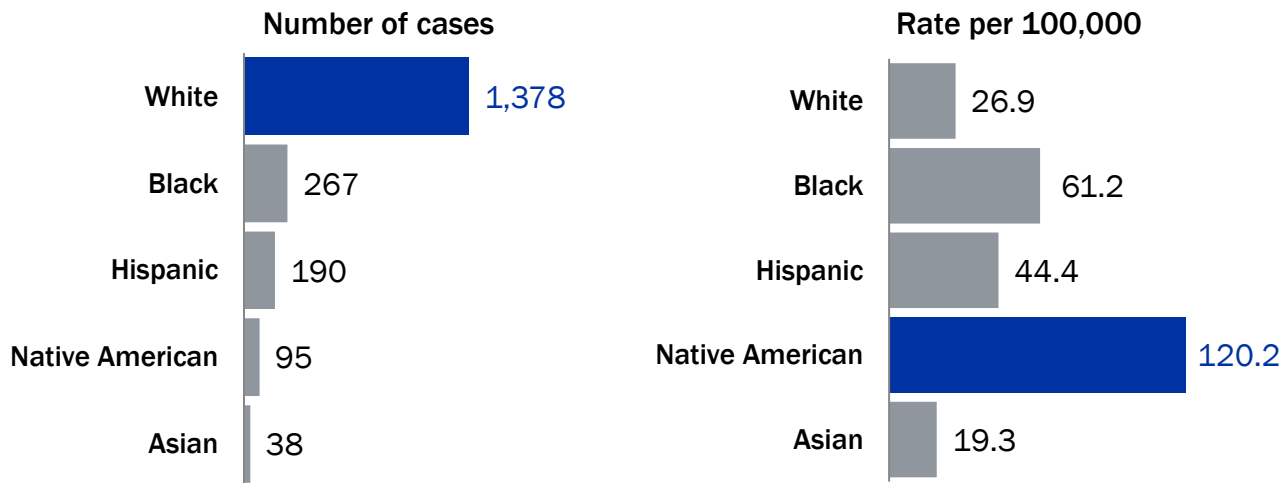


In 2021, most (67%) of the newly reported cases of hepatitis C were among white people. However, the rate was highest among Native Americans. This indicates that hepatitis C is being reported more often among Native Americans than among other racial and ethnic groups in Wisconsin.

FIGURE 11

Most newly reported cases of hepatitis C were among white people, but the rate of hepatitis C was highest among Native Americans.

Number and rate per 100,000 of hepatitis C cases by race/ethnicity, Wisconsin, 2021

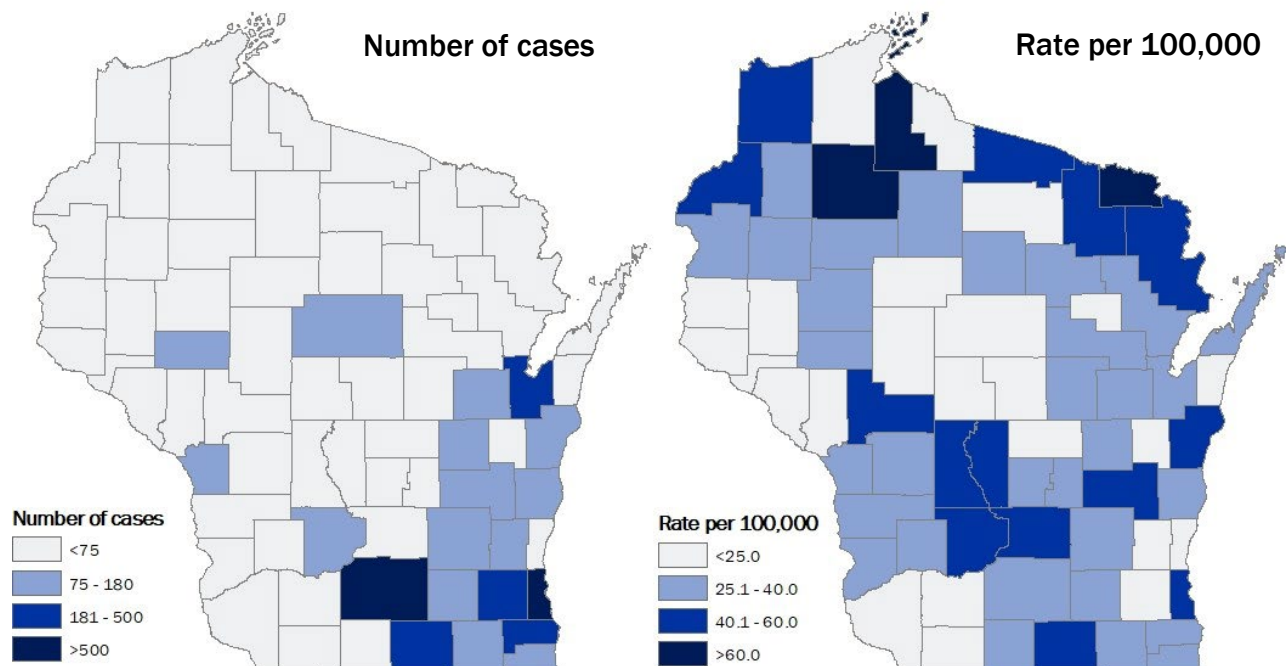


Notes: Data are not shown for 91 people (4.4% of cases) with unknown (N=38), other (N=39), and multiple (N=14) race/ethnicity.

FIGURE 12

Most cases newly reported during 2019–2021 resided in the urban south and east, but rates were highest among counties in rural areas.

Number and rate of newly reported hepatitis C cases, by county of residence, Wisconsin, 2019–2021



Notes: Maps exclude cases reported from the Department of Corrections.

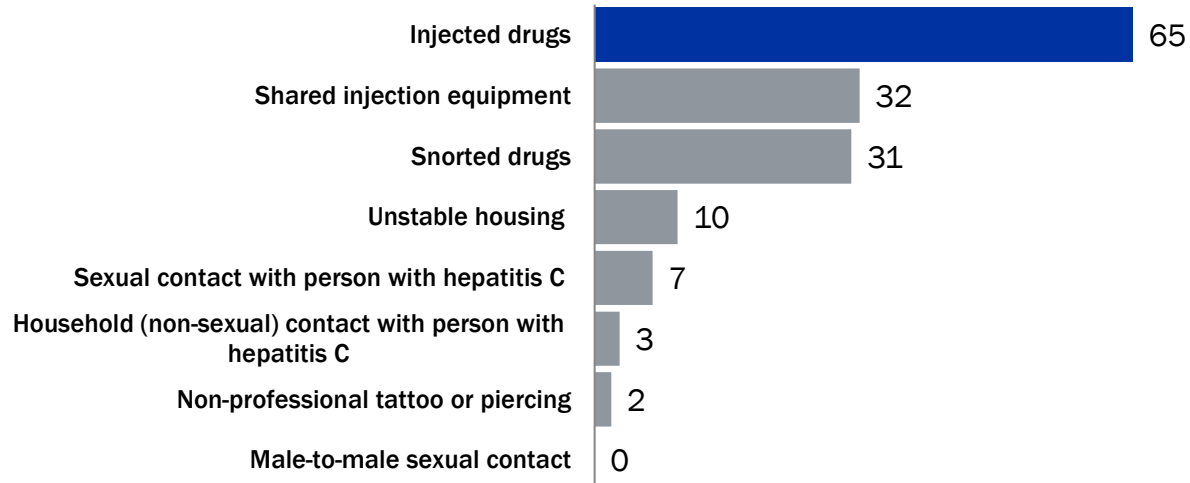
Acute cases, 2021

Among the 2,059 cases reported in 2021, 134 (6.5%) met the definition of acute hepatitis C. This section summarizes these 134 cases. Among the 134 acute cases, 95 (71%) had risk information available.

FIGURE 13

Injection drug use was the most commonly reported risk factor among people with acute hepatitis C.

Number of acute hepatitis C cases that reported each risk behavior or exposure, Wisconsin, 2021



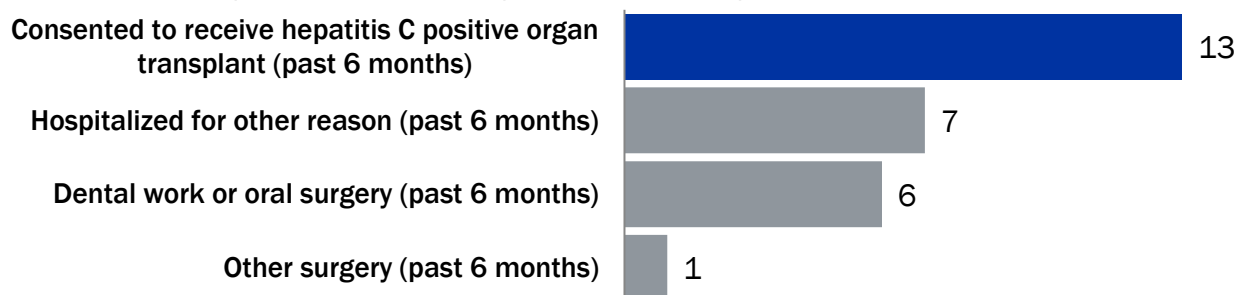
Notes: The numbers of people who reported not having the risk behavior or for which the response is unknown are not shown.

In recent years, consenting to receive an organ known to be positive for hepatitis C has become a more common medical procedure. In 2021, six cases of acute hepatitis C were reported with this exposure. Rarely, hepatitis C can be acquired unknowingly in health care settings through contaminated instruments. Of 134 people with acute hepatitis C, seven reported hospitalization in the last six months for reasons not related to transplantation with a hepatitis C positive organ. Since more than one risk or exposure may be indicated, this may represent overlapping risk and not necessarily the source of exposure.

FIGURE 14

Health care settings are possible sources of exposure to hepatitis C, including by consenting to receive organ transplantation with hepatitis C positive organs.

Number of acute hepatitis C cases that reported each risk exposure, Wisconsin, 2021

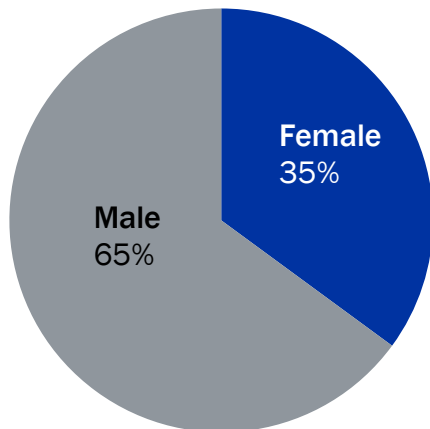


Notes: The numbers of people who reported not having the exposure or for whom the response is unknown are not shown.

FIGURE 15

In 2021, 35% of reported cases of acute hepatitis C were female.

Percent of acute hepatitis C cases, by gender, Wisconsin, 2021

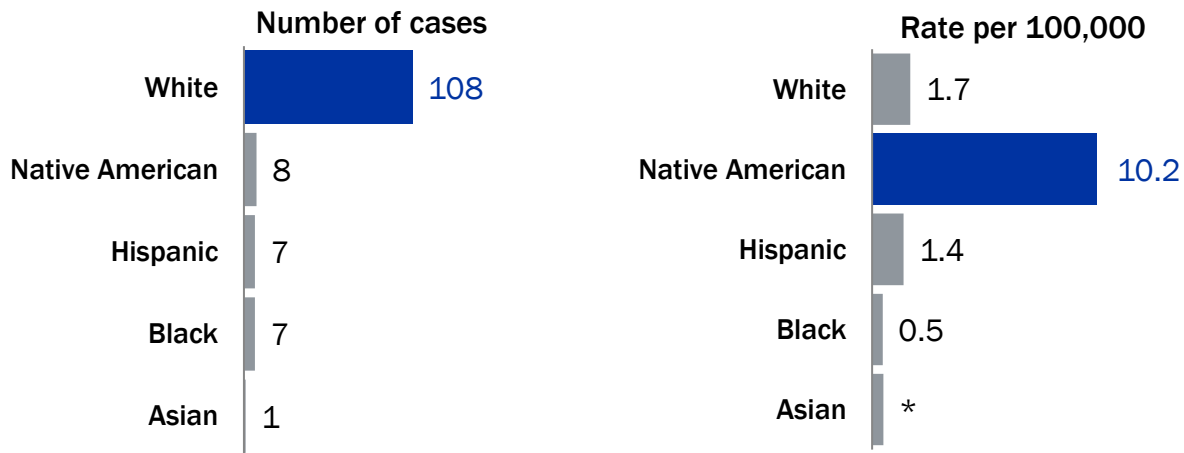


In 2021, most (81%) reported cases of acute hepatitis C were among white people. However, the rate of acute hepatitis C cases per 100,000 population was highest among Native Americans.

FIGURE 16

Most reported cases of acute hepatitis C were among white people, but the rate was highest among Native Americans.

Number and rate per 100,000 of acute hepatitis C cases by race/ethnicity, Wisconsin, 2021



Notes: *Rates were suppressed for categories with fewer than five cases. Excludes 3 people (2% of cases) with multiple (N=1) or other (N=2) race/ethnicity.

In 2021, the median age of people newly reported with acute hepatitis C was 34 years, and 72% (93 people) were under age 40.

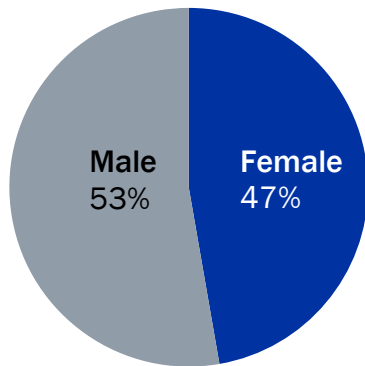
Cases among people aged 15–29, 2021

Among the 2,059 cases newly reported in 2021, 383 (19%) were among people aged 15–29. This section summarizes these 383 cases.

FIGURE 17

In 2021, 47% of people aged 15–29 newly reported with hepatitis C were female.

Percent of newly reported hepatitis C cases among people aged 15–29, by gender, Wisconsin, 2021

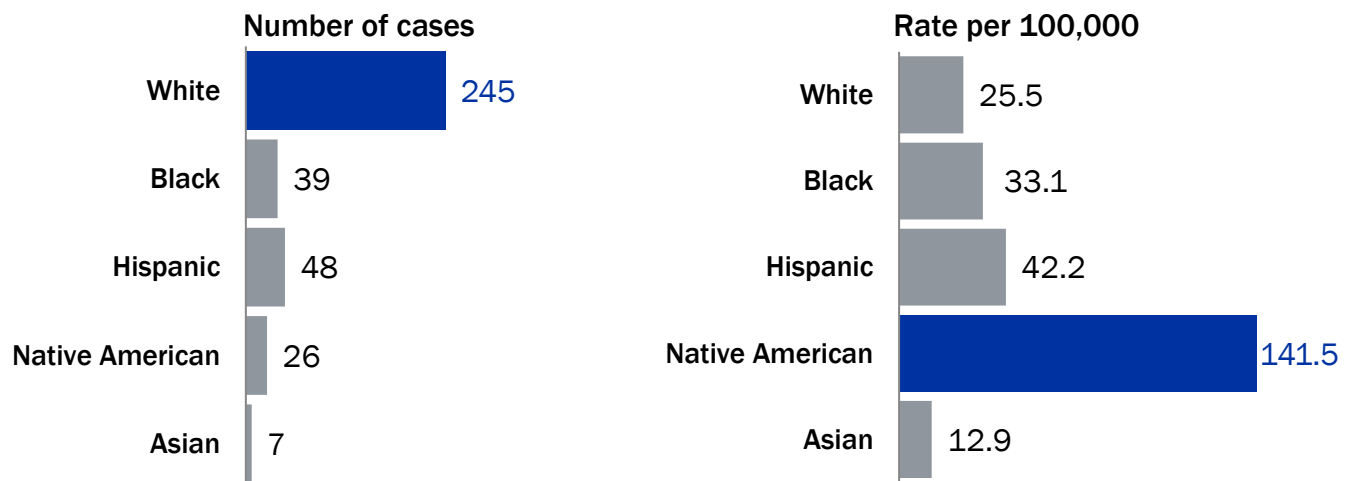


Among people aged 15–29, most (64%) newly reported cases of hepatitis C were among white people. However, the rate of hepatitis C cases reported per 100,000 population was highest among Native Americans.

FIGURE 18

Among people aged 15–29, most cases of hepatitis C were among white people, but the rate was highest among Native Americans.

Number and rate per 100,000 of hepatitis C cases among people aged 15–29, by race/ethnicity, Wisconsin, 2021

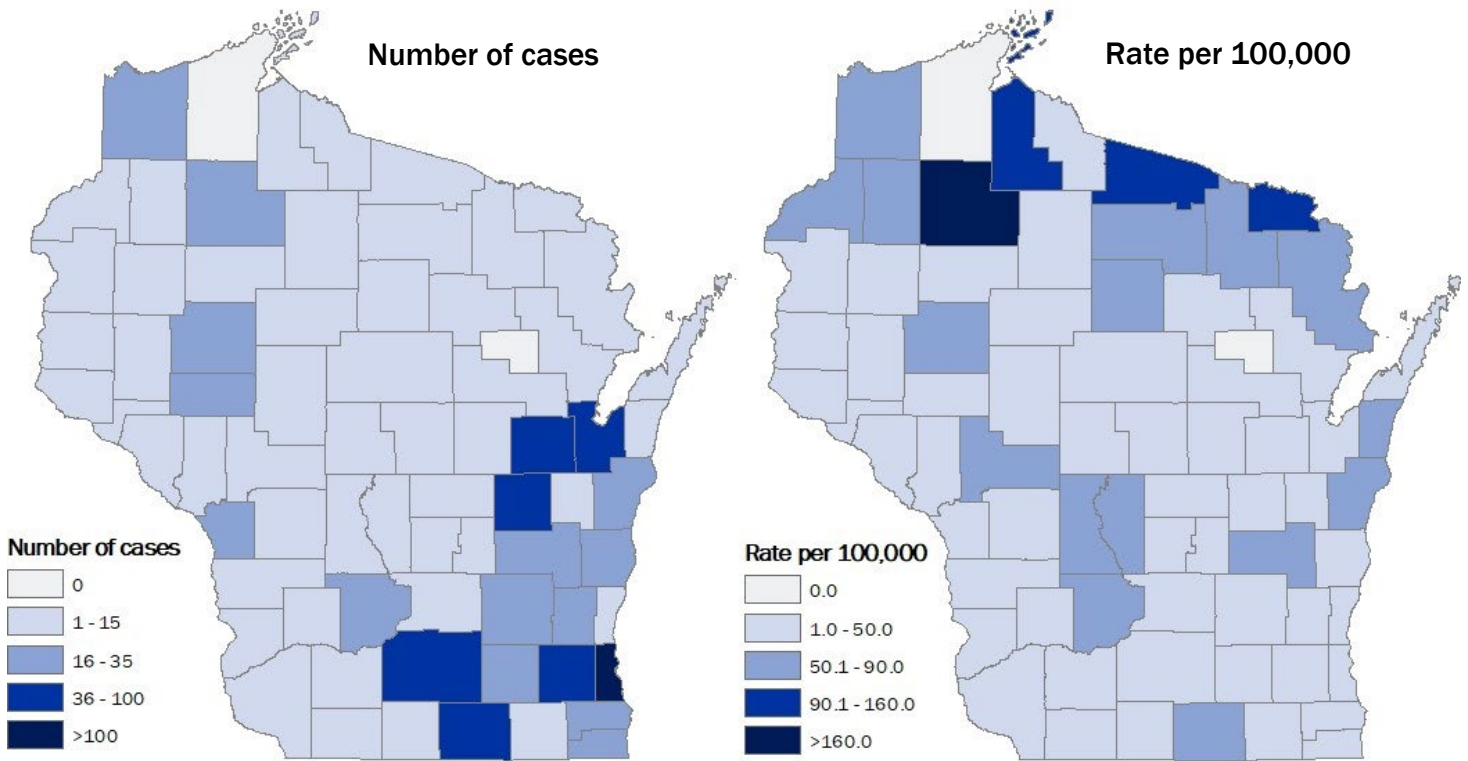


Notes: Excludes 18 people (4.7% of cases in this age range) with unknown (N=5), other (N=7), or multiple (N=6) race/ethnicity.

FIGURE 19

Most cases newly reported during 2019–2021 among people ages 15–29 resided in the urban south and east, but rates were highest among counties in rural areas.

Number and rate of newly reported hepatitis C cases among people aged 15–29, by county of residence, Wisconsin, 2019–2021



Notes: Maps exclude cases reported from the Department of Corrections.

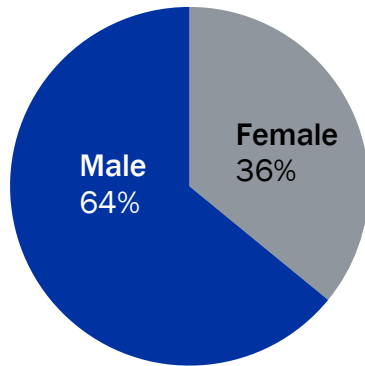
Cases among baby boomers, 2021

Among the 2,059 cases newly reported in 2021, 579 (28%) were among people born during 1945–1965. This section summarizes these 579 cases.

FIGURE 20

In 2021, 64% of baby boomers newly reported with hepatitis C were male.

Percent of newly reported hepatitis C cases among people born during 1945–1965, by gender, Wisconsin, 2021

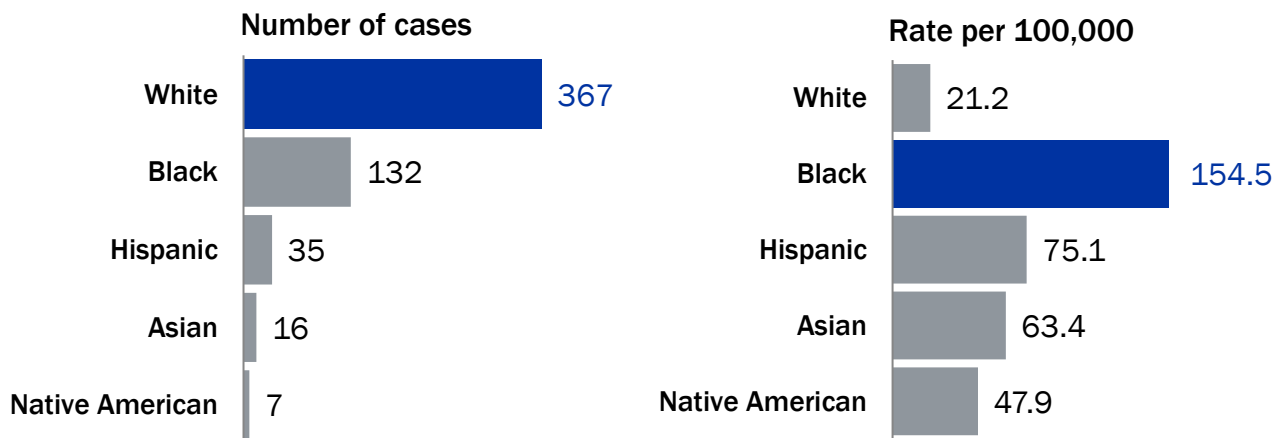


Among baby boomers, the majority (63%) of newly reported cases of hepatitis C were among white people. However, the rate was highest among black people. This indicates that, in this cohort, hepatitis C was reported more often among black people than among other racial and ethnic groups in Wisconsin.

FIGURE 21

Among baby boomers, the majority of cases of hepatitis C were among white people, but the rate was highest among black people.

Number and rate per 100,000 of hepatitis C cases among people born during 1945–1965, by race/ethnicity, Wisconsin, 2021

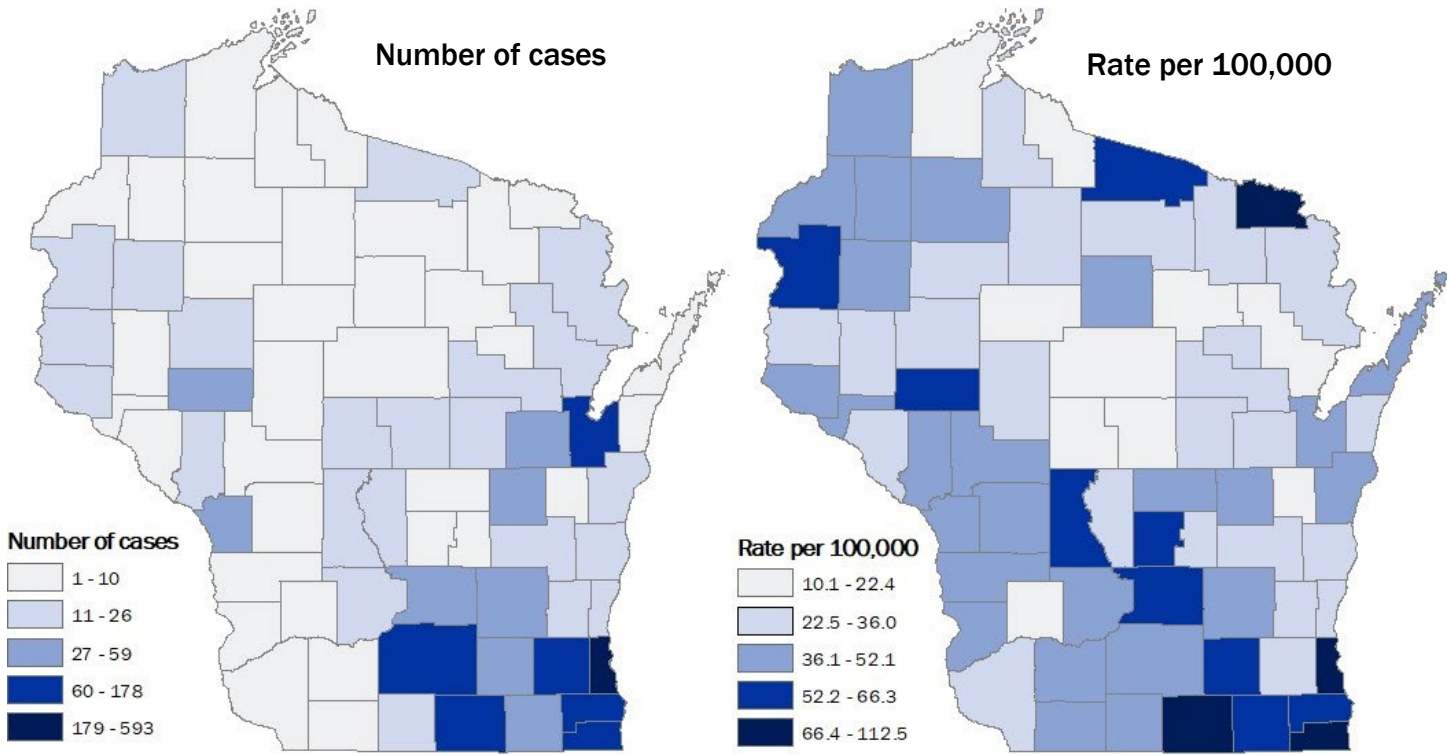


Notes: Data not shown for 24 people (4% of people in this cohort) with unknown (N=10), other (N=12), or multiple (N=2) race/ethnicity.

FIGURE 22

Most cases newly reported during 2019–2021 among baby boomers resided in southeastern counties.

Number and rate of newly reported hepatitis C cases among people born during 1945–1965, by county of residence, Wisconsin, 2019–2021



Notes: Maps exclude cases reported from the Department of Corrections.

Cases identified by the Department of Corrections, 2021

Among the 2,059 cases newly reported in 2021, 221 (11%) were reported from the Wisconsin Department of Corrections. This section summarizes these 221 cases.

Rates of hepatitis C in correctional institutions are much higher than the general U.S. population. One reason for this is that some populations affected by incarceration, such as people who inject drugs, are also more likely to have hepatitis C infection. Before October 2019, the Wisconsin Department of Corrections offered hepatitis C testing to incoming inmates with a risk factor and to people born during 1945–1965. Starting in October 2019, all inmates are offered hepatitis C testing.

FIGURE 23

Among people newly reported with hepatitis C from the Department of Corrections, 85% were male.

Number of newly reported hepatitis C cases from the Department of Corrections, by gender, Wisconsin, 2021

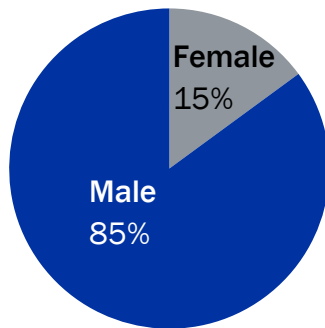


FIGURE 24

Among people newly reported with hepatitis C from the Department of Corrections, 79% of females and 76% of males were under age 40.

Number of newly reported hepatitis C cases from the Department of Corrections, by gender and age group, Wisconsin, 2021

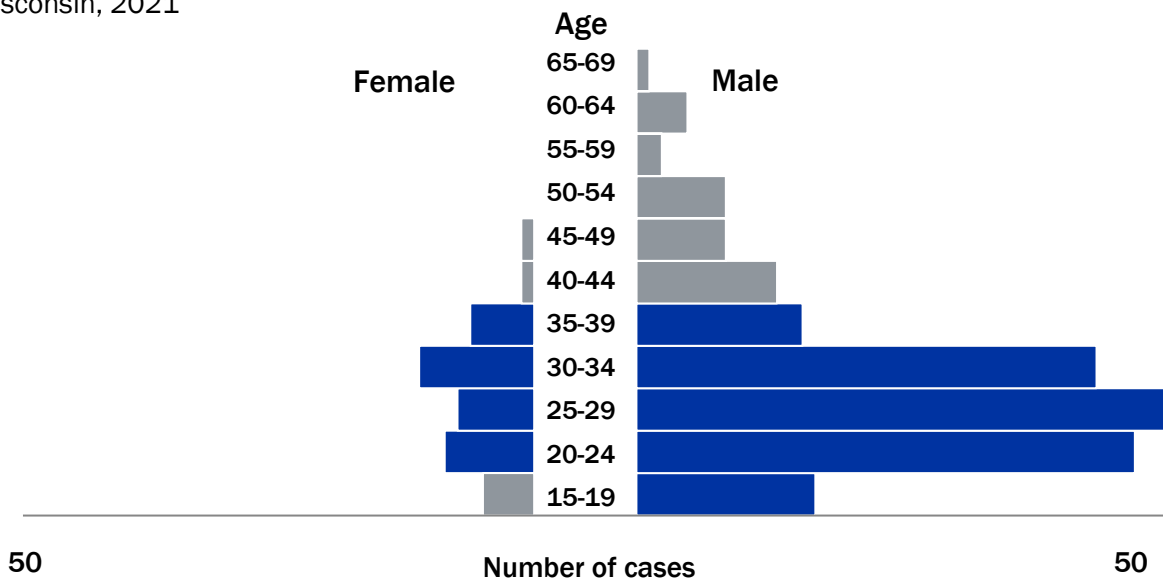
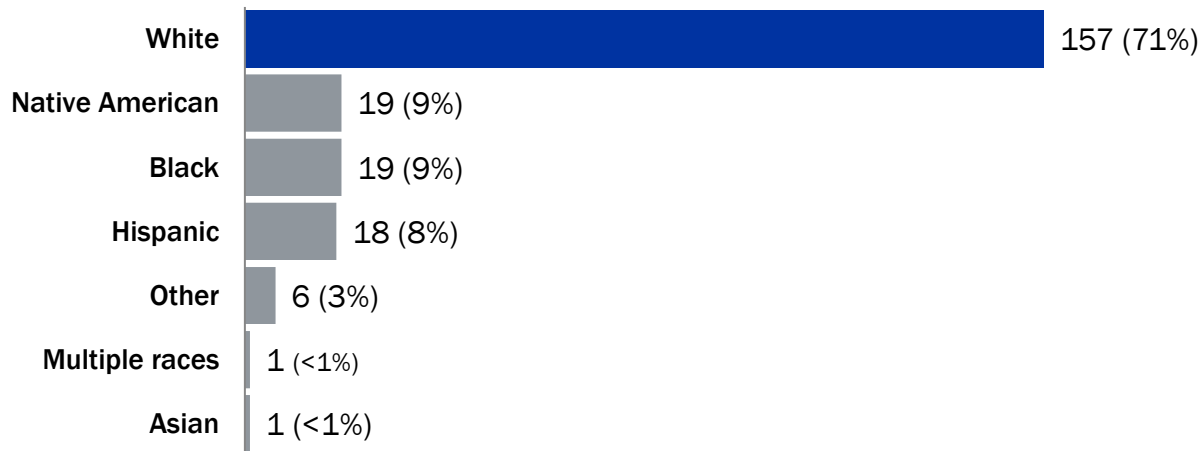


FIGURE 25

Most newly reported cases of hepatitis C from the Department of Corrections were among white people.

Number and percent of newly reported hepatitis C cases from the Department of Corrections, by race/ethnicity, Wisconsin, 2021



Perinatal cases, 2021

Beginning in 2018, perinatal hepatitis C infection is required to be reported to public health in Wisconsin. As the number of women of childbearing age with hepatitis C has increased, the number of infants at risk of perinatal hepatitis C infection has also increased. An estimated 6% of infants born to women with hepatitis C will be infected around the time of birth.

Beginning in April 2020, CDC recommended that all pregnant people receive hepatitis C screening during every pregnancy. Because infants born to women with hepatitis C often do not receive the appropriate testing needed to determine if they have been infected perinatally,¹⁵ the number of perinatal cases reported to public health is likely an extreme underestimation of the number of true perinatal cases each year.

In 2021, four children met the case definition of having perinatal hepatitis C infection, which includes having RNA positive results between the ages of 2 and 36 months. Of these four cases, 50% were male. Seventy-five percent were white and 25% were non-Hispanic Black or African American. Counties reporting cases included: Dane (1 case), Milwaukee (1 case), Racine (1 case), and Waupaca (1 case).

PREVALENCE ESTIMATES

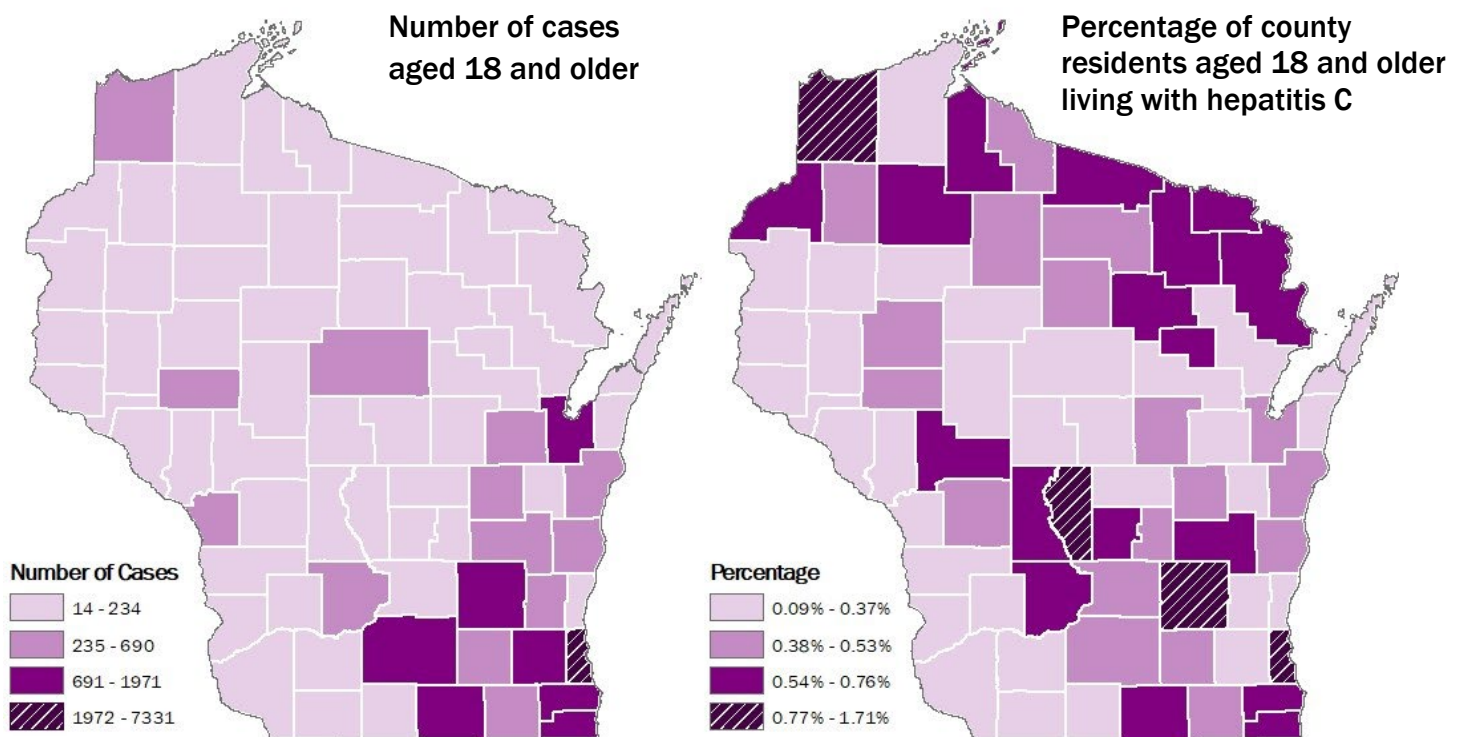
National prevalence estimates suggest that 2.4 million people aged 18 years and older in the U.S. (1% of all adults) are living with chronic hepatitis C infection.¹⁶ However, it is estimated that only 56% of people living with hepatitis C are aware of their diagnosis.¹⁷ This suggests that 44% of people living with hepatitis C in the U.S. have not been tested, diagnosed, or reported to public health. As a result, the true number of Wisconsin residents with hepatitis C is not known. Using methods described by Bocour A, et al., DHS estimates that approximately 47,000 Wisconsin residents aged 18 and older (1.0% of Wisconsin adults) are living with chronic hepatitis C.¹⁸

Although the true number of people living with hepatitis C in Wisconsin is not known, each year DHS reports the prevalence of *reported* hepatitis C in Wisconsin. Prevalence of reported hepatitis C is calculated by adding together all the cases reported to public health during 2000 through 2021, subtracting people matched to state death records, and subtracting people whose last reported hepatitis C RNA result was negative, indicating they had cleared the infection naturally or through treatment. Using this method, at the end of 2021, 25,328 Wisconsin residents of all ages (0.44% of all Wisconsin residents) and 25,276 Wisconsin residents who were age 18 or older in 2021 (0.55% of Wisconsin adults) were living with hepatitis C in Wisconsin. Reported prevalence data for people aged 18 and older are presented below by county of residence. All counties had a prevalence above 0.1%.

FIGURE 26

Most adults with reported hepatitis C reside in southeastern Wisconsin, but prevalence rates are also high in northern and central Wisconsin.

Number and percentage of the population age 18 and older with reported prevalent hepatitis C, by county of residence, Wisconsin, 2021



HEPATITIS C CARE CASCADES

Care cascades describe how many people received appropriate hepatitis C confirmatory testing and can also estimate how many people with hepatitis C infection cleared the infection, either naturally or through treatment. Among 15,217 people with positive hepatitis C test results first reported to public health in 2019–2021, 89% (13,468 people) had a confirmatory RNA test conducted. Of these, 55% (7,378 people) had positive RNA results confirming the diagnosis of hepatitis C. Among people with positive RNA results, 65% (4,800 people) had a subsequent RNA test, possibly indicating linkage to care. Among people with positive RNA results, 31% (2,302 people) had negative hepatitis C RNA results at their most recent test, suggesting the person had cleared the infection either naturally or through treatment. Only 26% of people aged 15–29 had test results indicating the infection had cleared compared to 41% of baby boomers. This information suggests that only a small percentage of people newly reported with hepatitis C in 2019–2021 received hepatitis C treatment, and younger people received treatment less often.

Negative RNA results have been reportable to the Wisconsin Department of Health Services since April 2017. Nevertheless, a small number of laboratories still do not routinely report negative HCV RNA results. As a result, the data shown here underestimate the number and percentage of people who received RNA confirmatory testing, subsequent RNA testing, and negative RNA results at last test.

FIGURE 27

Among people with positive hepatitis C RNA test results first reported in 2019–2021, only 31% had test results indicating infection had cleared through treatment or naturally.

Number and percent of people in each step of the care cascade among people newly reported with positive hepatitis C test results, 2019–2021

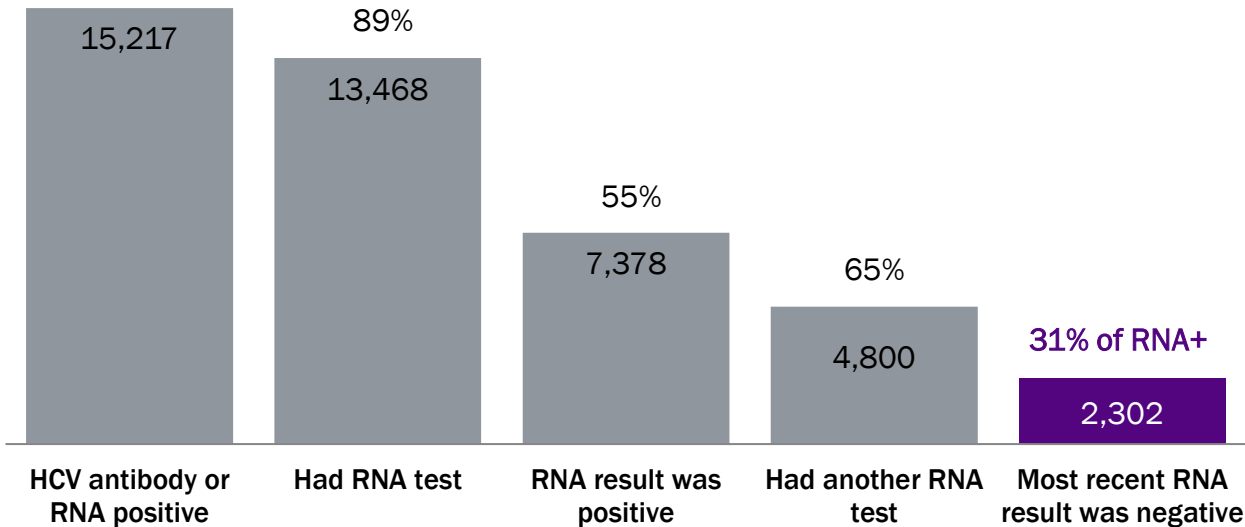


FIGURE 28

Among people aged 15–29 with positive hepatitis C RNA test results first reported in 2019–2021, only 26% had test results indicating infection had cleared through treatment or naturally.

Number and percent of people in each step of the care cascade among people aged 15–29 newly reported with positive hepatitis C test results, 2019–2021

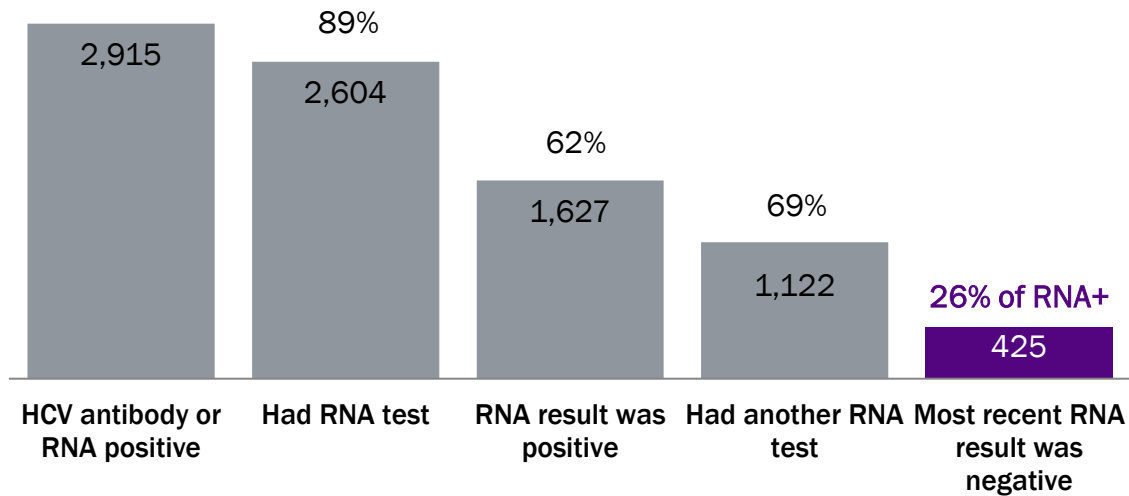
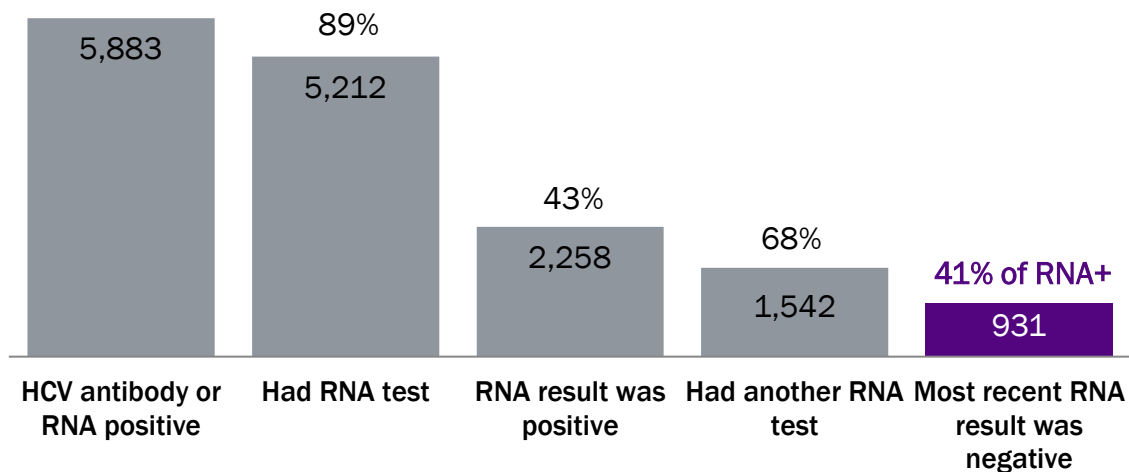


FIGURE 29

Among baby boomers with positive hepatitis C RNA test results first reported in 2019–2021, 41% had test results indicating infection had cleared through treatment or naturally.

Number and percent of people in each step of the care cascade among people born during 1945–1965 newly reported with positive hepatitis C test results, 2019–2021



APPENDICES

Data tables

TABLE 1

Number and rate per 100,000 of reported hepatitis C cases, by case classification and year of report, Wisconsin, 2011–2021

Year	Past/Present and Chronic		Acute		Perinatal		Total	
	N	Rate per 100,000	N	Rate per 100,000	N	Rate per 100,000	N	Rate per 100,000
2011	2,549	44.7	14	0.2	--	--	2,563	44.9
2012	2,589	45.3	26	0.5	--	--	2,615	45.8
2013	2,596	45.3	42	0.7	--	--	2,638	46.0
2014	3,168	55.1	49	0.9	--	--	3,217	56.0
2015	3,684	63.9	61	1.1	--	--	3,745	64.9
2016	3,821	66.2	106	1.8	--	--	3,927	68.1
2017	2,968	51.4	99	1.7	--	--	3,067	53.1
2018	2,600	45.0	142	2.5	2	--	2,744	47.5
2019	2,348	40.6	119	2.1	0	--	2,467	42.7
2020*	1,837	31.6	96	1.7	8	--	1,941	33.4
2021	1,921	32.9	134	2.3	4	--	2,059	35.3

Notes: Cases were classified according to the National Notifiable Diseases Case Classifications. Case counts include both confirmed and probable cases. Starting in 2016, the case definitions for chronic hepatitis C and acute hepatitis C changed. Starting in 2017, negative RNA results were reportable to DPH, which reduced the number of reports classified as probable chronic hepatitis C. This change also allowed more acute cases to be detected. In 2018, surveillance procedures changed to identify more acute cases. Reporting for the perinatal case definition began in 2018. In 2020, case definitions for acute and chronic hepatitis C changed.

*In 2020, case detection was impacted by reduced testing because of COVID-19 (see page 5).

Rates not shown for perinatal hepatitis C.

N = Number of cases

Rate per 100,000 = Number of cases divided by the population of Wisconsin and multiplied by 100,000

TABLE 2

Number and rate per 100,000 of newly reported hepatitis C cases, by county, Wisconsin, 2021 and 2019–2021

County	All cases			Cases age 15-29			Baby boomers		
	N (2021)	N (3 yrs)	Rate per 100,000 (3yrs)	N (2021)	N (3 yrs)	Rate per 100,000 (3yrs)	N (2021)	N (3 yrs)	Rate per 100,000 (3yrs)
Adams	10	27	43.8	3	6	77.5	4	11	44.5
Ashland	14	39	82.0	5	13	154.3	2	4	28.7
Barron	13	38	27.6	1	3	14.2	7	17	41.0
Bayfield	2	11	24.0	0	0	0.0	1	4	20.9
Brown	63	199	25.4	12	44	28.4	20	67	36.7
Buffalo	3	9	22.2	0	1	15.8	1	3	23.3
Burnett	5	23	49.5	1	4	64.8	2	9	52.7
Calumet	6	24	15.5	0	3	10.8	1	6	15.9
Chippewa	16	57	29.5	4	17	51.4	3	15	29.3
Clark	7	15	14.4	4	5	26.4	1	4	16.2
Columbia	24	69	40.2	4	13	45.0	8	28	59.9
Crawford	2	13	26.2	0	2	27.4	1	4	24.7
Dane	162	508	31.7	29	93	24.9	46	167	47.2
Dodge	32	95	35.5	4	22	48.9	9	30	42.2
Door	8	24	28.4	4	4	36.9	1	9	28.1
Douglas	24	73	55.2	3	16	66.9	8	16	44.2
Dunn	5	20	14.9	0	2	5.3	1	8	24.3
Eau Claire	21	85	27.4	6	17	20.1	4	31	43.6
Florence	5	15	113.4	1	2	127.4	1	5	95.2
Fond du Lac	33	131	42.1	6	34	61.2	7	20	24.0
Forest	2	12	43.7	1	4	86.0	1	3	35.8
Grant	5	20	12.7	3	6	15.0	1	7	28.1
Green	10	36	32.5	2	5	27.7	3	15	41.5
Green Lake	8	22	38.4	1	3	33.2	2	4	15.4
Iowa	2	15	21.0	0	1	8.8	1	8	38.7
Iron	2	4	22.8	1	1	45.4	1	1	14.6
Jackson	7	30	48.3	1	7	70.1	2	6	32.6
Jefferson	23	82	32.3	8	17	33.6	7	33	51.8
Juneau	11	46	56.8	3	7	55.5	3	14	55.3
Kenosha	36	166	32.8	1	20	19.0	26	80	68.7
Kewaunee	2	12	19.4	2	8	78.7	0	2	11.3
La Crosse	26	120	33.7	2	24	26.8	4	31	36.2
Lafayette	2	7	13.8	2	2	22.5	0	2	14.7
Langlade	9	16	26.9	1	1	11.0	1	1	5.1
Lincoln	5	28	32.8	1	10	74.1	2	8	29.1
Manitowoc	31	102	42.2	6	25	62.9	6	24	33.7
Marathon	28	80	19.7	5	15	20.8	2	9	8.7
Marinette	23	55	44.7	1	12	62.7	3	11	27.6
Marquette	2	18	38.9	1	3	49	0	5	28.0
Menominee	0	3	22.9	0	0	0.0	0	0	0

County	All cases			Cases age 15-29			Baby boomers		
	N (2021)	N (3 yrs)	Rate per 100,000 (3yrs)	N (2021)	N (3 yrs)	Rate per 100,000 (3yrs)	N (2021)	N (3 yrs)	Rate per 100,000 (3yrs)
Milwaukee	525	1490	52.4	77	226	33.7	195	593	100.6
Monroe	22	53	38.1	2	7	29.3	3	9	24.3
Oconto	18	35	30.5	2	5	28.5	6	13	36.1
Oneida	6	27	25.0	2	10	68.1	1	6	16.0
Outagamie	50	161	29.0	11	42	40.0	11	40	29.8
Ozaukee	11	42	15.8	3	9	19.2	4	16	21.1
Pepin	1	3	13.6	0	1	31.2	1	2	28.0
Pierce	6	25	19.8	1	5	15.5	3	13	43.0
Polk	10	37	28.0	1	4	18.7	7	24	62.8
Portage	12	43	20.2	2	13	23.3	5	11	20.9
Price	4	11	26.5	0	1	18.7	1	4	25.8
Racine	55	181	30.8	9	28	26.3	21	78	51.3
Richland	5	14	26.4	1	2	23.0	2	4	25.2
Rock	60	229	47.4	9	51	54.8	14	70	59.9
Rusk	4	16	36.6	1	3	46.3	1	5	33.4
Saint Croix	13	42	15.7	0	4	8.3	4	18	33.5
Sauk	28	94	49.6	5	18	55.0	5	21	72.6
Sawyer	21	41	81.8	5	18	259.8	0	3	10.0
Shawano	18	35	28.2	2	5	24.9	7	12	16.3
Sheboygan	24	87	25.1	4	19	31.1	7	23	32.4
Taylor	2	9	14.6	0	1	10.3	0	2	11.3
Trempealeau	5	19	21.4	1	3	20.1	3	11	47.1
Vernon	11	27	29.6	2	5	32.4	3	8	31.6
Vilas	9	35	53.4	4	12	147.1	1	11	43.2
Walworth	23	80	25.8	4	12	18.8	11	35	43.0
Washburn	4	15	31.5	1	4	63.7	2	5	29.4
Washington	23	77	18.9	6	21	30.4	4	17	15.5
Waukesha	83	233	19.3	11	42	19.8	33	88	26.3
Waupaca	12	42	27.0	4	11	45.7	3	12	25.9
Wausara	3	18	24.6	0	2	18.1	2	9	36.9
Winnebago	48	141	27.6	14	37	33.4	10	34	27.1
Wood	14	52	23.4	2	14	38.3	3	12	18.6
Federal Corrections	19	36	--	4	7	--	2	3	--
State Corrections	221	661	--	64	193	--	13	40	--
Wisconsin	2,059	6,460	37.0	383	1,307	37.9	581	1,974	44.6

Notes: Case counts include all cases meeting the definition of acute, chronic, or perinatal hepatitis C. Cases were classified according to the National Notifiable Diseases Case Classifications.

N (2021) = Number of cases reported in 2021

N (3 yrs) = Total number of cases reported in the three years of 2019–2021

Rate per 100,000 (3 yrs)= Three-year average rate of newly reported cases: Number of cases reported in 2019–2021 divided by the total population of the jurisdiction each year and multiplied by 100,000

Three-year average rates are presented so that each county could be represented without suppression of small numbers.

TABLE 3

Number of reported prevalent hepatitis C cases and percentage of the population with hepatitis C, among all ages and among people aged 18 and older, by county of residence, Wisconsin, at the end of 2021

County	All ages		Age 18 and older	
	N	Percent	N	Percent
Adams	106	0.52	150	0.84
Ashland	71	0.45	71	0.57
Barron	122	0.27	125	0.34
Bayfield	28	0.18	28	0.22
Brown	765	0.29	813	0.41
Buffalo	17	0.13	17	0.16
Burnett	73	0.47	73	0.57
Calumet	78	0.15	80	0.20
Chippewa	175	0.27	208	0.42
Clark	51	0.15	51	0.21
Columbia	197	0.34	211	0.47
Crawford	27	0.16	32	0.24
Dane	1684	0.31	1952	0.46
Dodge	264	0.3	1221	1.71
Door	73	0.26	77	0.32
Douglas	265	0.6	274	0.78
Dunn	81	0.18	85	0.24
Eau Claire	300	0.29	322	0.40
Florence	27	0.61	27	0.72
Fond du Lac	326	0.31	602	0.73
Forest	42	0.46	43	0.59
Grant	66	0.13	74	0.18
Green	96	0.26	97	0.34
Green Lake	67	0.35	70	0.46
Iowa	46	0.19	47	0.26
Iron	19	0.33	21	0.42
Jackson	89	0.43	98	0.60
Jefferson	239	0.28	245	0.37
Juneau	131	0.48	154	0.70
Kenosha	883	0.52	929	0.71
Kewaunee	36	0.17	36	0.22
La Crosse	295	0.25	305	0.33
Lafayette	21	0.12	21	0.17
Langlade	83	0.42	87	0.54
Lincoln	87	0.3	91	0.39
Manitowoc	314	0.39	328	0.51
Marathon	313	0.23	328	0.31
Marinette	193	0.47	208	0.62
Marquette	64	0.41	70	0.55
Menominee	19	0.44	21	0.66

County	All ages		Age 18 and older	
	N	Percent	N	Percent
Milwaukee	7174	0.76	7331	1.01
Monroe	173	0.37	176	0.50
Oconto	94	0.24	100	0.32
Oneida	121	0.34	123	0.41
Outagamie	420	0.22	437	0.30
Ozaukee	187	0.21	188	0.26
Pepin	14	0.19	16	0.27
Pierce	73	0.17	74	0.23
Polk	91	0.21	94	0.27
Portage	147	0.21	156	0.28
Price	47	0.34	48	0.41
Racine	848	0.43	911	0.60
Richland	30	0.17	32	0.23
Rock	667	0.41	696	0.56
Rusk	33	0.23	33	0.28
Saint Croix	101	0.11	104	0.15
Sauk	258	0.41	264	0.53
Sawyer	84	0.5	91	0.66
Shawano	115	0.28	118	0.36
Sheboygan	349	0.3	375	0.41
Taylor	13	0.06	4	0.01
Trempealeau	43	0.14	14	0.09
Vernon	54	0.18	47	0.21
Vilas	111	0.5	55	0.24
Walworth	304	0.29	112	0.60
Washburn	49	0.31	318	0.39
Washington	272	0.2	51	0.39
Waukesha	814	0.2	281	0.26
Waupaca	169	0.33	845	0.26
Waushara	60	0.25	177	0.42
Winnebago	559	0.33	72	0.36
Wood	176	0.24	600	0.45
Wisconsin	25,328	0.44	25,276	0.55

Notes: Prevalence of reported hepatitis C is calculated by adding together all of the cases reported to public health during 2000 through 2021 and subtracting people matched to state or national death records and subtracting people whose last reported hepatitis C RNA result was negative, indicating they had cleared the infection naturally or through treatment. In addition, this year, county of residence was updated to be the most recent residence address available from a national address locator service. The Wisconsin state total includes 3,845 people (1,440 of whom were age 18 or older in 2021) with unknown county of residence or those who were residing in correctional facilities.

N = Number of cases

Percent = Number of cases divided by the population of the jurisdiction and multiplied by 100

Technical notes

This report was compiled by the Wisconsin Department of Health Services, Division of Public Health, Communicable Disease Harm Reduction Section and is based on reports of hepatitis C infection submitted by laboratories and local and Tribal health departments to the Wisconsin Electronic Disease Surveillance System (WEDSS). Per [Wis. Admin. Code ch. DHS 145](#), hepatitis C is a reportable communicable disease. When cases are reported, local health departments contact people with hepatitis C infection to provide health education, risk reduction counseling, hepatitis A and B vaccine, and medical referral as needed.

This report is based on hepatitis C surveillance data from WEDSS as of September 19, 2022. Because WEDSS is not a static database and cases can be updated daily, hepatitis C case numbers used in other reports or individual county reports may vary depending on the date that these data are accessed.

Many cases of hepatitis C infection are reported by laboratories. Since laboratories do not generally report demographic data such as region, race, or age, surveillance summary data by demographic characteristics are often incomplete.

For the purpose of this report, Native American is used to describe persons reported with a race of American Indian or Alaska Native. The methods used to report and classify race and ethnicity data may inadvertently undercount certain groups of people. For example, in this report, people reported with multiple races (for example, Native American and white) would not be included as white or Native American, but would be reported as multiple race. Results of sensitivity analyses indicate that the trends by race and ethnicity would remain unchanged if these cases were included in the individual race categories.

Many reported cases of hepatitis C infection represent chronic disease in people who were infected years ago. People with acute infection are often unaware of their infection because it presents with few if any symptoms.

Changes in numbers and rates in a county or statewide may be due to an increase in new hepatitis C infections, changes in provider hepatitis C screening practices from year to year, differences in the amount of resources each jurisdiction has dedicated to hepatitis C surveillance, or differences in reporting of positive and negative hepatitis C test results to the Wisconsin Electronic Disease Surveillance System.

Starting in April 2017, negative RNA results became reportable to the Wisconsin Electronic Disease Surveillance System. Because of this change, the number of probable chronic hepatitis C cases has decreased. In addition, the surveillance system can now identify acute cases that had test conversion from negative RNA to positive RNA; therefore, the number of acute hepatitis C cases has increased. This change to the surveillance system was described in detail in the [2017 annual report](#).

Maps and tables include the three-year average rates (for years 2019–2021) so that each county could be represented without suppression for small numbers.

Prevalence estimates including people who have not yet been diagnosed or reported to public health were estimated using a modified version of the methods described in Bocour A, et al.¹⁹

Data regarding *reported* prevalence exclude Wisconsin residents matched to state or national death records. These data also exclude people whose last hepatitis C RNA results reported to the Wisconsin Electronic Disease Surveillance System were negative, indicating the infection had cleared naturally or through treatment. The numbers of people who had negative RNA results that were not reported to the Wisconsin Electronic Disease Surveillance System are not known and have not been subtracted from the prevalence estimate. This year, county of residence

was updated to be the most recent residence address available based on information from a national address locator service. Persons with residence addresses outside of Wisconsin were excluded.

For more information

[Wisconsin Department of Health Services](#)

[Centers for Disease Control and Prevention](#)

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Questions regarding the Wisconsin Hepatitis Prevention Program may be directed to: [Kailynn Mitchell](#), Hepatitis Prevention Coordinator, kailynn.mitchell@dhs.wisconsin.gov.

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- ¹⁹ *Ibid.*