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# WISCONSIN EPI EXPRESS

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## PROGRAM UPDATES

### STAFF UPDATES:

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### NEW BACKYARD POULTRY WEBSITE:

A new [webpage](#) has been created on the topic of Backyard Poultry and *Salmonella*.

### NEW MONTHLY ZIKA UPDATE FOR LHD'S:

The "[Wisconsin: Zika Summary and Response](#)," publication is a new monthly correspondence for public health officials and other local partners, providing situational awareness of Zika-related developments within Wisconsin and nationwide. The report will provide a snapshot of current response efforts, updates on Wisconsin surveillance, and links to helpful resources.

### ONGOING OUTBREAK INVESTIGATIONS:

Check out the DHS website for up-to-date information: [Salmonella Heidelberg](#), [Seoul Hantavirus](#), and [Zika virus](#).

### NEW EDUCATIONAL MATERIALS:

Please see our new fact sheets and flyers that have recently been developed: [Anaplasmosis and Ehrlichiosis](#), [Babesiosis](#), [ETEC](#), [Giardiasis](#), [Lyme disease](#), and [Measles](#).

### COMMUNICABLE DISEASE UPDATE WEBINAR SERIES:

The Communicable Disease Update Webinar Series continues to be held on the second Friday of every month from 1 to 2 p.m. The link to join the webinar is the same every month: <https://connect.wisconsin.gov/monthly-webinar-series/>. No registration is necessary. Upcoming topics include: waterborne disease safety, school immunization laws, skin infections, and norovirus in long-term care facilities.

# Zoonotic Disease Prevention Resources

By: Connie Bell, RN, MPH and Rachel Klos, DVM, MPH

Warm weather is in full swing in Wisconsin and residents are now outside exploring the beautiful landscapes. Many of these outdoor activities will include interacting with animals in some capacity whether it is at petting zoos, fairs, or at home with pets. Animals can carry pathogens that can make people ill. Animals do not always look sick when they are carrying these germs, they can look healthy and clean.

The Centers for Disease Control and Prevention (CDC) estimates that 6 out of every 10 known infectious diseases in people are spread from animals and 3 out of every 4 new or emerging infectious diseases in people are spread from animals. The Bureau of Communicable Diseases (BCD) recognizes the significant role that zoonotic diseases play in the health of Wisconsin residents. With that in mind, BCD has created several new educational materials on the topic of preventing the spread of zoonotic diseases: [Wash Your Hands!](#), [Handwashing After Animal Contact](#), [Staying Healthy While Working on a Farm](#), [Safety Guidelines for Rodent Owners](#), and [Salmonella and Backyard Poultry](#).

In addition, the National Association of State Public Health Veterinarians (NASPHV) publishes a [Compendium of Measures to Prevent Disease Associated with Animals in Public Settings](#) available on their website. BCD would like to encourage local health departments to use the Compendium and our new materials to provide education to patients with reportable illnesses. Also consider providing these resources proactively to groups or businesses in your jurisdiction that could benefit from prevention messaging. Groups to consider contacting include:

- 4-H Clubs
- Fair boards
- Petting zoos
- Feed or farm co-ops that sell animals or poultry
- Humane Societies
- Other locations that house animals in public settings

## NEW One Health Related Educational Resources

**WASH YOUR HANDS!**

1. Wet your hands with clean, running water (warm or cold), and apply soap.
2. Lather your hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.
3. Scrub your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.
4. Rinse your hands well under clean, running water. Let the water run back into the sink, not down to your elbows.
5. Dry your hands using a clean towel or air dry them.

**STAYING HEALTHY WHILE WORKING ON A FARM**

Human health is related to the health of animals and the environment. For example, some diseases can be shared between animals and people. These are called zoonotic diseases. When working on a farm, it is common for germs (e.g., Salmonella, E. coli, or Campylobacter) to pass from animals to people. For this reason, it is important to follow good hygiene practices to protect yourself and your family.

**HOW CAN I PROTECT MYSELF AND MY FAMILY?**

- Always wash hands thoroughly with soap and water after touching or working with livestock, handling equipment used on animals, or coming into contact with anything in the area where there are animals.
- This is especially important to do before preparing or consuming food or drink for yourself or others.
- Separate shoes, work gloves, and clothing when working with livestock.
- Do not eat or drink in areas where livestock are present.
- Do not drink unpasteurized (raw) milk or serve it to others.
- Change or take off soiled clothing and boots before getting into your vehicle. Wash hands after taking off any clothes and shoes you wore while working with livestock.
- Take care for calves with diarrhea (scours). It is especially important to practice good hygiene and biosecurity. This will help prevent the spread of potential germs between calves as well as reduce the bacteria you, your coworkers, and your family members could become sick.
- Young children and immune-compromised persons should not have contact with calves, especially those with diarrhea (scours).
- If you become sick with diarrhea lasting more than a few days or develop a high fever, contact your health care provider and tell them that you work with livestock.

**SALMONELLA AND BACKYARD POULTRY**

Many people are keeping live backyard poultry such as chickens and ducks. Having backyard poultry can have many benefits, but it is important to remember that they can carry bacteria that can make people sick. Children younger than 5 years, older adults, and people with weakened immune systems, including pregnant women, are more likely to get a serious illness from live poultry.

**HOW DO LIVE POULTRY SPREAD SALMONELLA?**

- Children, adults, and other poultry can have a bacteria called Salmonella in their intestines. Salmonella can make people sick with vomiting, diarrhea, fever, and stomach cramps.
- Poultry can spread Salmonella in their droppings and on their bodies (feathers, feet, and beaks) even when they look healthy and clean.
- Bacteria can then get on their cages, coops, feed, and water dishes—anywhere the birds live and roam.
- Anyone who touches the birds or who works or plays in the area where the poultry roam is at risk for getting Salmonella.

**HOW CAN I REDUCE MY CHANCES OF GETTING SALMONELLA?**

- WASH YOUR HANDS with soap and water right after touching live poultry or anything in the area where they live and roam. Use hand sanitizer if soap and water are not available.
- AVOID FEED HAND FEEDING OF YOUNG CHILDREN.
- POULTRY SHOULD STAY OUTSIDE EVEN WHEN THEY ARE BABIES. Do not let live poultry inside the house, in bathrooms, or especially in areas where food or drink is prepared, served, or stored.
- SOME PEOPLE SHOULD NOT TOUCH POULTRY. Do not let children younger than 5 years, adults older than 65, pregnant women, or people with weakened immune systems handle or touch chicks, ducklings, or other live poultry.
- DISINFECT FEED AND WATER DISHES.
- DO NOT EAT OR DRINK IN THE AREA WHERE BIRDS LIVE OR ROAM.
- DO NOT KISS OR SNUGGLE POULTRY.
- ONLY CLEAN EQUIPMENT USED FOR POULTRY OUTDOORS. Materials used to raise or care for live poultry, such as cages or feed or water containers, should be cleaned outdoors and should not be brought into the house.

**HANDWASHING AFTER ANIMAL CONTACT**

**WHY IS THIS IMPORTANT?**

Whether you live on a farm or go visit a petting zoo, there are many ways to interact with the animals around you. When visiting animals or their environment, it is important to remember that animals have germs, which they can spread to us. These germs can make us sick. To avoid getting sick, everyone should wash their hands after having any contact with animals.

**WHO SHOULD WASH THEIR HANDS?**

Everyone should wash their hands! However, the following groups should take special care around animal exhibits and make sure to wash their hands thoroughly:

- Young children
- Older people
- People with weakened immune systems

**WHEN TO WASH YOUR HANDS?**

- After touching animals or their living area
- After leaving the animal area
- After taking off clothes or shoes that were worn in areas where animals were present
- After going to the bathroom
- Before preparing foods, eating, or drinking

**HOW TO WASH YOUR HANDS?**

1. Wet your hands with clean, running water (warm or cold), and apply soap.
2. Lather your hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.
3. Scrub your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.
4. Rinse your hands well under clean, running water. Let the water run back into the sink, not down to your elbows.
5. Dry your hands using a clean towel or air dry them.

# Surgical Site Infection Reduction Program

By: Gwen Borlaug, CIC, MPH, FAPIC

The Division of Public Health (DPH) Healthcare-Associated Infections (HAI) Prevention Program conducts statewide HAI surveillance and coordinates HAI prevention activities among partners such as the Wisconsin Hospital Association, MetaStar (the Wisconsin healthcare quality improvement organization), the Division of Quality Assurance, and the Wisconsin State Laboratory of Hygiene.

HAI data collected from Wisconsin hospitals helps to direct resources and efforts toward prevention of the most prevalent HAIs in Wisconsin. During 2013-2016, surgical site infections were the most frequently reported HAI, with approximately 800 to 1,000 cases reported annually. This is more than the number of central line-associated bloodstream infections, catheter-associated urinary tract infections, ventilator-associated pneumonia, and methicillin-resistant *Staphylococcus aureus* bacteremia cases combined during that same time period.



Beginning mid-2015, DPH intensified efforts to promote evidence-based surgical site infection (SSI) reduction strategies among hospital surgery centers. Charles Edmiston, PhD, Professor Emeritus, Department of Surgery at the Medical

**During 2013-2016, surgical site infections were the most frequently reported HAI, with approximately 800 to 1,000 cases reported annually.**

College of Wisconsin, was enlisted as the SSI prevention subject matter expert and statewide surgical champion. DPH commissioned Dr. Edmiston to provide onsite consultation to hospital surgical care teams, provide ongoing email and telephone consultation, maintain a [library](#) of peer-reviewed journals, develop a state SSI prevention guidance document, and host an annual SSI Prevention Summit. The onsite visits are conducted by request and at no cost to the facility, as costs are covered by a grant from the CDC.

An analysis of hospital SSI data was conducted to determine SSI incidence following the onsite visits. Among the 10 hospitals receiving onsite SSI consultation visits during August-December 2015, reported SSIs decreased from 66 during 2015 to 36 during 2016. This represents a 45 percent reduction in SSI occurrence among these facilities. In contrast, among approximately 90 hospitals not receiving a visit, SSI incidence increased by approximately 15 percent during 2015-2016.

The hospitals that received the SSI consultation visits had an estimated savings of \$300,000-750,000 in healthcare costs using data from a [2009 HAI cost report](#). At an estimated cost of \$3,000 per onsite visit, these onsite visits are cost-effective and sound investments of public health dollars to prevent SSIs.

Dr. Edmiston has conducted an additional 15 onsite visits to date, and grant support will continue through March 2018. We encourage facilities to schedule visits by contacting Gwen Borlaug at [Gwen.Borlaug@dhs.wisconsin.gov](mailto:Gwen.Borlaug@dhs.wisconsin.gov). DPH will also be requesting visits to facilities determined to have higher SSI occurrence than the 2015 national baseline.



# Keeping Crypto Out of the Pool

By: Sarah Koske, DVM, MPH; and Amanda Koch, MPH

*Cryptosporidium* has emerged as the leading cause of recreational water-associated outbreaks in the U.S. The main reason is that *Cryptosporidium* can survive almost 11 days in pool water containing the typical chlorine concentrations found in most well-maintained pools (1

Each person in the pool has an average 0.14 grams of fecal material on their body if they do not take a pre-swim shower with soap.<sup>1</sup>

ppm). Additionally, individuals with cryptosporidiosis (“crypto”) can shed the organism in their stool for up to three weeks after symptoms stop.

Even a small amount of stool remaining on a person’s body when they use the pool is enough to make others ill. A diarrheal accident does not need to occur for crypto to contaminate the pool.

Since 2010, 35.5% of Wisconsin’s 31 recognized waterborne disease outbreaks were caused by *Cryptosporidium* (Figure 1). Detecting waterborne outbreaks relies on early recognition of common exposures, such as the same lake, community pool, or the same waterslide at a waterpark during the same period of time. Collecting detailed information during patient follow-up is the most important step to identifying an outbreak.



Additional challenges to identifying and controlling crypto outbreaks include:

### **A relatively long incubation period (up to 14 days):**

More than 14 days could pass before additional cases of crypto linked to the same source appear, potentially resulting in additional exposures during that interval.

### **Multiple potential exposures to *Cryptosporidium*:**

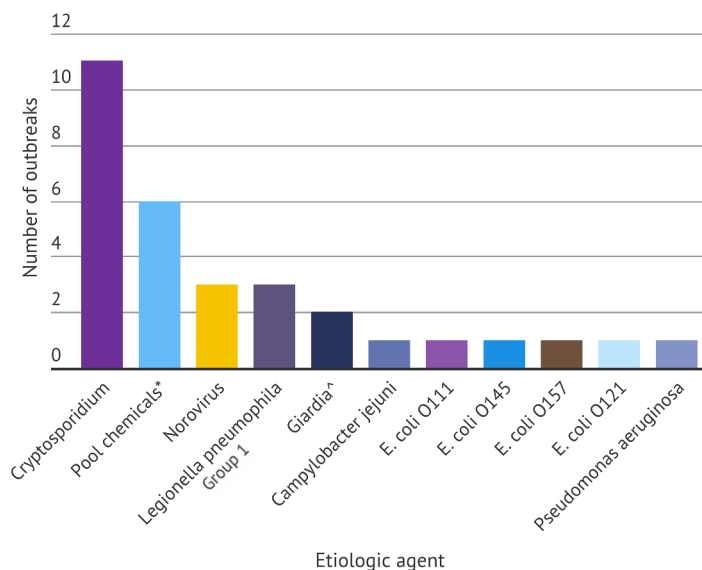
Summer is the time for swimming in lakes, rivers, and pools, but it’s also time for visiting the livestock barns at the county fair, drinking untreated water while camping, and attending an outdoor concert in a pasture.

### **Pool hopping:**

When an outbreak results in a pool closure, swimmers often jump into the next closest pool, and if ill swimmers continue to swim, the outbreak can spread. Especially if there are a lot of people using the second pool.

**The typical age demographic:** In Wisconsin, crypto is most commonly seen in children age 0-4 years and adults aged 20-29 years (Figure 2), which we believe reflects children and their primary care givers. It can be difficult to keep ill children out of the pool, but bathroom and hand hygiene practices and the higher likelihood of fecal accidents among this age group are important contributors to pool contamination. Parents of young children should be educated on why it’s important to keep their children out of the pool or swim lessons. And remember, swim diapers are not effective at controlling fecal accidents!

**FIGURE 1. Wisconsin waterborne outbreaks by etiologic agent, 2010-2016 (n=31)**



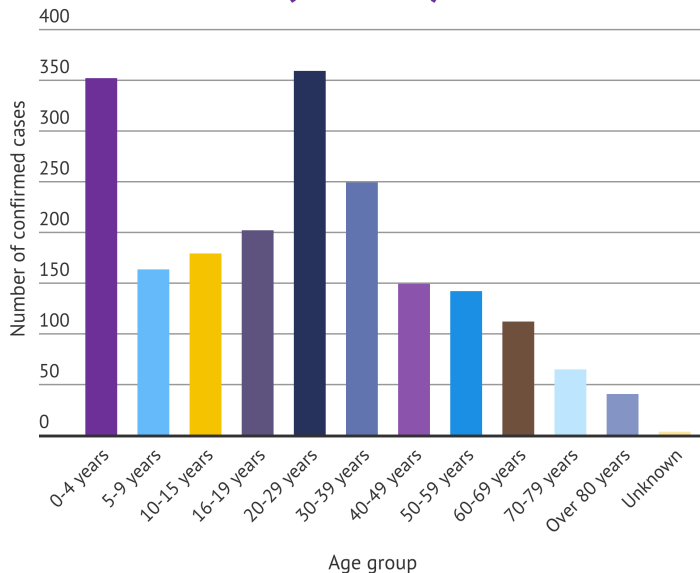
\*Pool chemicals include gaseous and/or aqueous forms

<sup>^</sup>Includes one outbreak with international exposure

# Keeping Crypto Out of the Pool (continued)

By: Sarah Koske, DVM, MPH; and Amanda Koch, MPH

**FIGURE 2. Age distribution of persons with Cryptosporidiosis, Wisconsin, 2013-2015 (n=2,011)**



In Wisconsin, crypto case counts typically begin to climb in June and continue to rise until peaking in September. The potential for spread of crypto to others is greatest when an individual with crypto continues to swim while ill. However, with a little extra education and detail collection, we can help keep Crypto out of the pool.

As the summer recreational water season gets into full swing, we have some reminders and answers to frequently asked questions about crypto:

## Case follow-up and patient education:

- Patients with crypto should not swim for at least *14 days after symptoms stop* to avoid potentially contaminating water and making other people ill. Explaining that crypto can survive in chlorine for 11 days can help them understand why it's important.
- When interviewing patients with crypto who report swimming **before** or **since** illness onset, be sure to gather the names of the facilities, attractions/pools visited, addresses, and swim dates. This will help identify outbreaks as well as pools that need remediation.
- Special attention should be paid when individuals report attending swimming lessons, being members of swim teams, or working as lifeguards.

It can be difficult to keep these individuals from swimming for two weeks.

- Parents of children in swimming lessons, team coaches, and aquatic facility operators should be educated about why it's important to keep ill children out of the pool. Spread of crypto during a 2013 crypto outbreak in southeastern Wisconsin was attributed to ill children continuing to attend swimming lessons while ill, infecting other children in a group setting. While a two-week exclusion is not mandated by law, local public health jurisdictions can adopt a local policy to exclude certain individuals in their jurisdictions should they suspect an individual will not comply with the voluntary recommendations. (Note: because the organism can be detected in stool up to three weeks post symptom resolution, tests of cure are not recommended as they are likely to be positive long after the number of organisms being shed has decreased dramatically.)
- Frequent hand washing with soap and water is extremely important to prevent the spread of illness among household members and the community.

## Remediation of contaminated facilities:

If an individual reports swimming in a pool while symptomatic or within 2 weeks after symptoms developed, that pool should be closed and hyperchlorinated according to CDC [guidelines](#) for diarrheal accidents. This prevents additional people from being exposed.

## Cleaning recommendations:

*Cryptosporidium* is not killed by alcohol gels and hand sanitizers. **Hydrogen peroxide** is the most effective disinfectant for surfaces and objects because of *Cryptosporidium's* resistance to chlorine bleach products. Contaminated surfaces should be soaked for 20 minutes with 3% hydrogen peroxide (available in any drug store) and then rinsed thoroughly. Do not mix hydrogen peroxide with bleach solutions. Additional helpful instructions can be found in the CDC's [Intensified Cryptosporidiosis Control Measures for the Child Care Setting](#).

# Keeping Crypto Out of the Pool (continued)

By: Sarah Koske, DVM, MPH; and Amanda Koch, MPH

## Outreach and education materials:

Newly formatted DHS fact sheet for the general public on [giardiasis](#) is now available! The cryptosporidiosis fact sheet will be available soon. You will find it in the alphabetic disease listing on the DHS website when it is available.

CDC has developed posters targeted for various audiences which are available to download and print from their healthy swimming [website](#). Highly recommended is the poster titled "[What's in YOUR Cannonball?](#)"

## Introducing Amanda Koch:

Amanda Koch joined DPH in September 2016 as the CDC/ Council of State and Territorial Epidemiologists (CSTE) Applied Epidemiology Fellow in Waterborne Diseases. Amanda obtained her B.S. degree in biology from UW-Madison and her MPH in epidemiology from the University of Illinois at Chicago. Prior to coming to DPH, Amanda was involved in HIV/AIDS prevention and outreach with the Chicago Department of Public Health. Currently, much of Amanda's work revolves around prevention and control of parasitic diseases such as cryptosporidiosis and giardiasis.

She will also be conducting surveillance for harmful algal blooms and managing reports of human and animal illnesses associated with toxic algae. Amanda will be part of the DPH team investigating waterborne disease outbreaks and providing technical assistance to all our public health partners. We are excited to have her on board!

## References

1. Centers for Disease Control and Prevention. Microbes in pool filter backwash as evidence of the need for improved swimmer hygiene – Metro Atlanta, Georgia, 2012. MMWR 2013;62;19:385-388.

## Have questions on crypto or any other waterborne disease? Give us a call!

### DPH waterborne disease contacts:

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Waterborne Disease Coordinator

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#### ➤ Enterics Epidemiologist of the Day Line:

[DHSDPHEnterics@dhs.wisconsin.gov](mailto:DHSDPHEnterics@dhs.wisconsin.gov)

608-267-7143

### For pool inspection, licensure, and operations questions, contact:

#### ➤ Samantha Fiscus, REHS, AFO, CPO

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# Communicable Disease Case Counts

This report contains a selection of reportable conditions with inclusion based on public health significance and frequency of occurrence. The case counts reflect confirmed and probable cases, for all process statuses. These numbers are not final and are subject to change as confirmatory testing and case follow-up are completed.

Disease	2016 Case Counts		2017 Case Counts			
	Total	Q1	Q2	Q3	Q4	2017 YTD
<b>Enteric/ Gastrointestinal (also includes suspect cases)</b>						
Campylobacteriosis	1,730	284	475			759
Cryptosporidiosis	881	97	140			237
Cyclosporiasis	5	2	8			10
<i>E. coli</i> , <i>Shiga toxin-producing (STEC)</i>	416	61	110			171
Giardiasis	824	84	97			181
Hemolytic uremic syndrome	8	0	2			2
Listeriosis	16	1	2			3
Salmonellosis	946	191	249			440
Shigellosis	770	145	71			216
Typhoid fever	9	1	0			1
Vibriosis (non-cholera)	11	10	6			16
Yersiniosis	42	10	14			24
<b>Invasive Bacteria</b>						
Group A Streptococci	208	96	86			182
Group B Streptococci	546	110	122			232
Meningitis, other	48	0	0			0
<b>Mycotic</b>						
Blastomycosis	86	14	6			20
Coccidioidomycosis	14	0	1			1
Histoplasmosis	8	2	4			6
<b>Respiratory</b>						
Please refer to the weekly respiratory virus surveillance report: <a href="https://www.dhs.wisconsin.gov/influenza/weekly-influenza-report.pdf">https://www.dhs.wisconsin.gov/influenza/weekly-influenza-report.pdf</a>						
Influenza-associated hospitalizations	2,017	3,187	486			3,673
Influenza, novel	1	0	0			0
Legionellosis	116	23	40			63
Tuberculosis	40	12	12			24
<b>Sexually Transmitted</b>						
Chlamydia trachomatis	27,080	7,089	6,096			13,185
Gonorrhea	6,548	1,754	1,632			3,386
HIV	222	72	46			118
Syphilis (all stages)	426	120	125			245
<b>Vaccine Preventable</b>						
Diphtheria	0	0	0			0
<i>Haemophilus influenzae</i> invasive disease	127	34	27			61
Hepatitis B, acute (confirmed cases only)	9	4	2			6
Hepatitis B, perinatal	1	0	0			0

# Communicable Disease Case Counts (cont.)

Disease	2016 Case Counts		2017 Case Counts			
	Total	Q1	Q2	Q3	Q4	2017 YTD
<b>Vaccine Preventable (cont.)</b>						
Measles (rubeola)	0	0	0			0
Meningococcal disease	6	3	0			3
Mumps	48	30	9			39
Pertussis (whooping cough)	1,452	142	108			250
Poliomyelitis	0	0	0			0
Rubella	0	0	0			0
<i>Streptococcus pneumoniae</i> invasive disease	422	182	160			342
Tetanus	0	0	5			5
Varicella (chicken pox)	392	55	50			105
<b>Vectorborne</b>						
Babesiosis	68	4	13			17
Ehrlichiosis/ Anaplasmosis	699	10	317			327
Jamestown Canyon virus infection	7	1	1			2
La Crosse virus infection	4	0	0			0
Lyme disease	2,318	109	719			1,486
Malaria <sup>1</sup>	20	5	0			5
Powassan virus infection	5	1	0			1
Rocky Mountain spotted fever	19	0	4			4
West Nile virus infection	13	0	0			0
Yellow fever <sup>1</sup>	0	0	0			0
Zika virus infection <sup>1,2</sup>	62	3	1			4
<b>Zoonotic</b>						
Brucellosis	3	0	1			0
Hantavirus infection	0	3	0			0
Leptospirosis	1	0	0			0
Q Fever	7	1	5			0
Rabies (human)	0	0	0			0
Toxoplasmosis	2	3	4			2
Tularemia	1	0	0			0
<b>Other</b>						
Hepatitis A	7	2	3			2
Hepatitis C, acute	104	6	21			27
Hepatitis E, acute	5	0	0			0
Kawasaki disease	10	6	3			9
Lymphocytic choriomeningitis virus infection	1	0	0			0
Psittacosis	0	0	0			0
Transmissible spongiform encephalopathy (human)	10	0	0			0

<sup>1</sup> Denotes diseases where all cases in Wisconsin residents are travel-associated. No local transmission occurs.

<sup>2</sup> Due to enhanced surveillance, asymptomatic confirmed cases are included.

