July 2017

WISCONSIN EPI EXPRESS

IN THIS ISSUE

PROGRAM UPDATES

STAFF UPDATES:

- Whitney Ederer, UW Population Health Fellow, 608-266-3128, Whitney.Ederer@dhs.wisconsin.gov
- Megan Lasure, Antibiotic Resistance Lab Network Epidemiologist, 608-266-0915, Megan.Lasure@dhs.wisconsin.gov
- Christie Oestreich, Northern Regional Immunization Advisor, 715-365-2709, Christie.Oestreich@dhs.wisconsin.gov
- Danielle Sill, WIR Epidemiologist, 608-266-7797, Danielle.Sill@dhs.wisconsin.gov
- Ryan Wozniak, Surveillance and Investigation Unit Supervisor, 608-267-0249, Ryan.Wozniak@dhs.wisconsin.gov

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

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 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.

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

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. 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

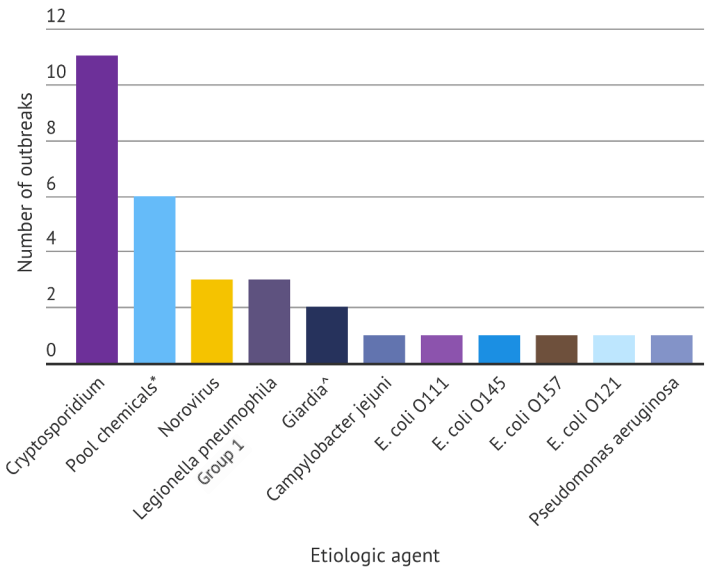
By: Sarah Koske, DVM, MPH; and Amanda Koch, MPH

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 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.

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.[1]

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.

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



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.

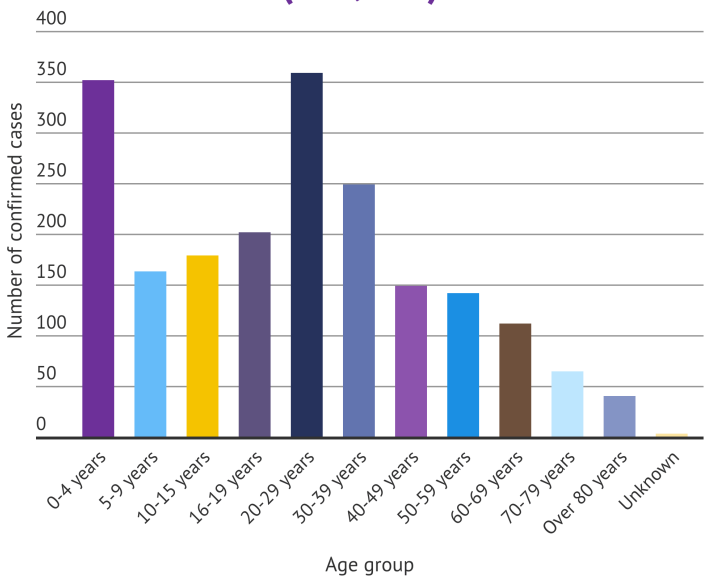
Pool hopping: When an outbreak results in a pool closure, swimmers often jump into the next closest pool, and if ill swimmers continue to swim, the outbreak can spread. Especially if there are a lot of people using the second pool.

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!

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 disinfect 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:

- **Sarah Koske, DVM, MPH**

  Waterborne Disease Coordinator

  Sarah.Koske@dhs.wisconsin.gov

  Phone: (608)267-9009

  Fax: (608) 261-4976

- **Amanda A. Koch, MPH**

  CDC/CSTE Applied Epidemiology Fellow

  Wisconsin Division of Public Health

  Phone: (608) 267-2487

  Fax: (608) 261-4976

  Amanda.Koch@dhs.wisconsin.gov

- **Enterics Epidemiologist of the Day Line:**

  DHSDPHEnterics@dhs.wisconsin.gov

  608-267-7143

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

- **Samantha Fiscus, REHS, AFO, CPO**

  Recreational Waters & Lodging Technical Specialist

  WI Department of Agriculture, Trade and Consumer Protection (DATCP)

  Office Phone: (608) 224-4692 / Cell Phone: (608) 574-8131

  Samantha.Fiscus@wisconsin.gov or datcpdfrsrec@wisconsin.gov

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
Enteric/ Gastrointestinal (also includes suspect cases)						
Campylobacteriosis	1,730	284	475			759
Cryptosporidiosis	881	97	140			237
Cyclosporiasis	5	2	8			10
E. coli, Shiga toxin-producing (STEC)	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
Invasive Bacteria						
Group A Streptococci	208	96	86			182
Group B Streptococci	546	110	122			232
Meningitis, other	48	0	0			0
Mycotic						
Blastomycosis	86	14	6			20
Coccidioidomycosis	14	0	1			1
Histoplasmosis	8	2	4			6
Respiratory						
Please refer to the weekly respiratory virus surveillance report: https://www.dhs.wisconsin.gov/influenza/weekly-influenza-report.pdf						
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
Sexually Transmitted						
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
Vaccine Preventable						
Diphtheria	0	0	0			0
Haemophilus influenzae 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
Vaccine Preventable (cont.)						
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
Streptococcus pneumoniae invasive disease	422	182	160			342
Tetanus	0	0	5			5
Varicella (chicken pox)	392	55	50			105
Vectorborne						
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[1]	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[1]	0	0	0			0
Zika virus infection[1,2]	62	3	1			4
Zoonotic						
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
Other						
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

[1] Denotes diseases where all cases in Wisconsin residents are travel-associated. No local transmission occurs.
[2] Due to enhanced surveillance, asymptomatic confirmed cases are included.