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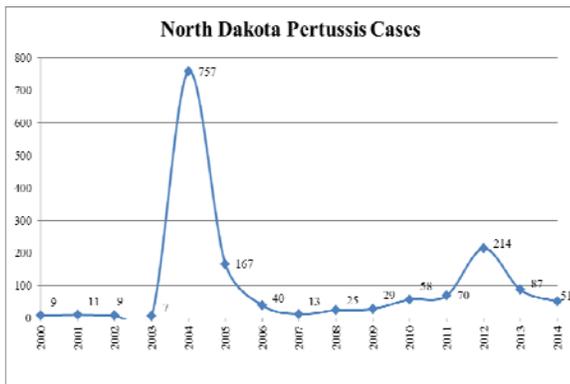
Epidemiology *report*

Vaccine-Preventable Disease Surveillance

by Amy Schwartz, Surveillance Epidemiologist

Pertussis

Preliminary data indicates that 51 cases of pertussis were reported from 11 North Dakota counties in 2014. Seventeen of these cases occurred in the last two months of the year alone, indicating an increase in incidence. No cases were hospitalized. In comparison, 87 cases of pertussis were reported in 2013, 214 cases in 2012, and 70 cases in 2011.



Mumps

In 2014, one probable and one suspect case of mumps were reported. The cases were from different counties and were not linked. One probable and two suspect cases were reported in 2013. Two case of suspect mumps were reported in 2012.

Meningococcal Disease

In 2014, two confirmed cases (1 serogroup B, 1 serogroup Y) of meningococcal disease were reported in North Dakota, compared to three confirmed cases

(2 serogroup B, 1 serogroup Z) in 2013 and one confirmed case (serogroup B) in 2012. No deaths were reported.

Chickenpox

Preliminary data indicates that 10 confirmed and 11 probable cases of chickenpox were reported in 2014 compared with the 20 confirmed and 16 probable cases reported in 2014.

No cases of measles, rubella, diphtheria or tetanus were reported in 2014.

Rabies

by Alicia Lepp, Surveillance Epidemiologist

Preliminary numbers for 2014 indicate that a total of 731 animals were tested for rabies in North Dakota, with 18 (2%) testing positive. Fifty of the 53 North Dakota counties submitted at least one animal for rabies testing. Twelve counties had an animal that tested positive. Cass, Burleigh and Ward submitted the highest number of animals (n=95, n=73 and n=67, respectively). Ward County (n=4) had the highest number of animals that tested positive, and Sioux had the highest proportion of submitted animals that tested positive (100%), followed by Sargent (33%).

Cats were the most commonly submitted species (n=234, 42% of all submissions). The highest rates of positive tests were in skunks (67%) (**Table 1**).

In addition to passive rabies surveillance (testing of animals that have exposed a person or domestic animal), the North Dakota Department of Health (NDDoH), the North Dakota Game and Fish and United States Department of Agriculture Wildlife Services conducted active surveillance in which coyotes, skunks, raccoons, badgers, foxes or other carnivores were collected through surveillance activities, hunter-harvested animals or road kill. In 2014, 204 of the 731 (27%) of the animals that were submitted for rabies testing were part of this active surveillance. None of the animals tested positive.

Table 1. Positive Rabies Cases by Animal, North Dakota, 2014*

| Species | Number Positive | Percent Positivity |
|--------------------|-----------------|--------------------|
| Bat | 1 | 6% |
| Cat | 2 | 11% |
| Cow | 3 | 17% |
| Skunk | 12 | 67% |
| Grand Total | 18 | - |

* Date is preliminary

The NDDoH reports only laboratory-confirmed cases of rabies. Cases of rabies may occur and be unobserved and therefore untested, particularly in wild populations. Rabies testing can be done at either the NDDoH Division of Laboratory Services in Bismarck or the North Dakota State University Veterinary Diagnostic Laboratory in Fargo. Consultation on possible exposure to rabies is available from the NDDoH by calling 701.328.2378 or 800.427.2180.

2012–2013 Acute Viral Gastroenteritis Outbreak Summary

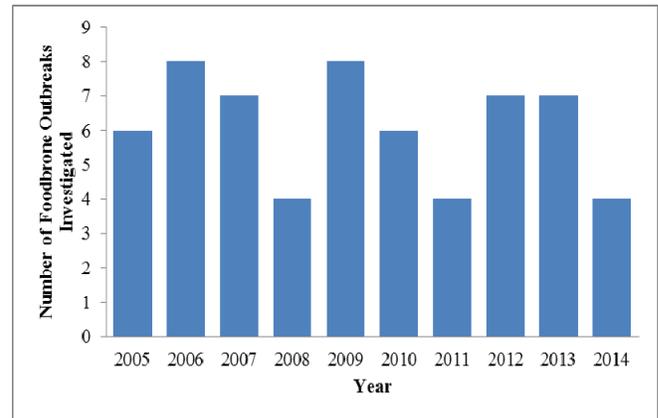
by Alicia Lepp, Surveillance Epidemiologist

In 2014, the NDDoH investigated a total of four outbreaks of gastroenteritis involving at least 87 cases of illness. The four outbreaks were classified as follows: one confirmed foodborne and three probable foodbornes.

During the past ten years, the median number of outbreaks investigated by the NDDoH per year was 6.5 (range, 4 to 8). (**Chart 1**).

A specific pathogen was laboratory confirmed in 25 percent of the outbreaks investigated (*Salmonella* - contaminated pork was implicated in one of the outbreaks). The etiologic agent was undetermined in three (75%) of the outbreaks.

Chart 1. Foodborne Outbreaks Investigated, North Dakota, 2005-2014.



Laboratory testing was conducted in two of the four outbreaks (50%). Reasons for no laboratory testing include lack of appropriate specimens (n=2). A food vehicle was determined for one of the outbreaks (*Salmonella*-contaminated pork).

Foodborne outbreaks are caused by a variety of enteric bacterial, viral, parasitic and chemical agents. A foodborne outbreak is an incident in which two or more people experience a similar illness after ingesting a common food, and epidemiologic analysis implicates the food as the source of illness or an unexplained, unexpected increase of similar illness and food is the likely source. Collecting stool specimens and timely reporting to public health authorities is important in identifying the etiology and preventing further spread of illness. To report gastroenteritis outbreaks, call the NDDoH at 701.328.2378 or 800.472.2180.

North Dakota Department of Health
 Foodborne & Gastrointestinal Illness website
www.ndhealth.gov/disease/GI

Significant Disease Control Investigations

by Alicia Lepp, Michelle Feist and Sarah Weninger

Hepatitis C Outbreak Investigation in

North Dakota

In 2014, the NDDoH continued an investigation of an outbreak of health care-related hepatitis C virus (HCV) infections in Ward County, North Dakota. In 2013, a case-control analysis found that HCV infection was significantly associated with exposure to nail care, as well as receipt of podiatry and phlebotomy services. Testing activities in 2014 focused on residents residing at long term care facilities who had exposure to the phlebotomist and/or podiatrist providing services during the investigation timeline.

In April 2014, cases diagnosed that had no exposure to long term care facility A (LTFC A), where all previous cases were either current or former residents. Additional testing was coordinated to determine if additional persons had been exposed to hepatitis C and were a part of this outbreak. Over 1,100 individuals have been tested in this investigation and currently, 51 cases are associated with this outbreak and four of those cases do not have exposure to LTFC A. The NDDoH continues to investigate additional exposures and determine if additional individuals may be at risk for exposure to hepatitis C.

As a result of this investigation, the NDDoH has consulted with Association for Professionals in Infection Control and Epidemiology (APIC) to provide education on bloodborne pathogen transmission and infection control to facilities in North Dakota. Infection control presentations can be found at: www.ndhealth.gov/disease/hai/Training.htm. Ensuring facilities in North Dakota are practicing proper infection control procedures has been important to halt the transmission of hepatitis C associated with this outbreak.

This outbreak of HCV infections in North Dakota is the largest hepatitis C outbreak reported in the United States since 2008. This outbreak is the only

health care-associated hepatitis C outbreak reported in a long-term care setting. Of the hepatitis C outbreaks reported to the Centers for Disease Control from 2008 – 2013, 22 percent of the total 228 outbreak cases reported resulted from the hepatitis C outbreak in North Dakota. The epidemiologic analysis in our investigation indicated that there was a significant association between nail care, podiatric care and phlebotomy, and these exposures have not been implicated in previously reported hepatitis C outbreaks. More information on this outbreak can be found at: www.ndhealth.gov/disease/Hepatitis/HCVOutbreak2013.htm.

Rabid Kittens at Pet Store

On September 5, 2014, the NDDoH received a positive rabies result in a kitten that had been purchased from a pet store in North Dakota on August 31, 2014. The kitten was from a litter of six that had been anonymously dropped off and put on display for purchase on August 30. The kittens were in a cage that was adjacent to another that held two other kittens. All the kittens in the litter and one kitten in the adjacent cage were sold by September 1, 2014.

The NDDoH contacted the owners of the recently purchased kittens and recommended euthanizing and testing for rabies. All of the kittens tested negative for rabies. Because the kitten may have been infectious prior to and while at the pet store, the NDDoH issued a press release asking that individuals who had visited the pet store after August 29, along with the individual that dropped off the kittens, contact the NDDoH. At the time of the press release, results of the remaining kittens were unknown, so it was recommended that anyone who been bitten or scratched by any kitten at the pet store between August 30 and September 1 contact their health care provider. The individual who dropped off the kittens was located and was still in possession of the mother cat, which subsequently tested negative for rabies.

On October 6, another kitten was sold from the same pet store and subsequently tested positive for rabies on October 30. Five other kittens were in this litter. This kitten would not have been shedding rabies while at the pet store; however, a similar exposure for the other kittens in the litter could not be ruled out. The remaining kittens were quarantined for six months by their owners.

Leptospirosis in Zoo Animal

On November 21, 2014, the NDDoH received a report from a veterinarian who assisted in an exploratory surgery and necropsy of a dik-dik, a small antelope, at a North Dakota zoo. Laboratory results indicated that the dik-dik had leptospirosis. Leptospirosis is a bacterial disease, that, if untreated, can cause kidney damage, meningitis, liver failure, respiratory distress and even death. The bacteria is spread through the urine of infected animals, and humans can become infected through contact with urine or other body fluids from infected animals or contact with water, soil, or food contaminated with the urine of infected animals. Three veterinarians and roughly ten keepers may have been exposed to the dik-dik. The CDC was consulted on the exposures and the NDDoH made recommendations for monitoring for symptoms.

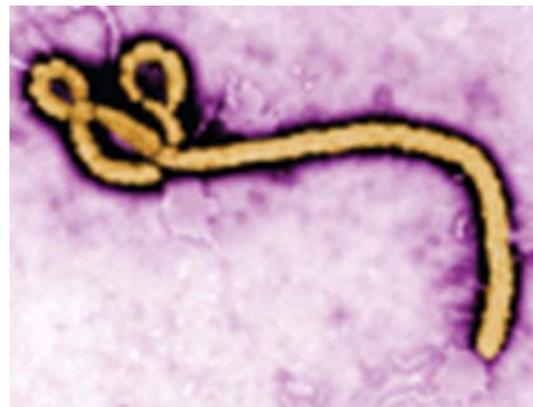
2014 West Africa Ebola Outbreak

On March 25, 2014, the World Health Organization stated that the Guinea Ministry of Health reported an outbreak of Ebola hemorrhagic fever with 86 suspect cases and 59 deaths (68.5% fatal). Suspect cases were also being investigated in Liberia and Sierra Leone. Two days later the first reports of laboratory confirmed Ebola hemorrhagic fever were announced. Since then, the Ebola epidemic in West Africa has swelled to become the largest in history. Multiple countries have been affected with locally-acquired and/or imported Ebola cases. These affected countries include, Guinea, Liberia, Sierra Leone, Nigeria, Senegal, Spain, United States, Mali and United Kingdom.

In the United States there have been a total of four locally-identified Ebola cases (two imported cases and two locally-acquired). The first case was a traveler from Liberia who did not recover from his illness. Two health care workers who provided care for the Liberian traveler while he was hospitalized became infected and recovered. The fourth case was a medical aid worker who returned to the United States from Guinea and did not survive.

In response to the 2014 West Africa Ebola outbreak, the NDDoH activated the Department Operations Center to manage activities and outbreak information. Some of the NDDoH activities include working with health care providers and first responders on responding to a suspected or confirmed case of Ebola, managing infection control supplies through state medical cache, planning and participating in exercises, preparing information to partners and the general public, communicating health messages, and monitoring travelers who have been in Ebola-affected countries.

The NDDoH, Division of Disease Control, receives travel manifests and contacts all travelers from Ebola-affected countries. These travelers are interviewed to determine their Ebola risk, instructed on monitoring their health and how to report daily to Disease Control, and provided information on what to do if they develop symptoms. These individuals are in contact with Division of Disease Control staff every day for 21 days following their last possible exposure. Daily monitoring reports are posted on the health department’s Ebola website at www.ndhealth.gov/disease/Ebola.



| Summary of Selected Reportable Conditions | | | | | |
|---|-----------------------|-----------------------|--|-----------------------|-----------------------|
| North Dakota, 2013-2014 | | | | | |
| Reportable Condition | Oct.- Dec. | Jan.- Dec. | | Oct.- Dec. | Jan.- Dec. |
| Campylobacteriosis | 21 | 122 | | 19 | 127 |
| Chickenpox | 7 | 21 | | 12 | 36 |
| Chlamydia | 779 | 3393 | | 756 | 2946 |
| Cryptosporidiosis | 39 | 146 | | 24 | 85 |
| E. coli, shiga toxin positive (non-O157) | 2 | 14 | | 6 | 30 |
| E. coli O157:H7 | 2 | 9 | | 2 | 14 |
| Enterococcus, Vancomycin-resistant (VRE) | 49 | 150 | | 109 | 465 |
| Giardiasis | 5 | 39 | | 9 | 44 |
| Gonorrhea | 184 | 677 | | 131 | 493 |
| Haemophilus influenzae (invasive) | 3 | 9 | | 6 | 13 |
| Acute Hepatitis A | 1 | 8 | | 3 | 9 |
| Acute Hepatitis B | 0 | 0 | | 0 | 0 |
| Acute Hepatitis C | 0 | 0 | | 0 | 4 |
| HIV/AIDS ¹ | 16 | 76 | | 17 | 58 |
| Influenza | 2627 | 4748 | | 812 | 4014 |
| Legionellosis | 0 | 4 | | 0 | 3 |
| Listeria | 0 | 1 | | 1 | 0 |
| Lyme Disease | 3 | 14 | | 2 | 29 |
| Malaria | 1 | 8 | | 1 | 4 |
| Meningococcal disease ² | 0 | 2 | | 0 | 3 |
| Mumps | 2 | 2 | | 0 | 3 |
| Pertussis | 18 | 51 | | 20 | 87 |
| Q fever | 0 | 2 | | 0 | 0 |
| Rabies (animal) | 3 | 18 | | 6 | 40 |
| Rocky Mountain spotted fever | 0 | 3 | | 0 | 2 |
| Salmonellosis | 16 | 88 | | 14 | 102 |
| Shigellosis | 3 | 21 | | 5 | 18 |
| Staphylococcus aureus, Methicillin-resistant (MRSA) | 69 | 169 | | 27 | 113 |
| Streptococcal pneumoniae ³ , (invasive, children < 5 years of age) | 28 | 89 | | 20 | 103 |
| Syphilis, Primary and Secondary | 3 | 13 | | 5 | 13 |
| Trichinosis | 0 | 0 | | 0 | 0 |
| Tuberculosis | 8 | 15 | | 2 | 13 |
| Tularemia | 0 | 4 | | 0 | 0 |
| Typhoid fever | 1 | 1 | | 0 | 0 |
| West Nile Virus Infection | 1 | 23 | | 2 | 127 |

*Provisional data

¹ Includes newly diagnosed cases and cases diagnosed previously in other states that moved to North Dakota.

² Includes confirmed, probable and suspect meningococcal meningitis cases.

³ Includes invasive infections caused by streptococcal disease not including those classified as meningitis.