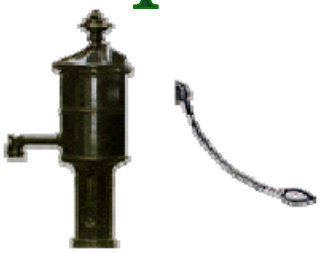
The Pump Handle



"I had an interview with the Board of Guardians of St. James's parish, on the evening of Thursday, 7th September, and represented the above circumstances to them. In consequence of what I said, the handle of the pump was removed on the following day."

John Snow, 1855

May 2014 Topics

- Q Fever Reported in North Dakota
- West Nile Surveillance Activities Begin
- Hantavirus Pulmonary Syndrome Death Reported
- Pertussis Reported in North Dakota
- Student Palooza!

Q Fever Reported in North Dakota

In April 2014, an individual in North Dakota was diagnosed with Q fever. The individual had assisted birthing sheep in the past few years, which is a risk factor for Q fever. The bacteria that causes Q fever, *Coxiella burnetii*, is primarily found in sheep, cattle and goats. The bacteria are shed in high numbers within the amniotic fluids and the placenta during birthing of these animals. It can also be shed in the milk, urine and feces of infected animals. Infection in humans usually occurs by inhalation of the bacteria that becomes airborne when barnyard dust is contaminated by dried placental material, birth fluids and excreta of infected animals.

Acute symptoms of Q fever typically develop within two to three weeks of exposure and include high fevers, severe headache, myalgia, cough, nausea, vomiting, diarrhea and chest pain. Some people may experience complications that include pneumonia, granulomatous hepatitis, myocarditis and central nervous complications. Chronic Q fever develops in less than 5 percent of patients. It may present within six weeks after an acute infection or years later. Forms of chronic Q fever include endocarditis, aortic aneurysms and infections of the bone, liver or reproductive organs. Q fever can be treated with doxycycline.

This is the seventh case reported to the North Dakota Department of Health (NDDoH) since Q fever became reportable in 1999. Additional information about Q fever can be found at www.cdc.gov/qfever/ or by calling the NDDoH at 800.472.2180.

West Nile Surveillance Activities Begin

The North Dakota Department of Health's West Nile virus (WNV) surveillance activities began on June 1, 2014. Activities include reporting and testing sick horses and other domestic animals, trapping and testing mosquitoes, monitoring illness in humans, and reporting and testing dead birds. Mosquito traps are located throughout the state and volunteers send in trap contents each week to the NDDoH's Division of Laboratory Services. The mosquitoes are then counted according to gender and species. The female *Culex tarsalis* is the mosquito of interest, as that is the primary vector for WNV in North Dakota. Dead birds can be reported to the state health department here: www.ndhealth.gov/WNV/Bird/ReportForm.aspx. Birds of interest for testing for WNV are corvids (crows, jays, magpies and ravens) and raptors (eagles, hawks, falcons and owls).

The NDDoH offers free WNV testing during transmission season (June 1 – September 30). West Nile virus IgM antibody testing is provided at the Division of Laboratory Services and will be conducted on serum samples. Serum and the completed laboratory test request form (SFN 5826) should be sent to the Division of Laboratory Services, 2635 East Main Avenue, P.O. Box 5520, Bismarck, ND 58506-5520. If you have questions regarding testing/shipping, please contact the Division of Laboratory Services at 701.328.6272.

West Nile virus activity updates will be posted weekly on the NDDoH WNV website at www.ndhealth.gov/wnv.

Hantavirus Pulmonary Syndrome Death Reported

On June 12, 2014, the NDDoH announced that a resident of central North Dakota died from complications of Hantavirus Pulmonary Syndrome (HPS). The individual was an adult with no underlying medical conditions. While it could not be determined the exact activity that led to this individual's infection, the individual did have potential exposure to rodents before becoming ill. This is the 12th case of HPS and the seventh death reported to the NDDoH since the virus was discovered in the southwestern part of the United States in 1993.

In North Dakota, HPS is caused by the Sin Nombre virus, and the rodent vector is the deer mouse, *Peromyscus maniculatus*. The virus is shed in the stool, urine and saliva of infected rodents. Infection usually results by breathing in air contaminated with the virus when these materials are disturbed. Early symptoms include fatigue, fever and muscle aches, which typically develop between one to five weeks after exposure. Infected individuals may also experience headaches, dizziness, chills, nausea, vomiting, diarrhea and abdominal pain. Four to 10 days after the initial phase of illness, the late symptoms appear which include coughing, shortness of breath and fluid in the lungs. HPS has a mortality rate of 38 percent.

More information on Hantavirus Pulmonary Syndrome, and steps that should be taken to prevent infection when working in areas with possible rodent infestation, can be found here www.cdc.gov/hantavirus/ or by calling the NDDoH at 800.472.2180.

Pertussis Reported in North Dakota

As of June 13, 2014, eight cases of pertussis have been identified in North Dakota since the beginning of the year. Of these, three are laboratory-confirmed, two are epidemiologically-linked to confirmed cases and three are probable cases. The majority of cases were unvaccinated. At this time last year, there were 33 cases of pertussis in North Dakota.

Symptoms:
Although North Dakota is seeing lower numbers than previous years, providers should continue to consider pertussis as a potential diagnosis for patients exhibiting the following symptoms:

- Prolonged cough
- Cough with paroxysms
- Whoop
- Post-tussive gagging/vomiting

People presenting with the above symptoms should be considered as presumptive pertussis cases and should be treated and advised to stay home until the appropriate antibiotics have been taken for five days or pertussis has been ruled out. All suspect and confirmed cases of pertussis should be reported immediately to NDDoH.

Vaccine:
Diphtheria, tetanus and acellular pertussis vaccine (DTaP) should be administered routinely to infants at 2, 4, 6 and 15 to 18 months of age, and a booster dose of DTaP should be given at 4 to 6 years of age. DTaP is required to attend school and child care. Tetanus, diphtheria and acellular pertussis vaccine (Tdap) is routinely recommended for adolescents 11 to 12 years of age. Tdap is required to be administered to all adolescents entering seventh grade. Adolescents 13 to 18 years of age and adults are also recommended to receive a dose of Tdap if they have not received a dose previously. Additionally, pregnant women are recommended to receive a dose of Tdap during each pregnancy between 27 and 36 weeks gestation.

For more information, please contact the NDDoH Division of Disease Control at 701.328.2378 or toll-free at 800.472.2180.

Student Palooza!

★**Name:** Jessica Orth

What College/University are you attending: University of North Dakota
Major: Master of Public Health

What projects are you working on in Disease Control: Analyzing occupational health data

Family/Hobbies: Spending time with family, running, playing piano

★**Name:** Melissa Kindelspire

What College/University are you attending: Valley City State University
Major: Undergraduate Senior, double majoring in Chemistry and Health Science

What projects are you working on in Disease Control: Hepatitis C and Syphilis outbreak

Family/Hobbies: Family: Ryleigh- 7, Joshua- 5, and Lydia- 4. I work part-time at the E.R. in Jamestown and also volunteer as a Child Passenger Safety Technician and as a volunteer rural EMT.

★**Name:** Kalee Werner

What College/University are you attending: University of North Dakota
Major: Master of Public Health

What projects are you working on in Disease Control: I am helping with HIV/Hepatitis/TB/STD by entering data into Maven

Family/Hobbies: I am married and have two dogs. My husband and I enjoy going on bike rides and taking our puppies for long walks. We also enjoy hiking and camping.

★**Name:** Eric Sondreal

What College/University are you attending: North Dakota State University
Major: Master of Public Health (Infectious Disease Management)

What projects are you working on in Disease Control: I am working on a project investigating the possible implementation of a hospital discharge database for North Dakota.

Family/Hobbies: I come from a family of seven, which includes my parents Philip and Ellen, and my four younger sisters Bethany (24, my fraternal twin!), Katie (21), Molly (18), Sophia (16). We are very family oriented and love to spend time with each other doing sports, board games, and attending events at our local church. Besides my involvement in academia at NDSU, I enjoy attending the Chi Alpha Ministry held at NDSU each week to socialize with friends and learn as well. I am very active in sports (swimming, tennis, biking, and weight lifting) and enjoy water activities in the summer time (wake surfing, wakeboarding, skiing, and tubing). I also have the privilege of collaborating with multiple staff in the NDSU pharmacy and wellness departments on various research projects this summer.

Terry Dwelle, MD, MPHTM, State Health Officer
Kirby Kruger, Director, Division of Disease Control; Chief Medical Services Section
Tracy K. Miller, MPH, State Epidemiologist