

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

August 2013 Topics

- West Nile Virus Update
- Hepatitis C Outbreak Investigation in Ward County
- What is the Risk of Lyme Disease in North Dakota?
- New Disease Control Employees!
- Save the Date! HIV/STD/TB/Hepatitis Symposium: September 17-18, 2014



West Nile Virus Update

As of September 30, 2013, 101 human West Nile virus (WNV) infections have been reported to the North Dakota Department of Health from a total of 28 counties. This time last year, the North Dakota Department of Health reported 80 cases from 24 counties. North Dakota is experiencing two distinct peaks in symptom onset dates of cases this WNV season. This is an unusual trend in North Dakota compared to previous years where one distinct peak is identified, typically occurring in the middle or end of August (**Graph 1**).

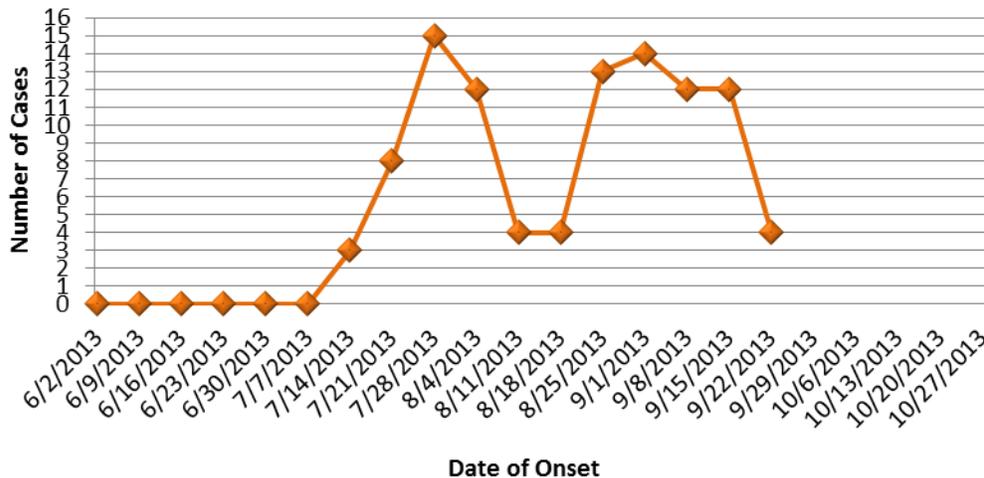
Thirty-six of the cases have been hospitalized. Fifty of the 101 cases (50%) have experienced neuroinvasive disease, in which a person's nervous system is affected and is the most severe form of the disease. Two WNV-related human deaths have been reported.

Additional WNV activity includes 13 asymptomatic blood donors from nine counties, one positive horse, one positive cow and six positive birds.

Nationwide, 1,135 cases have been reported to the CDC as of September 24, 2013. Of the 1,135 cases, 529 (47%) were classified as neuroinvasive disease. Forty-four WNV-related human deaths have been reported.

West Nile virus activity is updated Wednesday morning each week on the North Dakota Department of Health website at www.ndhealth.gov/wnv.

Graph 1. WNV Cases by Date of Onset, North Dakota, 2013



Hepatitis C Outbreak Investigation in Ward County

The North Dakota Department of Health (NDDoH) is investigating a cluster of Hepatitis C virus (HCV) cases in Ward County. As of September 6, 2013, there have been seven cases identified among three women and four men, all age 60 and older. Laboratory analyses indicate that the virus from the seven cases is genetically-linked, suggesting a common source of infection.

At the start of this investigation, three acute cases were diagnosed within a few months in the first quarter of 2013 and within the same geographic area. Reporting of clusters of acute HCV cases is unusual in North Dakota. The outbreak investigation seeks to ascertain whether a connection exists among these cases. At this time, a source has yet to be identified.

Health officials are currently working in conjunction with community health-care partners to identify how these cases may have been exposed and whether there is a common source. Any possible associations among identified cases will be evaluated. Individuals who may have exposures or events in common with identified cases may also be screened for hepatitis C.

Hepatitis C is a viral infection of the liver caused by the hepatitis C virus. Hepatitis C can lead to lifelong infection and can cause serious liver damage (e.g., cirrhosis or liver cancer) and death. About 80 percent of individuals infected with HCV have mild or no symptoms initially. Symptoms may include fatigue, loss of appetite, nausea, abdominal discomfort, vomiting, dark urine or jaundice. Some people recover fully, but 55 percent to 85 percent of infected individuals develop chronic infection.

Hepatitis C is spread primarily through direct exposure to blood or blood products from an infected person. Risk factors include:

- Current or past injection drug users.
- Recipients of blood and/or solid organs before 1992.

- Recipients of clotting factors (products given to help blood clot) made before 1987.
- Hemodialysis patients.
- Infants born to infected mothers.

As the investigation progresses, the NDDoH will release updates through media outlets and through the following website:

<http://www.ndhealth.gov/Disease/Hepatitis/HCVOutbreak2013.htm>

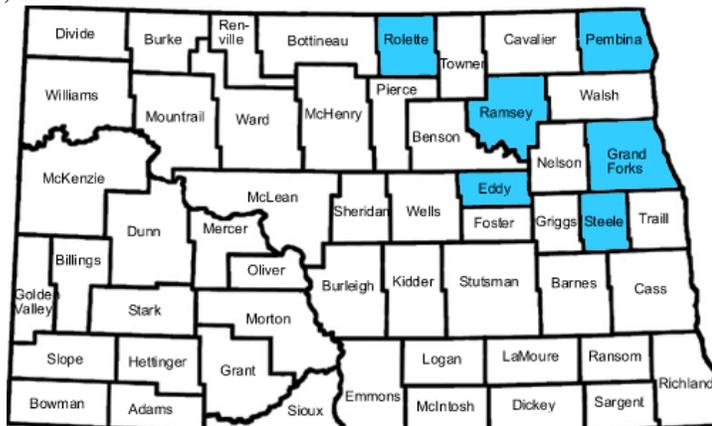
For more HCV information, please visit the NDDoH viral hepatitis website at www.ndhealth.gov/disease/Hepatitis/. Additional HCV information is also available from the Centers for Disease Control and Prevention (CDC) at <http://www.cdc.gov/hepatitis/c/>.



What is the Risk of Lyme Disease in North Dakota?

Lyme disease transmission and spending time outdoors in North Dakota is generally not associated with significant risk. In the past, North Dakota residents were not considered to be at risk for Lyme disease unless they traveled outside of the state to a Lyme endemic area because the tick vector, *Ixodes scapularis*, did not have a well-documented presence in the state. A state-wide tick survey conducted in 2010 identified established populations of the deer tick (*Ixodes scapularis*) in the northeastern region of the state. Six counties were identified with established deer tick populations and are shown in **Figure 1**. *Ixodes scapularis* ticks were found in all life stages (larval, nymph and adult). The *Ixodes scapularis* ticks collected were tested for tick-borne disease pathogens. Several ticks in Grand Forks County were found to be infected with *Borrelia burgdorferi*, *Anaplasma phagocytophilum* and *Babesia* species. Babesia also was identified in ticks in Ramsey County.

Figure 1. Counties with established populations of *Ixodes scapularis* ticks identified, North Dakota, 2010



As a result of the tick survey, these counties and other counties in the Northeast region of the state could be considered as areas of possible Lyme disease transmission. Not every county was sampled in North Dakota in 2010 and another survey has not been conducted since. Additionally, the North Dakota Department of Health has received a report of three dogs diagnosed with Lyme disease in Ransom County this summer. At this time, additional data is needed to better define Lyme disease risk areas in North Dakota and to determine if expansion and emergence of Lyme disease tick vector species in previously unrecognized areas is occurring (e.g., Ransom County or additional counties in the Northeast region of the state).

Medical providers should include Lyme disease and other tick-borne diseases in the differential diagnosis of patients residing in or spending time in these suspect counties with onset of febrile illness and other indications of tick-borne disease such as expanding rash, headache, fatigue, stiff neck and muscle and/or joint pain. North Dakota residents living in non-endemic Lyme areas can be exposed when they travel, so health-care providers should ask patients about their travel, exposure to ticks and to tick habitats. Lyme disease testing guidance can be found on the Centers for Disease Control and Prevention's website at www.cdc.gov/lyme/diagnostesting/LabTest/TwoStep/.

As of Oct 1, 2013, there have been 16 cases of Lyme disease reported in North Dakota. Most cases reported out-of-state travel to a Lyme endemic area; however, one case with no travel history outside of North Dakota was recognized as being exposed in Benson County. For more information about Lyme disease and other tick-borne diseases in North Dakota, visit the tick-borne disease website at www.ndhealth.gov/disease/tickborne/.



New Disease Control Employees!

★ **Name:** Dinorah L. Calles (Di)



Title: Epidemic Intelligence Service Officer; Lieutenant, United States Public Health Service.

Education Background: PhD, Emory University (Atlanta, GA); MPH, University of North Texas Health Science Center School of Public Health (Fort Worth, TX); BA, Dartmouth College (Hanover, NH).

Past Experience: Epidemiologic Methods Consultant, Pan American Health Organization (co-author, *ActivEpi Español*; field methods instructor in Washington, D.C., Paraguay and Brazil); Epidemiologist, Regular Fellow, Center for Global Health, CDC; Fulbright and NIH grantee for MCH dissertation research, Brazil; Local Public Health System Assistant Coordinator, City of Fort Worth Public Health Department.

Family/Hobbies: With me in Bismarck, only Duke, my 2-year old Eskie. Sanctuary orchestra musician/music therapy volunteer (flute); Latin American cuisine; capoeira; samba, tango, and other Latin American dance; doggie park outings and hikes. Forthcoming: intense World Cup 2014 soccer fan.

★ **Name:** Jill Baber

Title: Influenza and Syndromic Surveillance Coordinator

Education Background: Recently completed my MPH at the Fairbanks School of Public Health in Indianapolis, IN (dual concentration in epidemiology and environmental health). BS in Science from Portland State University in Portland, OR.

Past Experience: Research Assistant in cancer care research for the Indiana University School of Nursing, intern with food protection at the Indiana State Department of Health.

Family/Hobbies: I'm married and I enjoy cooking, board games, and outdoor activities.



Save the Date! HIV/STD/TB/Hepatitis Symposium: September 17-18, 2014

The 2014 HIV/STD/TB/Hepatitis Symposium will be held September 17 and 18, 2014, at the Radisson hotel in Bismarck, N.D.

The symposium will include both plenary and breakout sessions, and the following topics will be presented:

- HIV/STDs/TB/Viral hepatitis in North Dakota
- Integrating HIV, STD and viral hepatitis services
- Tuberculosis in Grand Forks
- Tuberculosis 201
- Affordable Care Act
- Diagnosis and treatment of syphilis
- Successes of outreach testing in North Dakota
- Ensuring cultural competency
- Success of rapid hepatitis C testing in North Dakota
- Advances in treatment options of hepatitis C

The audience for the symposium includes all health-care and substance abuse professionals who provide services to individuals with HIV, sexually transmitted diseases, tuberculosis or viral hepatitis. The symposium will provide an opportunity to receive education and resources to improve the capacity to provide these services. Continuing education credits will be available from North Dakota Board of Nursing, North Dakota Board of Addiction Counseling Examiners and the North Dakota Board of Social Workers.

Additional information on the symposium will be posted at www.ndhealth.gov/disease/ as it becomes available.

Contributing authors of The Pump Handle include Alicia Lepp, Dinorah Calles, Michelle Feist, Jill Baber, Sarah Weninger, Tracy Miller and Kirby Kruger. For questions, suggestions or inquiries, or to be removed from the mailing list, please contact Sarah Weninger of the Division of Disease Control, at 701.328.2366 or by e-mail at sweninger@nd.gov.

The pump handle picture in the title was obtained from the website www.ph.ucla.edu/epi/snow.html.



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