

The Pump Handle 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

December 2016 Topics

- “*Shigella* or Shiga Toxin, What is the Difference?” Illnesses – Laura Cronquist
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“*Shigella* or Shiga toxin, What is the Difference?”

Enteric illnesses can be caused by many different types of pathogens, including bacteria, viruses, parasites, fungi, marine organisms and their toxins, and chemical contaminants. The enteric illnesses currently included on the North Dakota Department of Health’s (NDDoH) list of mandatory reportable conditions are botulism, campylobacteriosis, cholera, cryptosporidiosis, Shiga toxin-producing *Escherichia coli* or *E. coli* (STEC), hepatitis A, giardiasis, listeriosis, salmonellosis, shigellosis, trichinellosis (also known as trichinosis), typhoid fever, and vibriosis. However, it is important to note that all suspected foodborne and waterborne outbreaks, no matter the cause, are reportable to the NDDoH.

Culture-based test methods traditionally used in diagnostic laboratories to identify enteric pathogens are rapidly being replaced by culture-independent diagnostic tests (CIDTs). Rather than relying on culture results, which may take days, CIDTs can identify bacterial pathogens within hours based on the detection of nucleic acid sequences or antigen. For STEC, current laboratory methods include the detection of Shiga toxin or the genes that encode Shiga toxins. The similarity in the nomenclature of Shiga toxin-producing *E. coli* and *Shigella* can be a source of confusion and has occasionally led to misdiagnosis and incorrect reporting. Test methodology differs among healthcare facilities, but the most commonly misinterpreted STEC results seem to be from nucleic acid-based basic enteric pathogen panels, which are a type of CIDT. These results may indicate the presence of “Shiga-like toxin 1,” “Shiga-like toxin 2,” “*Escherichia coli* Shiga-like toxin 1 (stx1) gene,” and “*Escherichia coli* Shiga-like toxin 2 (stx2) gene.” While this

may seem simple enough, it is important to know when reporting. In recent months, four cases of Shiga toxin-producing *E. coli* were reported to NDDoH as *Shigella*. STEC and *Shigella*, although alike in name, are two very different bacteria with different exclusion and restriction recommendations and laws—and different treatment recommendations.

For more information on childcare and school exclusion recommendations, see the North Dakota Childcare/School Infection Control Manual at www.ndhealth.gov/Immunize/Documents/Schools/Final_Manual_2016.pdf. State laws regarding food handler restrictions and exclusions can be found in the North Dakota Food Code at www.ndhealth.gov/FoodLodging/PDF/Food_Code_2012_Final.pdf (view proposed changes be at www.ndhealth.gov/FoodLodging/PDF/ND_Food_Code_Changes_-_FDA_2013_FOOD_CODE_FINAL_rev12-20-2016.pdf).

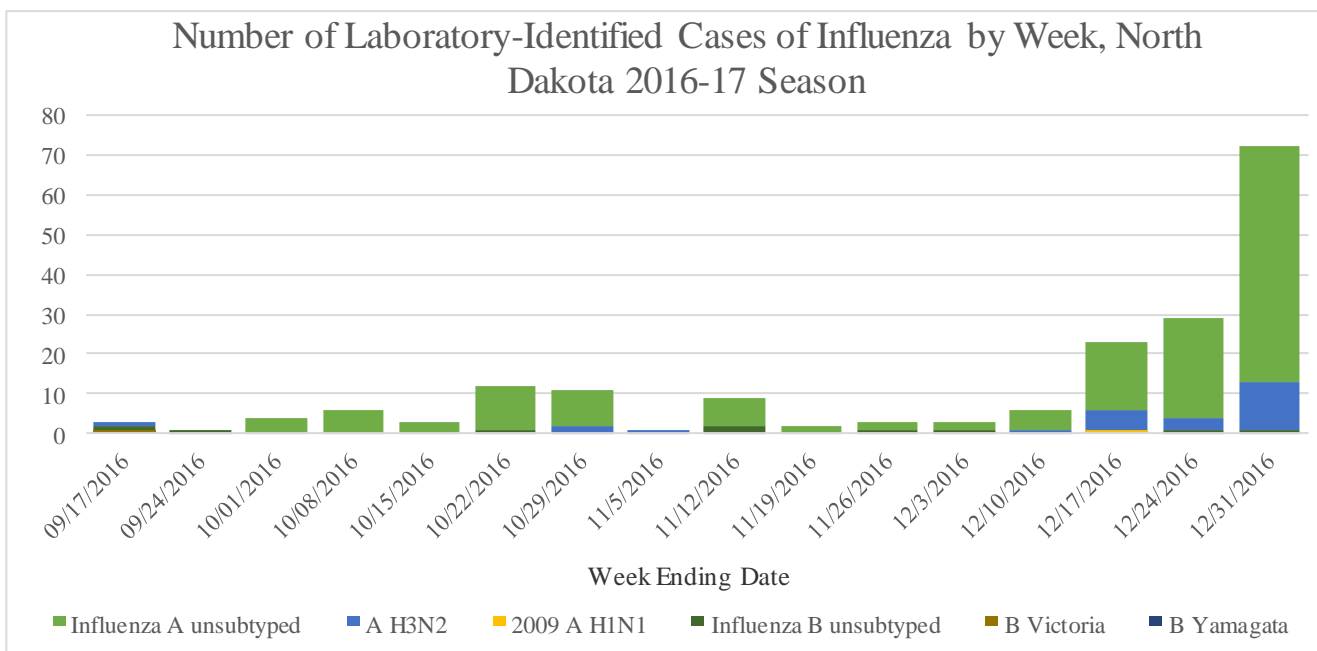
For more information on submitting disease morbidity reports, reporting possible outbreaks, or technical guidance on laboratory testing, please contact the NDDoH at 701.328.2378.



Seasonal Influenza Update

Influenza season picked up in December, with 188 cases reported for the season as of December 31, 2016. A vast majority of cases occurred in December. Three outbreaks in long-term care facilities have also been reported for the season so far. During the influenza season, outbreaks of influenza and influenza-like-illness are common in long-term care centers, schools, and any other place where a large number of people congregate.

Both major influenza A and B strains circulate every season, but one strain typically predominates over the others. So far, the predominant strain of influenza circulating in North Dakota and nationally is the influenza A H3N2 strain, which last predominated during the 2014-15 influenza season. Influenza A H3N2 is associated with slightly more severe seasons than the 2009 A H1N1 strain that has also circulated seasonally since the 2009 pandemic. The H3N2 strain can be especially hard on elderly populations. So far this season, the circulating influenza virus strains are well-matched to the 2016-17 influenza vaccine.





Reporting Requirements for Tuberculosis in North Dakota

Tuberculosis (TB) is a reportable condition in North Dakota. Physicians, healthcare facilities, and medical laboratories are required to report confirmed or suspected cases of pulmonary or extra-pulmonary sites of disease to the NDDoH within one working day.

Laboratory Case Definition of Tuberculosis - A case that meets **any** of the following criteria:

- Isolation of *M. tuberculosis* complex from a clinical specimen.
- Demonstration of *M. tuberculosis* complex from a clinical specimen by nucleic acid amplification test.
- Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained or is falsely negative or contaminated.

Clinical Case Definition of Tuberculosis - A case that meets **all** of the following criteria:

- A positive tuberculin skin test result or positive interferon gamma release assay for *M. tuberculosis*.
- Other signs and symptoms compatible with TB (e.g., abnormal chest radiograph, abnormal chest computerized tomography scan or other chest imaging study, or clinical evidence of current disease).
- Treatment with two or more anti-TB medications.
- A completed diagnostic evaluation.

In addition, suspected cases of TB disease that meet the following criteria should be reported within one working day, prior to final confirmation by the laboratory or clinical case definition:

- A positive microscopic smear result for acid-fast bacilli (AFB) from a respiratory or extra-pulmonary specimen AND clinical, radiographic, laboratory, or epidemiologic evidence consistent with active TB disease.
- Clinical, radiographic, laboratory or epidemiologic evidence consistent with active TB disease AND clinical specimens for bacteriologic testing are not available, or bacteriologic test results are negative for *M. tuberculosis*.
- Multi-drug therapy for treatment of TB disease has been prescribed.

Upon suspicion of disease, it is recommended having patient self-isolate from family, friends, and co-workers until a definitive diagnosis can be made to prevent additional transmission of TB. We recommend that alternative housing is found for the suspected/confirmed case if any of the following persons reside in the home until TB is ruled-out, or the patient is no longer infectious:

- Child 5 years of age or younger
- HIV-infected
- Substance Abuse
- Silicosis
- Diabetes Mellitus
- Severe Kidney Disease
- Low Body Weight

- Organ Transplant Recipients
- Head and Neck Cancer
- Medical treatment such as corticosteroids
- Specialized treatment for Rheumatoid Arthritis or Crohn's Disease

To report a confirmed or suspected case of tuberculosis, call the TB Prevention and Control Program at 701.328.2377 or 800.472.2180.



New Disease Control Employee!

★ **Name:** Brenton Nesemeier

Title: Regional Field Epidemiologist – Fargo Area

Education Background: I received my Master's Degree in Microbiology from NDSU in 2010, and I received my Bachelor's Degree in Microbiology from NDSU in 2007.

Past Experience: I worked as an Environmental Health Practitioner/Emergency Preparedness upon graduation for a year at Central Valley Health District in Jamestown (2010-2011). It was here that I was able to get some public health experience and assist in writing various EPR and EHP plans. I then relocated to Fargo and worked in Clinical Research (PRACS, Lachman Consulting Services, AXIS Clinicals) from 2011-2016, my duties in clinical research changed year to year. I was heavily involved with wet chemistry techniques/extractions, quality control/assurance, SOP/training document implementation/review/generation and finally helping to prepare documents and responses to FDA inquiries/483s.

Family/Hobbies: My favorite hobbies would be cooking, traveling, and spending time with family and friends at the lakes over the summer. I also love bumming around the house with my three cats; Zoey, Pugsley, and Groot.



Dave Glatt, PE and Arvy Smith, MPA, Co-Acting State Health Officers
 Kirby Kruger, Director, Division of Disease Control; Chief of Medical Services Section
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