



The Pump Handle

October 2019

"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

Topics

- Tuberculin Skin Test Antigen: Aplisol and Tubersol
- Meningococcal Meningitis in North Dakota
- Changes in Reportable Conditions
- Shiga toxin-producing *E. coli* (STEC) Outbreak in a North Dakota Child Care Center
- New Disease Control Employee – Rachel Goebel



Tuberculin Skin Test Antigen: Aplisol® and Tubersol®

The shortage of Aplisol® announced by the Centers for Disease Control and Prevention (CDC) in June 2019 has been resolved. Aplisol is a purified protein derivative used to aid in the diagnosis of tuberculosis. Another testing solution, Tubersol, was placed into allocation from the manufacturer during the Aplisol shortage to ensure product could be given to healthcare facilities in greatest need.

To obtain testing solution for either product, contact your previous supplier to order testing solution. The amount of product available to your facility may be based on your previous order history.

If you are unable to obtain either Aplisol or Tubersol, please contact the North Dakota Department of Health's (NDDoH) TB Program.



Meningococcal Meningitis in North Dakota

Two cases of Meningococcal meningitis have been reported to the NDDoH so far in 2019. The last reported cases of meningococcal meningitis were in 2014.

Meningococcal meningitis is a severe infection of the bloodstream and meninges (the thin lining covering the brain and spinal cord) caused by the bacteria, *Neisseria meningitidis*. It is a relatively rare disease and usually occurs as a single isolated event. Clusters of cases or outbreaks are rare in the United States.

Meningococcal meningitis is spread through the exchange of respiratory and throat secretions like spit (e.g., by living in close quarters, kissing, sharing drinks). Many people carry meningococcal bacteria in the nose and throat without any signs of illness, while others may develop serious symptoms. [High risk contacts of a diagnosed individual should receive proper chemoprophylaxis to prevent the spread of the disease.](#)

Getting vaccinated is the most effective way to prevent oneself against meningococcal meningitis. There are two types of meningococcal vaccines. Meningococcal conjugate vaccine (MCV4) protects against four serogroups (A, C, Y, and W-135) of *Neisseria meningitidis* and is recommended for all children 11 to 12 years of age. Adolescents should receive a booster dose at age 16. In North Dakota, all children entering seventh through tenth grade are required to be vaccinated with one dose of MCV4. Children entering eleventh through twelfth grade are required to be vaccinated with two doses of MCV4. North Dakota colleges and universities also require MCV4 vaccine. Vaccines that protect against *Neisseria meningitidis* serogroup B (Men B) are also available. These vaccines are routinely recommended for people ages 10 and older known to be at increased risk for meningococcal disease. People ages 16 – 23 may also be vaccinated. Men B vaccine is not required for school entry. Younger children and adults usually do not need meningococcal vaccines. However, the CDC recommends one or both types of meningococcal vaccines for people with certain medical conditions, travel plans, or jobs.

For more information about meningococcal meningitis and who should be vaccinated, please visit <https://www.cdc.gov/meningococcal/index.html>.



Changes in Reportable Conditions

Changes to the reportable conditions administrative rule took effect on October 1, 2019. Providers have until January 1, 2020 to start reporting. The following conditions were added:

- Acute Flaccid Myelitis

- *Candida auris*
- Cluster of severe or unexplained illnesses or deaths; previously written as unexplained and emerging critical illness and death
- Critical Congenital Heart Disease
- Cyclosporiasis
- Fetal Alcohol Syndrome
- Leptospirosis
- Neonatal abstinence syndrome
- Overdose
- Suicide and Suicide Attempts
- Tuberculosis disease and infection continues to be reportable; the revisions just clarify which test results the NDDoH would like reported.
- Violent Deaths

Removed from the reportable conditions list was *Clostridium perfringens* intoxication.

Laboratories are encouraged to update their data systems to allow for electronic reporting of the infectious conditions. Providers are encouraged to report non-infectious conditions, as requested, to the Office of the State Epidemiologist.

For more information about reportable conditions, please visit the NDDoH Division of Disease Control [website](#).



Shiga toxin-producing *E. coli* (STEC) Outbreak in a North Dakota Child Care Center

Shiga toxin-producing *E. coli* (STEC) are strains of the bacteria *Escherichia coli* (*E. coli*). Although most *E. coli* strains are harmless and live in the intestines of healthy humans and animals, STEC strains produce a potent toxin and often cause diarrhea, which may be bloody. A serious complication of STEC infections known as hemolytic uremic syndrome (HUS) can cause severe illness and death. According to the CDC, the most commonly reported strain of STEC in the United States is *E. coli* O157. This strain is more likely to cause HUS than non-O157 STEC strains, especially among children younger than five years. The [CDC](#) estimates that 265,000 STEC infections occur each year in the United States, resulting in about 3,600 hospitalizations and 30 deaths.

The NDDoH recently investigated a cluster of diarrheal illnesses among attendees and staff at a child care facility. The investigation was initiated when it was discovered that two children who attend child care at the facility had been diagnosed with STEC infections. Employees at the facility and parents or guardians of all child care attendees were interviewed by NDDoH staff to gather information about recent signs or symptoms of gastrointestinal illness. Child care

attendees and workers who reportedly experienced gastrointestinal illness during the period of interest were excluded from child care or work until two consecutive stool specimens tested negative for STEC. Child care attendees who had not experienced gastrointestinal illness during the period of interest were excluded from child care until one stool specimen tested negative for STEC.

Laboratory testing identified two different serotypes of STEC in stool specimens from child care attendees. Stool specimens from child care workers did not yield STEC isolates. *E. coli* O157:H7 was detected in specimens from ten children. Additionally, one household contact was identified as a secondary case. *E. coli* O103:H2 was detected in specimens from five children. No co-infections with both O157:H7 and O103:H2 were identified. Whole genome sequencing (WGS) was performed on all STEC isolates associated with this outbreak to assess genetic relatedness. Analysis of WGS data showed that each of the 11 *E. coli* O157:H7 isolates and the five *E. coli* O103:H2 isolates was highly similar genetically to all other isolates within its respective serotype cluster. The two serotype clusters were not genetically related to one another.

A confirmed outbreak-associated case was defined as a person who was epidemiologically linked to the child care facility and had laboratory evidence of infection with the *E. coli* O157:H7 outbreak strain or the *E. coli* O103:H2 outbreak strain. Sixteen confirmed cases were identified. An additional ten individuals met the Council of State and Territorial Epidemiologists (CSTE) probable case definition for STEC but are not included in the official outbreak case count because they lacked laboratory evidence of infection with the outbreak strains.

Analysis of epidemiologic data coupled with the laboratory data indicated that the two strains of STEC were likely introduced into the child care facility from different sources during two discrete events. The data suggest the bacteria were most likely spread by person-to-person transmission. According to the American Academy of Pediatrics (AAP), since the infectious dose (i.e., the amount of bacteria needed to make someone sick) of STEC is very low, person-to-person transmission is common among households and in child care centers. The [National Resource Center for Health and Safety in Child Care and Early Education \(NRC\)](#) has noted that bacterial contamination of hands, toys, and other classroom objects is common and facilitates transmission of enteric pathogens in child care facilities.

The following recommendations from the [AAP](#), [CDC](#), and [NRC](#) can help control and prevent STEC transmission in child care centers:

- Practice proper hygiene, especially good handwashing with soap and clean, running water.
 - Wash your hands after using the bathroom and changing diapers.
 - Wash your hands after contact with animals or their environments (e.g., at farms, petting zoos, fairs, even your own backyard).
 - Wash your hands before and after preparing or eating food.

- If soap and water are not available, use an alcohol-based hand sanitizer with at least 60% alcohol (check the product label to be sure).
- With a child care health consultant, the director should develop protocols and procedures for handling children’s illnesses, including care plans and an inclusion/exclusion policy. The inclusion/exclusion criteria should be reviewed with all families.
- Caregivers/teachers should always observe children for signs of disease to permit early detection and implementation of control measures, including exclusion for diarrhea.
- Exclude children in child care who were diagnosed with STEC infections until diarrhea ceases and two successive negative stool samples are obtained.
- Facilities should consult the local health department to determine whether the increased frequency of diarrheal illness requires public health intervention.
- All child care staff members should receive continuing education and monitoring concerning hand hygiene and cleaning of environmental surfaces.

For additional information about STEC, please visit <https://www.cdc.gov/ecoli/> or contact Laura Cronquist at lcronquist@nd.gov or 701-328-2378.



New Disease Control Employee – Rachel Goebel

Name: Rachel Goebel

Title: North Dakota Immunization Information System (NDIIS) Coordinator

Education Background: I completed my undergraduate degree in Social Work at Concordia College, and received my Masters in Public Health, specializing in Population Health Analytics, from the University of North Dakota.

Past Experience: Prior to working for the Department of Health, I worked as a Social Worker in a variety of settings- primarily medical. Most recently, I was employed at a nursing home, serving the residents of long-term care neighborhoods and their families.

Family/Hobbies: I live in Grand Forks with my husband and my pets. We are expecting our first child in February! I love dancing, especially classical ballet, and am part of a community dance company here in Grand Forks. I also enjoy baking, training my dog, and reading. A fun fact about me is that I speak Norwegian 😊



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