

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 2003 Topics

- Active Surveillance for Influenza Infection in Children
- Avian Influenza (H5N1) Outbreak in Asia
- Norovirus Crashes Wedding Party
- Additions to Mandatory Reportable Conditions



Active Surveillance for Influenza Infection in Children

Active surveillance is used by epidemiologists when information is needed in a timely manner. In 2003, the North Dakota Department of Health (NDDoH) teamed with MeritCare's Ask-A-Nurse calling center to conduct active surveillance to identify possible cases of SARS in North Dakota. All calls made to the calling center were monitored daily for symptoms and travel histories that met the SARS case definition. No suspect SARS patients were identified. In the event that a SARS case would have been identified, public health officials would have been able to contact and initiate actions promptly to prevent the possible spread of the disease. Active surveillance also was used to identify gastrointestinal illnesses possibly associated with drinking unsafe water during the water shortage crisis in the Ft. Yates, N. D. area in November 2003. Once again, the NDDoH teamed with MeritCare's Ask-A-Nurse calling center to quickly identify possible water-related illnesses.

Influenza surveillance in Japan over the past decade has identified several hundred cases of acute encephalopathy in children associated with influenza. Although reports of influenza-associated encephalopathy are rare in the United States, the Centers for Disease Control and Prevention (CDC) has requested states to report cases of encephalopathy, as well as any deaths in children with influenza infection. The NDDoH initiated active surveillance for acute encephalopathy associated with influenza infection and influenza-associated deaths in children in mid-December 2003.

Acute encephalopathy in children is defined as:

- Younger than age 18
- Altered mental status or personality change in patient lasting more than 24 hours and occurring within five days of the onset of an acute febrile respiratory illness
- Laboratory or rapid diagnostic test evidence of acute influenza virus infection
- Diagnosed in the United States

Influenza-associated death in children with evidence of influenza infection is defined as:

- Clinical summary with history of illness
- Laboratory results, including documentation of influenza virus infection
- Autopsy report if available

Active surveillance for influenza-associated encephalopathy and influenza-associated deaths in children is being conducted on a weekly basis by field epidemiologists with hospitals across the state.

As of Jan. 15, 2004, there have been no reports of encephalopathy or deaths associated with influenza in children younger than 18 in North Dakota. Since October 2003, 93 influenza-associated deaths among children aged younger than 18 were reported nationwide to the CDC. The number of influenza-associated deaths in children in 2003 cannot be accurately compared to previous years because influenza is not a nationally reportable condition. Hence, the proportion of influenza infections associated with death cannot be estimated.

North Dakota influenza information and data is available on the NDDoH influenza website at www.ndflu.com.



Avian Influenza (H5N1) Outbreak in Asia

Five children and one mother died recently in Vietnam with influenza-like illnesses. A total of 27 cases with similar symptoms have been reported in Viet Nam as of January 28, 2004. Avian influenza type A (H5N1) infection was confirmed in eight total cases. H5N1 also was confirmed in three cases in Thailand, two of which died. Avian influenza H5N1 (also called the “bird flu”) has ravaged chicken farms in southern and northern Vietnam, killing more than three million chickens. More chickens have been destroyed in the attempt to prevent any further spread to humans. Epidemiological investigation has linked all patients to a common source of poultry. Human-to-human transmission is not evident at this time. The H5N1 strain is nearing close to 100 percent mortality in infected chickens. Ducks and pigs also are highly susceptible to the virus and capable of spreading the infection to humans. Humans have a low immune response to H5N1 infection and develop severe respiratory illness, making the virus a potential and significant risk to public health.

Recent spread of H5N1 in bird populations in several countries of Eastern Asia - including South Korea, Vietnam, Japan, Cambodia, Thailand and Indonesia - highlights the urgent need for improved monitoring and reporting. The CDC recommends enhanced public health surveillance for hospitalized patients with severe respiratory illness and a history of travel to affected areas within 10 days of becoming ill. Clinicians should notify the NDDoH immediately of any patients fitting this case definition.

Travelers from affected areas are advised to be alert for respiratory symptoms when returning to the United States.

Additional information about influenza A (H5N1) in Vietnam can be viewed at the World Health Organization (WHO) website at www.who.int/en/ and the CDC website at www.cdc.gov/flu/about/fluviruses.htm.



Norovirus Crashes Wedding Party

The NDDoH received a report of gastrointestinal illness involving a number of individuals who attended a wedding reception in Dickinson, N.D. in November 2003.

Approximately 90 individuals attended the wedding reception. Sixty-eight wedding reception guests were interviewed by Disease Control epidemiologists. Thirty-one (46%) attendees met the case definition of experiencing diarrhea and/or vomiting after eating at the wedding reception. Reported symptoms included diarrhea (94%), vomiting (81%), nausea (84%), abdominal cramps (71%), chills (61%) and headache (52%).

The incubation period was estimated to be approximately 40 hours, and the average duration of illness was 24 to 48 hours. The median age of those in attendance was 27 (range from less than 1 year to 71 years). Of those who reported being ill, the median age was 24. Three stool samples from ill wedding party members and reception guests were submitted to the Division of Microbiology and tested positive for norovirus (formally known as Norwalk-like virus).

Although the epidemiological investigation linked all of those ill to the wedding reception, no specific foods were found to be the likely source of infection. The dinner consisted mainly of food items that were served cold, such as turkey and ham cold cuts, pasta salad, potato salad, vegetable tray with ranch dressing, jello, cake and beverages. Norovirus outbreaks are frequently associated with consumption of cold, ready-to-eat foods and liquid items (e.g. salad dressing or cake icing) that allow the virus to mix evenly. Infected food handlers contaminating the food by direct contact or work surfaces contaminated by stool or vomit are the most common associated factors in norovirus outbreaks. Humans are able to shed the virus during the time they are experiencing symptoms and for as long as two weeks after symptom resolution. In this situation, all food handlers reported to be well at the time of working at the wedding reception. Information regarding the past medical history of the food handlers to rule out the possibility of viral shedding following a recent infection was not obtained.

The CDC estimates that 23 million cases of norovirus occur each year and that the virus accounts for at least 50 percent of all foodborne outbreaks in the United States. Common settings for outbreaks include restaurants and catered meals, nursing homes, hospitals, schools and vacation settings or cruise ships.



Additions to Mandatory Reportable Conditions

A public hearing was held Jan. 13, 2004, regarding changes to the NDDoH mandatory reportable conditions list. No comments were received at the hearing. These changes include adding Severe Acute Respiratory Syndrome (SARS) and all CD4 test results as reportable conditions and changing arboviral encephalitis to arboviral infection. The proposed changes will be reviewed by the State Health Council for final adoption.

Providers will be notified when the changes to the reportable conditions are adopted into law.

Contributing authors of The Pump Handle include Julie Goplin, Tracy Miller, Kirby Kruger and Larry Shireley. For questions, suggestions or inquiries, or to be removed from the mailing list, please contact Julie Goplin of the Division of Disease Control at 701.238.2375 or by email at jgoplin@state.nd.us.

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



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