

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

June 2003 Topics

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The Mouse That Roared

The NDDoH recently issued a warning regarding hantavirus disease. This release is available on the department's home page at <http://www.health.state.nd.us/> (click on Hantavirus on the right-hand side).

Three cases of hantavirus were reported in Montana within two weeks in mid-May, 2003. Two of the three persons died from the severe pulmonary syndrome caused by the virus that is spread by mice, primarily the deer mouse. Montana biologists report that the deer mouse population has greatly increased due to a mild winter followed by a wet spring.

Two hantavirus cases resulting in one death also were reported in southwest Kansas.

The deer mouse has one of the widest ranges of any North American rodent and can be found living mostly in rural and wooded areas throughout the United States. They are carriers of hantavirus, capable of transmitting the virus to other hosts without getting sick themselves. Transmission to humans occurs through a bite from an

infected deer mouse or from inhaling particles of urine or droppings that have become aerosolized. The disease is not spread from person to person. Symptoms begin within two to three weeks after exposure and are flu-like including difficulty breathing, cough, fever and muscle aches. Patients often become extremely ill and may need to be treated by support with a respirator since there is no drug therapy available. The fatality rate of patients with hantavirus when it was first discovered was 90 percent and is now about 50 percent.

The most effective way of preventing hantavirus pulmonary syndrome is by eliminating the chance of exposure by making it difficult for rodents to live in or around human dwellings. Basic control measures include sealing any entry holes inside and outside the home (a mouse can fit through a hole the size of a dime!), clearing brush and grass away from the foundation, keeping floors clean and food sealed, including pet food.

The chance of getting hantavirus disease is very low, but consequences are very serious so using safety precautions while working on your properties is important. When cleaning out storage sheds or cabins, open doors and windows to air out the confined space before entering. If you come across an old mouse nest or notice a large amount of droppings indicative of rodent infestation, put on rubber gloves and wet the contaminated areas with detergent. Any general-purpose household detergent that is commercially available (make sure the label states that it is a disinfectant) or a 1:10 bleach solution (1 ½ cups bleach mixed in one gallon of water) will be efficient. Dispose of waste, dead rodents or the nest in a double plastic bag. Disinfect your cleaning supplies when finished or dispose of them in the same manner. Information regarding pest control measures and cleaning is available on the department's hantavirus website at <http://www.health.state.nd.us/disease/hantavirus.htm>.

Hantavirus emerged for the first time as an outbreak in 1993 in the Four Corners region of the southwestern United States. Since the discovery of this virus, there have been 336 cases in 31 states including 32 retrospectively identified back to 1959. In 2001, 11 cases were identified nationwide, the lowest case rate since it was first discovered. Previously, the nation's average number of cases per year was 34 cases, 68 percent higher than in 2001. The last cases of reported hantavirus in North Dakota occurred in 2000 when two cases were reported. Both people survived. Suspect hantavirus cases must be reported to the NDDoH immediately and specimen samples sent to the Division of Microbiology for testing.

Additional information regarding hantavirus is available at <http://www.cdc.gov/ncidod/diseases/hanta/hantvrus.htm>.



West Nile Virus Surveillance Activities

The first sign of West Nile Virus (WNV) activity in North Dakota this year was a Fargo-area horse that presented with WNV symptoms in April. The initial symptoms were hind-quarter coordination problems which progressed, resulting in euthanasia about one month later. Tests confirming WNV infection are pending.

The NDDoH and WNV surveillance participants initiated active surveillance for WNV infected birds on June 1, 2003. The first WNV positive bird in North Dakota was found on June 4 in the Fargo area of Cass County. This was the first positive out of the 80 birds submitted to the North Dakota State University Veterinary Diagnostic Laboratory for testing as of June 10, 2003. The press release describing this event can be viewed on the health department's homepage at <http://www.health.state.nd.us/>.

Surveillance information on birds, horses and humans can be viewed on the Division of Disease Control's website at <http://www.ndwnv.com/>.



SARS Case Investigation Ongoing in North Dakota

The NDDoH was notified in May 2003 that a Cass County resident between 20- and 30-years-old reported a fever and respiratory symptoms after transit through Toronto, Canada. Just previous to this report, Toronto was added back onto the Centers for Disease Control and Prevention's (CDC) list of areas reporting local transmission. As a result, the patient was determined to meet the CDC's SARS case definition.

The suspect case was not hospitalized and voluntarily stayed at home until 10 days after resolution of symptoms which is thought to be the possible infectious period. The patient's physician and the NDDoH closely monitored the patient and close contacts by daily telephone calls throughout the period. The patient's symptoms have since resolved and no contacts have been ill. Follow-up confirmatory tests will be conducted by the CDC.

Updated information on SARS may be found on the NDDoH website at <http://www.health.state.nd.us> (click on SARS in the right-hand column). The North Dakota Division of Microbiology may be contacted for guidance on SARS testing at 1.701.328.5262.



Monkeypox Outbreak

In late May, a health facility in Wisconsin tended to a three-year-old patient who was later identified to be the first case of monkeypox in the Western Hemisphere. More cases were identified in, Wisconsin, Indiana and Illinois. The CDC notified the United States of the outbreak the weekend of June 6. As of June 12, 50 cases were being investigated and New Jersey has been added to the list of affected states.

At the time of this report, all human monkeypox cases have been linked to exposure to infected prairie dogs, and in once case a rabbit, being kept as pets. The prairie dogs are thought to have acquired the disease under the supervision of an exotic pet distributor in Illinois who had just received a Gambian giant rat from Africa. The animals were distributed to pet stores in Wisconsin where they were sold to customers as pets.

Monkeypox is transmitted to humans by a bite from an infected animal or direct contact with the infected animal's blood, body fluids or lesions. Human-to-human transmission is also possible by direct contact, although, at the time of this report, none of the cases in the United States have been infected by this mode of transmission. The CDC recommends that health care providers take necessary

precautions by practicing a combination of standard, contact and airborne precautions for suspect monkeypox cases seeking medical care.

Symptoms of monkeypox, which are milder than smallpox, occur approximately 12 days after exposure and are described as fever ($\geq 100.5^{\circ}\text{F}$), headache, muscle aches, back ache and swollen lymph nodes. About one to three days following onset of fever, a papular rash, often starting on the face, spreads to the extremities. After ongoing several stages, the pustules become crusted, scab over and fall off in two to four weeks. No treatment is available to cure monkeypox but the smallpox vaccine has proven to reduce the risk of being infected and is recommended by the CDC for persons investigating monkeypox outbreaks, health care workers in direct contact with patients and close or intimate contacts of infected individuals or animals.

The CDC, Food and Drug Administration and the Department of Health and Human Services issued an embargo on certain rodents and prairie dogs from being imported into the United States from Africa until further notice.

The NDDoH has distributed a letter to providers that can be viewed at <http://www.health.state.nd.us/disease/>. Additional information exists on the CDC's website at <http://www.cdc.gov/ncidod/monkeypox/index.htm>.



Online Disease Reporting

Health care providers can now send disease report cards to the NDDoH via the internet. The Division of Disease Control website contains an online card that can be entered and submitted to the Department of Health by using the computer. Go to <http://www.health.state.nd.us/disease/DiseaseCard.htm>. The entry form that appears contains fields where you can enter information and drop-down lists to select appropriate information from. Moving from field to field is done by pressing the "TAB" key. To submit the form when completed, press "ENTER." Call Erin Fox at 1.701.328.3341 or Julie Goplin at 1.701.328.2375 if you have any questions with the new system. The NDDoH still accepts alternative reporting methods such as paper report cards, fax, etc.

Upgrading the disease reporting system to electronic submission is one step in implementing the public health information network called NEDSS (National Electronic Disease Surveillance System). NEDSS is an integrated surveillance tool that can transfer appropriate public health, laboratory and clinical data efficiently and securely over the internet. This system will improve the nation's ability to identify and track emerging infectious disease and potential bioterrorism attacks as well as to investigate outbreaks and monitor disease trends.

Through a competitive request for proposal process, the NDDoH has selected Scientific Technologies Corporation (STC) as the contracted systems integration company to develop and implement a data management and surveillance system for the Division of Disease Control. The initial focus will be to develop a system to integrate electronic laboratory reporting from the Division of Microbiology and hospital-based laboratories and to conduct essential day-to-day disease surveillance operations received from health care providers. Further additions may include

emergency department syndromic surveillance reports, Ask-A-Nurse calling center surveillance, ambulance/emergency services reports, pharmaceutical sales and animal health surveillance.



Mad Cow Disease in Canada

A case of Bovine Spongiform Encephalopathy (BSE), commonly referred to as Mad Cow Disease, was reported by the Canadian Food Inspection Agency on May 20, 2003. The cow was found to be infected with the disease through routine surveillance performed by Canadian officials.

After investigating the Alberta farm where the disease emerged, the lineage of the cow and the lot of feed thought to be potentially contaminated, 15 farms were placed under quarantine and 1,160 head of cattle were euthanized to reduce the risk of spreading the disease to other cattle and humans. This is the only instance of Mad Cow Disease in Canada since 1993, when a beef cow imported from Britain in 1987 was diagnosed with the illness.

Pending further investigation, the United States has prohibited or restricted the importation from Canada of any food products considered to originate from ruminants or in which ruminant material could possibly be present. This includes, but is not limited to, all live ruminants, ruminant meat products and ruminant protein products. The United States has been taking precautions against BSE since its discovery in Great Britain in the early 1990s by placing severe restrictions on importation of live ruminants and ruminant products from countries where Mad Cow Disease exists, in addition to implementing an active surveillance program. No cases of Mad Cow Disease have ever been reported in the United States.

More information on Mad Cow Disease and the situation in Canada can be found on the Canadian Food Inspection Agency website at <http://www.inspection.gc.ca/english/anima/heasan/disemala/bseesb/bseesbindexe.shtml> or the CDC website at <http://www.cdc.gov/ncidod/diseases/cjd/cjd.htm>.



Got vaccine? If so, keep an eye on the thermometer

The NDDoH recently identified a clinic that had stored vaccines at improper temperatures. Storing vaccine at improper temperatures can reduce its effectiveness, resulting in a potential lack of protection from disease.

It is just as important to ensure vaccine is kept in an area where it is not too cold as it is to make sure it is not too warm. Providers should know the recommended storage temperatures of all vaccines they are using and monitor the temperatures at least daily. Temperature monitors and vaccine temperature monitoring sheets have been given to all providers utilizing vaccine provided by the NDDoH.

Information regarding proper vaccine storage is available on the product package insert. Additional information has been provided by the NDDoH and is available at <http://www.health.state.nd.us/disease/immune/>. Information regarding proper vaccine storage can be obtained by contacting Heather Weaver, immunization

program manager or Molly Sander, immunization surveillance coordinator at 701.328.2378 or 800.472.2180.

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 <http://www.ph.ucla.edu/epi/snow.html>.



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