Communicable Disease Newsletter

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PERTUSSIS

Pertussis

Pertussis, or more commonly called ***whooping cough***, is a very contagious disease of the respiratory system. The disease is caused by the Bordetella pertussis bacteria, which releases toxins, thereby causing damage to the upper respiratory system.

Transmission

Pertussis is only found in humans and is spread through direct contact with infectious respiratory droplets. Such droplets are generally expelled into the air during coughing and sneezing, where they are then breathed in by someone in close proximity.

Signs/Symptoms of Illness

The disease can cause serious illness in infants, children, and adults. Symptoms of pertussis infection usually develop within 7-10 days of exposure and typically begin with cold-like symptoms, including runny nose, mild cough and low-grade fever. After 1-2 weeks, severe coughing begins and unlike the common cold, coughing "fits" (paroxysms) can continue for weeks. Individuals are most contagious for up to 2 weeks after the cough begins. The paroxysmal cough is characterized by rapid, intense coughing until the person is nearly out of breath and forced to inhale with a loud "whooping" sound. Paroxysmal episodes can go on for 10 weeks or more and can result in vomiting and exhaustion.

Infants infected with pertussis may suffer from apnea (a pause in the breathing pattern) and the cough may be minimal or even absent. The disease is the most dangerous for infants in that more than one-half of those infected must be hospitalized. Many infants are infected by older siblings, parents or other caregivers who might not even know they have the disease.

Protection

The best way to prevent pertussis is through vaccination. Pertussis vaccines are very effective and are available for infants, children, adolescents and adults. DTaP and Tdap vaccines are available for individuals meeting vaccination criteria according to the Advisory Committee on Immunization Practices (ACIP). Beginning January 2011, the ACIP recommends 1 dose of Tdap vaccine for children 7-10 years of age without a complete DTaP series and also for adults 65 years of age and older who have, or anticipate having, close contact with an infant less than 12 months of age.

In its early stages, pertussis appears to be nothing more than the common cold and infected persons usually appear fairly well between coughing bouts. Pertussis is often not suspected or diagnosed until the more severe symptoms appear. The best way to get an accurate diagnosis is to contact your doctor at the onset of illness.

If you would like more information on pertussis disease, visit www.cdc.gov/pertussis/index.html. For more information on pertussis vaccination contact your family doctor or the Saginaw County Department of Public Health at (989) 758-3840.

References

http://www.cdc.gov/pertussis/index.html

Epidemiology and Prevention of Vaccine Preventable Diseases, 11th ed., May 2009.

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NOROVIRUS

NOROVIRUS

Noroviruses are the most common cause of epidemic gastroenteritis, responsible for at least 50% of all gastroenteritis outbreaks worldwide, and a major cause of foodborne illness. In the United States, approximately 21 million illnesses attributable to norovirus are estimated to occur annually. There have been substantial advances in detection and reporting of the disease during the past decade and there is an increased emphasis on prevention and control measures.

Noroviruses are members of a group of viruses called caliciviruses. They were first identified in 1968 in Norwalk, Ohio and thus described as "Norwalk-like" viruses for many years. Noroviruses cause acute gastroenteritis in persons of all ages.

Symptoms: The illness typically begins after an incubation period of 12 -48 hours and is characterized by acute onset, non-bloody diarrhea, vomiting, nausea, and abdominal cramps. Some persons may experience only vomiting or diarrhea. Others may also have low-grade fever and body aches and therefore this illness is often referred to as "stomach flu" but actually there is no biologic association with the influenza virus. Although symptoms may be severe, they typically resolve without treatment after 1-3 days in otherwise healthy persons. However, infants and young children, the elderly, and those with other underlying disease and weakened immune system may experience a more prolonged course of illness lasting 4-6 days and there have been associated deaths. Approximately 10% of persons with norovirus gastroenteritis seek medical attention, which may include hospitalization and treatment for dehydration with intravenous fluid therapy.

Transmission: The single-stranded RNA noroviruses are extremely contagious requiring as few as 10 viral particles to infect. The virus can be detected in stool for an average of 4 weeks following infection, although peak viral shedding occurs 2-5 days after infection. Studies continue to determine if people can develop any protective immunity to norovirus, as it remains a mystery as to why some persons do not develop illness despite significant exposure and also that 30% of those infected with norovirus can be asymptomatic.

Humans are the only known reservoir for human norovirus infections, and transmission occurs by three general routes:

Person-to-person: Transmission may occur directly through the fecal-oral route, by ingestion of airborne viral particles in vomit, or by indirect exposure from objects or surfaces.

Foodborne: Transmission typically occurs by contamination from infected food handlers during preparation and service. Food can also be contaminated at any time during production, processing, and distribution. A variety of products have been implicated in outbreak investigations; food eaten raw (e.g. leafy vegetables, fruits, and shellfish) have been identified most commonly. Only a small dose of the virus is needed to cause infection, and thus food handlers who have norovirus infection can contaminate large quantities of food product.

Waterborne: Transmission can occur through recreational or drinking water when there is contamination. People with diarrhea caused by norovirus should not use recreational water venues (e.g. swimming pools) for two weeks after symptoms resolve.

Incidence: Recent CDC studies suggest that norovirus is the leading cause of acute gastroenteritis in the community and among persons seeking care in outpatient clinics or emergency departments across all age groups.

Outbreaks can occur in a variety of settings, e.g. nursing homes, hospitals, and schools, childcare centers, colleges, prisons, military encampments, restaurants, catered events, cruise ships, bus tours, and airplane travel. Environmental contamination and close proximity to those who are ill facilitate transmission.

Diagnosis and treatment: Identification of norovirus is best made from stool specimens collected as early as possible during the acute phase of the illness, preferably between 48-72 hours after onset of symptoms. Good results can also be obtained on stool samples taken as long as 7-10 days after symptom onset. Currently, there is no antiviral medication that works against norovirus and no vaccine to prevent infection. Antibiotics are ineffective in treating a norovirus infection. Treatment is supportive, with fluid replacement encouraged as tolerated to prevent dehydration. Medical attention should be sought if symptoms last for longer than 48 hours, if the person exhibits signs and symptoms of dehydration (e.g. listless behavior, fever, headache, dry skin, extreme thirst), and if the stool contains blood or mucous, as there may be another cause for the diarrheal illness.

Prevention:

Hand washing: Because of the highly infectious nature and the fact that the virus continues to be shed in the stool for up to 4 weeks after an illness, appropriate hand hygiene is likely the single most important method to prevent norovirus infection and control transmission. Reducing any norovirus present on hands is best accomplished by thorough hand washing with running water and plain or antibacterial soap. Washing with soap and water reduces the number of microbes on the hands by mechanically removing the virus. Avoid putting your hands near your mouth and remember to wash hands at these times:

Before meals preparation or eating a meal or snack

After use of the bathroom

After handling objects (e.g. ,money) or having contact with pets

When hands are visibly soiled

When someone in the household is ill

Recent studies have shown that alcohol-based hand sanitizers are not effective against norovirus.

Exclusion and Isolation: Considering the highly infectious nature of norovirus, exclusion and isolation of infected persons are often another important means of interrupting transmission of virus and limiting contamination of the environment. This is especially true in situations where people live close to one another, e.g. long-term care facilities, acute-care hospitals, cruise ships, and college dormitories. Infected persons should avoid returning to work or school too quickly and follow the guideline of staying home an additional 24- 48 hours after symptoms have resolved. Exposing classmates, relatives, and co-workers can be lowered through this practice and recovery time improved in many cases. Persons employed in a health care or food service setting who are infected with norovirus should be excluded while they have symptoms and for 72 hours after they recover from their illness.

Environmental disinfection: The use of chemical disinfectants is another key action in interrupting norovirus spread from contaminated environmental surfaces. High-touch areas (e.g. door knobs, hand rails, handles, etc) should be given particular attention. Chlorine bleach has been widely recommended as effective in disinfecting human norovirus from surfaces. It should be applied to hard, nonporous surfaces at a concentration of 1,000-5,000 ppm (5-25 tablespoons of household bleach per gallon of water).

Practice food safety measures:

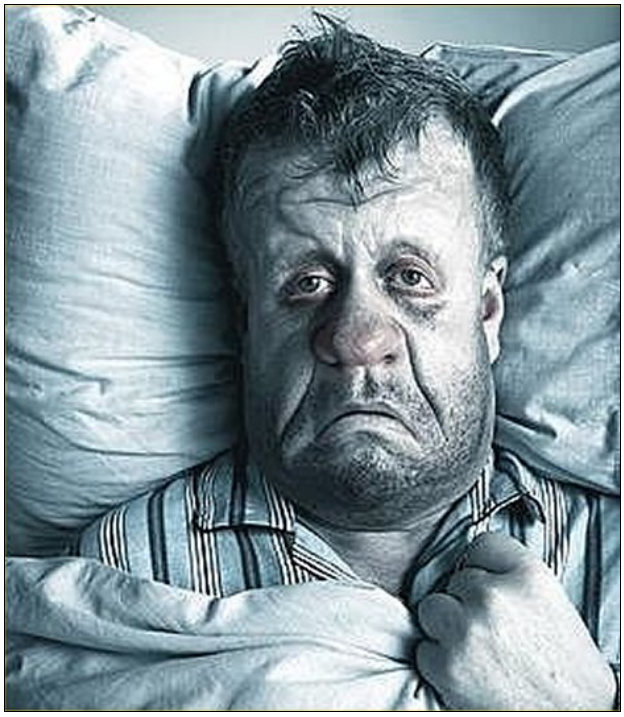
Our food supply no longer comes from the family garden, but has become global with many different countries supplying food products to the United States. Also we eat out a lot more and when food is prepared away from the home and is eaten outside the home or taken home for consumption, there are additional opportunities for contamination. This is why it is important to wash all fruits and vegetables and to prepare and store foods at proper temperatures. For more information on food safety guidance, go to www.fightbac.org.

References:

American Academy of Pediatrics. (2009). Human Calicivirus Infections. In: Pickering LK, Baker, CJ, Kimberlin, DW, Long S.S. eds. *Red Book: 2009 Report of the Committee on Infectious Disease.* 28th ed. Elk Grove Village, IL; American Academy of Pediatrics; 2009: pp.241-242.

CDC. "Updated Norovirus Outbreak Management and Disease Prevention Guidelines." *MMWR.* 2011; Vol.60. No.3.

www.fightbac.org



COMMUNICABLE DISEASE YTD
REPORTED FOR SAGINAW COUNTY
01/01/2011-03/31/2011

Disease	No. Reported
ANIMAL BITE	17
CAMPYLOBACTER	1
CHICKENPOX (Varicella)	10
CHLAMYDIA (Genital)	143
FLU LIKE DISEASE	3613
GASTROINTESTINAL ILLNESS	1329
GONORRHEA	16
GUILLAIN-BARRE SYNDROME	1
HEAD LICE	78
HEPATITIS A	1
HEPATITIS B ACUTE	2
HEPATITIS B CHRONIC	2
HEPATITIS C CHRONIC	42
HISTOPLASMOSIS	2
HIV	4
INFLUENZA	17
MENINGITIS-ASEPTIC	6
MENINGITIS-BACTERIAL	**1**
MENINGITIS-STREPTOCOCCUS PNEUMONIAE, INV	**1**
NOROVIRUS	**3**
PERTUSSIS	**0**
SHIGATOXIN-PRODUCING ESCHERICHIA COLI (STEC)	**1**
SHIGELLOSIS	6
STREP THROAT	**724**
TUBERCULOSIS-MYCOBACTERIUM OTHER	**1**

This newsletter is provided to all Saginaw County healthcare providers, hospitals, schools, local colleges, universities, urgent care facilities and local media centers.

If you would like to receive this newsletter by e-mail please submit your e-mail address to: kburlingame@saginawcounty.com

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Please visit our website at www.saginawpublichealth.org where our communicable disease pamphlets are available.