



Prevention and Control of Viral Gastroenteritis Outbreaks in Schools

September 2008

Outbreaks of gastroenteritis, also called the “stomach flu”, are reported to Lewis and Clark City-County Health Department. The most common causes of these outbreaks are Noroviruses, a group of viruses that can cause nausea, vomiting, diarrhea and stomach cramps. A fact sheet is available at the end of this document.

Infection Control

Viral Gastrointestinal Outbreak Control: In an environment where people congregate such as a child care facility or a school, there are risks of intense or prolonged transmission of disease that may require aggressive intervention. These viruses have a very high attack rate, which means that many children and staff have the potential to become ill. Although most outbreaks of viral gastroenteritis are self-limiting, the following recommendations should be implemented to control an outbreak until the outbreak is over, i.e. when no signs or symptoms exist within the facility for 5 days.

1. Exclude children with symptoms of nausea, vomiting, and/or diarrhea. For children awaiting pickup, have the child wait in the infirmary or away from other children. A child should not return to school for at least 24 hours after the symptoms have subsided, whether or not a diagnosis has been made of norovirus infection.
2. Staff and children should be educated and reminded to wash hands with soap and warm water after using the toilet. It may be helpful to supervise young children during hand washing, or to teach songs, have contests, or promote other activities to make hand washing fun. Always be sure that bathrooms used by children are fully stocked with toilet paper, soap, and paper towels, and that children have access to warm water for hand washing. If good personal hygiene is maintained, even those with active infections may be less of a threat.

Proper hand washing procedure:

- Use a designated hand sink supplied with a hand washing reminder sign, soap, hot and cold running water under pressure and paper towels
- Moisten hands
- Apply soap
- Scrub the hands, wrists, nails and finger tips for 20 seconds
- Rinse with 100°-110° fast flowing water (2 gallons per minute) under pressure
- Dry thoroughly with paper towels
- Discard paper waste in approved container without re-contamination of hands

Alcohol based hand sanitizers are ineffective against some gastrointestinal viruses and must not be used in place of hand washing.

3. Increase regular cleaning of all hand contact surfaces (e.g., handrails, doorknobs, faucets, toys, tables, counters, desks etc.) with an appropriate germicidal product (see section below). **This should be done as often as possible during an outbreak.** Viruses that cause gastroenteritis may become airborne in droplets during vomiting or toilet flushing of

infectious material. These droplets may land on surfaces. Surfaces may also become contaminated from people's hands

4. Increase cleaning and disinfection of shared bathrooms. Clean at least every hour, if possible. If an ill person has just used the bathroom, clean immediately.
 - a. Disinfect with an agent approved for norovirus
 - b. Use disposable cloths and disposable gloves
 - c. Provide ventilation to the outside
5. All staff and children should wash their hands immediately before they eat or touch their mouth.
6. Encourage the use of closed toilet lids while flushing. This may help cut down on virus being projected into the air in tiny droplets of water.
7. Soiled linens and clothes should be handled as little as possible, and with minimum agitation to prevent microbial contamination of the air and people. Transport in enclosed and sanitary manner such as a plastic bag.
8. Consider having staff and children wash their hands at scheduled times, such as once an hour, in addition to regular hand washing practices. Studies have shown that this may reduce the number of absentee days in school settings.

Employee Health

1. Exclude from work ALL staff with symptoms of nausea, vomiting or diarrhea. Ill staff should remain away from work for a minimum 24 hours, preferably 48 hours following the disappearance of symptoms.
2. **A big contributor to outbreaks can be ill people who handle food.** Viruses can be transmitted through food to everyone at the facility. Even a microscopic amount of fecal mater or vomit on a person's fingers or clothing transferred to food can cause illness. Exclusion of ill staff is particularly important for food handlers, who should not be involved in preparing food or handling ice for 48-72 hours following the disappearance of symptoms.
3. Restrict access to the kitchen to well kitchen staff only. Staff who have been ill or who have been caring for ill children must not enter the food service area. No one else should have access to the kitchen.

Fecal or vomit accidents

If someone vomits or defecates, move people away from the area if possible. The area must be cleaned and sanitized immediately. This is especially important near food preparation areas. The entire area, including both horizontal and vertical surfaces must be cleaned and then sanitized with approved cleaners that are effective against norovirus. Close this area off for at least an hour after vomiting has occurred whenever possible since the virus can be airborne in the form of tiny droplets.

Those tasked with clean-up must be protected by using disposable rubber gloves, a disposable apron, and a mask.

- Dispose of all exposed foods within 25 feet of the contamination
- Dispose of any food prepared by the ill person
- Use paper towels or disposable cloths to soak up as much of the soil as possible
- Be careful not to drip or splash the soil
- Clean and sanitize the soiled area with an approved compound for norovirus
- Dispose of all waste material in sealed plastic bags

- If windows are available, air out the area
- Wash hands thoroughly before resuming work

Cleaning and Disinfecting

1. The most effective disinfectant for noroviruses is chlorine based. Use chlorine bleach from a **new bottle** in the following concentrations for these surfaces: with a **contact time of 10-20 minutes**
 - 200 ppm (5 tablespoons of bleach in 1 gallon of water)**
Stainless Steel, food/mouth contact items
 - 1000 ppm (1/3 cup in 1 gallon of water)**
Non-porous surfaces – Tile floors, counter-tops, sinks, toilets.
 - 5000 ppm (1 and 2/3 cups bleach in 1 gallon of water)**
Porous surfaces—wooden floors
2. **Carpet** – Pickup visible organic debris with absorbent material and discard in a plastic bag. Steam clean @ 158°F for 5 minutes or 212°F for 1 minute.
3. **Linens/clothing /textiles** – remove visible organic debris with absorbent material and discard in a plastic bag. Keep contaminated and uncontaminated clothes separate. Minimize disruption of soiled linens and laundry to minimize aerosols. Wash in a pre-wash cycle, then use a regular wash cycle using detergent and dry separately from contaminated clothing at temp greater than 170 degrees F.

Recommendations for Using Chlorine Bleach

- Never ever mix other cleaners/disinfectants/or other chemicals with bleach.
- Prepare your bleach solution in a well-ventilated area. Chlorine bleach is corrosive and an irritant to skin, eyes, upper and lower respiratory tract and all mucosal tissue.
- Avoid spray bottle application of disinfectants if possible.
- Use disposable gloves (a heavier glove is necessary when working with 1000 ppm and 5000 ppm dilutions), masks, eye protection and gown or protective clothing when working with 1000 ppm and 5000 ppm dilutions of bleach disinfectant especially.

REPORTING

State and county regulations require the immediate reporting of diarrheal and gastroenteritis outbreaks to local health authorities. Local health authorities can **assist** with the control of these outbreaks, provide information for staff and parents, and provide links to testing and related services.

If an outbreak is suspected at a facility:

- Call the Health Department at 443-2584.



Norovirus Facts

What are Noroviruses?

Noroviruses are a group of viruses that cause the “stomach flu,” or gastroenteritis (GAS-tro-en-ter-I-tis), in people. Norovirus is also commonly known as Norwalk or the “cruise ship virus.”

What are the symptoms of noroviruses?

The symptoms of norovirus illness usually include nausea, vomiting, diarrhea, and some stomach cramping. Sometimes people also have a low-grade fever, chills, headache, muscle aches, and a general sense of tiredness. The illness often begins suddenly, and the infected person may feel very sick. The illness is usually brief, with symptoms lasting from 12 hours to 5 days. In general, children experience more vomiting than do adults. Most people with norovirus illness experience both diarrhea and vomiting.

How serious is norovirus disease?

Norovirus disease is usually not serious, although people may feel very sick and vomit many times a day. Most people get better within 1 or 2 days, and they have no long-term health effects related to the norovirus. However, sometimes people become dehydrated due to vomiting and diarrhea and may need special medical attention. Children and infants, the elderly, and persons with weakened immune systems are more likely to experience dehydration, hospitalization, and complications, including death.

How do people become infected with noroviruses?

This virus is very contagious and can spread rapidly. Noroviruses are found in the stool or vomit of infected people. The virus can then be passed directly to other people or to the environment (handrails, walls, toys, tables, countertops), where other people pick it up. People can become infected with the virus in several ways, including:

- Eating food or drinking liquids that are contaminated with norovirus;
- Touching surfaces or objects contaminated with norovirus, and then placing their hand in their mouth;
- Having direct contact with another person who is infected and showing symptoms (for example, when caring for someone with illness, or sharing foods or eating utensils with someone who is ill).

When do symptoms begin?

Symptoms of norovirus illness usually begin about 24 to 48 hours after ingestion of the virus, but they can appear as early as 12 hours after exposure.

How long are people contagious?

People infected with norovirus are contagious from the moment they begin feeling ill to at least 3 days after recovery. Some people may be contagious for as long as 2 weeks after recovery. Therefore, it is very important to use good handwashing and other hygienic practices and not to prepare food while you are contagious.

What’s the best way to prevent spreading Norovirus to family, friends and community?

- Stay home when you are having symptoms.
- Use a separate bathroom if possible and wash your hands thoroughly after each episode.

- Thoroughly clean and disinfect contaminated surfaces immediately after an episode of illness by using a solution as described below.
- Immediately remove and wash clothing or linens that may be contaminated with virus after an episode of illness (use hot water and soap). Soiled linens and clothes should be handled as little as possible, and with minimum agitation to prevent microbial contamination of the air and people.
- Encourage the use of closed toilet lids while flushing. This may help cut down on virus being projected into the air in tiny droplets of water.
- **Persons who are infected with norovirus should not prepare food while they have symptoms and for 3 days after they recover from their illness.** Food that may have been contaminated by an ill person should be disposed of properly.
- **People in occupations that, by their nature, can easily spread illness need to stay home for 48-72 hours after symptoms stop. Sensitive occupations include food handlers, daycare providers and health care providers.**

Can norovirus infections be prevented?

Yes. You can decrease your chance of coming in contact with noroviruses by following these preventive steps:

- Frequently wash your hands, especially after toilet visits and changing diapers and before eating or preparing food.
- Carefully wash fruits and vegetables, and steam oysters before eating them.

What is an effective cleaner and disinfectant?

The most effective disinfectant for noroviruses is chlorine based. Use chlorine bleach from a **new bottle** in the following concentrations for these surfaces: with a **contact time of 10-20 minutes**

200 ppm (5 tablespoons of bleach in 1 gallon of water)

Stainless Steel, food/mouth contact items

1000 ppm (1/3 cup in 1 gallon of water)

Non-porous surfaces – Tile floors, counter-tops, sinks, toilets.

5000 ppm (1 and 2/3 cups bleach in 1 gallon of water)

Porous surfaces—wooden floors

Carpet – Pickup visible organic debris with absorbent material and discard in a plastic bag. Steam clean @ 158° F for five minutes or 212° F for 1 minute.

Linens/clothing /textiles – remove visible organic debris with absorbent material and discard in a plastic bag. Keep contaminated and uncontaminated clothes separate. Minimize disruption of soiled linens and laundry to minimize aerosols. Wash in a pre-wash cycle, then use a regular wash cycle using detergent and dry separately from contaminated clothing at temp greater than 170 degrees F.

How do I protect myself when using chlorine bleach?

- Never ever mix other cleaners/disinfectants/or other chemicals with bleach.
- Prepare your bleach solution in a well-ventilated area. Chlorine bleach is corrosive and an irritant to skin, eyes, upper and lower respiratory tract and all mucosal tissue.
- Avoid spray bottle application of disinfectants.
- Use disposable gloves (a heavier glove is necessary when working with 1000 ppm and 5000 ppm dilutions), masks, eye protection and gown or protective clothing when working with 1000 ppm and 5000 ppm dilutions of bleach disinfectant especially.