



Outbreaks of Viral Gastroenteritis in Schools

Outbreaks of gastroenteritis, also called the “stomach flu”, are reported to Oklahoma State Department of Health, Acute Disease Service, and County Health Departments. The most common causes of these outbreaks are noroviruses, a group of viruses that can cause nausea, vomiting, diarrhea, and stomach cramps. For additional information regarding noroviruses, visit the Acute Disease Service website at <http://ads.health.ok.gov>.

INFECTION CONTROL AND PREVENTION

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 transmission, 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 24—48 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

3. Increase regular cleaning of all hand contact surfaces (e.g., handrails, doorknobs, faucets, toys, tables, counters, desks, etc.) with an appropriate germicidal product. **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.
 - Disinfect with an agent approved for norovirus
 - Use disposable cloths and disposable gloves.
 - Provide ventilation to the outside.
5. All staff and children should wash their hands immediately before they eat or touch their mouths.
6. Encourage the used 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 at 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 at least 24 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 matter 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 at least 24 hours following the disappearance of symptoms.
3. Restrict access to the kitchen to well kitchen staff only. Staff who have been ill or 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

Norovirus can survive 3 or 4 weeks on surfaces at room temperature, and many common disinfectants will not kill the virus. 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 a 25 feet perimeter 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 no 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 form 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, countertops, sinks, toilets
 - **5000 ppm (1 and 2/3 cups bleach in 1 gallon of water):** Porous surfaces—wooden floors
2. **Carpets** - Pickup visible organic debris with absorbent material and discard in a plastic bag. Steam clean at 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 a temp greater than 170°F.

Recommendations for Using Chlorine Bleach

- Never 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

Suspected outbreaks of apparent infectious diseases should be reported to the OSDH Acute Disease Service immediately for investigation. Public health officials 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 Acute Disease Service Epidemiologist-On-Call at (405) 271-4060 (24/7/365 availability), or contact your local county health department.

Adapted from Lewis and Clark City-County Health Department “Prevention and Control of Viral Gastroenteritis Outbreaks in Schools, September 2008”, accessed at http://www.co.lewis-clark.mt.us/uploads/media/Norovirus_Guidance_for_Schools_2008_03.pdf.