



VIRAL GASTROENTERITIS OUTBREAK GUIDELINES FOR SCHOOLS

Outbreaks of gastroenteritis in schools are not uncommon. Viruses cause most outbreaks of gastroenteritis and are almost always transmitted person-to-person, by contaminated surfaces or, occasionally, by contaminated food. These outbreaks can be detected early by recognizing the typical symptoms of illness and can be controlled by taking specific steps to prevent the virus from being transmitted person-to-person.

What causes viral gastroenteritis in schools?

Many different viruses can cause gastroenteritis, including rotavirus and norovirus; however, norovirus is the cause of most of these outbreaks. Although the symptoms may be similar, viral gastroenteritis is not caused by bacteria (such as *Salmonella*) or parasites (such as *Giardia*), or by medications or other medical conditions.

What are the signs and symptoms of viral gastroenteritis?

The main symptoms of viral gastroenteritis are vomiting and watery diarrhea. Other symptoms include headache, fever, nausea, and abdominal cramps ("stomachache"). In general, the symptoms begin 1 to 2 days following infection and may last for 1 to 10 days, depending on which virus causes the illness. In general, children with norovirus experience more vomiting than adults.

How does viral gastroenteritis spread?

Norovirus is spread when material contaminated by feces or vomit from an infected person is ingested. Norovirus is extremely infectious. Only eighteen particles of norovirus can make someone sick. A pea-sized amount of feces can contain billions of viral particles. The virus can continue to be present in the feces of infected persons for a week or more, even after they recover or even if they were asymptomatic. In schools, the virus is spread primarily through contamination of the hands of persons who are ill. Vomiting also will suspend viral particles in the air, resulting in contamination of the environment. Norovirus can remain infectious on environmental surfaces for many days and is relatively resistant to disinfection, heat, and cold.

How is viral gastroenteritis diagnosed?

Viral gastroenteritis can be diagnosed by testing the stool. A special test for norovirus is available at the Nevada State Public Health Laboratory. This requires fresh (unfrozen) stool. While the test can typically be completed within one to two days of receiving a specimen, decisions to implement control measures of a possible outbreak should be taken immediately. Testing stool may not be possible in every outbreak.

How can an outbreak of viral gastroenteritis be identified?

Facilities should establish and maintain a surveillance program for viral gastrointestinal disease. In general, an outbreak of viral gastroenteritis should be suspected when the number of illnesses exceeds what is normal or typical. Each school that is suspecting an outbreak is occurring will be supplied with a blank gastrointestinal (GI) illness Excel spreadsheet tool. This tool can provide each school with more school-specific indications of when an outbreak of viral gastroenteritis may be occurring.



How is an outbreak of viral gastroenteritis controlled?

To control a viral gastroenteritis outbreak, person-to-person transmission must be interrupted. There is likely little that can be done to prevent the initial introduction of the virus, since an infected staff member or student may be shedding the virus even before they are ill or may never be symptomatic. However, routine handwashing and routine deep cleaning of the facility may help prevent initial introduction. Note that hand sanitizer alone is NOT effective against norovirus, so good handwashing is essential to controlling disease spread. Staff should monitor student handwashing practices.

If people practice good personal hygiene after going to the bathroom, it will limit the spread of the disease. In addition, staff must always use gloves or another method of “no bare hand contact” (e.g., tongs, toothpicks, gloves, etc.) when handling “ready-to-eat” foods or snacks for students (e.g., crackers, cookies, cut vegetables, etc.) The recommendations on the following pages are intended to assist facility personnel in controlling an outbreak of viral gastroenteritis.

CONTROLLING PERSON-TO-PERSON TRANSMISSION OF VIRUSES IN SCHOOLS

Institute control measures when a viral gastroenteritis outbreak is suspected.

DO NOT WAIT FOR DIAGNOSTIC CONFIRMATION

Rapidly implementing control measures at the first sign of a gastroenteritis outbreak can prevent additional cases.

Reporting – when an outbreak is suspected

Notify the Nevada Division of Public and Behavioral Health at 775-400-0333 or stateepi@health.nv.gov.

Record cases on a log and/or computerized system.

1. Include name, staff or student status.
2. Date and time of symptom(s) onset.
3. Symptoms
4. Classroom number
5. Date of birth or age
6. Phone number

If a parent reports a child has tested positive, it is also helpful to record who the doctor was or where they were seen and what the child tested positive for. (The Division of Public and Behavioral Health has a downloadable [GI Illness Excel file](#) available for this use).


Infection Control

Thoroughly clean fecal and vomiting accidents promptly – follow recommendation on next page. Ill students should be placed in a “sick” room away from other students until a parent or legal guardian is able to pick them up. Ill employees should be sent home. Increase the frequency of bathroom and toilet cleaning (at least daily), especially faucets, door handles, toilet handles and light switches.



Personnel & Students

- Exclude all ill students and employees with vomiting and/or diarrhea until 48 hours after symptoms stop.
- Maintain the same staff to assigned classrooms, if possible. Limit staff and students from moving between contaminated and uncontaminated areas.
- Exclude parents and non-essential staff from contaminated areas, if possible.
- Request parents or legal guardians do not bring symptomatic family members into the facility.
- Cancel or postpone group activities (i.e., outings, field trips, parties, etc.) until restrictions are lifted by the Division of Public and Behavioral Health.

 Handwashing is the single most important procedure for preventing the spread of infection! Frequent handwashing with soap and water for at least 20 seconds of vigorous rubbing, thorough rinsing under a stream of clean water, and drying with disposable towels is recommended. Note that hand sanitizer alone is NOT effective against norovirus so good handwashing is essential.

Cleaning Up Vomit, Feces and Other Unpleasant Tasks

- Always have a trained team with the right chemicals and equipment. **Only trained staff should clean and disinfect affected areas.**
- Always **clean** with detergent and hot water **prior** to disinfecting. Disinfect with **1000 ppm** chlorine solution or use an effective virucide.

Chlorine Solution Directions

Prepare 1000 ppm chlorine solution by mixing ½ cup liquid chlorine (bleach) with 1 gallon of water. Make solutions fresh daily, label with date & contents, and store out of reach of children. For questions regarding appropriate use of chlorine solutions or other effective disinfectants, please email stateepi@health.nv.gov.

GENERAL PRINCIPLES OF CLEANING & DISINFECTING

Clean soiled areas

- Isolate the areas where a vomiting or diarrhea incident has occurred (25 feet surrounding the location of the incident).
- Wear disposable gloves and masks.¹
- When heavily contaminated, absorb and remove as much of the vomit/feces as possible with paper towels or disposable cloths.
- Clean soiled areas with detergent and hot water prior to disinfecting.
- Dispose of paper towels/cloths in plastic waste bags.

Disinfect soiled areas

- Use freshly made 1000 ppm chlorine solution or an effective virucide². See manufacturer's instructions for appropriate use.
- Dispose of gloves, masks, and cloths in plastic waste bags. Put plastic bags in the regular trash.
- Wash hands thoroughly using soap and water and dry them just as thoroughly with disposable paper towels.



RECOMMENDED ITEMS TO CLEAN AND DISINFECT

Areas that need to be cleaned and disinfected

All classrooms, multi-purpose room, restrooms, gyms, locker rooms, clinic area, hall lockers, drinking fountains, vending machines, libraries, custodial storage closets etc.

Classrooms

Clean and disinfect all areas of the classroom. All desks, chairs, cubbies, white/black boards, TVs / VCR, sinks, storage cabinets, etc.

Hard surfaces, horizontal surfaces, furniture, and soft furnishings

Clean and disinfect within 25 feet surrounding the location of the incident. Clean and disinfect doors, door handles, light switches, toilet handles, sinks, faucets, phones, chairs, tables. If unable to use liquid disinfectants, steam clean with a temperature of 170° F minimum.

Carpets

Use paper towels to soak up excess liquid and dispose of towels in a plastic waste bag; clean using a disposable cloth, then disinfect. The carpet should be steam-cleaned with a temperature of 170° F minimum after disinfection. Note that home-style (non-professional) carpet cleaners often do not reach this temperature so professional cleaning is recommended. Dry with fan (unit sits over spot-does not blow across). Do not use dry or wet vacuum.

Walls

Clean and disinfect from the floor up to 6 feet up the wall.

Non-disposable mop heads

Launder in hot water with bleach.

Toys and playground equipment

Clean and disinfect all toys, activity tables, books, cubbies, playground equipment, plastic tubs, and storage bins. Discontinue use of sensory bins until the outbreak is over, and restrictions have been lifted by the Division of Public and Behavioral Health.

Front office area

Clean and disinfect front office counter, parent sign-in area, and all door handles multiple times throughout the day.

Food preparation and food storage areas

Destroy any food that may have been contaminated, and food that was handled by an infected person. Clean and disinfect all tables, food contact surfaces, refrigerator doors/handles, microwave oven (inside and out), counters, and all cooking equipment and utensils.

Buses

Clean and disinfect inside all transport buses daily, including handrails, seats, and commonly touched areas.



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If an outbreak is suspected, please notify the Nevada Division of Public and Behavioral Health as soon as possible by emailing dpbhepi@health.nv.gov or calling 775-400-0333.

References:

- 1. With outbreaks of norovirus, it is recommended that persons who clean areas substantially contaminated by feces and/or vomitus wear masks because spattering or aerosolization of infectious material might result in disease transmission.*
- 2. Effective virucides are those effective against feline calicivirus (FCV) including: Virkon ® (Biosafety USA), Accel ® (Virox Technologies), EcoTru, and MiKro BAC 3 ® (Ecolab).*

[Centers for Disease Control and Prevention: Norovirus](#)

County of Sonoma Department of Health Services. [For Schools: Norovirus Control Measures](#).

Division of Epidemiology and Public Health, University of Nottingham, Queens Medical Centre. [A school outbreak of Norwalk-like virus: evidence of airborne transmission](#)