

Noroviruses

What is the role of Public Health Services and NS Agriculture – Food Safety Section in Norovirus infection prevention?

Food safety specialists are involved with prevention of foodborne disease, and also have public health training related to communicable disease prevention at facilities such as childcare centres, long-term care facilities, nursing homes, and summer camps. They are responsible for the routine inspection of these operations, and work closely with Public Health Services staff in District Health Authorities during a suspected or confirmed Norovirus outbreak at these facilities.

What are Noroviruses?

Noroviruses are a group of viruses that cause vomiting and diarrhea. The term “Norovirus” is the official name for this group of viruses, but they are also called Norwalk-like viruses. They are abbreviated as “NoV”.

What are the symptoms of Norovirus (NoV)?

The symptoms of NoV illness usually begin suddenly and include nausea, vomiting, diarrhea and stomach cramps. Sometimes symptoms include a low-grade fever, chills, headache, muscle aches and fatigue. The symptoms usually last for one to three days. NoV infections occur throughout the year but are more common in winter.

No age group is more susceptible to NoV infection, however the risk of more severe symptoms, such as dehydration, are more likely to occur in the very young, the elderly, and those with certain other pre-existing health problems.

How is the virus spread?

The main source of the virus is stool and vomit from infected persons:

- The virus can be spread from person-to-person on unwashed hands.
- The virus can also be spread by food or ice that has been handled by an infected person or by contaminated drinking water.
- Vomiting may spread the virus short distances through the air.
- The virus can survive on surfaces such as door handles, light switches, counter-tops, toilets, floors, handrails, or sink taps for several days or weeks, if these surfaces are not properly disinfected.
- NoV are easily spread in settings where people are in close contact, including day-care centres, long-term care facilities, health-care facilities, schools, dormitories, and cruise ships.

People are most likely to spread Noroviruses while ill but a small risk can last up to two days after recovery. Some people may be contagious for as long as two weeks after their symptoms subside. It is important that people wash their hands carefully even after they no longer have symptoms, or they have been exposed to persons with the illness, and have not been symptomatic.

What is the treatment for Norovirus infections?

Healthy people usually recover on their own in about 48 hours. There are no medications available to treat this infection. Consumption of plenty of fluids in order to prevent dehydration is important. If vomiting or diarrhea lasts for more than two to three days or is severe, medical attention may be required.

How can Norovirus infection spread be prevented?

The 'multi-pronged' infection control approach, when practiced by facility operators, staff, residents, and the public, can significantly reduce the spread of the highly infectious NoV in the facilities and the community. This approach includes specific handwashing, exclusion, and environmental sanitation practices.

HANDWASHING:

The most important public health measure to prevent any infectious disease is proper handwashing. Documentation supports handwashing to be **very effective** in controlling the spread of NoV.

Proper Handwashing Procedure -

Wash hands and lather with soap and hot water for at least 20 seconds. Ensure the back of your hands, between fingers, and under fingernails and thumbs get a vigorous rub. After rinsing, dry hands with a single service paper towel, and use towel to turn off the sink faucet. If possible, do not allow hand contact with door handles.

Always wash hands before preparing or handling food, after using the washroom, prior to self-service of food, after changing diapers, tending to residents/ children, handling soiled laundry, or cleaning/ disinfecting surfaces. Post signs in washrooms and staff areas reminding staff of the importance of proper handwashing.

Some studies indicate that using certain types of hand sanitizers or rubs is not as effective as proper handwashing in removing NoV. Sanitizers can be made available to staff, residents, and public, but their limitations against NoV should be recognized. Use of most commercially available hand sanitizers should not be considered a replacement of proper handwashing against NoV.

EXCLUSION:

Ill food handlers and ill staff in contact with residents/ children -

- They should be sent home immediately and not return to work for a period of at least **48 hours after all symptoms have subsided**, or as advised by the Medical Officer of Health. If possible, for 1-2 days after the staff member returns, have the person involved in non-food or non-resident/ child-related activities (i.e., cash register duty, paperwork, cleaning).
- Any self-service of foods and water fountain use should be suspended during an outbreak. Review self-service ice and beverage dispensing units with the Food Safety Specialist, to determine if use of these units should be suspended.

Residents at a long-term care facility -

- Keep residents in their rooms while they are symptomatic, or as advised by the Medical Officer of Health.
- If possible, for rooms with multiple residents, keep ill residents with other ill residents to prevent spread of NoV to asymptomatic residents.
- consider staff cohorting
- Have tray service of foods and fluids to ill residents' rooms.

Visitors (public) at the a long-term care/ residential care facility

- Inform visitors that there is an ongoing gastrointestinal illness outbreak at the facility. Urge the public to refrain from visiting the facility if they have gastrointestinal symptoms.
- Encourage handwashing prior to visiting residents and before leaving the facility.
- If a member of the public is visiting an ill resident, they should restrict their visit to that resident exclusively.

Children at a childcare facility or summer camp -

- At the first sign of NoV symptoms, exclude the ill child(ren) in a separate room away from other children. Designate a washroom for the child(ren)'s exclusive use until they leave the facility.
- Contact the child(ren)'s guardian immediately to have them removed from the facility as soon as possible.
- Suspend water play activities in the centre.
- Follow the cleaning/ disinfection procedures indicated in this document, and increase cleaning/ disinfection frequency of toys.
- Staff should remind parents that they must not bring ill children to the facility, and to keep ill children home until they are certain the illness has resolved

PROPER CLEANING AND DISINFECTION PRACTICES:

Products effective against NoV (general sanitizing) –

- Household bleach (5.25% NaHClO₄) at 1000 ppm
 - a dilution factor of 1:50
 - 0.6 oz bleach/ 4 cups water
 - 19 ml bleach / 1L of water
 - contact time with surface is two minutes
 - change solution daily, discard unused portions
 - light reduces effectiveness of mixture, use less transparent/ opaque bottles if possible

NOTE: Using bleach at 1000-5000 ppm can be irritating to the respiratory tract, skin, eyes, and mucosal tissue. Use in well ventilated areas with proper personal protective equipment. Set spray bottles to "stream" setting to avoid aerosol formation of the mixture.

Products effective against grossly contaminated surfaces (vomit/ diarrhea) –

- Household bleach at 5000ppm
 - a dilution factor of 1:10
 - 3.5 oz bleach/ 4 cups water
 - 95 ml bleach/ 1L of water
 - contact time with surface is two minutes
 - change solution daily, discard unused portions
 - light reduces effectiveness of mixture, use less transparent/ opaque bottles if possible

Other products which may be effective against NoV -

- Accelerated hydrogen peroxide
- Glutaraldehyde
- Iodine
- Activated potassium peroxydisulfate
- Parachlorometaxlenol (0.2%) in a nano-emulsion

Use the above mentioned products at concentrations and contact times as directed by your chemical supplier for general NoV sanitizing, and use on grossly contaminated surfaces.

Quaternary ammonia based disinfectants are not effective in significantly reducing levels of NoV.

General cleaning/ sanitizing hard surfaces in a facility with NoV symptoms –

1. Wear disposable gloves, and consider using a gown and mask.
2. Clean the area with a general cleaner or detergent and hot water, using separate cloths for the sink and the toilet. Rinse with hot water.
3. Disinfect area with a sanitizer effective against NoV, and ensure that the proper contact time of the product with the surface, as well as the appropriate concentration is used.
4. Dispose of gloves. Wash your hands. Do not reuse cloths anywhere else in the facility.
5. If possible, surfaces regularly in contact with hands (railings, doorknobs, light switches, sink taps, elevator buttons, etc.), or highly contaminated areas such as toilets and sinks in washrooms of symptomatic residents should be cleaned/ disinfected on a more frequent basis.

Cleaning/ sanitizing grossly contaminated hard surfaces (with vomit/ feces) –

1. Wear disposable gloves, and consider using a gown and mask.
2. Use paper towels to soak up liquids and remove solid material. Other absorbent materials can be used (commercial coagulants, kitty litter) to remove gross contamination.
3. Soak the towels or coagulant with disinfectant at a concentration level and contact time appropriate for gross contamination.
4. Throw away the paper towels/ coagulant in a garbage bag and seal immediately for disposal.
5. Clean the area with a general cleaner or detergent and hot water. Rinse with hot water.
6. Follow steps 3-5 of the general cleaning/ sanitizing procedure above.

Cleaning / sanitizing carpeted areas –

1. Never vacuum carpet during an outbreak. Viruses present in the carpet can become airborne and facilitate the spread of NoV.
2. If cleaning grossly contaminated sites on carpet, follow steps 1-3 in the section above, using a disinfectant designed for use on carpet.
3. Carpets should then be steam cleaned to 70C (158F) for 5 minutes, or 100C (212F) for 1 minute to destroy the virus. Grossly contaminated small mats should be discarded.
4. Due to the long contact time required in the steam cleaning process to destroy NoV, chemical disinfectants appropriate for carpet use are recommended to supplement steam cleaning. Consult your chemical supplier regarding these products. Bleach is not considered an appropriate disinfectant in this application.

Laundry –

1. Any heavily soiled laundry should be rinsed off with cold water prior to washing.
2. Do not shake out soiled sheets or clothing.
3. Wash with the hot cycle, using regular detergent, and machine dry with the hottest setting possible.
4. Wash hands after handling soiled laundry.

Who do I contact if I have additional questions regarding Norovirus?

Contact your local NSDA Food Safety Specialist or Public Health Nurse.

Food Safety Specialist Name: _____ Phone Number: _____

Public Health Services Name: _____ Phone Number: _____