



Norovirus Toolkit

About Norovirus

INCUBATION:

Individuals generally become ill 12 – 48 hours after exposure (swallowing norovirus).

INFECTIOUS DOSE:

As few as 18 norovirus particles on food or hands can make someone sick. The amount of virus that would fit on the head of a pin is enough to infect more than 1,000 people!

TRANSMISSION:

Norovirus spreads via the fecal-oral route. Infected individuals shed the virus in their stool and vomit, which can then contaminate food, surfaces, and objects. The virus spreads to others when they consume or come into contact with contaminated items. Infected individuals can shed the virus in their stool for several weeks after recovery.

SYMPTOMS:

Illness is characterized by acute-onset vomiting; watery, non-bloody diarrhea with abdominal cramps; and nausea. Additional symptoms include myalgia, malaise, headache and low-grade fever.

DISINFECTION:

Norovirus does not have a viral envelope, which makes it extremely resistant to disinfectants. To clean up after norovirus:

- Use a solution of 1 cup of regular, unscented household bleach to 1 gallon of water.
- Or use another disinfectant that says it is effective against norovirus on the label.

Hand sanitizer is not effective against norovirus. Wash hands for 20 seconds with soap and water.

REPORTING:

Individual cases of norovirus infection are not reportable in North Carolina. However, outbreaks of multiple cases with norovirus-like symptoms are required to be reported in some high-risk settings (e.g. licensed nursing facilities) and may be reported in other settings. Call your [local health department](#) (LHD) to report an outbreak of norovirus.

Guidance for Long-Term Care Facilities

PREVENTION TOOLS:

1. HAND HYGIENE

- Train staff on proper hand hygiene.
 - Hand sanitizer is not effective against norovirus, therefore, should not be used as an alternative to handwashing during or after patient care or interactions with suspected or confirmed residents, especially during outbreaks.
- Make sure staff and resident handwashing facilities are stocked with soap and paper towels.

2. CLEAN/DISINFECT

- Chlorine bleach at a concentration of 1,000-5,000 ppm is the gold standard for a disinfectant that is effective against norovirus. To make this solution, mix one cup of regular, unscented, household bleach with one gallon of water.
- Check the labels on your disinfectant products to ensure they are effective against norovirus.
 - If not, obtain a disinfectant that is effective against norovirus to have on hand. Consider getting a product that is also effective against *C. difficile*. Check with your chemical supplier, or look at:
 - [List G: EPA's Registered Antimicrobial Products Effective Against Norovirus](#)
 - [List K: EPA's Registered Antimicrobial Products Effective against Clostridium difficile Spores](#)
- [Clean up vomiting](#) or diarrheal incidents immediately, using appropriate PPE (gloves, mask, gowns). Do not use a vacuum. Change mop water, clean/disinfect mop bucket and use clean mop head after cleaning up vomit or diarrheal incident.
- Always use best practices for cleaning/sanitizing and disinfecting, washing linens, etc.

Recommended Bleach Preparation Quantities		
5.25% Sodium hypochlorite		
		Bleach per gallon of water
Bleach (Free Chlorine) Concentration	1000 ppm	1/3 cup
	5000 ppm	1 2/3 cup

Recommended Bleach Preparation Quantities		
8.25% Sodium hypochlorite		
		Bleach per gallon of water
Bleach (Free Chlorine) Concentration	1000 ppm	3 TBSP
	5000 ppm	1 cup

3. PERSON MOVEMENT

- When possible, do not transfer patients into or out of the facility while they are experiencing vomiting or diarrhea.
- Visitors with vomiting or diarrhea should not visit the facility.
- Staff and volunteers should stay home from work if ill with vomiting or diarrhea.

QUICKLY IDENTIFY AN OUTBREAK:

- Update and regularly check your line list.
 - A line list is a method of organizing and analyzing data to assist with an investigation. It is typically set up as a spreadsheet, with a row for each person associated with the investigation. Each row may contain data points such as demographics, clinical information and exposure risks (e.g. specific foods).
- Understand what your normal or baseline level of diarrhea and vomiting is in the facility.
- Call your local health department and initiate outbreak response measures when more residents are ill than expected or there are multiple illnesses in one wing or unit.
- Keep track of staff and volunteer illnesses.

IMPLEMENT OUTBREAK CONTROL MEASURES:

RESIDENTS

- Monitor for resident illness (record on [Line List](#)). When possible, isolate residents while they are ill and for 48 hours after symptoms have stopped.
 - Utilize [Contact/Enteric](#) Precautions (gown and gloves for all interactions that may involve contact with the ill resident or their environment).
 - Residents with suspected or confirmed norovirus should be placed in a private room or cohorted with other symptomatic residents.
 - Resident movement outside of the room should be limited to medically-necessary purposes.
- During large outbreaks:
 - Consider halting new admissions until the outbreak has ended.
 - Consider pausing group activities where touching common items creates more transmission risk (e.g. checkers, cards).
 - Consider limiting communal dining and having residents eat in their rooms.

STAFF

- Monitor for staff illness (record on a Line List. Restrict ill staff/volunteers from patient care and food handling duties until 72 hours after their vomiting/diarrhea has ended.
- Redouble efforts to promote glove use and hand hygiene:
 - Educate residents, staff, and visitors on proper technique.
 - Promote proper glove use followed by handwashing.
 - Traditional alcohol-based hand sanitizers are not effective against common gastrointestinal pathogens such as norovirus. Hands should be washed with soap and water during and after contact with suspected or confirmed residents.
 - Soap and water should also be used prior to food prep, snacks/meals, and after bathroom visits.
 - Avoid any bare hand contact with unpackaged food, including snacks or fruit for residents.
- Avoid having staff care for patients with active illness before caring for patients who have not been ill.

VISITORS

- Consider limiting visitors during a large outbreak, as they can spread illness in the facility or become ill themselves.
- Post signs to promote visitor hand hygiene, particularly after visiting ill residents (see additional resources below).

CLEAN

- Immediately clean/disinfect the facility. Focus on frequently touched surfaces and objects (e.g., bathrooms, door handles, counters, tables, water fountains, etc.).
 - Clean surfaces and patient equipment prior to the application of a disinfectant.
 - Disinfect all surfaces with a disinfectant that is effective against norovirus. Norovirus is a hardy organism that is not killed by household bleach sanitizer solution, quaternary ammonia, or alcohol-based hand sanitizers.
 - See above Clean/Disinfect section (2).

TESTING

- State Lab of Public Health (SLPH) can provide Norovirus test kits upon request for outbreak testing. Each "Kit" is made up of a cooler, icepacks, all necessary forms, 5 stool collection containers, and collection directions. They can be mailed (postage paid) to SLPH or sent via the LHD courier.
 - A **minimum** of 3 stool containers must be collected for testing, but no more than 5.
 - If all stool collection containers are not utilized, please return these to SLPH.
 - To request a Noro Kit for an outbreak, contact SLPH directly at slph.norovirus@dhhs.nc.gov
- Additionally, if specimens are tested at a hospital or commercial lab, please request any positive outbreak specimens be shared with SLPH for sequencing.

RESOURCES

- **CDC** [Norovirus Prevention and Control Guidelines for Healthcare Settings](https://www.cdc.gov/infection-control/hcp/norovirus-guidelines/index.html)
<https://www.cdc.gov/infection-control/hcp/norovirus-guidelines/index.html>
- **CDC** [CDC Contact Precautions](https://www.cdc.gov/infection-control/media/pdfs/contact-precautions-sign-P.pdf) <https://www.cdc.gov/infection-control/media/pdfs/contact-precautions-sign-P.pdf>
- **EPA** [EPA's Registered Antimicrobial Products Effective Against Norovirus](https://www.epa.gov/pesticide-registration/epas-registered-antimicrobial-products-effective-against-norovirus-feline)
<https://www.epa.gov/pesticide-registration/epas-registered-antimicrobial-products-effective-against-norovirus-feline>
- **EPA** [EPA's Registered Antimicrobial Products Effective against Clostridium difficile Spores](https://www.epa.gov/pesticide-registration/epas-registered-antimicrobial-products-effective-against-clostridioides)
<https://www.epa.gov/pesticide-registration/epas-registered-antimicrobial-products-effective-against-clostridioides>
- **NC Environmental Health** [Vomit and Diarrhea Cleanup Poster](https://ehs.dph.ncdhhs.gov/faf/docs/foodprot/Vomit&DiarrheaPoster-English.pdf)
<https://ehs.dph.ncdhhs.gov/faf/docs/foodprot/Vomit&DiarrheaPoster-English.pdf>
- **MN Department of Health** [2024-2025 Norovirus Information for long-term care facilities](https://www.health.state.mn.us/diseases/foodborne/outbreak/facility/lfcfnorotoolkit.pdf) (Adapted with permission from MN Department of Health)
<https://www.health.state.mn.us/diseases/foodborne/outbreak/facility/lfcfnorotoolkit.pdf>
- **Visitors Signage:**
 - **CDC** [Flyers: Wash Hands to Prevent Norovirus | Norovirus](https://www.cdc.gov/norovirus/communication-resources/handwashing-flyers.html)
<https://www.cdc.gov/norovirus/communication-resources/handwashing-flyers.html>
 - **NC DHHS** [Visitor Sign for Norovirus Outbreaks](https://www.dph.ncdhhs.gov/epidemiology/communicable-disease/norovirusoutbreakinlfcfssignforvisitorspdf/open)
<https://www.dph.ncdhhs.gov/epidemiology/communicable-disease/norovirusoutbreakinlfcfssignforvisitorspdf/open>