



Norovirus Outbreaks in Long Term Care Facilities

Guidelines for reporting, response, and control of confirmed and suspected norovirus outbreaks

Montana Department of Public Health and Human Services

Communicable Disease Epidemiology Program

With special thanks to the Flathead City-County Health Department for providing many of the following guidance documents that have been adapted for use by DPHHS.

What is Norovirus?

Norovirus is a very contagious virus that causes vomiting and diarrhea. Anyone can get infected and sick with norovirus. You can get norovirus from:

- Having direct contact with an infected person
- Consuming contaminated food or water
- Touching contaminated surfaces then putting your unwashed hands in your mouth

The most common symptoms are:

- Vomiting
- Diarrhea
- Nausea
- Stomach Pain

Other symptoms include:

- Fever
- Headache
- Body aches

A person usually develops symptoms 12 to 48 hours (typically 1-2 days) after being exposed to norovirus. Most people with norovirus illness get better within 1 to 3 days.

Norovirus can also lead to dehydration, especially in older adults and people with other illnesses.

Symptoms of dehydration include:

- Decrease in urination
- Dry mouth and throat
- Feeling dizzy when standing up

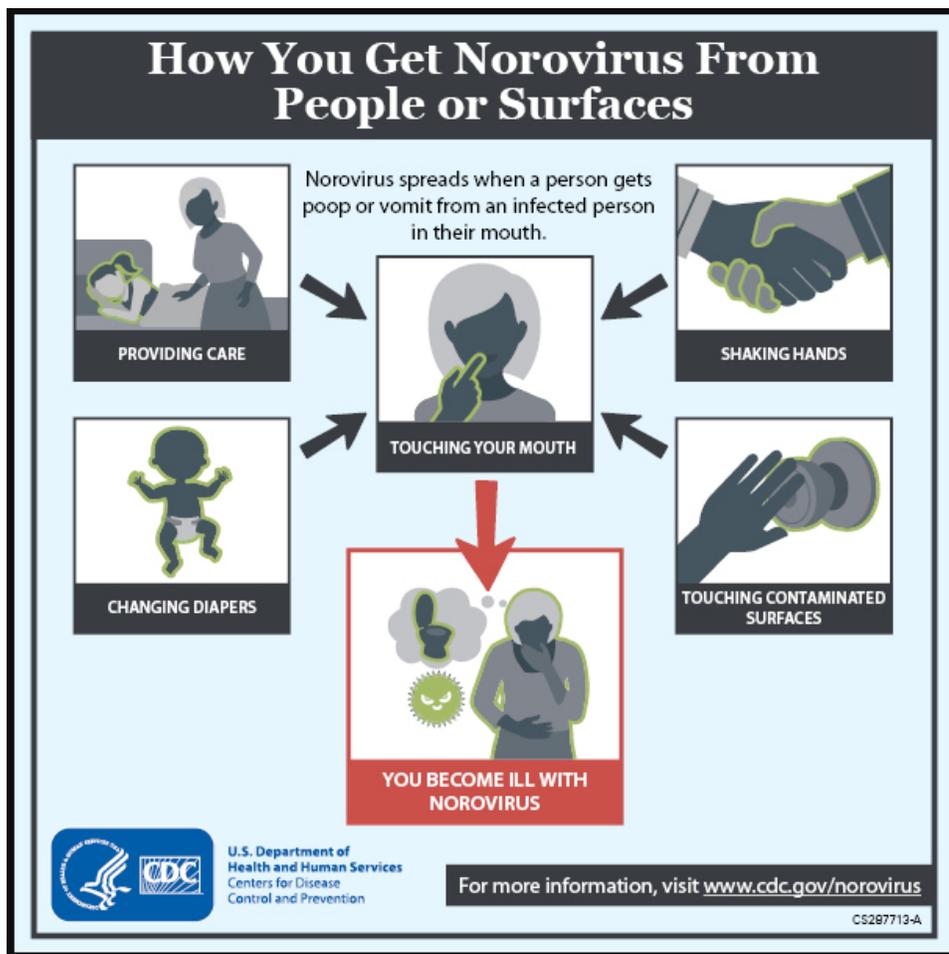
You can get norovirus illness many times in your life because there are many different types of norovirus. Infection with one type of norovirus may not protect you against other types.

You may hear norovirus illness called “food poisoning” or “stomach flu.” Norovirus can cause foodborne illness, as can other germs and chemicals, if you eat food or drink liquids that are contaminated with the virus. Norovirus illness is not related to the flu (influenza). Though they occasionally share some of the same symptoms, the flu is a respiratory illness caused by the influenza virus.

Norovirus Transmission

Norovirus spreads VERY EASILY. You can get norovirus by accidentally getting tiny particles of poop or vomit from an infected person in your mouth. This can happen if you:

- Eat food or drink liquids that are contaminated with norovirus
- Touch surfaces or objects contaminated with norovirus then put your fingers in your mouth
- Have direct contact with someone who is infected with norovirus, such as by caring for them or sharing food or eating utensils with them.



If you get norovirus illness, you can shed billions of norovirus particles that you can't see without a microscope. It only takes a few norovirus particles to make other people sick. You are most contagious:

- When you have symptoms of norovirus illness
- During the first 48-72 hours after symptoms resolve

The provided information is from the Center for Disease Control and Prevention (CDC). More information can be found at <https://www.cdc.gov/norovirus/index.html>

However, studies have shown that you can still spread norovirus for two weeks or more after you feel better.

How Food Gets Contaminated

Food and water can get contaminated with norovirus in many ways, including when:

- Any infected person touches food with their bare hands that have poop or vomit particles on them.
- Food is placed on a counter or surface that has poop or vomit particles on it.
- Tiny drops of vomit from an infected person spray through the air and land on the food.
- The food is grown or harvested with contaminated water, such as oysters harvested from contaminated water, or fruit and vegetables irrigated with contaminated water in the field.

How Water Gets Contaminated with Norovirus

Recreational or drinking water can get contaminated with norovirus and make you sick or contaminate your food. This can happen:

- At the source such as when a septic tank leaks into a well
- When an infected person vomits or poops in the water
- When water isn't treated properly, such as not enough chlorine

For more information on healthy water and how water can get contaminated, visit

www.cdc.gov/healthywater/.

How Surfaces Get Contaminated with Norovirus

Surfaces can get contaminated with norovirus in many ways, including when:

- An infected person touches the surface with their bare hands that have poop or vomit particles on them
- An infected person vomits or has diarrhea that splatters onto surfaces
- Food, water, or objects that are contaminated with norovirus are placed on surfaces

Preventing Norovirus

The 5 tips below are important prevention methods and will help protect you and others from norovirus.

1. Practice proper hand hygiene.

Wash your hands thoroughly with soap and water:

- Especially after using the toilet or changing diapers
- Always before eating, preparing, or handling food, and
- Before giving yourself or someone else medicine.

Norovirus can be found in your vomit or poop even before you start feeling sick. The virus can stay in your poop for 2 weeks or more after you start feeling better. It is important to continue washing your hands often during this time. Note that hand sanitizers are not as effective at removing norovirus particles as washing with soap and water.

2. Handle and prepare food safely.

Carefully wash fruits and vegetables before preparing and eating them. Cook oysters and other shellfish thoroughly before eating them.

Be aware that noroviruses are relatively resistant to heat. They can survive temperatures as high as 145°F and quick-steaming processes that are often used for cooking shellfish.

Food that might be contaminated with norovirus should be thrown out.

Keep sick infants and children out of areas where food is being handled and prepared.

3. When you are sick, do not prepare food or care for others who are sick.

You should not prepare food for others or provide healthcare while you are sick *and for at least 2 days after symptoms stop*. This applies to food handlers and healthcare workers in facilities such as restaurants, schools, daycares, and long-term care facilities.

4. Clean and disinfect surfaces

After someone vomits or has diarrhea, thoroughly clean and disinfect the entire area immediately. Put on rubber or disposable gloves and wipe down the entire area with paper towels, then disinfect the area using a bleach-based household cleaner as directed on the product label. Leave the bleach disinfectant on the affected area for at least five minutes then clean the entire area again with soap and hot water. Finish by cleaning soiled laundry, taking out the trash, and washing your hands.

Make your own bleach solution by combining 3/4 cup household bleach (5.25% bleach concentration) per gallon of water. Additional products that are effective against norovirus are listed on the EPA website: https://www.epa.gov/sites/production/files/2018-04/documents/list_g_disinfectant_list_3_15_18.pdf

To help make sure that food is safe from norovirus, routinely clean and sanitize kitchen utensils, counters, and surfaces before preparing food.

5. Wash laundry thoroughly

Immediately remove and wash clothes or linens that may be contaminated with vomit or poop.

You should:

- Handle soiled items carefully without agitating them
- Wear rubber or disposable gloves while handling soiled items and wash your hands with soap afterward
- Wash the items with detergent and hot water at the maximum available cycle length then machine dry them at the highest heat setting.

How to Respond to an Outbreak

What is an outbreak?

An outbreak is an increase in cases of a disease, more than what would typically be expected, with cases closely related in time and place and with a common exposure. Outbreaks of norovirus and gastrointestinal illness are reportable under the Administrative Rules of Montana [37.114.203](#). As soon as a norovirus outbreak is suspected or confirmed, call your local health department to report it.

Setting: Most outbreaks of norovirus reported in the United States occur in healthcare facilities. In Montana between 2014 and 2018, 82% of all norovirus outbreaks were reported in health care settings including long-term care facilities (LTCF), assisted living facilities and hospitals. The greatest burden affects residents in LTCFs.

Specimen Submission: DPHHS is asking our partners at LTCFs to help improve our understanding of norovirus in Montana by submitting stool samples to a laboratory for testing during suspected norovirus outbreaks. Public health needs to have at least two positive specimens in order to confirm an outbreak. Local laboratories across the state have been asked to submit all positive norovirus specimens to the Montana Public Health Laboratory (MTPHL) for additional testing. Please contact your local laboratory to ask them about specimen collection and shipping requirements, or your local public health department for general specimen collection questions.

Your local health department is here to help!

Your local health department is available to help during norovirus outbreaks, or any type of communicable disease outbreak.

To find contact information for your local health department, visit the Montana DPHHS webpage: <https://dphhs.mt.gov/publichealth/FCSS/countytribalhealthdepts>

Some examples of what your local health department may be able to help you with include: advice and assistance when a facility is experiencing norovirus with their patients or staff, such as infection control practices, environmental cleaning, and outbreak mitigation strategies.

Some common recommendations during an outbreak of norovirus in a long-term care facility include:

1. Cohort ill residents in their room/apartment and place on contact precautions if they are sick to minimize contact with unaffected residents for at least 48 hours after symptoms are resolved
2. Promote good hand hygiene for residents: after using the toilet, after having contact with an ill individual, and before preparing food, eating, or drinking
3. Restrict visitors to facility
4. Staff that are experiencing symptoms should stay home 48 – 72 hours after their symptoms have resolved.
 - o Food service employees and direct patient care employees should stay home for 72 hours after their symptoms have resolved.
5. Disinfect all high-touch surface and areas contaminated with diarrhea and vomit.
 - o Use a chlorine bleach solution with a concentration of 1000 - 5000ppm to clean and disinfect. This can be made by combining 3/4 cup household bleach (5.25% concentration) per gallon of water.
6. Submit at least two stool samples for laboratory testing in order to confirm the diagnosis.

The provided information is from the Center for Disease Control and Prevention (CDC). More information can be found at <https://www.cdc.gov/norovirus/index.html>

Checklist for Norovirus Outbreaks in Long-Term Care Facilities and Congregate Settings

REPORTING & TESTING

- Upon suspicion of a norovirus outbreak, **notify and report to your local public health department**
- Maintain a line listing of symptomatic residents and staff
- Collect and submit at least two specimens from affected residents and staff as soon as an outbreak is suspected, until the cause of illness is identified**
- Outbreak is considered resolved when 72 hours (2 average incubation periods) have passed since resolution of symptoms in last case

CONTROL MEASURES FOR FACILITY

Infection Control:

- Institute contact precautions for ill residents until 48 hours after resolution of symptoms. Contact precautions include:
 - Use gloves and gowns while caring for ill residents and cleaning up feces or vomitus
 - Utilize mask/eye protection if anticipated risk of splashes to the face during patient care
- Use dedicated or disposable equipment for resident care/meals to minimize transmission
- Cohort ill residents and staff as much as possible to minimize new infections; symptomatic individuals should not be placed in the same room as asymptomatic individuals
- Dedicate patient care staff to care for only ill or only well residents, as possible
- Identify/educate patient care staff who also work in other health care facilities
 - These other facilities should be notified that they have a staff member currently working in a facility with a norovirus outbreak
- Restrict resident and staff movement between affected and unaffected units/wards
- Enforce strict hand hygiene for all facility staff
- Handwashing with soap and water is the most effective way to prevent norovirus. Hand sanitizer should be used as a supplement to handwashing, but not as a replacement.

Environmental Controls:

- Disinfect all high-touch surfaces (faucets, door handles, commodes, and toilet or bath rails) multiple times per day
- Use EPA-registered disinfectants or detergents/disinfectants approved for use against norovirus for routine cleaning and disinfection
 - CDC recommends cleaning with a bleach solution; combine 3/4 cup of household bleach per 1 gallon of water
 - https://www.epa.gov/sites/production/files/2018-04/documents/list_g_disinfectant_list_3_15_18.pdf
- Clean soiled carpets and soft furnishings with hot water and detergent or steam clean as appropriate
- Handle soiled linens carefully using appropriate infection control precautions
- Conduct thorough cleaning of affected personal and communal areas 48 hours after resolution of the last case

Administrative Controls:

- Exclude ill staff from work for at least 48 hours after symptoms have resolved; 72 hours for direct patient care and food handling staff
- Post signage about the outbreak and proper hand hygiene (see examples below)
- Restrict admissions and transfers as possible

RECOMMENDATIONS FOR RESIDENTS & VISITORS

- Ill residents to stay in their room/apartment and on contact precautions if they are sick to minimize contact with unaffected residents for at least 48 hours after symptoms are resolved
 - Suspend group activities until outbreak has resolved
- Promote good hand hygiene for residents: after using the toilet, having contact with an ill individual, and before preparing food, eating or drinking
- Restrict visitors to facility - post signs on facility doors with restriction information (see examples below)

Internal and External Communication

- Identify contact person for communicating with Health Department
- Nursing/Sanitarian visit to facility as needed

How to Clean Up After a Norovirus Incident

Step 1: Protect yourself. Put on disposable gloves and mask.

Step 2: Wipe up vomit and poop with paper towels and put them in a plastic trash bag.

Step 3: Pour a bleach cleaner on all surfaces that may have vomit or poop on them. Leave the bleach on surfaces for at least 5 minutes.

-Make your own bleach cleaner by adding $\frac{3}{4}$ cup of bleach to 1 gallon of water

Step 4: Clean all surfaces AGAIN with hot water and soap.

Step 5: Remove your disposable gloves and mask and throw away

Step 6: Remove and wash all laundry

Step 7: Wash your hands with soap and water

Clean up right away and keep others from getting sick.

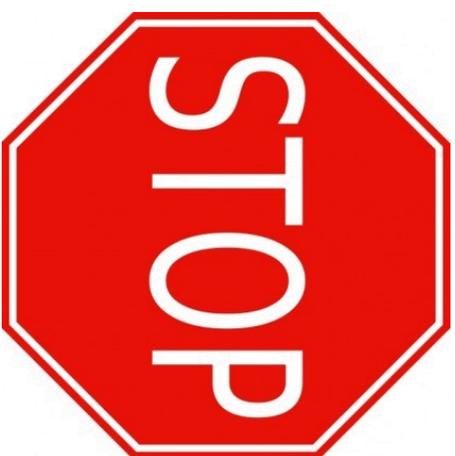


MONTANA
COMMUNICABLE
DISEASE EPIDEMIOLOGY



**WE ARE EXPERIENCING
A GASTROINTESTINAL
ILLNESS OUTBREAK.**

**We will be limiting visitors at this time,
please check in with our front desk
before entering.**



**WE ARE EXPERIENCING
A GASTROINTESTINAL
ILLNESS OUTBREAK.**

We will not be allowing visitors at this time.

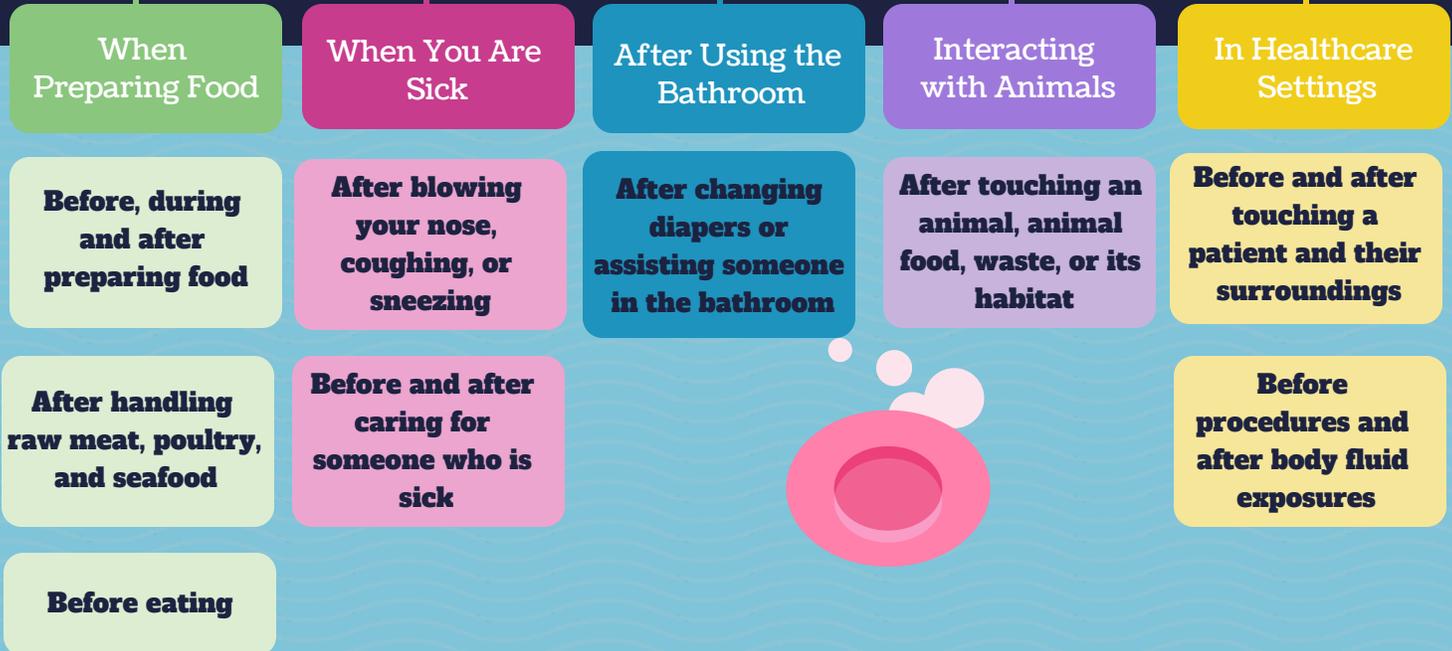
**If you have questions, please visit our front
desk.**

Clean Hands Save Lives

Many communicable diseases could be prevented by proper hand hygiene.

Handwashing is the most important way to prevent the spread of infectious diseases.

When should you wash your hands?



Handwashing can reduce the risk of respiratory infections by 16%

Routine handwashing can prevent 1 million deaths a year, worldwide

Appropriate handwashing can reduce the risk of foodborne illness



Ways to Encourage Handwashing:

1. Find soap and products that you like
2. Make handwashing stations accessible at events and in workplaces
3. Supervise young children during handwashing
4. Post handwashing signs near sinks



MONTANA COMMUNICABLE DISEASE EPIDEMIOLOGY

Key Infection Control Recommendations

for the Control of Norovirus Outbreaks in Healthcare Settings

Patient Cohorting and Isolation Precautions

Place patients with norovirus gastroenteritis on Contact Precautions for a minimum of 48 hours after the resolution of symptoms

When symptomatic patients cannot be accommodated in single occupancy rooms, efforts should be made to separate them from asymptomatic patients. These efforts may include placing patients in multi-occupancy rooms, or designating patient care areas or contiguous sections within a facility for patient cohorts.

- ▶ Staff who have recovered from recent suspected norovirus infection associated with an outbreak may be best suited to care for symptomatic patients until the outbreak resolves.

Consider the following precautions:

- ▶ Minimize patient movements within a ward or unit during norovirus outbreaks
- ▶ Restrict symptomatic and recovering patients from leaving the patient-care area unless it is for essential care or treatment
- ▶ Suspend group activities (e.g., dining events) for the duration of a norovirus outbreak.

Hand Hygiene

- ▶ Actively promote adherence to hand hygiene among healthcare personnel, patients, and visitors in patient care areas affected by outbreaks of norovirus gastroenteritis
- ▶ During outbreaks, use soap and water for hand hygiene after providing care or having contact with patients suspected or confirmed with norovirus gastroenteritis.

*For all other hand hygiene indications refer to the 2002 HICPAC Guideline for Hand Hygiene in Health-Care Settings (<http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf>).



Personal Protective Equipment (PPE)

- ▶ If norovirus infection is suspected, adherence to PPE use according to Contact and Standard Precautions is recommended for individuals entering the patient care area (i.e., gowns and gloves upon entry).



Patient Transfer and Ward Closure

- ▶ Consider the closure of wards to new admissions or transfers as a measure to attenuate the magnitude of a norovirus outbreak.
- ▶ Consider limiting transfers to those for which the receiving facility is able to maintain Contact Precautions; otherwise, it may be prudent to postpone transfers until patients no longer require Contact Precautions. During outbreaks, medically suitable individuals recovering from norovirus gastroenteritis can be discharged to their place of residence.

Diagnostics

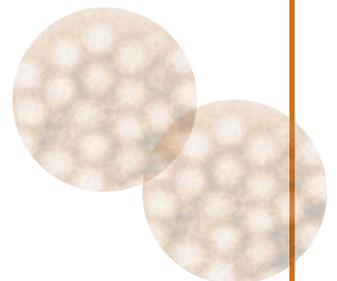
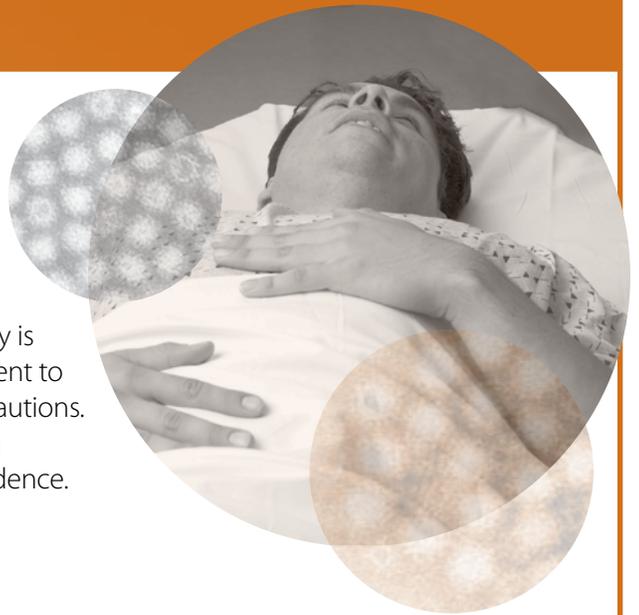
- ▶ In the absence of clinical laboratory diagnostics or in the case of delay in obtaining laboratory results, use Kaplan's clinical and epidemiologic criteria to identify a norovirus gastroenteritis outbreak.

Kaplan's Criteria:

1. Vomiting in more than half of symptomatic cases, and
 2. Mean (or median) incubation period of 24 to 48 hours, and
 3. Mean (or median) duration of illness of 12 to 60 hours, and
 4. No bacterial pathogen isolated from stool culture
- ▶ Consider submitting stool specimens as early as possible during a suspected norovirus gastroenteritis outbreak and ideally from individuals during the acute phase of illness (within 2-3 days of onset).
 - ▶ Specimens obtained from vomitus may be submitted for laboratory identification of norovirus when fecal specimens are unavailable (consult with your lab). Testing of vomitus as compared to fecal specimens may be less sensitive due to lower detectable viral concentrations.
 - ▶ Routine collecting and processing of environmental swabs during a norovirus outbreak is not required.

Environmental Cleaning

- ▶ Perform routine cleaning and disinfection of frequently touched environmental surfaces and equipment in isolation and cohorted areas, as well as high traffic clinical areas. Frequently touched surfaces include, but are not limited to, commodes, toilets, faucets, hand/bedrailing, telephones, door handles, computer equipment, and kitchen preparation surfaces.
- ▶ Increase the frequency of cleaning and disinfection of patient care areas and frequently touched surfaces during outbreaks of norovirus gastroenteritis (e.g., increase ward/unit level cleaning twice daily to maintain cleanliness, with frequently touched surfaces cleaned and disinfected three times daily using EPA-approved products for healthcare settings).



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- ▶ Clean and disinfect surfaces starting from the areas with a lower likelihood of norovirus contamination (e.g., tray tables, counter tops) to areas with highly contaminated surfaces (e.g., toilets, bathroom fixtures). Change mop heads when new solutions are prepared, or after cleaning large spills of emesis or fecal material.
 - ▶ No additional provisions for using disposable patient service items such as utensils or dishware are suggested for patients with symptoms of norovirus infection. Silverware and dishware may undergo normal processing and cleaning using standard procedures.
 - ▶ Use Standard Precautions for handling soiled patient-service items or linens, which includes the appropriate use of PPE.
 - ▶ Consider changing privacy curtains routinely and upon patient discharge or transfer.

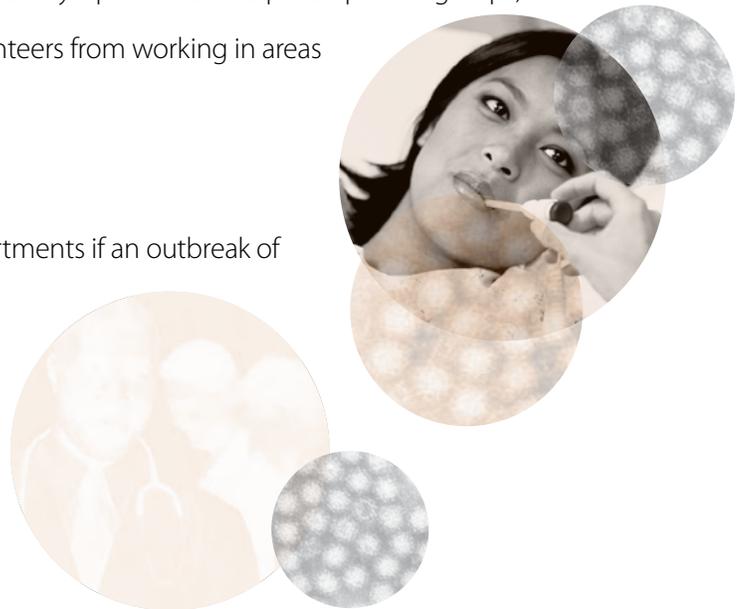


Staff Leave and Policy

- ▶ Exclude ill personnel from work for a minimum of 48 hours after the resolution of symptoms. Once personnel return to work, the importance of performing frequent hand hygiene should be reinforced.
- ▶ Establish protocols for staff cohorting in the event of an outbreak of norovirus. Ensure staff care for one patient cohort on their ward and do not move between patient cohorts (e.g., patient cohorts may include symptomatic, asymptomatic exposed, or asymptomatic unexposed patient groups).
- ▶ Exclude non-essential staff, students, and volunteers from working in areas experiencing outbreaks of norovirus.

Communication and Notification

- ▶ Notify appropriate local and state health departments if an outbreak of norovirus gastroenteritis is suspected.



Additional Norovirus Resources

OSHA Norovirus Fact Sheet: <https://www.osha.gov/Publications/norovirus-factsheet.pdf>

Guideline for the Prevention and Control of Norovirus in Healthcare Settings:
<https://www.cdc.gov/infectioncontrol/pdf/guidelines/norovirus-guidelines.pdf>

Key Infection Control Recommendations: <https://www.cdc.gov/hai/pdfs/norovirus/229110a-noroviruscontrolrecomm508a.pdf>