

# Environmental Cleaning Resource for Healthcare Settings During Norovirus Outbreaks

This guide provides general norovirus outbreak management information for healthcare facilities, including long-term care settings. Facilities can use this toolkit to create or update policies specific to their facility based on their individual risk assessment, local public health guidance, and nationally recognized guidelines and standards.

Note: The resources and information in this document are not regulatory in nature, except when required by a regulatory agency such as Washington State Department of Labor & Industries (L&I), Washington State Department of Social and Health Services (DSHS), DOH-Health Systems Quality Assurance (HSQA), and Centers for Medicaid and Medicare Services (CMS). When creating policy and procedures, healthcare settings should ensure they meet regulatory requirements.

Follow local public health guidance for norovirus outbreaks:

[DOH | Norovirus](#)

[DOH | Report Norovirus Related to Foodborne Disease Outbreak](#)

[DOH | Report Waterborne Related to Foodborne Disease Outbreak](#)

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# Definitions

## Norovirus Outbreak

The Centers for Disease Control and Prevention (CDC) defines a norovirus outbreak as [an occurrence of two or more similar illnesses resulting from a common exposure that is either suspected or laboratory-confirmed to be caused by norovirus](#). Most outbreaks of norovirus illness happen when infected people spread the virus to others through contact. This can happen by caring for them or sharing food or eating utensils with them. Food, water, and surfaces contaminated with norovirus can also cause outbreaks.

## Cleaning

CDC defines cleaning as the removal of foreign material (e.g., soil and organic material) from objects or surfaces and is normally accomplished using water with detergents or enzymatic products.

## Disinfecting

Disinfecting kills remaining germs on objects and surfaces.

## Sanitizing

Sanitizing reduces the number of germs on objects and surfaces to levels considered safe.

## Non-critical Surfaces

Non-critical surfaces are surfaces that might come into contact with intact skin but not mucous membranes.

## Semi-critical Surfaces

Semi-critical surfaces are surfaces that might come into contact with mucous membranes or nonintact skin.

## Critical Surfaces

Critical surfaces are surfaces that enter sterile tissue or the vascular system.

## High-touch Surfaces

High-touch surfaces include, but are not limited to:

- Patient or resident rooms: bed rails, bedside tables, call buttons, light switches, commodes
- Restrooms: faucets, toilet flush handles, soap dispensers, counters
- Shared spaces: door handles, elevator buttons, handrails, telephones, computer equipment, administrative areas, kitchen preparation surfaces

## Contact Time

Contact time, also called wet time or disinfectant time, is the amount of time the disinfectant should be wet on the surface to effectively disinfect.

## Standard Precautions

Standard Precautions are guidelines that outline the minimum set of interventions that are required for preventing transmission of microorganisms. Standard precautions are used for all patients in every healthcare setting. They're based on a risk assessment and make use of common sense practices and personal protective equipment use that protect healthcare providers from infection and prevent the spread of infection from patient to patient.

## Transmission-Based Precautions

Transmission-based precautions are the second tier of basic infection control and are used in addition to standard precautions for patients who may be infected or colonized with certain germs for which additional precautions are needed to prevent infection transmission.

## Contact Precautions


Contact precautions are extra safety steps taken to prevent the spread of germs, including germs passed through direct or indirect contact with a patient or their surroundings. Contact precautions are needed when certain infections or conditions, like wounds, incontinence, or body fluids, may cause germs to spread more easily. Specific situations where contact precautions are required are listed in CDC's [Appendix A](#).

## Contact Enteric Precautions

Contact enteric precautions are a type of transmission-based precaution used for patients known or suspected to have gastroenteritis caused by *C. difficile*, norovirus, or rotavirus. Contact enteric precautions include the use of soap and water for hand hygiene since alcohol is ineffective against these germs.

# Transmission-Based Precautions


For noroviruses, CDC recommends using contact enteric with standard precautions. The DOH and Washington State Hospital Association Contact Enteric Precautions sign encompasses CDC guidance and can be found [here](#). The term “contact enteric precautions” will be used throughout this toolkit to refer to these transmission-based precautions.




## CONTACT ENTERIC PRECAUTIONS

Visitors check in with staff before entering.

**PRIOR TO ENTERING:**




Wash or gel hands prior to entry.



Wear a gown and gloves.

Use **SOAP AND WATER** before leaving the room.

**OTHER REQUIREMENTS:**



Use resident-dedicated or disposable equipment. Clean and disinfect shared equipment before leaving the room with **sporicidal/bleach cleaner**.

Sign to be removed by Environmental Services after precaution discontinuation and room cleaned.

### CONTACT ENTERIC PRECAUTIONS

PERSONAL PROTECTIVE EQUIPMENT (PPE)  
Steps below are reflective for all PPE and gather only PPE as listed on first page in addition to other PPE per Standard Precautions.

**Putting on PPE (Dressing)**

1. Perform hand hygiene.
2. Put on isolation gown, secure ties/straps.
3. Put on respirator or face mask, ensure appropriate and well fitting.
4. Put on face shield or goggles.
5. Put on gloves.

**Taking off PPE (Doffing)**

1. While in the patient's room, remove gloves without contaminating hands.
2. Remove gown - Untie/unwrap ties, break ties if applicable for disposable gowns. Remove by pulling one shoulder at a time to remove each arm, continue to pull gown down and away from the body. Roll gown as it is removed and place in the proper receptacle. You may now exit the room.
3. Upon exit, perform hand hygiene (use soap & water if visibly soiled, encountered stool, or were in Contact Enteric Precautions).
4. Remove face shield/goggles; avoid touching the front of eye protection that may be contaminated.
5. Remove and properly handle respirator/face mask - avoid touching the front that may be contaminated and dispose or decontaminate as appropriate.
6. Repeat hand hygiene.

**FOR USE WITH CONDITIONS SUCH AS**  
(Refer to facility policy):

- Acute diarrhea
- Clostridioides difficile (C. difficile, C. diff)
- Norovirus
- Rotavirus

**RESIDENT PLACEMENT**

- Place resident in private room with private bathroom, if not available, follow facility guidelines for cohorting.

**DISHES & UTENSILS**

- No special precautions.
- Kitchenware sanitized in dishwasher.

**DIETARY**

- Family and visitors may not eat in the room.

**LINEN & WASTE MANAGEMENT**

- Bag linen in the resident's room. Avoid excessive handling and do not shake linen. For biohazard waste, follow Category B Medical Waste guidelines.

**ROOM CLEANING**

- Follow facility policy for disinfection and privacy curtain change. Clean and disinfect with **sporicidal/bleach disinfectant** as per facility policy.

**EQUIPMENT & SUPPLIES**



- Only essential equipment and supplies in the resident's room.
- Use dedicated or disposable equipment when available.
- Clean and disinfect reusable equipment and resident's room with disinfectant per facility policy.

**TRANSPORT**

- Alert receiving unit, medical transport or hospital regarding resident's isolation precaution status.
- Resident should **wash their hands with soap and water, have resident wear a new clean gown and/or cover the resident with a new clean sheet.**
- Transporter: Remove PPE and clean hands **with soap and water** prior to exiting the resident's room. If direct contact is likely during transport, wear appropriate PPE.
- Clean and disinfect transport vehicle with sporicidal/bleach.

Discontinue precautions per Facility Policy.

## Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007):

Infection/Condition	Type of Precaution	Duration of Precaution	Precautions/Comments
Gastroenteritis Noroviruses	 <b>Update</b> Contact + Standard		<p>Use Contact Precautions for a minimum of 48 hours after the resolution of symptoms or to control institutional outbreaks.</p> <p>Persons who clean areas heavily contaminated with feces or vomitus may benefit from wearing masks since virus can be aerosolized from these body substances [142, 147 148]; ensure consistent environmental cleaning and disinfection with focus on restrooms even when apparently unsoiled [273, 1064]. Hypochlorite solutions may be required when there is continued transmission [290-292]. Alcohol is less active, but there is no evidence that alcohol antiseptic handrubs are not effective for hand decontamination [294].</p> <p>Cohorting of affected patients to separate airspaces and toilet facilities may help interrupt transmission during outbreaks.</p> <p> <b>Gastroenteritis, Noroviruses Precaution Update [May 2019]:</b> The Type of Precaution was updated from "Standard" to "Contact + Standard" to align with <a href="#">Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings (2011)</a></p>

# Cleaning and Disinfecting

Standard precaution guidelines explain how to clean and disinfect non-critical surfaces in care areas. In general, these procedures do not need to be altered for patients or residents that require transmission-based precautions. Depending on the specific illness, the approved disinfectant will potentially change, but not the process. Cleaning and disinfection of all care areas is important for high-touch surfaces, especially those closest to the patient or resident that are most likely to be contaminated.

## EPA-Registered Disinfectants

- Select disinfectants that meet the healthcare facility's needs. For environmental surfaces, particularly in care areas, use a chlorine bleach solution whenever possible. You can use an antimicrobial disinfectant deemed effective against norovirus by the Environmental Protection Agency (EPA) for environmental cleaning. These disinfectants are contained in [EPA List G: Registered Antimicrobial Products Effective Against Norovirus](#).
- Make EPA-registered chlorine wipes readily available for cleaning. Keep wipes out of reach of children and others at risk for misuse.
- Many disinfectants contain active ingredients that can irritate the skin, eyes, or respiratory system. Ensure staff have access to and understand the safety data sheets (SDS) for all chemicals used. Use appropriate personal protective equipment (PPE), following the manufacturer's recommendation.

## Concentration and Contact Time

- If you are not using household bleach, follow the product directions for norovirus outbreak control, including the correct concentration and contact time. Follow disinfectant expiration dates, which are shown on the label.
- Prepare fresh bleach solutions and use them within 24 hours. Store them for up to 30 days if doubled in concentration.
- When using a bleach solution, use a concentration of 1,000-5,000 ppm (5-25 tablespoons or approximately 1/3 to 1 ½ cups of household bleach [5.25%] per gallon of water) for at least 5 minutes.

**Table 1: Bleach Concentration and Contact Time**

Concentration	Amount of household bleach (5.25%) per gallon of water	Contact time	Notes
1,000-5,000 ppm	5-25 tablespoons (approximately 1/3 to 1 ½ cups)	At least 5 minutes	If not using household bleach, follow product directions for norovirus outbreak control.

## Cleaning Process

- Start by cleaning less-contaminated areas (e.g., tray tables, countertops) and progress to high-touch surfaces like toilets and bathroom fixtures.
- Clean visibly soiled surfaces before applying disinfectants.
- Always clean first to remove organic material from any equipment or surface prior to disinfection. Any residual proteinaceous material reduces the effectiveness of the disinfection.

## Cleaning and Disinfecting Frequency During Outbreaks

- Clean and disinfect more frequently during outbreaks. For example, clean and disinfect care areas twice daily, with high-touch surfaces cleaned and disinfected at least three times daily or more frequently if possible.
- You might need to increase cleaning and disinfecting frequency depending on the patient or resident's hygiene or how dirty the environment is. Assess the need for additional trained cleaning staff.
- Change privacy curtains when they are visibly soiled and when a patient or resident is discharged or transferred. Pay special attention to common areas during peak usage hours.
- Perform terminal cleaning after patient or resident discharge or transfer. Consider covering toilets during flushing to minimize the spread of contaminated particles.

## Protective Measures

- Wear appropriate protective barriers while cleaning areas heavily contaminated with vomit or feces, including gloves, masks, face shields, and gowns.
- Bag and dispose protective barriers promptly to prevent transfer of infectious material.
- Wear PPE according to contact, contact enteric, and standard precautions when entering the patient or resident care area (e.g., gowns and gloves upon entry) to reduce the likelihood of exposure to infectious vomit or fecal material.
- Use a surgical or procedure mask and eye protection or a face shield if there is an anticipated risk of splashes to the face during the care of patients or residents, particularly among those who are vomiting.
- Place designated containers for used disposable or reusable PPE in a location that is convenient to the site of removal to facilitate disposal and containment of contaminated materials.

## Kitchen and Foodborne Considerations

- If a foodborne outbreak is suspected, close kitchens and clean them thoroughly using the above cleaning and disinfecting procedures and remove all contaminated food from the area.
- The local health jurisdiction (LHJ) may need to verify that cleaning is adequate and that food workers are healthy before reopening.
- To prevent food-related outbreaks of norovirus gastroenteritis in healthcare settings, food handlers must perform hand hygiene before touching or preparing food.
- Personnel who work with, prepare, or distribute food must be excluded from duty if they develop symptoms of acute gastroenteritis.
- Personnel should not return to these activities until a minimum of 48 hours after the resolution of symptoms or longer as required by local health jurisdictions.
- Remove all shared or communal food items from clinical areas for the duration of the outbreak.

## Cleaning Equipment

- Change mop heads when preparing fresh cleaning solution and after cleaning large spills of vomit or fecal material.
- Maintain vacuum cleaners to minimize dust dispersal in general. Equip them with HEPA filters, especially for use in high-risk areas.
- Use disposable cleaning cloths or single-use wipes to minimize cross-contamination.

## Care Equipment and Instruments and Devices

- Clean and disinfect shared equipment between patients or residents.
- Thoroughly clean and disinfect non-critical equipment, such as commodes, intravenous pumps, and ventilators, before use on another patient or resident.
- Clean, maintain, and disinfect medical equipment and instruments/devices in accordance with manufacturers' instructions to prevent patient-to-patient transmission of germs and potential equipment damage.
- When writing policies for cleaning and disinfecting non-critical items, don't forget to include computers and personal digital assistants (PDAs).
- Use steam sterilization whenever possible on all critical and semi-critical items that are heat and moisture resistant (e.g., steam sterilizable respiratory therapy and anesthesia equipment), even when it is not essential to prevent pathogen transmission.
- Steam sterilizers also are used in healthcare facilities to decontaminate microbiological waste and sharps containers, but additional exposure time is required in the gravity displacement sterilizer for these items. [Learn more on CDC's website for steam sterilization.](#)



## Carpet, Textiles and Laundry

- For carpets and other porous surfaces, use steam cleaning or an EPA approved cleaner. Disinfection with bleach might discolor carpets or fabric.
- Consider avoiding the use of upholstered furniture and rugs or carpets in care areas, as these objects are difficult to clean and disinfect completely.
  - If this option is not possible, immediately clean soilage, such as vomit or fecal material, from upholstery.
  - Select furniture and fixtures for care areas that can withstand routine cleaning and disinfection.
  - Consider steam cleaning the upholstered furniture in patient or resident rooms when they are discharged.
  - Refer to manufacturer recommendations for cleaning and disinfection of these items. Consider discarding items that cannot be appropriately cleaned and disinfected.
  - If you use carpeting in high-activity care areas, consider using carpet tiles in areas at high risk for spills.
    - If carpet tiles are contaminated with blood or other body substances, they can be removed, discarded, and replaced. Occupational Safety and Health Administration (OSHA) also acknowledges that only minimal direct skin contact occurs with carpeting, and therefore, employers are expected to make reasonable efforts to clean and sanitize carpeting using carpet detergent and cleaner products.
  - For carpeted areas:
    - Disinfection with bleach might discolor carpets or fabric.
    - Don't vacuum the affected area before cleaning, as this will cause pathogens to become airborne and spread.
    - Apply kitty litter or baking soda to the affected area.
    - Clean up kitty litter or baking soda with a disposable one-time use scraper and scoop or a disposable dustpan.
    - Either clean the carpet or furniture using steam at 158°F for five minutes or 212°F for one minute or disinfect the carpet or furniture with an EPA registered antimicrobial product effective against norovirus.
    - Carpet can become contaminated during the cleaning process. Therefore, keep the carpet cleaning equipment in good repair and allow it to dry between uses.
    - Clean carpets on a regular basis, determined by internal policy.

- For laundry:
  - Use standard precautions for handling soiled patient or resident-service items or linens, including the use of appropriate PPE.
  - When handling soiled linens and clothes, wear disposable gloves and gowns. Handle soiled linens and clothes as little as possible, minimizing agitation to prevent the spread of infectious particles.
  - Transport laundry in an enclosed and sanitary manner.
  - Remove visible vomit and or stool from clothing and linens before washing.
  - Separate contaminated items from regular laundry.
  - Use detergent and a 1/2 cup of bleach to wash clothing and linens according to label directions.
  - If you cannot use bleach, use an oxygenated detergent according to label directions.
  - Wash contaminated items in a pre-wash cycle followed by a regular wash cycle using the hottest setting.
  - Dry using the hottest setting.
  - Follow the key principles for handling soiled laundry:
    - Do not shake the items or handle them in any way that may aerosolize infectious particles.
    - Avoid contact between your body or personal clothing and the soiled items you are handling.
    - Contain soiled items in a laundry bag or designated bin.
  - Double bagging, incineration, or modifications for laundering are not recommended precautions when handling or processing soiled linen.
  - For patients or residents on isolation for norovirus gastroenteritis, consider discarding all disposable care items and laundering any unused linens in their rooms after they are discharged or transferred.

## Waste Disposal

- Handle contaminated materials carefully:
  - Place in sealed, labeled bags for transport.
  - Use appropriate biohazard disposal methods if required.
- Facilities can minimize waste by limiting the number of disposable items brought into rooms or areas on contact enteric precautions.
- For patients or residents with symptoms of norovirus infection, no additional cleaning provisions are recommended for disposable service items like utensils or dishware. Follow normal cleaning processes for silverware and dishware, using standard procedures.

## Resume Routine Cleaning

- When the building is norovirus free for 48 hours, routine cleaning can resume.

# Communication

## Communication and Notification

- Develop written policies that specify the chains of communication needed to manage and report outbreaks of norovirus gastroenteritis.
- Write your framework to include clinical staff, environmental services, laboratory administration, healthcare facility administration and public affairs, and state or local public health authorities.
- Establish clear protocols for communication between healthcare teams and cleaning staff to ensure thorough and timely cleaning.
- Provide timely communication to personnel and visitors when an outbreak of norovirus gastroenteritis is suspected. Outline what policies and provisions need to be followed to prevent further transmission.
- As with all outbreaks, notify appropriate local and state health departments, as required by state and local public health regulations, if an outbreak of norovirus gastroenteritis is suspected.

## Staff Training

- Provide training on:
  - Proper cleaning techniques
  - Identifying high-risk areas for norovirus transmission
  - Correct use of disinfectants and adherence to contact times
  - Standard, transmission-based, contact, and contact enteric precautions
- Emphasize hand hygiene:
  - Actively promote good hand hygiene among healthcare personnel, patients, residents, and visitors in care areas affected by norovirus outbreaks.
    - Consider using signage, just-in-time (JIT) staff education, increased audits, and extra hand hygiene stations and dispensers
  - Use soap and water for hand hygiene:
    - After providing care or having contact with patients or residents suspected or confirmed with norovirus gastroenteritis
    - After handling contaminated materials or performing cleaning tasks

- Use alcohol-based hand sanitizers for hand hygiene if soap and water are not available. Sanitizers are not a substitute for handwashing during outbreaks.
  - Ethanol-based hand sanitizers (60-95%) are the preferred active agent compared to other alcohol or non-alcohol based hand sanitizer products during outbreaks of norovirus gastroenteritis.
- For all other hand hygiene indications (e.g., before having contact with norovirus patients) refer to the [2002 HICPAC Guideline for Hand Hygiene in Health-Care Settings](#), which includes the instructions for use of FDA-compliant alcohol-based hand sanitizer.

## Staff Leave and Policy

- Develop and adhere to sick leave policies for healthcare personnel who have symptoms consistent with norovirus infection.
- Exclude ill personnel from work for a minimum of 48 hours after the resolution of symptoms.
- Once personnel return to work, reinforce the importance of performing frequent hand hygiene, especially before and after each patient or resident contact.

# References

[CDC | Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings](#)

[WA Integrated Food Safety Center of Excellence | Norovirus Outbreak Control Checklist](#)

[CDC | Norovirus Prevention and Control Guidelines for Healthcare Settings](#)

[CDC | 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings](#)

[University of Minnesota | Step-by-Step Guide to Norovirus Cleanup](#)

[CDC | Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008](#)

[CDC | Environmental Infection Control Guidelines](#)

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