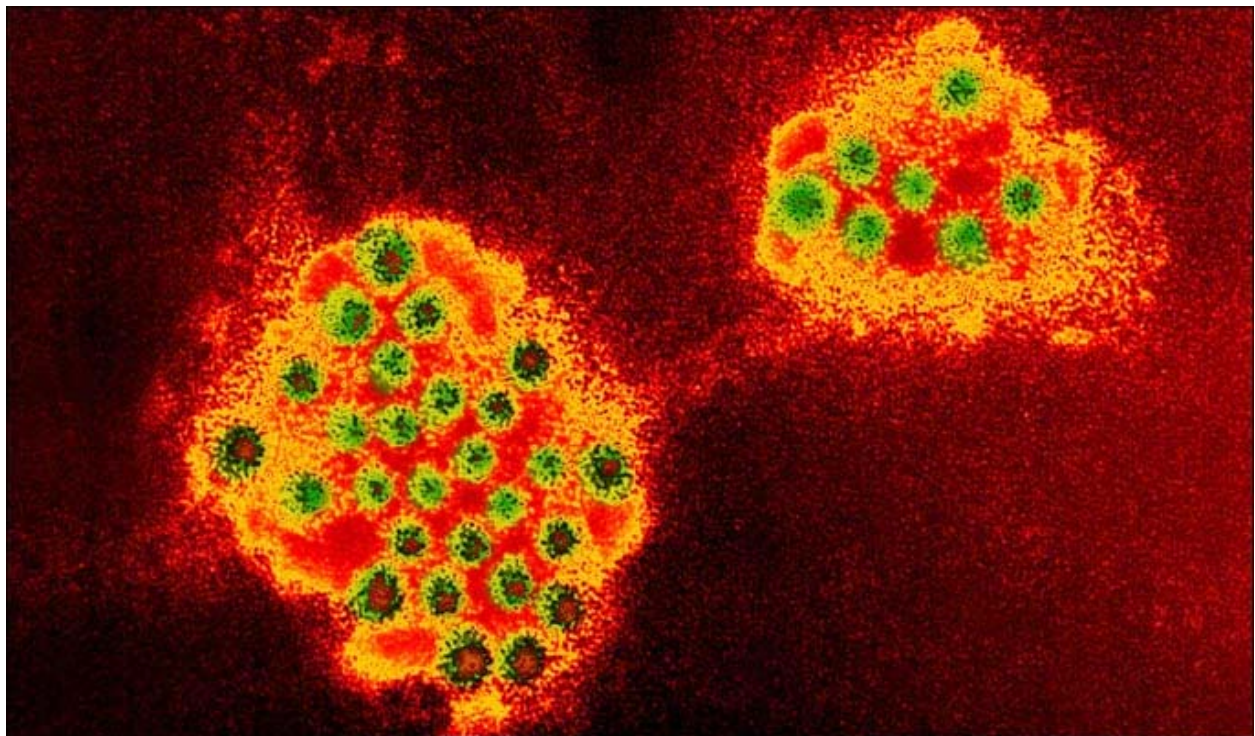


Chattanooga - Hamilton County Health Department

Doing All We Can To Assure A Healthy Community

RECOMMENDATIONS FOR THE PREVENTION AND CONTROL OF VIRAL GASTROENTERITIS OUTBREAKS IN HAMILTON COUNTY LONG-TERM CARE FACILITIES



Chattanooga-Hamilton County Health Department
Epidemiology Department
921 East 3rd Street
Chattanooga, TN 37405
(423) 209-8190



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Introduction

Outbreaks of viral gastroenteritis in long-term care facilities (LTCFs) are common, and can become epidemic during the winter and early spring. Viruses (norovirus specifically) cause most of these outbreaks, and they are almost always transmitted from **person-to-person** (including residents, staff, visitors and volunteers). Norovirus can persist in the environment and is resistant to many disinfectants. As a result, **contamination of the environment** plays a key role in transmission. Only occasionally is an outbreak in a LTCF caused by contaminated food. **Norovirus, which is highly contagious, requires immediate action to prevent further spread of the virus to residents and staff.**

Norovirus outbreaks can be detected early by recognizing the typical symptoms of illness, and can be controlled by promptly implementing aggressive infection control measures to prevent the virus from being transmitted from person to person. This document outlines the control measures that should be taken focusing on hand hygiene, environmental disinfection and exclusion of ill persons. When appropriate prevention and control measures are not implemented immediately, outbreaks can continue for weeks causing many illnesses, some hospitalizations and occasionally death from dehydration and other complications of vomiting and diarrhea.

Appropriate hand hygiene is likely the single most important method to prevent norovirus infection and control transmission. Reducing any norovirus present on hands is best accomplished by thorough handwashing with running water and plain or antiseptic soap. Washing with plain soap and water reduces the number of microbes on hands via mechanical removal of loosely adherent microorganisms. The effectiveness of alcohol-based and other hand sanitizers against norovirus remains controversial with mixed evidence. Overall, studies suggest that proper hand washing with soap and running water for at least 20 seconds is the most effective way to reduce norovirus contamination on the hands, whereas hand sanitizers might serve as an effective adjunct in between proper handwashings but should not be considered a substitute for soap and water handwashing.

What causes viral gastroenteritis in long-term care facilities?

Gastroenteritis is an inflammation of the stomach and intestines. This usually results in vomiting and/or diarrhea. Outbreaks of gastroenteritis in long-term care facilities are usually due to norovirus. Bacteria such as *Salmonella*, *Shigella*, or *Campylobacter* also occasionally cause gastroenteritis in long-term care facilities, but are more likely to be foodborne and the patterns of illness that occur are usually different from viral gastroenteritis.

What are the signs and symptoms of Norovirus-associated gastroenteritis?

Noroviruses cause acute gastroenteritis in persons of all ages. The illness typically begins after an incubation period of 12-48 hours and is characterized by acute onset, nonbloody diarrhea, vomiting, nausea, and abdominal cramps. Some persons might experience only vomiting or diarrhea. Vomiting is more common in the young, and diarrhea is more common in adults. Low-grade fever and body aches also might be associated with infection, and thus the term "stomach flu" often is used to describe the illness, although it has no relationship to respiratory infections caused by the influenza virus. Although symptoms might be severe, they typically resolve without treatment after one to three days in otherwise healthy persons. However, more prolonged courses of illness lasting four to six days can occur, particularly among young children, elderly persons, and hospitalized patients. Immunity occurs following infection but lasts only a short time, so everyone is at risk of becoming infected again, from the same virus, two to six months later.

How is Norovirus spread?

Norovirus is extremely contagious and can easily spread from person to person. It is primarily spread when viral particles are transferred from contaminated hands to the mouth and ingested (fecal-oral). Both stool and vomit are infectious with millions of viral particles present. It takes only a small number of particles (infectious dose as low as 18 viral particles) to cause illness. The virus can be detected in stool for an average of 4 weeks following infection, although maximum excretion of virus in the stool occurs 2-5 days after infection. Vomiting disperses viral particles in the air, resulting in possible exposure to nearby persons and contamination of surfaces. Norovirus can remain infectious on environmental surfaces and is resistant to many common disinfecting products. Transmission can occur when individuals touch environmental surfaces or objects contaminated with these viruses and then touch their mouth.

People can also become infected by eating food or drinking liquids contaminated with the virus. This typically occurs by contamination from infected food handlers during preparation and service but can occur in the food distribution system. Contaminated food outbreaks involving raspberries, oysters and delicatessen meat have occurred. Large community outbreaks have resulted from contaminated recreational and drinking water. These outbreaks often involve contaminated well water or from breakdowns of municipal systems.

How is norovirus diagnosed and treated?

Diagnosis usually involves a physical exam and a review of the patient's medical history and symptoms only. In an outbreak of gastroenteritis it may be necessary to confirm norovirus as the cause of illness to help investigate the cause of the outbreak. In these cases stool samples of infected persons are tested at the Tennessee Department of Health Laboratory for norovirus by

reverse transcription-polymerase chain reaction (RT-PCR). Food samples currently are not being tested. Testing for norovirus may not be useful for outbreaks that are clinically and epidemiologically consistent with norovirus and occur in areas where norovirus is known to be circulating. Testing can be provided to your facility in conjunction with the Chattanooga-Hamilton County Health Department. **Control measures should never be delayed while awaiting laboratory confirmation.** Ideally, stool specimens should be collected during the acute phase of illness (48-72 hours after symptom onset). When this is not possible, specimens collected later in the illness (up to 7-10 days after onset) might still provide a diagnosis.

There is no medicine that will kill norovirus. In addition, there is no vaccine that will prevent an infection. Therefore, norovirus treatment is supportive care. Supportive care refers to treating symptoms that occur because of the infection. The key factor is to replace lost fluids. The most helpful fluids to prevent dehydration are oral rehydration fluids. People unable to drink enough fluids to prevent dehydration may need fluids intravenously.

How is an outbreak of norovirus identified?

The ability to detect an outbreak early will allow more timely interventions to control and prevent the spread of norovirus. Diarrheal illnesses are common within long-term care facilities, making early detection of a norovirus outbreak more difficult. Conducting surveillance for illness throughout the facility and monitoring the results for increases may reveal an outbreak. Surveillance should include monitoring for new onset of diarrheal illnesses among both patients and employees. Diarrheal illness associated with vomiting should increase the suspicion for a norovirus illness, since vomiting is not a hallmark of other common gastrointestinal illnesses found in long-term care facilities, such as *Clostridium difficile*. In addition, norovirus illnesses frequently affect staff members as well as residents. Employees should report gastrointestinal illness to their supervisor and should not come to work when they are ill. Outbreaks of norovirus may be caused by contaminated food or person-to-person transmission. **An outbreak of viral gastroenteritis should be suspected when two or more residents and /or staff develop new onset of vomiting and/or diarrhea within one to two days.** By promptly notifying the epidemiology department at the first sign of an outbreak, we can assist in understanding the cause of the outbreak so prompt control measures can be implemented. **Facilities should immediately institute aggressive infection control measures anytime an outbreak is suspected.**

How is an outbreak of norovirus controlled?

Interrupting person to person transmission will limit the extent of the outbreak if transmission prevention precautions are implemented when the first few cases are suspected. There is probably little that can be done to prevent the initial introduction of the virus, since an infected staff member or visitor may be shedding the virus even before they are ill. The following recommendations may assist in controlling an outbreak of norovirus:

Limit transmission when initial cases are suspected

- A. Notification
 1. Each unit should immediately report any resident or staff with a sudden onset of symptoms suggestive of norovirus to the Staff Manager.
 2. New cases should be recorded daily using a case log (see Appendix 1).
 3. Notify the medical director. Immediate isolation of the resident and restricting access to affected areas is essential.
 4. Notify the Chattanooga-Hamilton County Health Department, Epidemiology Department at 423-209-8190. We can assist you with implementation of control measures.
- B. Management of Residents and Staff
 1. Confine symptomatic residents to their rooms until 48 hours after symptom-free. Symptomatic residents should be cohorted (e.g., residents with the same infection may share a room).
 2. Exclude non-essential staff from entering room.
 3. Symptomatic staff, visitors, and volunteers should stay home until symptom – free for 48-72 hours.
 4. Educate staff, residents and visitors regarding the outbreak, methods of transmission, and control measures.

II. Institute control measures when an outbreak is suspected without waiting for diagnostic confirmation.

- A. Notification: see above. All suspected/confirmed outbreaks must be reported immediately to the Chattanooga-Hamilton County Health Department, Epidemiology Department 423-209-8190.
- B. Management of Residents
 1. Minimize movement and transport of residents. Asymptomatic, exposed residents should not be moved from an affected to an unaffected resident unit since they may already be infected.
 2. Cancel or postpone group activities until at least 48 hours after the last identified case.
 3. Clean and disinfect equipment such as blood pressure cuffs, stethoscopes and electronic thermometers between uses.
 4. Consider dedicating commonly used equipment for use in affected areas only. (e.g. wheelchairs, commodes, and blood pressure cuffs)
 5. Consider use of antiemetics for residents with vomiting. (Consult Medical Director or patients' physician)
 6. If a resident is unable to perform proper hand hygiene, staff members should assist the resident.
 7. Common areas such as activity rooms and dining rooms should be closed. Meals should be served in the residents' rooms.

8. Limit new admissions until at least 72 hours after the last identified case. If new admissions are necessary, admit residents to an unaffected unit or to a unit that has had no new cases within the last 72 hours.
9. If a resident is transferred to the hospital, notify the hospital and the medical transport service personnel that the resident is coming from a facility at which an outbreak is occurring.

C. Management of Staff

1. Staff assignments
 - a) Maintain the same staff to resident assignments, whenever possible.
 - b) Do not allow staff to “float” between affected and non-affected units, if possible.
2. Implement Transmission Prevention Precautions
 - a) Disposable gloves (clean, non-sterile gloves are adequate) should be worn when entering the room of a symptomatic resident when direct contact with ill persons or contaminated surfaces is possible.
 - b) Gowns should be worn when contamination of clothing with fecal material or vomitus is possible.
 - c) When caring for a resident who is actively vomiting or when cleaning areas grossly contaminated by feces or vomitus a mask should also be worn.
 - d) Perform hand hygiene immediately after removal of gown and gloves and before leaving the residents’ room.
 - e) After glove and gown removal and hand hygiene, ensure that hands and clothes do not touch potentially contaminated environmental surfaces or items in the resident’s room.
 - f) Staff should wash their hands when entering and leaving every resident room.
 - g) Employee hand washing vigilance should be monitored

D. Management of Ill Staff

1. The loss of a large number of staff may place a significant burden on those remaining at work but exclusion of ill staff is an important transmission control strategy.
2. Exclude all ill staff members for 48-72 hours after they are symptom-free.
3. A log should be maintained to record ill staff symptoms, date they became ill and when they returned to work. (see Appendix 4).
4. Testing for norovirus is not required before staff return to work. Since norovirus can be shed for a long duration (up to 4 weeks) after recovery from illness, the need for strict hand hygiene should be stressed to staff returning from illness.

E. Management of Food Service

1. Closing communal dining areas is important during a norovirus outbreak.
2. Consider delivering food on disposable dinnerware to affected areas.

3. If particular floors or units are affected, consider delivery of all meals to that floor or unit by one staff member. Distribution of food to each resident on the floor might then be tasked to the staff member dedicated to the care of residents on that floor or unit in order that the number of staff in contact with ill residents remains limited.
4. Cleaning and disinfection of food and drug trays and the carts used to transport them should take place before and after each use outside the food and drug preparation areas.
5. During an outbreak, strict hand washing regimes by food service personnel should be stressed.
6. Exclude non-food service personnel from food preparation and service areas.

F. Management of Environment

1. Environmental surfaces should be kept visibly clean and be disinfected on a routine basis.
2. During an outbreak, the frequency of cleaning and disinfecting high-touch surfaces throughout the facility should be increased. High-touch surfaces would include, but are not limited to, door handles, elevator buttons, sink and toilet handles, food preparation and dining areas, hand and stair rails, telephones, light switches, counters and computer keyboards.
3. Disposable cleaning cloths and mop heads should be used if possible. Staff should use one cloth for cleaning and a new cloth for sanitizing/disinfecting surfaces. Separate cloths should be used in toilet areas. Staff should use a new set of cleaning cloths for each room. Staff should use disposable gloves. Gloves should be removed and discarded before moving to clean the next room.
4. Vomiting or fecal accidents should be cleaned promptly. The surfaces that have been soiled and the surrounding area should be cleaned and sanitized by trained staff wearing appropriate protective barriers (i.e. mask, gloves, gown).
5. Residents and non-essential staff should be excluded from these areas for the duration of the cleaning.
6. Use paper towels to soak up excess liquid. Transfer these and all solid waste directly into a plastic bag. Clean soiled area using detergent and hot water and then disinfected with a freshly prepared sodium hypochlorite solution (e.g. household chlorine bleach in a 1:100 {500 ppm} to 1:10 {5,000 ppm} dilution) or an Environmental Protection Agency (EPA) – approved disinfectant for norovirus (see Appendix 1). Bleach solution should remain on surface for 10-20 minutes.
7. Contaminated mop heads, cleaning cloths, personal protective equipment, and potentially infectious material used/collected during the cleaning procedure should be promptly discarded in a manner that prevents transfer of this material to other surfaces or persons (e.g., biohazard bag).

8. Staff should thoroughly wash hands after completing cleaning and again after completing disposal procedure.
9. Contaminated towels, linens, pillows, bedspreads, blankets, and other fabric materials should be placed into separate laundry bags from non-contaminated items. They should be washed separately in a hot wash and dried separately. If an outside laundry service is used, they should be advised that the laundry is potentially infectious.
10. Care should be taken when changing and laundering soiled bed linen to not aerosolize the infectious material.
11. For carpet and upholstery cleaning, use paper towels to soak up excess liquid. Transfer these and all solid waste directly into a plastic bag to minimize exposure to aerosols. Steam clean (heat inactivation) 158°F for 5 minutes or 212°F for 1 minute for complete inactivation. Dry vacuuming is not recommended.

G. Management of Visitors

1. Visits to symptomatic residents should be discouraged.
2. If visitation is necessary, visitors should go directly to the person they are visiting and not spend time with anyone else. Health care workers should instruct visitors on the appropriate procedure for putting on and removing gowns, gloves (and mask if resident is vomiting) and hand hygiene.
3. Signs should be posted to warn visitors of the outbreak, so individuals do not put themselves at risk (see Appendix 2).
4. Visitors should not enter the long-term care facilities if they are ill.

References

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Appendix 1

Disinfection Procedures

1. What to disinfect: Doorknobs, faucets, sinks, toilets, commodes, bath rails, phones, counters, chairs, bottles, food and drug trays, food and drug carts, elevator buttons, light switches, mattress covers, aprons, uniforms, bedding, computer keyboards, ice machines
2. What to use: *Chlorine bleach* (sodium hypochlorite, NaOCl) (A list of other chemicals and products that may prove effective can be found at http://www.epa.gov/pesticides/antimicrobials/list_g_norovirus.pdf)
3. How to dilute & use of dilution strengths:
 - 1000 ppm (parts per million)
 - Use for non-porous surfaces, tile floors, counters, sinks, toilets, trays, doorknobs
 - 1/3 cup standard bleach mixed with 1 gallon of water (1:50 dilution)
 - 5000 ppm
 - Use for porous surfaces such as wood counters and floors
 - 1 2/3 cup bleach in 1 gallon of water (1:10 dilution)
4. Contact time – leave bleach on surface for 10-20 mins.
5. Stability of chlorine bleach
 - Opened bottles of concentrated chlorine bleach will lose effectiveness after 30 days. Change bottles of bleach every 30 days for accurate concentrations.
 - For disinfecting during an outbreak, start with an unopened bottle of chlorine bleach.
 - Prepare fresh dilutions of chlorine bleach every day and discard unused portions (once diluted, bleach breaks down quickly).
 - Label containers with date prepared and strength of solution.
6. What NOT to use:
 - Most quaternary ammonia compounds (many common all-purpose cleaners, e.g. 409®)
 - Ethanol anionic compounds
 - Phenolic compounds (many common household disinfectant sprays, eg. Lysol® or Pinesol®) may be effective, but require concentrations of 2-4 times manufacturer's recommendation, which could pose significant health risk to workers and pets.
 - These cleaners are not likely to be effective in destroying viral particles which cause acute viral GI outbreaks.

We are currently experiencing an increase in the number of residents with gastrointestinal illness in our facility; we ask that you please check in at the front desk before visiting with your family member or friend.

--Thank you for your cooperation

Appendix 3

Facility: _____

Unit: _____

[illegible]

Appendix 4

Facility: _____

Unit: _____

Case Log of Staff with Acute Illness															
#	Name	Age	Sex	Assignment	Onset	Well	N	V	D	AC	Fe	Ch	Ret-wk	Hosp.	Lab Results

Onset=Onset of Illness; Well=Well Day; N=Nausea; V=Vomiting; D=Diarrhea; AC=Abdominal Cramping; Fe=Fever; Ch=Chills; Rt-Wk=return to Work date;
 Hosp=Hospitalization

Norovirus Toolkit

This toolkit is designed to be used in conjunction with the guidance *Recommendations for the Prevention and Control of Viral Gastroenteritis Outbreaks in Hamilton County Long-Term Care Facilities* (March 2011).

This toolkit contains supplementary documents intended to assist long-term care facilities implement the aforementioned guidelines.

1. Best Practices: Control of Viral Gastroenteritis Outbreaks in Group Residence Facilities
2. Norovirus Cleaning and Disinfection
3. Q & A: Norovirus (handout for Residents and Visitors)
4. Noro-Cleaning (handout for Residents and Visitors)
5. CDC Hand Hygiene Brochure (handout for Residents and Visitors)

Questions related to these documents may be directed to Chattanooga-Hamilton County Health Department, Epidemiology at 423-209-8190.

BEST PRACTICES: CONTROL OF VIRAL GASTROENTERITIS OUTBREAKS**NOTIFICATION AND CONSULTATION**

Review the document, *Recommendations for the Prevention and Control of Norovirus Outbreaks in Hamilton County Long Term Care Facilities* (March 2011)

Keep a line list of ill residents and staff using the case log at the back of the guidelines mentioned above

- List ill staff and residents separately

Notify facility medical director, director of nursing or infection control, managers, staff and residents

Notify Chattanooga-Hamilton County Health Department(CHCHD), Epidemiology and submit the following:

- Line list of ill residents and staff (to be maintained throughout the outbreak)
- Site map with location of ill residents and staff indicated

Notify CHCHD of any of the following events while outbreak is ongoing:

- Sudden increase in number of cases over a 24-hour period
- A symptomatic food handler is identified
- A death potentially linked to the outbreak

BASIC INFECTION CONTROL AND EDUCATION

Educate staff, residents, and visitors about proper hand washing practices. **Do not rely on hand sanitizers**

Ensure the facility has adequate supplies of hand washing products (liquid soap, paper towels) and that these items are replenished as needed. Hand washing products should be easily accessible for staff and residents

Post contact precaution signs on ill residents' rooms

Post signs prominently discouraging non-essential visitation

Educate staff and residents about norovirus ,distribute handouts

Discontinue staff parties and potlucks until at least 7 days after last case onset

INFECTION CONTROL: ISOLATION AND COHORTING

❖ **Goal of Isolation:** Limit the spread of organisms from a contaminated area to an uncontaminated area

❖ **Method:** Cohorting, Required modification of resident movement and staff work practices, initiation of contact precautions, and dedication of equipment and supplies for at least 7 days after last case onset. Cohorting modifications apply to an affected area.

❖ **Affected Area:** May be a group of rooms, a hallway, a unit, a floor, or a building where symptomatic individuals reside or where symptomatic staff worked and exposed residents or other staff. Affected areas may change during the course of the outbreak.

INFECTION CONTROL: RESIDENTS

Request all ill residents stay in their rooms until symptom-free (no diarrhea or vomiting) for 48-72 hrs

(As needed) Request all residents in affected areas (ill and well) stay in their rooms until all residents are symptom-free for 48-72 hrs

Minimize movement of residents between units whether the unit is affected or not

Serve meals to residents in affected areas in their own rooms

(As needed) Discontinue group meal service facility-wide when more than one unit is affected

Discontinue group social activities in the affected unit or facility-wide as appropriate, until 7 days after last case onset (in residents or staff)

Discontinue all new admissions and transfer of residents between units and to other facilities until 7 days after last onset

Dedicate the use of patient care equipment to a single resident within the affected unit. If this is not possible, clean and disinfect equipment before use with another resident. Equipment includes, but is not limited to:

- BP cuffs
- Bedside commodes
- Stethoscopes
- Wheelchairs
- Thermometers
- Therapy Equipment

INFECTION CONTROL: STAFF

Inform all staff immediately of the outbreak and their specific role in containing it

Exclusion from Work

Identify symptomatic staff throughout the facility and exclude them from work until they are symptom-free for 48-72 hrs.

Instruct symptomatic staff to notify supervisors of their illness immediately. Update staff illness log.

Ensure returning staff observe strict hand hygiene

Discourage ill and exposed staff from working in patient care or food handling at other facilities

Dedicated Staffing

Discontinue "floating" staff between affected and non-affected units

Maintain work assignments: staff exposed in an affected area should continue to work only within that area

Exclude non-essential personnel, including volunteers, from rooms of symptomatic residents and affected units

BEST PRACTICES: CONTROL OF VIRAL GASTROENTERITIS OUTBREAKS**Contact Precautions and Personal Protective Equipment (PPE)**

Observe contact precautions in rooms of ill residents. Contact precautions should be observed by *all* staff (professional/caregiving, housekeeping, kitchen, administrative).

Wear gloves when in contact with ill persons or contaminated surfaces. Gowns should be worn when contamination of clothing with fecal material or vomitus is possible. Additionally, mask should be worn when cleaning areas grossly contaminated by feces or vomitus or when caring for someone actively vomiting or having diarrhea.

Fully train staff in the use of contact precautions and PPE

Ensure sufficient supplies for contact precautions and that they are accessible near the point of use.

Place used PPE in sealable, preferably biohazard, container after use and before exiting the area

INFECTION CONTROL: HOUSEKEEPING AND MATERIALS

Inform housekeeping staff immediately of the outbreak and their specific role in containing it

Dedicate housekeeping staff to an affected area and do not rotate them to other units

If possible, make housekeeping staff with appropriate PPE available 24/7 to respond to “clean-up” calls in a timely manner and to provide more frequent routine sanitation during the outbreak

Sanitize common areas with a disinfectant effective against norovirus (see *norovirus Cleaning and Disinfection*) Particular emphasis should be given to “high touch” surfaces such as:

- | | | | |
|----------------------|---------------------|------------------------|-------------------------|
| •Bathroom Surfaces | •Drinking Fountains | •Doorknobs & Handles | •Recreational Equipment |
| •Light Switch Plates | •Telephones | •Computer Keyboards | •Railings |
| •Elevator Buttons | •Tables & Chairs | •Wheelchairs & Walkers | •Remote Controls |

Wear gloves when cleaning. Gloves should be changed after each task and from area to area.

Clean rooms of asymptomatic residents in affected areas before cleaning rooms of symptomatic residents.

Emergency cleaning

Treat as a biohazard any vomiting or fecal accident, especially in a food service or common area

Cordon off the area immediately, clean and disinfect according to the instructions in *Norovirus Cleaning and Disinfection*. Full PPE should be used (see above)

Cleaning Supplies and Equipment

Dedicate cleaning equipment and material to the affected area

Use disposable cleaning cloths and mop heads whenever possible.

Launder cleaning supplies according to *Norovirus cleaning and Disinfection* when laundry is done onsite.

Sanitize cleaning carts and equipment after use in contaminated areas. Store separately

Waste Handling and Removal

Provide sealable, preferably biohazard, waste disposal containers in ill residents’ rooms for disposal of contaminated waste

Empty waste promptly. Use gloves. Do not allow waste bags or containers to come into contact with clothing.

Transport biohazard waste safely; do not contaminate clean areas.

Laundry

Store and launder contaminated and uncontaminated laundry separately.

When laundry is done onsite, staff should observe biohazard precautions when handling, transporting, and laundering. See *Norovirus Cleaning and Disinfection*

Consider using a laundry service during an outbreak if residents share a common laundry area

INFECTION CONTROL: KITCHEN

Inform food service management and staff of the outbreak and their specific role in containing it.

Clean up vomitus and feces immediately from kitchen and dining areas following instructions in *Norovirus Cleaning and Disinfection*. Full PPE should be worn (see above).

Mandate glove use for all kitchen staff during an outbreak. Wash hands and change gloves between tasks.

Discontinue all self-service of food items, including salad bars, drink stations, family-style dining, and any other self-service practices until at least 7 days after last case onset.

When group meal service is continued during an outbreak:

- Stringently clean high touch surfaces in the dining room after each meal service. This is critical.
- Wear gloves, protect clothing, and use disposable cleaning supplies when cleaning kitchen/food service areas.

When meals are served in rooms:

- Serve well residents first (when residents are served in rooms).
- Clean and disinfect promptly any utensils, serving items, and delivery carts returned from affected areas.

For more information, or to report a suspected outbreak, contact the Chattanooga-Hamilton County Health Department, Epidemiology at (423) 209-8190

NOROVIRUS CLEANING AND DISINFECTION

Norovirus causes a highly contagious gastrointestinal infection. It is easily spread through contact with contaminated surfaces. Any surface can become contaminated if touched by the hands of an infected individual. Surfaces in direct contact with vomit or fecal material from an infected person are of highest concern. Such areas should be treated as biohazardous. Disinfect as a matter of urgency. See below for directions. Surfaces that are frequently touched should be cleaned and sanitized often:

- | | | | |
|-----------------------|--------------------|-------------------------|------------------------|
| ▪ Bathroom Surfaces | ▪ Kitchen Surfaces | ▪ Doorknobs | ▪ Recreation Equipment |
| ▪ Light Switch Plates | ▪ Telephones | ▪ Computer Keyboards | ▪ Railings |
| ▪ Toys & Games | ▪ Tables & Chairs | ▪ Wheelchairs & Walkers | ▪ Remote Controls |

Effective Disinfectants

- **Fresh Chlorine Bleach:** Allow 10-20 minutes of contact time, then rinse with water
 - **200ppm** (parts per million): 1 tablespoon in 1 gallon water
Use for stainless steel, food/mouth contact items, toys
 - **1000ppm:** 1/3 cup in 1 gallon water
Use for nonporous surfaces, tile floors, counters, sinks, toilets
 - **5000ppm:** 1-2/3 cups bleach in 1 gallon water
Use for porous surfaces, wooden floors

Ineffective Disinfectants

- **Most Quarternary Ammonia Compounds**
- **Ethanol Anionic Cleaners**
- **Phenolic Compounds**

A list of commercial products effective against norovirus can be found at the EPA website: <http://www.epa.gov/oppad001/chemregindex.htm>.

Personnel performing disinfecting activities should adhere to the disinfectant manufacturer's instructions for dilution, application and contact time.

Cleaning Spills of Vomit or Feces

1. Use personal protective equipment (PPE = gloves, masks, gowns).
2. Cordon off area immediately.
3. Clean up visible debris using disposable absorbent material (paper towels or other disposable cloths).
4. Discard soiled items carefully in a red biohazard plastic bag to minimize aerosols.
5. Liberally clean and disinfect area and objects surrounding the contamination with an appropriate effective disinfectant (multiple applications may be required).
6. Take off gloves, gown, and mask, in that order, and discard before exiting contaminated clean-up area.
7. Place discarded PPE in the sealable red plastic biohazard bag.
8. Re-glove and transport bag to main trash with care – do not allow the bag to come into contact with clothing.
9. Always wash hands after handling any biohazardous material, trash, or waste.

Specific Cleaning Methods

ALWAYS wear gloves and protective clothing

- **Hard Surfaces**
 - Disinfect with bleach; then rinse with water if in food preparation area.
- **Carpet and Upholstered Furniture**
 - Visible debris should be removed with absorbent disposable towels and discarded in a red biohazard bag – handle carefully to minimize aerosols.
 - Carpet should be cleaned by heat inactivation using steam: 158°F for 5 minutes or 212°F for 1 minute (disinfecting with bleach may discolor carpet).
- **Linens, Clothing, and Textiles**
 - Remove visible debris from items before washing.
 - Handle contaminated items with gloves.
 - Keep contaminated items away from uncontaminated items.
 - Wash contaminated items in a pre-wash cycle followed by a regular wash cycle.
 - Use HOT water. Use detergent and bleach. Use oxygenated detergent alone when bleach cannot be used.
 - Dry contaminated items separately from uncontaminated items at a temperature greater than 170°F.
- **Surfaces Corrodible or Damageable by Bleach**
 - Use registered products effective against norovirus

EPA website: <http://www.epa.gov/oppad001/chemregindex.htm>

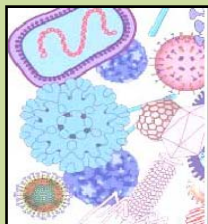
Proper Handling

- Treat all waste as biohazardous – provide appropriate containment.
- Use chemicals in well-ventilated areas.
- Avoid contact between incompatible chemicals.
- Prevent chemical contact with food during cleaning.
- Handle contaminated material as little as possible and with minimal agitation to reduce aerosols.

Q & A: NOROVIRUS ("STOMACH VIRUS")

WHAT IS NOROVIRUS?

Norovirus is a virus that causes illness often referred to as "stomach flu" or viral gastroenteritis. Infection with norovirus is NOT related to the influenza or "flu" virus, which causes respiratory illness.



WHAT ARE THE SYMPTOMS?

Vomiting and diarrhea are the most common symptoms. Symptoms may also include nausea, stomach cramps, fever, chills, aches, and fatigue. Children may experience more vomiting than adults.

WHEN DO SYMPTOMS START?

Symptoms typically begin 1 to 2 days after contact with the virus.

HOW LONG DO SYMPTOMS LAST?

Symptoms usually last 1 to 2 days. Symptoms may last longer in the very young, the elderly, and persons with weakened immune systems.

HOW IS NOROVIRUS DIAGNOSED?

A health care provider normally diagnoses norovirus infection based on your symptoms. The Tennessee Department of Health Laboratory may also test for norovirus during an outbreak.

HOW IS NOROVIRUS TREATED?

There is no specific treatment for norovirus infection. Most people get better on their own within 1-2 days. If you experience diarrhea or vomiting, drink plenty of fluids to prevent dehydration. Preventing dehydration is most important for the very young, the elderly, and persons with weakened immune systems. People with severe dehydration may require hospitalization.

IS NOROVIRUS CONTAGIOUS?

Norovirus is very contagious. It spreads easily from person to person. It takes as few as 18 virus particles to cause illness. Norovirus can live from weeks to months on surfaces.

SHOULD AN INFECTED PERSON STAY HOME?

Yes. People with norovirus should stay home until they no longer experience vomiting or diarrhea. Food handlers, health care workers, and child care workers should not return to work for at least 2 days after their last episode of diarrhea.

HOW LONG IS IT CONTAGIOUS?

People with norovirus infection are especially contagious during the first few days of their illness and for several days after they feel better.

HOW IS NOROVIRUS SPREAD?

Norovirus is found in the vomit and feces of an infected person. Norovirus can be spread through direct contact with an infected person or by eating food prepared by that person. It can also be spread by touching surfaces contaminated with the virus and then touching your mouth.

HOW CAN I AVOID NOROVIRUS?

Handwashing. This is the number one way to avoid getting ill with norovirus. Talk to your household about hand washing, and teach children when and how to wash their hands. Wash your hands with liquid soap and warm water, scrub for about 20 seconds, and dry hands with clean towels:



- After using the bathroom or changing diapers
- Before and after preparing, serving, or eating food
- After work, recreation, and visiting public places
- After contact with trash or soiled laundry
- After cleaning tasks
- Before and after visiting a day care, nursing home, hospital, or doctor's office

Fast clean up after accidents involving vomit or feces.

- Protect your clothes and wear gloves
- Use a mask if available
- Remove the vomit or feces carefully
- Use disposable towels and a bleach and water solution
- Disinfect the stain and the area and objects nearby
- Wash your hands with soap and water afterwards
- For complete details, see "NORO-Clean!" document

Frequent disinfection of frequently touched surfaces. Kitchen and bathroom surfaces, remote controls, doorknobs, handles, sports gear, toys, tables, chairs, handrails, strollers, grooming grooming items, phones, computer mouse and keyboards, light switches, car interiors, etc.



WHERE CAN I GET MORE INFORMATION?

More information about norovirus is available at the Centers For Disease Control and Prevention (CDC) website at:
<http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus.htm>

Noro-Cleaning

How to clean when someone in your home has norovirus

NOROVIRUS

- Norovirus is a viral infection. It is the most common infectious cause of diarrhea and vomiting
- Norovirus is highly contagious
- Norovirus can live on surfaces
- Anyone can get norovirus.

Spread by

- Touching surfaces that have the virus on them
- Direct contact with an infected person
- Eating food handled by an infected person

Symptoms

- Vomiting, nausea
- Diarrhea and abdominal cramping



NOROVIRUS CAN BE FOUND ANYWHERE PEOPLE GATHER AND LIVE.

Because norovirus is so contagious, it is very easy to spread the virus at work, in public places, at school and at home. It is more easily transmitted in situations where people live closely with each other, such as dorms, nursing homes or hotels. Norovirus has also been called "the cruise ship virus".

HANDWASHING IS THE #1 WAY TO PREVENT THE SPREAD OF NOROVIRUS!

- Wash your hands before and after preparing, serving, or eating food; providing personal care for others; and personal grooming.
- Wash your hands after using the bathroom, changing diapers, cleaning and laundry task, handling trash, handling pets or pet waste, recreation and sports, visiting public places, and close personal contact.

CLEANING SUPPLIES

- Cleaning products effective against norovirus; household bleach is preferred
 - Make a disinfectant using 1/3 cup household bleach to 1 gallon of water – mix fresh daily
 - Other EPA-approved products for norovirus: <http://www.epa.gov/oppad001/chemregindex.htm>
- Spray bottles and buckets – you can buy or mix the right disinfectant to use in these containers
- Cleaning cloths and mops – disposable ones are best
- Mop bucket (always disinfect after use and before storing)
- Disposable gloves and clothing protection (also use a mask to clean vomit or fecal accidents)
- Plastic trash bags that can be sealed

CLEANING UP SPILLS

Clean up vomit or fecal accidents immediately!

- Wear gloves, protect your clothing, and use the mask – the virus particles can be airborne
- Open the sealable plastic bag and have it ready for use
- CAREFULLY remove fecal matter or vomitus with absorbent disposable towels – place in plastic bag
- Use bleach safely – ventilate, don't mix chemicals, and rinse after 20 minutes in food prep areas
- Clean (scrub with friction) and disinfect spill areas and surrounding objects and spaces at least once
- Dispose of cleaning cloths or paper towels used for cleaning in plastic bag
- When the task is done, remove gloves and discard in plastic bag
- Remove clothing protection carefully and discard, or wash if not disposable. Wash your hands!
- Steam-clean soiled carpets and upholstery – use caution with steam

EVERYDAY CLEANING

- Clean and disinfect the items below often, especially when household members are ill. Use gloves.
- Bathroom and kitchen surfaces, handles, doorknobs, light switches, remote controls, phones, toys (rinse after), computer mouse and keyboards, handrails, car interiors, tables and chairs, grooming items, sports equipment, strollers, etc.

LAUNDRY

- While household members are ill, do laundry often
- Store all laundry in closed containers; store and wash contaminated laundry separately
- Hold dirty laundry away from your body when carrying it
- Pre-wash first, then re-wash using a regular cycle
- Use HOT water. Use either oxygenated detergent or regular detergent and bleach
- Dry laundry in a hot dryer until completely dry
- Clean and disinfect the surfaces of laundry appliances after washing contaminated items

Hand Hygiene is the #1 way to prevent the spread of infections

Why? You can take action by practicing hand hygiene regularly and by asking those around you to practice it as well.

When? You and your loved ones should clean your hands very often, especially after touching objects or surfaces in the hospital room, before eating, and after using the restroom. Your healthcare provider should practice hand hygiene every time they enter your room.

How? It only takes 15 seconds of using either soap and water or an alcohol-based hand rub to kill the germs that cause infections.

Which? Use soap and water when your hands look dirty; otherwise, you can use an alcohol-based hand rub.

Who? You, your loved ones, and your healthcare providers should practice hand hygiene.

For more information, please visit
www.cdc.gov/handhygiene or call 1-800-CDC-INFO

CDC acknowledges the following partners in the development of the *Hand Hygiene Saves Lives* video:
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This brochure was developed with support from the CDC Foundation and Kimberly-Clark Corporation.

A Patient's Guide

Hand Hygiene Saves Lives



hand hygiene

- Washing hands with soap and water.
- Cleansing hands using an alcohol-based hand rub.
- Preventing the spread of germs and infections.



Why?

To prevent hospital infections.

- In the United States, hospital patients get nearly 2 million infections each year. That's about 1 infection per 20 patients!
- Infections you get in the hospital can be life-threatening and hard to treat.
- All patients are at risk for hospital infections.
- You can take action by asking both your healthcare providers and visitors to wash their hands.

Remember: Hand hygiene saves lives.

To make a difference in your own health.

- Hand hygiene is one of the most important ways to prevent the spread of infections, including the common cold, flu, and even hard-to-treat infections, such as methicillin-resistant *Staphylococcus aureus*, or MRSA.

When?

You should practice hand hygiene:

- Before preparing or eating food.
- Before touching your eyes, nose, or mouth.
- Before and after changing wound dressings or bandages.
- After using the restroom.
- After blowing your nose, coughing, or sneezing.
- After touching hospital surfaces such as bed rails, bedside tables, doorknobs, remote controls, or the phone.

Healthcare providers should practice hand hygiene:

- Every time they enter your room.*
- Before putting on gloves. Wearing gloves alone is not enough to prevent the spread of infection.
- After removing gloves.

Remember: Ask your doctors and nurses to clean their hands before they examine you.

* If you already have an infection, your healthcare providers may take special measures (isolation precautions) to prevent the spread of your infection to others. They might enter your room wearing protective equipment (e.g., gloves, gown, mask). You do not need to ask them to clean their hands because they should have done so before they put on gloves.

How?

With soap and water:

1. Wet your hands with warm water. Use liquid soap if possible. Apply a nickel- or quarter-sized amount of soap to your hands.
2. Rub your hands together until soap forms a lather and then rub all over the top of your hands, in between your fingers and the area around and under the fingernails.
3. Continue rubbing your hands for 15 seconds. Need a timer? Imagine singing the "Happy Birthday" song twice.
4. Rinse your hands well under running water.
5. Dry your hands using a paper towel if possible. Then use your paper towel to turn off the faucet and to open the door if needed.

Remember: It only takes 15 seconds to protect yourself and others.

With an alcohol-based hand rub:

1. Follow directions on the bottle for how much of the product to use.
2. Rub hands together and then rub product all over the top of your hands, in between your fingers and the area around and under the fingernails.
3. Continue rubbing until your hands are dry. If enough rub was used to kill germs, it should take at least 15 seconds of rubbing before your hands feel dry. You should not rinse your hands with water or dry them with a towel.

Which?

Use soap and water:

- When your hands look dirty.
- After you use the bathroom.
- Before you eat or prepare food.

Use an alcohol-based hand rub:

- When your hands do not look dirty.
- If soap and water are not available.

Alcohol based hand rubs

- Products that kill germs on the hands.
- Should contain 60% to 95% ethanol or isopropanol (types of alcohol).
- Are fast-acting and convenient.

Who?

You can make a difference in your own health:

- Healthcare providers know they should practice hand hygiene, but they sometimes forget. Most welcome your friendly reminder.
- Ask healthcare providers to practice hand hygiene in a polite way — tell them that you know how easy it is for people to get infections in the hospital and that you don't want it to happen to you.

Remember: Take control of your health, practice hand hygiene.