

Clean-Up in Aisle 5

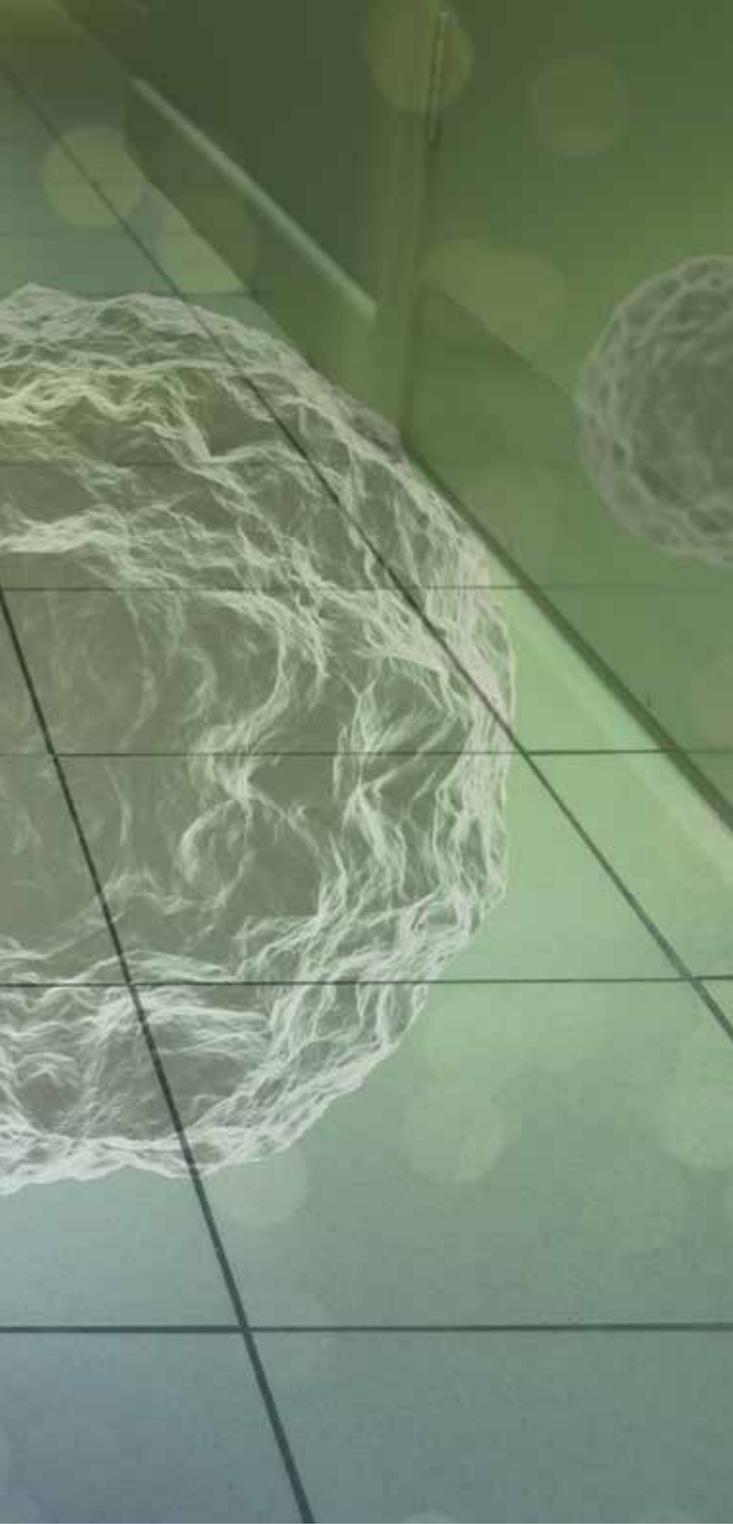
by *Melissa Vaccaro, MS, CHO*

Noroviruses are a group of viruses that cause acute gastroenteritis in humans. You may hear people refer to this as “Noro” or “stomach flu.” The virus can be difficult to eradicate in institutional settings, especially when vomiting occurs in common use areas or if large numbers of persons are experiencing vomiting and diarrhea. It’s also difficult to deal with when you have a restaurant full of patrons or a store with every register in use. It may be inconvenient. It may be annoying to customers. However, you must take the time to clean up from a vomiting or

diarrhea incident properly or more people and employees will get sick.

The symptoms of norovirus infection include:

- Nausea
- Vomiting—acute onset
- Diarrhea—acute onset
- Cramping
- Low-grade fever



NOROVIRUS FACTS

- The potential transmission level of norovirus shed in the feces is up to 1 trillion viral particles per gram of feces.
- One projectile vomiting incident can contaminate the environment with 300,000 viral particles.
- 10-18 norovirus viral particles can make you sick.
- Norovirus is responsible for more than 50 percent of all foodborne gastroenteritis outbreaks.

You are most contagious when you are sick with norovirus illness and during the first few days after you recover. Noroviruses are primarily transmitted through the fecal-oral route, usually by consumption of contaminated food or water. The virus is also transmitted by direct person-to-person spread, and from surfaces or objects in the environment that become contaminated.

The incubation period (from exposure to symptoms) is 12-48 hours. People can spread the virus anytime they have symptoms. Virus from vomit or feces can contaminate environmental surfaces, resulting in new infections occurring for several weeks. The goal is to properly clean rooms, common use areas, furniture, and equipment to eliminate the virus on surfaces and objects. Noroviruses are resistant to standard disinfectants, requiring the use of a bleach solution or a specific stronger disinfectant. The virus is relatively stable in the environment and can survive freezing and heating to 140°F.

Because the virus is very small, when an infected person vomits, the virus can be expelled into the air when the vomitus lands on a surface. The virus can then spread within the room or common area and land on other surfaces. When another person touches a contaminated surface or object, a new infection can occur. Covering vomitus with a paper or cloth immediately helps limit the contamination of other surfaces within the room or area. It only takes a very small amount of viral particles (as few as 10) to make someone sick. The Centers for Disease Control and Prevention (CDC) identifies norovirus as the leading cause of illness and outbreaks from contaminated food in the United States.

When vomiting or a fecal spill has occurred in a common-use area, the entire room or area requires cleaning and disinfection before it is used again. In residential care or healthcare settings, common use areas such as dining rooms may be closed until new infections are no longer occurring. Stopping norovirus transmission in institutional settings, including schools and foodservice facilities, requires thorough environmental disinfection in addition to isolation of ill persons and exclusion of those persons from group activities or school.

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To control norovirus, you cannot wait until you have an event to gather cleaning items. You should be prepared and need a clean-up and response plan. The 2013 FDA Food Code requires that food establishments have procedures for employees to follow when responding to an event. The procedures shall address specific actions employees must take to minimize the spread of contamination and the exposure of employees, customers, food, and surfaces to vomitus or fecal matter. Putting the proper response into action in a timely manner will help reduce the likelihood that food may become contaminated, and that others may become ill as a result of the accident.

NOROVIRUS CLEAN-UP AND RESPONSE PLAN

Before beginning, gather the following necessary supplies:

Equipment to protect yourself (personal protective equipment):

- Disposable gloves
- Disposable hair cover
- Disposable shoe covers
- Disposable gown
- Disposable face mask (for use if you need to clean up any bodily fluids or when mixing cleaning/disinfectant products)

Clean-Up Kit:

- Disposable mop (avoid wooden-handled mops)
- Mop bucket
- Disposable towels and cloths
- Trash bags/plastic bags
- A disinfectant proven to kill norovirus
 - > **Recommended:** Mix of chlorine bleach solution using non-scented bleach. (Chlorine bleach may damage some fabrics and surfaces so spot test areas before applying the solution.)
 - > Bleach solutions should be mixed fresh, just before cleaning procedures begin.
 - > Water should be approximately 75°F, as hotter temperatures can decrease the effectiveness of bleach solutions.

- > For food/mouth contact items, toys, or stainless steel:
 - Bleach solution should contain 200 ppm chlorine.
 - Add 5 tablespoons of bleach to 1 gallon of water.
- > For hard surfaces (e.g. non-porous surfaces, ceramic, sealed countertops, utensils):
 - Bleach solution should contain 1000 ppm chlorine.
 - Add 1/3 cup bleach (5.25 - 6.15 percent sodium hypochlorite) to 1 gallon water.
- > For porous surfaces (e.g. unsealed concrete or natural stone):
 - Bleach solution should contain 5000 ppm chlorine.
 - Add 1-2/3 cups bleach (5.25 - 6.15 percent sodium hypochlorite) to 1 gallon water.
- > *Note what concentration of bleach you are using as this will determine the amount of bleach you must add to the mixture.*
 - If the bleach you are using is different from the concentration listed above, see manufacturer's instructions for proper mixing directions.
 - You can also use another disinfectant registered as effective against norovirus by the Environmental Protection Agency (EPA).
 - Never mix bleach with detergents or ammonia products. Use only as directed.
- > Make sure product labels contain language which states that they are approved to be used in food facilities *and* that the label provides adequate directions for use in these settings and is effective on norovirus. Though commonly used in foodservice facilities, some quaternary ammonia is not effective against norovirus, so read product labels.
- > If you have questions, consult the manufacturer for more information on the approval for use of their product on food contact surfaces and/or in foodservice facilities.
- > Any product that will be used to sanitize food contact surfaces must be approved by the FDA under 21 CFR 178.1010. **See the following link for a list of approved chemicals: <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=178.1010>**

Procedure:

- Wash your hands.
- Put on personal protective equipment (change if any item becomes soiled).
- Begin cleaning.
 - > Start with clean equipment and supplies.
 - Make sure that cleaning supplies are clean.
 - Begin with fresh cleaner in a spray bottle so that the detergent solution doesn't become contaminated.
 - If you use a mop and bucket to clean the floor, mop head should be thrown away and mop equipment (handles, bucket, wheels, etc.) should be disinfected when finished. Mop equipment can hold bacteria and viruses, and can contaminate already-cleaned surfaces.
 - Do not use wooden mops. Some are not sealed and cannot be disinfected properly.
 - > Clean
 - Cleaners (detergents) remove dirt and germs from surfaces so they can be rinsed away with water. Make sure dust and dirt are removed from surfaces before disinfecting or the disinfectant will not be effective.
 - > Rinse
 - Rinsing is an important step in the cleaning process.

Disinfection:

Disinfectants are chemical products that destroy or inactivate germs and prevent them from growing. Disinfectants have no effect on dirt, soil, or dust so surfaces *must* be cleaned (as described above) before they are disinfected.

- Apply disinfectant to all surfaces in the room, paying close attention to highly-touched areas.
 - > Rooms and common use areas utilized by ill persons should be disinfected.
 - > Don't forget doorknobs, faucets, sinks, toilets, bath rails, phones, counters, chairs, tables, light switches, aprons, uniforms, ice machines, clipboards, etc.
 - > Change cloths when soiled.
 - > Make sure to allow the disinfectant to remain in contact with the surface it is applied to for the appropri-



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ate amount of time (referred to as “contact time”). Use the manufacturer’s guidelines to determine appropriate contact time.

- > Bleach solutions typically need at least 5 minutes of contact time up to 20 minutes.
- > If the disinfectant dries before the appropriate contact time has passed, re-apply disinfectant to that area.
- Air Dry
 - > Allow all surfaces to air dry. Do not use towels to dry any surfaces as they may re-contaminate equipment.
- Work from clean to dirty surfaces.
 - > Always begin cleaning in the least dirty areas and clean toward the known, dirtier areas.

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- > If you are cleaning up any bodily fluids, clean from the edges of the spill toward the center.
- > Bathrooms should be cleaned last.
- Clean from top to bottom.
 - > Carpets and floors should be cleaned last.
 - > Carpets should be cleaned with a chemical disinfectant that is effective against norovirus, and then carpets should be steam cleaned at 158°F for 5 minutes or 212°F for 1 minute for complete inactivation.
- Separate clean from dirty.
- Do not place dirty items with, above, or close to clean items.
- Launder dirty linens/clothing.
 - > Items containing bodily fluids that need to be laundered should be double-bagged.
 - > Handle laundry carefully and avoid shaking it as this can spread the virus.
- > Launder with laundry detergent effective against norovirus for the longest available cycle length. Laundry should then be machine dried.
- Rinse food contact surfaces.
 - > Before use, rinse all food contact surfaces with potable water after the appropriate contact time has passed.
 - > If surfaces are not rinsed, levels of the disinfectant that are left behind may make people sick.
- When finished, remove all personal protective equipment and place in a trash bag.
- Wash your hands thoroughly with soap and water immediately after disposing of trash.
 - > Hand sanitizers may not be effective against norovirus and should not be used as a substitute for hand washing.



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SUMMARY

There is no vaccine to prevent infection and no drug to treat norovirus. It is self-limiting, but you have to manage symptoms such as dehydration. Anyone can be infected with norovirus, and you can get norovirus more than once during your life. Be vigilant with handwashing and hygiene! Know how to clean-up properly to avoid further contamination to others. **E**



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Review Questions

FOOD PROTECTION CONNECTION

Reading *Clean-Up in Aisle 5* and successfully completing these questions online has been approved for 1 hour of sanitation CE for CDM, CFPPs. CE credit is available ONLINE ONLY. To earn 1 San CE hour, purchase the online CE quiz in the ANFP Marketplace. Visit www.ANFPonline.org/marketplace, select “**Publication**,” then select “**CE article**” at left, then search the title “*Clean-Up in Aisle 5*” and purchase the article.



- Norovirus is a
 - Parasitic virus
 - Gastrointestinal virus
 - Bacterial infection
- To clean up after an incident in your facility you should use
 - Between 200 and 5000 ppm of 5.25 percent bleach
 - Never use chlorine bleach
 - Use 50-100 ppm of 5.25 percent bleach
- Norovirus symptoms include
 - High fever
 - Bloody stool
 - Acute onset of vomiting
- What chemicals are generally not effective against norovirus?
 - Some quaternary ammonia products
 - Some hand sanitizers
 - Both A and B
- Employees cleaning up from an incident should
 - Have a pre-planned clean-up procedure to follow
 - Tell the manager they don't want to clean up the mess
 - Just clean up the actual area of the 'spill,' nothing more
- Disinfecting of the incident site and surrounding area should occur
 - Immediately
 - After an effective cleaning has taken place
 - In two hours, after the affected area has dried from cleaning
- After proper disinfection for a proper amount of contact time, food contact surfaces should be
 - Used right away
 - Cleaned again
 - Rinsed with potable water

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