



## FOODBORNE ILLNESS EDUCATION SERIES

# NOROVIRUS

Norovirus is one of the “Big Six” microorganisms that are highly infectious and can cause severe foodborne illnesses. Norovirus is the most common cause of gastroenteritis foodborne illness in the U.S., causing as many as 21 million illnesses each year, over 100,000 hospitalizations and 900 deaths. This highly infectious virus is transmitted very easily from person to person as well as from food that has been cross-contaminated by an infected food handler. This knowledge sheet focuses on norovirus, the disease it causes, prevention, and response to potential norovirus contamination.

## TRANSMISSION, SYMPTOMS, AND STATISTICS

- Norovirus is the pathogen responsible for approximately 60% of the gastroenteritis illnesses from known pathogens, according to the U.S. Centers for Disease Control and Prevention (CDC).
- Norovirus is present in the feces and vomitus of infected people in very high concentrations. Since viruses are so small, they can spread in the air to approximately 25 feet from the location where an ill person vomits.
- The acute gastroenteritis illness that norovirus causes has a brief incubation period of 12 hours to 48 hours with the duration of the illness lasting only 1 – 2 days. The virus may be present in feces for 2 weeks after symptoms subside.
- Symptoms include: vomiting; nausea; abdominal cramps; diarrhea; headache; and sometimes fever, chills, and muscle aches.
- The populations at most risk are the elderly, the very young, and the immunocompromised. Dehydration and other complications may cause severe illness or death.
- Foodborne norovirus outbreaks in foodservice establishments or catered events occur most often due to food handlers being ill, not properly washing their hands, and cross-contaminating ready-to-eat foods.

## ABOUT NOROVIRUS

Norovirus has been called Norwalk-like virus, the cruise ship disease, or non-bacterial gastroenteritis. It is most common during the winter months when people are inside and in close proximity.

Norovirus is very stable in the environment. It can survive freezing temperatures and temperatures up to 140°F/60°C; it can remain viable in the environment upon hard surfaces for more than 2 weeks.

Norovirus is not able to grow and multiply in foods as foodborne pathogenic bacteria can, but the virus is able to survive in foods. Norovirus will reproduce only inside living animals and humans.

Norovirus is resistant to sanitizers at the concentrations used in the foodservice industry and requires disinfectant concentrations of chlorine or other chemicals to inactivate the virus.

There are no vaccines or antibiotics effective against norovirus. Those who have had the illness can contract it again.

Call 800.868.0089 or visit [steritech.com](http://steritech.com)

**Steritech**

## TRANSMISSION, SYMPTOMS, AND STATISTICS

- Examples of foods implicated in outbreaks are salads, sandwiches, and baked goods. Icings or liquid foods such as salad dressings can be responsible for outbreaks as the virus may become distributed throughout the product and contaminate a large amount of food.
- Undercooked shellfish such as oysters harvested from norovirus-contaminated water have caused a number of outbreaks. Produce items harvested from areas where contaminated irrigation water is used have also caused norovirus transmission.

## KEEP YOUR OPERATIONS AND CUSTOMERS SAFE

- One of the best ways to prevent the spread of norovirus is through the use of proper handwashing techniques. Pay special attention to scrubbing beneath fingernails, between fingers, and around wrists.
- Require all food handlers to wash their hands frequently and properly, especially before preparing or handling any food, before and after preparing or handling raw shellfish, after using the restroom, or after cleaning the restroom.
- All guests may contaminate restrooms, so use disinfectant with efficacy against the norovirus when cleaning the restroom.
- Enforce a policy of no bare hand contact for ready-to-eat foods – disposable gloves, deli paper, tongs, etc. – and handwashing prior to putting on gloves.
- Do not permit employees to work when ill with vomiting and diarrhea or diagnosed with any of the CDC's "big six" foodborne pathogens – non-typhoidal *Salmonella* species, *Salmonella* Typhi, *Shigella* species, Shiga Toxin-producing *E. coli*, hepatitis A, or norovirus. Do not permit employees to return to work until they are symptom-free for at least 48 hours.
- Do not serve undercooked shellfish unless there is a consumer advisory on the menu. The U.S. Food and Drug Administration recommends shellfish be cooked using one of the following methods: boil for 3 minutes; fry in oil at 375°F for 10 minutes; or bake at 450°F for 10 minutes.
- Immediately follow-up on any customer foodborne illness claims. Alert health department if multiple reports are received so that any potential outbreaks can be investigated quickly.
- Alert health department if multiple reports are received so that any potential outbreaks can be investigated quickly.
- Have a written plan to respond to potential norovirus contamination such as vomiting or diarrheal incidents. Download Steritech's White Paper: [Guidelines for Response to Vomiting & Diarrheal Incidents in Foodservice Establishments](#).
  - Remove all persons from area; discard any exposed food (in preparation or in service) within 25 feet of a vomiting or diarrheal incident. Include any linens, carpet, and all surfaces exposed in disinfection procedures.
  - Have a bodily fluid clean-up kit with personal protective equipment, disinfectant effective against norovirus, and disposable clean-up tools and containment bag.
  - Train employees on proper disinfection and clean-up procedures.
  - Monitor any employees involved in clean-up for 48 - 72 hours for any symptoms of norovirus.
- The chart on page 3 lists effective disinfectant solutions against norovirus.

## 5 MUST-KNOW FACTS FOR LOCATION EMPLOYEES

- 1 One of the most important ways you can prevent norovirus is through frequent, proper handwashing.
- 2 Know where to find your location's bodily fluids clean-up kit and understand procedures for responding to a vomiting or diarrheal incident.
- 3 If a vomiting/diarrheal incident occurs at your location, use appropriate chemicals and personal protective equipment to disinfect without spreading the contamination.
- 4 Standard foodservice sanitizers will not kill norovirus; the chart below lists effective disinfectant solutions. More information can be found on the [U.S. Environmental Protection Agency's \(EPA\) List G](#), which includes all the chemicals the EPA has registered as effective against norovirus.
- 5 Follow label directions carefully. Food contact surfaces must be rinsed in water after disinfection and before use.  
  
Do not come to work when you are sick with vomiting, diarrhea, or fever with sore

## EFFECTIVE NOROVIRUS DISINFECTANTS AND APPROPRIATE SURFACES FOR USE

1. An EPA-registered disinfectant from List G that is effective against norovirus. Follow the manufacturer's label directions for use.
2. A dilution of household bleach for appropriate chlorine concentration for use in clean up of vomiting or diarrhea spill; use the columns below for preparing an effective solution. All food contact surfaces must be rinsed with potable water after disinfection.

Dilution: 5.25% household bleach, 6% dish machine sanitizer	Dilution: 8.25% concentrated bleach (use 1/3 less)	Approximate Concentration	Surface Use
1 part bleach to 10 parts water 1 2/3 cups bleach/gallon water	1 part bleach to 16 parts water 1 cup bleach/gallon water	5,000 PPM	Directly on vomit or feces spills; porous surfaces, wooden floors
1 part bleach to 50 parts water 1/3 cup bleach/gallon of water	1 part bleach to 80 parts water 1/8 cup bleach/gallon water	1,000 PPM	Non-porous surfaces; hard surfaces
1 part bleach to 250 parts water 1 tablespoon/gallon of water	1 part bleach to 400 parts water 2 teaspoons/gallon of water	200 PPM	Food contact surfaces; stainless steel subject to fallout from virus particles in the area.

- For carpets, upholstery, or drapes, use steam cleaning at a minimum temperature of 150°F/66°C.
- For linens, use hot water wash cycle at 160°F/71°C for 25 minutes, minimum. Dry at high setting.