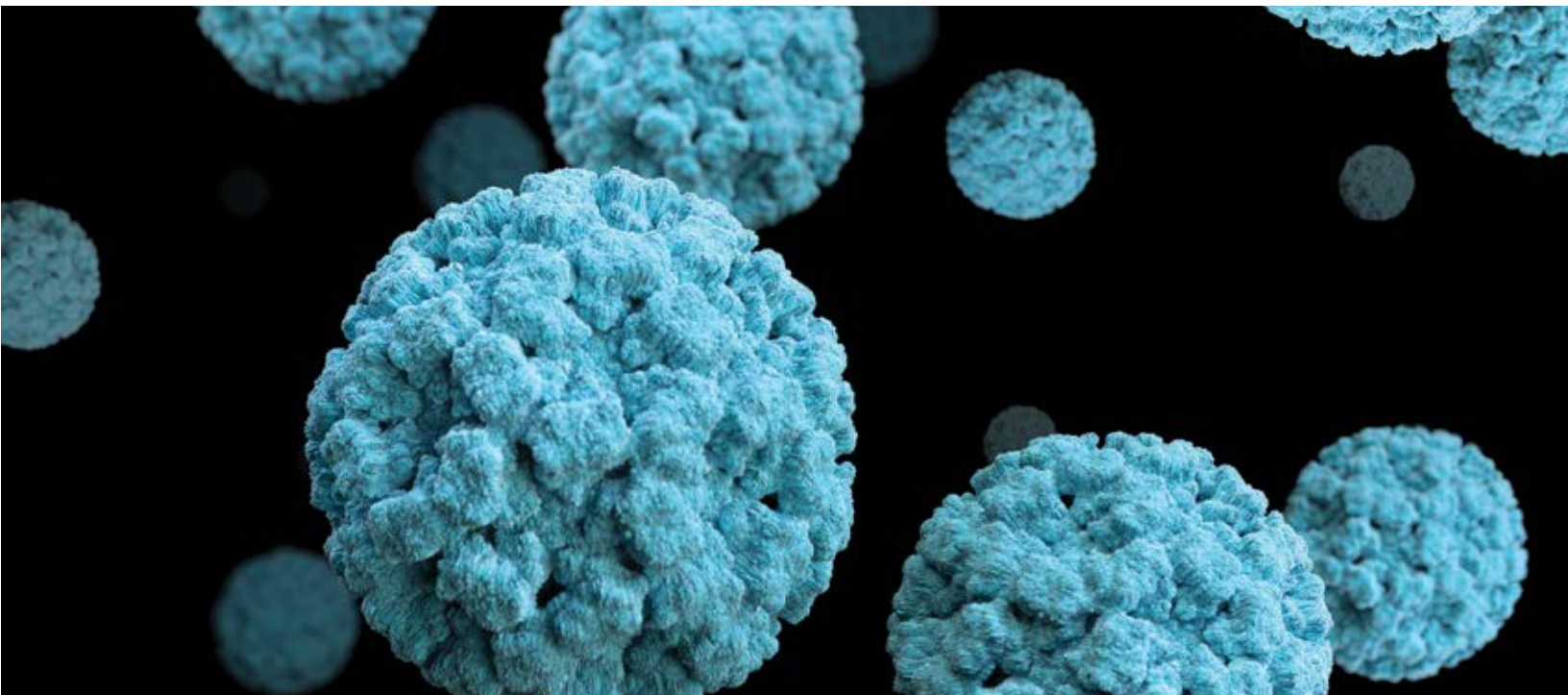


THE IMPORTANCE OF NOROVIRUS

Why you should have a good food safety program to control its spread



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INTRODUCTION

According to the Centers for Disease Control and Prevention (CDC), there are more than 250 different types of foodborne illnesses.¹ Yet, norovirus is among the most common. In fact, norovirus is responsible for over 50 percent of foodborne illnesses in the U.S., and nearly half of all foodborne disease outbreaks due to known agents.²

A norovirus outbreak associated with a restaurant can result in significant financial and public confidence implications.

In recent years, the majority of the nation's foodborne norovirus outbreaks occurred in restaurants, and it was often related to an infected employee practicing poor personal hygiene and subsequently handling food.³

In addition to the negative health impacts of sick employees and patrons, a norovirus outbreak associated with a restaurant can result in significant financial and public confidence implications. This is why it is important to understand what this virus is, the effect it could have on your restaurant, and how you can help reduce the likelihood of being impacted by norovirus.

WHAT IS NOROVIRUS?

Sometimes called the "stomach flu," norovirus is a tiny virus that only infects humans. It is the most common cause of acute viral gastroenteritis around the world and as stated above, the most common cause of foodborne illness in the United States⁴. Unlike some other infectious diseases, we can get norovirus time and again, and the average person will experience a norovirus infection five times in their life.⁴

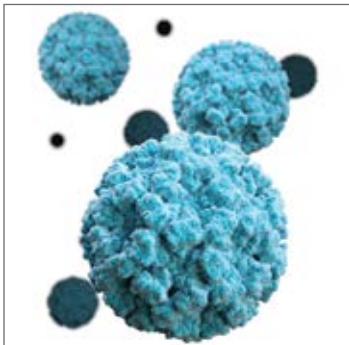


Image courtesy of the CDC

WHAT ARE THE SYMPTOMS?

Norovirus symptoms usually appear 12 to 48 hours after first exposure to the virus, and last approximately one to three days. The most common symptoms of norovirus are:

- **Diarrhea**
- **Vomiting**
- **Nausea**
- **Stomach pain**

Other symptoms include:

- **Headache**
- **Fever**
- **Body aches**

People with norovirus are most contagious when they are sick, and for a few days after they feel better.

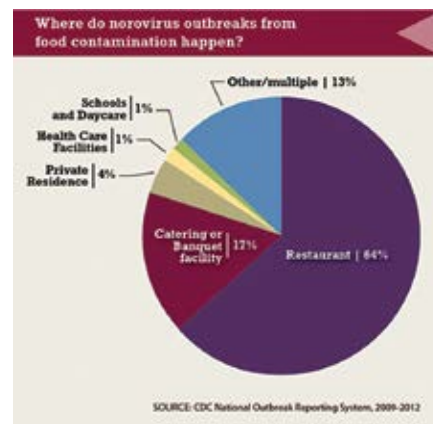
HOW IS IT SPREAD?

Norovirus is shed in the stool and vomit of infected people, and can quickly and easily spread to hands, surfaces, and even by close contact with infected individuals, particularly



small children or those experiencing vomiting. Food and water becomes contaminated when either prepared or served by an infected food worker not washing his or her hands properly (especially after use of the bathroom)

or by contact with contaminated surfaces. The virus can also be distributed over several feet by air when a person vomits, often landing on surfaces that then become contaminated. However it reaches a person, the virus must be taken in by mouth to infect someone. Because of these features of virus spread, we often see norovirus outbreaks in places where people gather and/or share food, such as in restaurants, healthcare facilities and schools.



The foods most often associated with foodborne norovirus outbreaks are fruits and vegetables, molluscan shellfish (oysters and clams) and so-called 'ready-to-eat' (RTE) foods, which are those having a lot of human handling just prior to eating. RTE foods (e.g., salads, hand-sliced deli meats) are the most common cause of illness, and these usually become contaminated by an infected food handler practicing poor personal hygiene. Surfaces harboring the virus can also serve as a source of contamination of foods. Foods may also become contaminated before or during harvest, such as oysters harvested from water contaminated with human sewage, or fruits and vegetables irrigated with contaminated water.

WHY SHOULD FOODSERVICE ESTABLISHMENTS BE CONCERNED ABOUT NOROVIRUS?

Norovirus is the most common cause of foodborne illness in the United States, and looking at foodborne outbreaks over the last few years, foodservice establishments were the main source of these outbreaks.³ In fact, when a source was found in these outbreaks, 70% of the time it was due to an infected food worker, and in over half of these cases the person was touching RTE foods with bare hands.

The source of norovirus is limited to humans. The virus is present in massive quantities in the stool of infected individuals, and it only takes a few virus particles to make a person sick. A single infected employee in a restaurant has the potential to spread norovirus to large numbers of people. For example, in 2006, more than 300

people became sick with norovirus after eating at a restaurant where a sick food handler vomited in a waste bin in a food preparation area, prompting all exposed foods in the kitchen to be discarded, and a 25-foot radius from the site to be disinfected.⁶

NOROVIRUS IS THE MOST COMMON CAUSE OF FOODBORNE ILLNESS IN THE UNITED STATES.³

In addition, one in five foodservice employees reported they had worked while sick with vomiting and diarrhea, and in general, foodservice employees fail to wash their hands as frequently as recommended.⁵

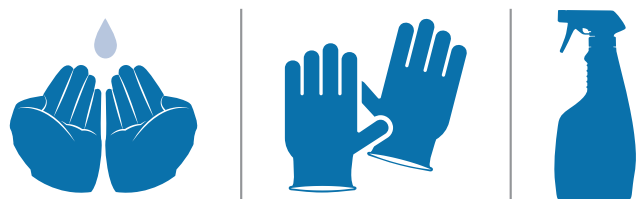
Norovirus is also environmentally persistent and cannot be completely inactivated by many commonly used sanitizers and disinfectants used at manufacturer recommended concentrations and/or contact times. It is possible to have the disease recur even after thorough cleaning and disinfection,⁶ suggesting restaurants need to take a multifaceted approach to preventing and controlling this virus.

WHAT CAN MANAGERS OF FOOD SERVICE ESTABLISHMENTS DO TO PREVENT THE SPREAD OF NOROVIRUS IN THEIR FACILITIES?

1. Design a food safety plan that considers norovirus.

For example:

- **Handwashing stations** should be readily available, conveniently located and stocked at all times
- **All restrooms** (for employees and patrons) should be cleaned frequently and regularly
- **Have written guidelines** for the cleanup of vomiting or diarrhea episodes in the facility
- **Select disinfectants** having anti-noroviral claims, but be aware that efficacy claims do not always mean the product eliminates the virus completely. It is best to clean first, sanitize next. Employees applying these products should be knowledgeable in their safe use, effective concentrations and contact times
- **Consider the whole facility** in food safety planning, e.g.,
 - How people come and go in the food preparation areas, what surfaces are most touched, etc.
 - Plan what should be done if there is a potential contamination event
 - Consider unintended consequences, such the potential for virus spread if cleaning or disinfection is not done properly, or how to respond to unexpected customer behaviors that might promote norovirus contamination



2. Educate all staff in good food safety practices, norovirus symptoms and ways to control the virus. Having a certified kitchen manager (CKM) who is trained in food safety, as well as having staff members certified in food safety, was found to be protective against foodborne outbreaks in general, when researchers compared restaurants that had and had not experienced foodborne outbreaks.⁷ Make sure new employees are trained before they begin to work and refresher training is provided periodically to all employees to help assure continued good practices.

3. Observe what food safety procedures employees are performing, making adjustments and providing guidance at the time problems are identified. For example, make sure employees are washing their hands properly and as often as they should be, and are disinfecting surfaces correctly and with the right product using recommended practices. Also, modeling good behaviors goes a long way in promoting those same behaviors in others.

4. Exclude sick employees for at least 24 hours after their symptoms resolve. The FDA Food Code provides more specifics based on particular disease states. Having a work environment that provides paid employee sick leave and promotes employee reporting of symptoms is important for compliance with this guidance. Since people can still shed the virus after their symptoms have subsided, temporarily reassigning employees to jobs in which there is no direct food contact is a good practice.

WHAT CAN STAFF MEMBERS DO TO PREVENT THE SPREAD OF NOROVIRUS IN FOODSERVICE ESTABLISHMENTS?

1. Employees should stay home if they have norovirus symptoms and for at least 24-48 hours after their symptoms have ended. They should always let their supervisors know when they are ill.

2. All staff should practice regular hand hygiene consistent with the FDA Food Code and CDC guidelines. For example, employees should not have bare-hand contact with ready-to-eat foods and should always wear gloves, changing them frequently.

The 2013 FDA Food Code states that handwashing should be done for at least 20 seconds, with 10 to 15 of those seconds for scrubbing of hands, under clean, running water with an appropriate amount of cleaning compound advised by the product manufacturer. Hands should be rubbed together vigorously, with attention to the fingertips, areas between fingers, and under the nails, before rinsing and thoroughly drying.⁸

3. ALWAYS wash hands after using restroom facilities!
NO EXCEPTIONS!

4. Clean and sanitize utensils and surfaces properly and regularly.

Taken together, it is obvious that foodservice establishments play a big role in preventing the spread of norovirus, not only for the health of their customers and staff, but also because the virus can mean significant loss of revenue and customer trust. Being prepared, with a good food safety plan, an educated workforce and a focus on good hygiene and sanitation will not only go a long way to controlling norovirus, but other microorganisms causing foodborne illness as well.

Norovirus is the most common cause of foodborne disease, but it doesn't have to be.

HELPFUL RESOURCES:

The following are a list of resources that provide up-to-date information on norovirus and how to help reduce its spread.

- CDC Factsheet for food handlers: www.cdc.gov/norovirus/downloads/foodhandlers.pdf
- List of EPA-approved disinfectants for norovirus (note, these are listed for hospital use, and not all products may be food safe): <https://www.epa.gov/pesticide-registration/list-g-epa-registered-hospital-disinfectants-effective-against-norovirus>
- FDA's Retail Food Protection: Employee Health and Personal Hygiene Handbook: <http://www.fda.gov/food/guidanceregulation/retailfoodprotection/industryandregulatoryassistanceandtrainingresources/ucm113827.htm>

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Dr. Jaykus serves as the Scientific Director for NoroCORE. She has experience working with many large, multi-institutional projects dealing with a variety of food borne pathogens but is best known for her work in Food Virology, focusing on developing methods to detect human enteric virus contamination in foods and environmental samples, and better understanding the dynamics of virus transmission through the food chain. Her current research efforts are varied and focus on food virology; development of molecular methods for foodborne pathogen detection; application of quantitative risk assessment in food safety; and understanding the ecology of pathogens in foods. As NoroCORE Scientific Director, Dr. Jaykus manages the administrative functioning of the Collaborative and coordinates the Research, Outreach, and Education efforts of the Collaborative.