**WHAT IS NOROVIRUS?**

Norovirus is a single-stranded, nonenveloped RNA virus that causes inflammation of the stomach and/or intestines, and it is the most common cause of acute infectious gastroenteritis in the United States. Norovirus causes an estimated 23 million cases of gastroenteritis and 800 deaths per year in the U.S. alone.¹

The virus is highly contagious — it takes as few as 18 virus particles to cause an infection, and one person is capable of infecting many others. As a result, norovirus outbreaks are quite common, and not just on cruise ships. According to a 2010 study in the *American Journal of Infection Control (AJIC)*, hospitals and long-term care facilities account for more than 25% of U.S. outbreaks.¹

**TWENTY-THREE MILLION**
cases of gastroenteritis

**SYMPTOMS**

Norovirus causes the abrupt onset of nausea, vomiting and diarrhea that usually lasts for one to two days. Other symptoms can include stomach pain, fever, headache and body aches. Symptoms appear 12 to 48 hours after exposure to the virus. Symptoms can be more severe and last longer among the elderly or immunocompromised persons.

There is no specific cure for norovirus, but the replacement of fluids to avoid dehydration is extremely important.² Most people recover within one to three days.

**TRANSMISSION**

Norovirus is highly contagious and can infect anyone. Since there are many different types of the virus, a person can contract it multiple times. The most incidences of norovirus illness in the United States occur between November and April.³

Norovirus is transmitted by accidentally getting infected stool or vomit particles in the mouth. This usually occurs through one of the following ways:³

- Ingesting contaminated food or drinks
- Touching contaminated surfaces and then touching the mouth
- Having direct contact with an infected person

People are most contagious when they are sick with norovirus illness and during the first three days after recovering from the symptoms.

**THE RISK OF HEALTHCARE FACILITY NOROVIRUS OUTBREAKS IS PROBABLY UNDERAPPRECIATED AND IS BEST ADDRESSED BY ADVANCED PLANNING AND HAVING A WELL-THought-OUT INSTITUTIONAL CONTROL PLAN THAT CAN BE RAPIDLY MOBILIZED AND DEPLOYED WHEN THE NEED ARISES.**

*Brian Currie, MD, MPH, Vice President and Medical Director for Research at Montefiore Medical Center*
Prevention

Patients carrying the pathogen can easily contaminate objects or shared surfaces that they touch, so healthcare facilities may want to group suspected infected patients together or place them in private rooms. Given the prevalence of the virus, surface disinfection and hand hygiene are important parts of a prevention regimen.

The Centers for Disease Control and Prevention (CDC) recommends the following prevention measures for healthcare facilities: 4

**Wash Hands**

With soap and water after contact with norovirus patients and follow all hand-hygiene guidelines.

**Remove and Wash**

Contaminated clothing or linens and wear disposable gloves while handling.

**Personal Protective Equipment**

Follow the proper guidelines, and use gowns and gloves when in contact with symptomatic patients.

**Clean and Disinfect**

High-touch patient surfaces and equipment with bleach (sodium hypochlorite) or another product that has a label claim to kill norovirus and is registered with the Environmental Protection Agency (EPA).

Ensure that **Staff Who Show Symptoms of Gastroenteritis** are excused from work.
NOROVIRUS IMPACT ON FACILITIES
What makes norovirus relevant to healthcare facilities is the risk of outbreaks among patients and the risk of contamination to staff members.

Transmission to Patients
Norovirus can be introduced into healthcare facilities through infected patients, staff or visitors. The virus is easily transmitted through direct or indirect contact with particles from vomitus or diarrhea. A study in the American Journal of Infection Control (AJIC) reports that each norovirus outbreak affects an average of more than 12 patients. Patients infected with norovirus may experience increased hospital stays and could suffer other medical complications. According to the CDC, nearly two-thirds of all norovirus outbreaks in the U.S. occur in long-term care facilities. Outbreaks in these settings can last months, and symptoms can be more severe in elderly patients. Therefore limiting the virus’ spread to patients is extremely important, especially in healthcare environments.

NOROVIRUS OUTBREAK
affects an average of more than 12 patients.

Transmission to Staff
The American Journal of Infection Control notes that “norovirus outbreaks in healthcare workers can cause substantial economic losses to hospitals because of absenteeism.” In many cases, high levels of illness among staff result in closure of the affected ward, further increasing norovirus-related expenses. A review of closed medical departments found that more than 44% were directly attributed to norovirus outbreaks. To prevent the spread of illness to staff, the proper contact precautions and environmental cleaning protocols should be followed.

THE FINANCIAL BURDEN OF NOROVIRUS TO FACILITIES
A matched case study found that the financial burden of a norovirus outbreak to a facility was $65,190

Increased expenses resulted from:
- Bed closures
- Additional lab testing
- Infected workers
- Increased nursing care for infected patients
- Infection-control team expenses

Due to the highly contagious nature of the disease, costs increase rapidly based on the number of infected patients and staff members, making it imperative for facilities to mitigate further spread of the disease in order to curb rising costs.
Prevention is the key to reducing the financial burden of norovirus.

A recent study found that increased hand hygiene and surface disinfecting measures can greatly reduce the financial burden norovirus has on a facility.

Increasing **surface disinfection** following the detection of a single case of norovirus was found to offset costs by as much as $40,040.

When five cases of norovirus were detected, cost reduction increased to as much as $99,363.8

Similarly, increasing **hand hygiene** after the detection of a single case of norovirus was found to offset costs by up to $21,394.

Implementing similar procedures following the detection of five norovirus cases reduced costs by upwards of $104,273.8

These measures are based on the highly contagious nature of the virus and the ability of both surface disinfection and hand hygiene to aid in the reduction of the disease transmission to both patients and staff within a facility.8

**Surface disinfection and hand hygiene** are key in reducing transmission of the disease to both patients and staff within a facility.

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**References**

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