

Norovirus Fact Sheet

Noroviruses are a group of viruses that cause gastroenteritis - diarrhoea and vomiting in humans. Norovirus is commonly responsible for outbreaks in places where people are in close proximity to each other, such as nursing homes, homes for the aged, hospitals, banquet halls, cruise ships, childcare centres, schools, and restaurants. It can spread through contaminated food or water, and contact with an infected person.

General Information

Virology

Noroviruses are a group of related, single-stranded RNA, non-enveloped viruses that cause acute gastroenteritis in humans. Norovirus is the official genus name for the group of viruses previously described as “Norwalk-like viruses” (NLV) or small round structured viruses (SRSVs) because of their morphologic features. Noroviruses are part of the larger *Caliciviridae* family, which also includes the genus *Sapovirus*, formerly described as “Sapporo-like viruses” (SLV) and sometimes referred to as classic or typical caliciviruses, which also cause gastroenteritis in humans.

Noroviruses are named after the original strain “Norwalk virus,” which caused an outbreak of gastroenteritis in a school in Norwalk, Ohio, in 1968. Currently, there are five recognized norovirus genogroups, of which three (GI, GII, and GIV) are known to affect humans. More than 25 different genotypes have been identified within these genogroups. And since 2002, variants of the GII.4 genotype have been the most common cause of norovirus outbreaks.

Epidemiology of transmission

Norovirus is very contagious and only a few virus particles are needed to cause illness. People are the only known reservoir for norovirus and the disease is transmitted easily from person to person. The virus is spread through exposure to food, water, or surfaces contaminated by an infected person. Although it has not been proven, airborne transmission has been suggested as a possible explanation for rapid spread of outbreaks in settings, such as hospitals, nursing homes, daycares, and schools.

Clinical manifestations

The main symptoms of norovirus infection begin approximately 24-48 hours after exposure to the virus, but cases can occur within 12 hours of exposure. Symptoms include nausea, vomiting, diarrhoea, and abdominal cramps. A low grade fever may occur and dehydration is possible. The illness usually lasts from one day to three days; however, norovirus can be spread for up to 3 days after the symptoms stop, and some people may carry the virus for up to 2 weeks after the symptoms end.

Although being sick with Norovirus can make people feel very unwell for a day or two, almost everybody recovers completely without any long-term problems. However, as with any illness that can cause vomiting or diarrhoea, certain people are at risk for severe dehydration from loss of fluids. These people include infants, young children and persons who are unable to care for themselves, such as the disabled or elderly. Immuno-compromised persons are at risk for dehydration because they may get a more serious illness with greater vomiting or diarrhoea.

Basic Prevention

The most important means of preventing norovirus transmission and infection is exercising frequent and appropriate hand washing. Alcohol-based hand sanitizers ($\geq 62\%$ ethanol) may be helpful as an adjunct method of hand hygiene, but should not replace washing with soap and water. Simple measures, such as correct handling of cold foods, frequent hand washing and paid sick leave, may substantially reduce foodborne transmission of noroviruses.



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Infection Prevention and Control Measures

Healthcare Prevention Measures

In addition to Routine / Standard Precautions, Contact Precautions should be implemented with patients who are suspected or confirmed to have Norovirus.

- Patients with suspected or confirmed norovirus may be placed in private rooms or cohort with other patients with the same infection.
- Follow hand-hygiene guidelines by either carefully washing hands with soap and water or using Alcohol-Based Hand Sanitizers (ABHS) after contact with patients with norovirus infection
- Use gowns and gloves when in contact with, or caring for patients who are symptomatic with norovirus for all interactions that may involve contact with the patient or potentially contaminated areas in the patients environment
- Healthcare workers who have symptoms consistent with norovirus should be excluded from work

Environmental control measures

Environmental contamination has been documented as a contributing factor in ongoing transmission during outbreaks. Noroviruses have been shown to survive well in the environment – some studies suggesting up to 12 days or more.

Products used for disinfection of Norovirus must have an appropriate virucidal claim. As a non-enveloped virus, Norovirus is known to be more difficult to inactivate for many of the traditional disinfectant chemicals. For that reason, it is important that products used for disinfection of Norovirus must have an appropriate virucidal label claim. Routine cleaning and disinfection should be performed on frequently touched environmental surfaces and equipment in isolation and cohorted areas, as well as high-traffic clinical areas. The frequency of cleaning and disinfection of patient care areas and frequently touched surfaces should be increased during outbreaks (e.g., increase ward/unit level cleaning to twice daily to maintain cleanliness, with frequently touched surfaces cleaned and disinfected three times daily).

References:

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