

**General Information:**

Noroviruses are a group of viruses that cause acute gastroenteritis in humans. Noroviruses belongs to the group of viruses that include rotavirus, astrovirus, and enteric adenoviruses. These noroviruses belong to one of four norovirus genogroups (GI, GII, GIII, GIV). Because of the diversity of noroviruses, infection may not provide long-term immunity and persons may be infected multiple times. Noroviruses are highly contagious, with as few as 10 particles sufficient to cause infection. Noroviruses are transmitted through the fecal-oral route and people can be infected by eating food, touching surfaces or contaminated objects, or having direct contact with another person infected with norovirus. Studies have speculated that norovirus can persist on surfaces for up to 48 hours if not disinfected. The incubation period is about 24 to 48 hours after exposure to the virus, but can be as short as 12 hours with symptoms lasting one to two days. People who have recovered can continue shedding virus for up to 14 days.

**Infection Control Recommendations:**

- **Isolation Precautions:**
  - Patients with suspected norovirus infection should be managed with standard precautions with careful attention to hand-hygiene practices.
  - Diapered or incontinent persons should be managed with contact precautions.
  - During outbreaks, cohort symptomatic patients or isolate them to their rooms.
  - Exclude symptomatic patients from group activities and common rooms (including the dining room) until symptoms have subsided.
  - Masks should be worn by persons while cleaning areas heavily contaminated with feces or vomit.
  - Instruct visitors regarding hand hygiene and other infection control precautions.
  
- **Environmental Disinfection:**
  - Chlorine bleach with a minimum concentration of 1000 ppm (1 part household bleach to 50 parts water) is the disinfectant of choice for norovirus. Surfaces should be vigorously wiped for at least 10 seconds to achieve disinfection on visibly soiled surfaces.
    - Hospital disinfectants, EPA approved quaternary ammonium compounds, normal concentrations of lysol are not effective against norovirus.
    - Phenolic-based disinfectants may be effective, however, they must be used in concentrations 2-4 times greater than what is normally recommended.
    - A list of cleaning products recommended by the Environmental Protection Agency (EPA) as effective against norovirus is available at [www.epa.gov/oppad001/list\\_g\\_norovirus.pdf](http://www.epa.gov/oppad001/list_g_norovirus.pdf).
  
- **Laundry Concerns**
  - Soiled linens should be handled as little as possible. Do not shake soiled linens and laundry. Soiled linens should be placed directly into a designated bag at the point of removal.
  - Ensure proper segregation of clean and soiled laundry.
  - Do not overfill washers or dryers: this prevents adequate cleaning.
  - Wash with an approved detergent in hot water  $\geq 160^{\circ}\text{F}$  for  $\geq 25$  minutes.
  
- **Ice Machines**
  - Contaminated ice machines must be disinfected.
  - Do not handle ice directly by hand, and wash hands before obtaining ice.
  - Do not allow the ice scoop to remain in the ice bin.
  - Limit access to ice-storage chests, and keep container doors closed except when removing ice.

(continued)

- **Hand hygiene:**
  - All employees should wash hands frequently with warm running water and soap for at least 20 seconds, especially after performing patient-care duties, using the toilet, changing diapers, and before eating or preparing food.
  - Alcohol-based hand gels may be used in addition to hand washing with soap and water.
  - Emphasize thorough and frequent hand hygiene to those recovering from diarrheal illness since they can continue to be contagious for several days.
  
- **Toy Cleaning:**
  - Toys should be cleaned and disinfected daily.
  - Remove organic matter on softer toys soiled by vomit or feces. Launder toy as directed or discard.
  - Any toy entering a child's mouth must be disinfected with 200 ppm (1 tbsp bleach in 1 gallon water), rinsed thoroughly and air dried OR run through a dishwasher cycle with high temperatures.

**Exclusion Criteria:**

- **Staff:**
  - Exclude staff members who are currently symptomatic with vomiting and/or diarrhea.
  - Cohort staff members early in an outbreak to limit spread in a healthcare or long term-care facility.
  - Perform thorough and frequent hand hygiene after returning to work because the virus can continue to be shed for several days after symptoms resolve.
  - Staff who prepare food should be excluded from all food-handling duties while they are experiencing symptoms and for an additional three days after symptoms resolve.
  
- **Patients/residents/children:**
  - Patients or residents who are symptomatic should be excluded from group activities, dining halls, and common areas until all symptoms of diarrhea, nausea, or vomiting have subsided.
  - Children who are symptomatic with vomiting and/or diarrhea should be excluded from school or child care settings until they have been symptom free for at least 72 hours in outbreak settings.

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