

Fact Sheet

Environmental Cleaning NOROVIRUS

Noroviruses are a group of viruses that cause acute gastroenteritis in humans. The symptoms of norovirus infection include nausea, vomiting, diarrhea, cramping, and low-grade fever. Noroviruses are transmitted through the fecal-oral route, either by consumption of fecally contaminated food or water, direct person-to-person spread, or environmental and fomite contamination.

Maintaining a clean environment is important in containing and preventing the spread of norovirus!

What are examples of items to disinfect?

Doorknobs, faucets, sinks, toilets, commodes, bath rails, phones, counters, chairs (including backs), tables, hand rails, elevator buttons, light switches, mattress covers, aprons, uniforms, linens, bedding, ice machines, and over-bed tables in patient rooms.

What disinfectant works best?

Chlorine bleach solution (sodium hypochlorite -NaOCl)

Chlorine Bleach Concentrations and Mixing Instructions			
Concentration:	200 ppm (parts per million)	1000 ppm (parts per million)	5000 ppm (parts per million)
Use for:	Stainless steel, food/mouth contact items, toys	Non-porous surfaces, tile floors, countertops, sinks, toilets	Porous surfaces, wooden floors
Mixing:	1 tbsp of bleach in 1-gallon water	1/3 cup bleach in 1-gallon water	1 2/3 cups bleach in 1-gallon water
Dilution:	1:250 dilution	1:50 dilution	1:10 dilution

Leave bleach on surface for 10-20 minutes, and then rinse with clean water.

What is the stability of chlorine bleach?

- Open bottles of concentrated chlorine will lose effectiveness after 30 days. Change bottles of bleach every 30 days for accurate concentrations. For disinfecting, use an unopened bottle of chlorine bleach. Prepare a dilution of fresh bleach every day of use and discard unused portions.

What are other effective disinfectants against norovirus?

- Glutaraldehyde (0.5%) or Iodine (0.8%) mixed at the manufacturer's recommendations.
- A phenolic environmental disinfectant (Lysol® or Pinesol®) may be effective, but may require **2-4 times** more concentration than the manufacturer's recommendation. The use of this product at the higher concentration may pose a significant health risk to workers, pets or yourself. Use extreme caution when using these products. Please read the manufacturer's warning.

What are *ineffective* disinfectants against norovirus?

- Quaternary compounds (Benzalkonium chloride), Ethanol, or anionic compounds.

What are the health concerns with using chlorine bleach?

Mixing hazards

- USE ONLY IN WELL-VENTILATED AREAS. Adverse effects of inappropriate mixtures of household cleaners usually are caused by prolonged exposure to an irritant gas in a poorly ventilated area. The most common inappropriate mixtures of cleaning agents are bleach with acids (like vinegar) or ammonia (e.g. Windex®). Potential irritants released from such mixtures are chlorine gas, chloramines, and ammonia gas.

Health hazards

- Chlorine bleach is corrosive and irritating to all mucosal tissue, skin, eyes and upper and lower respiratory tract. Avoid spray bottle application with any disinfectant.

What personal protective equipment should be worn?

- Disposable gloves, masks, eye protection or face shields, and gown or protective clothing.
- Environmental cleaning using a more concentrated disinfectant will require a heavier duty glove than a simple non-sterile latex/vinyl glove.

Are there any specific clean-up procedures?

For cleaning large spills of vomitus or stool, a two-step process should be used:

1. Visible/organic debris should be cleaned up with absorbent material (double layer) and discarded in a plastic bag to minimize aerosols.
 2. Disinfect area and objects surrounding the vomitus or stool with an appropriate environmental disinfectant (multiple applications may be required).
- Ensure appropriate dilution and contact time for the appropriate environmental disinfectant.

Hard surfaces

- Disinfect with bleach solution, rinse with water if this is a food preparation area.

Carpet / Upholstered Furniture

- Visible debris should be cleaned with absorbent material (double layer) and discarded in a plastic bag to minimize aerosols - disinfecting with bleach may discolor carpet – steam clean (heat inactivation) 158°F for 5 minutes or 212°F for 1 minute for complete inactivation.

Linens / clothing / textiles

- If soiled, vomit or stool should be carefully removed to minimize aerosols. Aerosols created may pose a risk for transmission. Keep contaminated and uncontaminated clothes separated. Minimize disruption of soiled linens and laundry.
- Wash items in a pre-wash cycle, then use a regular wash cycle using detergent and dried at a high temperature greater than 170°F.

Surfaces corrodible/damageable by bleach

- Use EPA registered phenolic solutions (concentrated Lysol® or concentrated Pinesol®) mixed at **2-4 times** the manufacturer's recommended concentration.