



NOROVIRUS FACT SHEET

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 (sodium hypochlorite – NaOCl).

Note: ppm = parts per million

Chlorine Bleach Concentrations and Mixing Instructions			
Concentration:	200 ppm	1,000 ppm	5,000 ppm
Use for:	Stainless steel, food/mouth contact items, toys	Non-porous surfaces, tile floors, counter-tops, sinks, toilets	Porous surfaces, wooden floors
Mixing:	1 tbsp of bleach in 1-gallon water	1/3 cup bleach in 1-gallon water	1 cup bleach plus 2/3 cup 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 for 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 2-4x 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, 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 (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 faceshields, 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. Liberally disinfect area and objects surrounding the contamination 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, rinse with water if 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. Keep contaminated and uncontaminated clothes separated. Minimize disruption of soiled linens and laundry. Aerosols created may pose a risk for transmission.

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 2-4x the manufacturer's recommended concentration.

Hospital and Long-term Care Facility Recommendations

PATIENT/RESIDENT RECOMMENDATIONS:

General:

- Place ill patients in private rooms or in the same room or wing as other ill patients. Minimize movement of residents.
- Consider the use of antiemetics for patients with vomiting and maintain hydration.

Outbreak:

- Consider stopping all group activities (dining halls, activity rooms, etc.) until outbreak has resolved.
- Consider serving meals in resident rooms versus the dining hall.

STAFF RECOMMENDATIONS:

General:

- Ill staff that provide direct patient care, including food service workers should remain at home for 3 days following cessation of diarrhea and/or vomiting, or until stools are formed. Education on proper hand hygiene should be emphasized upon return to work.
- Staff that do not provide direct patient care should remain at home for at least 24 hours following cessation of diarrhea and/or vomiting, or until stools are formed. Education on proper hand hygiene should be emphasized upon return to work.
- Staff should wash their hands when entering and leaving every resident room.
- Patients with suspected norovirus infection should be managed with standard and contact precautions with careful attention to hand hygiene practices.

- Contact precautions should be used when caring for diapered or incontinent persons, during outbreaks in a facility, and when a splash could occur.
- Persons cleaning areas heavily contaminated with vomitus or feces should wear surgical masks.
- Staff should be assigned to work with well residents or sick residents, but should not care for both groups. Staff who go back and forth between ill and well residents, play an important role in transmitting the virus from resident to resident. To the extent possible, keep staff from “floating” between floors/units.
- Food handlers who are ill with gastrointestinal symptoms MUST NOT prepare or serve food under any circumstances. It is strongly recommended that symptomatic food handling staff be sent home immediately.
- There has been uncertainty over the effectiveness of alcohol based hand gels against norovirus. IDPH always recommends washing hands. Alcohol based hand gels should only be used in situations where soap and warm water may not be available.

Outbreak:

- Limit staff from moving between affected and unaffected units and limit any nonessential personnel from affected units.

FACILITY RECOMMENDATIONS:

General:

- Medical equipment used for care of norovirus infected patients, should be either dedicated to that room for the duration of isolation or be thoroughly disinfected upon removal from the room. Selection of appropriate cleaning agent should be consistent with the equipment manufacturer’s recommendation for compatibility.
- Refer to IDPH *Norovirus Environmental Cleaning Fact Sheet* for appropriate cleaning methods.

Outbreak:

- Consider limiting new admissions to the affected units until the incidence of new ill cases has reached zero.
- Inform visitors about a possible disease outbreak in your facility.
- Consider limiting or stopping visitation to the facility until there have been no new cases for at least 48 hours.
- Post extra hand washing signs in various visible areas in the facility.
- It may be useful to collect stool specimens from residents/patients to confirm norovirus is the cause of the outbreak.

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