



GUIDELINES FOR ENVIRONMENTAL CLEANING AND DISINFECTION OF NOROVIRUS

Materials Needed

Disposable gloves, masks, eye protection or face shields, and gown or protective clothing. For additional information about personal protective equipment: <http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html> (Part II.E). Note that using a more concentrated disinfectant requires a heavier duty glove than a simple non-sterile latex/vinyl glove.

Disinfection (for non-visibly soiled areas)

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, and ice machines.

Use of Chlorine Bleach (sodium hypochlorite) is preferred

- USE ONLY IN WELL-VENTILATED AREAS
- Chlorine bleach is corrosive and irritating to all mucosal tissue, skin, eyes, and respiratory tract. AVOID SPRAY BOTTLE APPLICATION.
- Chlorine bleach may damage fabrics and other surfaces. Spot test area before using for disinfection.

Concentrations of chlorine bleach used for disinfection:

- a. Use a chlorine bleach solution with a concentration of 1000–5000 ppm (5–25 tablespoons of household bleach [5.25%] per gallon of water)
- b. Minimum concentration of 1000ppm
 - i. Use for non-porous surfaces, tile floors, counters, sinks, toilets
 - ii. 1:50 dilution
- c. Maximum concentration of 5000ppm
 - i. Use for porous surfaces, wooden floors
 - ii. 1:10 dilution
- d. Solutions should be made daily, or can be stored in a dark (light-proof) container and discarded after 30 days

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

EPA Approved Disinfectants

If bleach cannot be used, U.S. Environmental Protection Agency (EPA) has also approved disinfectants for cleaning surfaces. A list of approved disinfectants is maintained on the EPA website: http://www.epa.gov/oppad001/list_g_norovirus.pdf. Not all disinfectants shown on the EPA list are approved for use in food establishments. NOTE: Most quaternary ammonium compounds may not be effective against norovirus.

Disinfection (for Large Spills of Vomitus or Stool)

1. Pre-clean visible/organic debris with absorbent material (double layer and placed in a plastic bag to minimize exposure to aerosols).
2. Liberally disinfect area and objects surrounding the contamination (multiple applications may be required).
 - a. Hard surfaces-disinfect with bleach (see previous section)
 - b. Carpet/Upholstered Furniture
After pre-clean: Clean with hot water and detergent and then steam clean (158° F for 5 min or 212 ° F for 1 min) for complete inactivation. A professional carpet cleaning company is recommended to reduce the risk of aerosolizing virus. Dry vacuuming is not recommended.

Linens/Clothing

If soiled, vomit or stool should be carefully removed to minimize aerosols. Keep contaminated and uncontaminated clothes separated. Do not shake soiled laundry and linens. Soiled linens and laundry should be placed directly into a bag at the point of removal. Wash items in a pre-wash cycle, then use a regular wash cycle using detergent and dry separately from uncontaminated clothing at high temperature greater than 170° F. Ensure segregation of clean and soiled linens and clothing.

Medical Equipment Cleaning Precautions

Medical equipment used for care of norovirus infected patients should either be dedicated to that room for the duration of isolation or be thoroughly disinfected upon removal from the room. Consult terminal cleaning recommendations for your facility. Select a cleaning agent that is consistent with the equipment manufacturer's recommendations.

Ice Machines

Contaminated ice machines must be disinfected.

References for Additional Information

Guidelines for Healthcare Facilities:

<http://www.cdc.gov/hicpac/pubs.html>

EPA's Registered Antimicrobial Products Effective Against Norovirus:

http://www.epa.gov/oppad001/list_g_norovirus.pdf