This document establishes general guidelines for cleaning and disinfection on passenger vessels that have carried traveler(s) who is a suspected case of transmissible diseases aboard, in particular influenza-like illness (ILI) and acute gastroenteritis (AGE). The purpose of this guideline is to provide basic procedures of environmental cleaning and disinfection in areas or cabins with suspected cases of AGE or ILI illness. This document is directed towards health and safety professionals aboard vessels that are sailing on waters under Brazilian jurisdiction, regardless of national or foreign flag.

This guidance may be modified at any time by decision of Brazilian health authorities or in accordance with World Health Organization guidelines or during the occurrence of unusual situations in certain events aboard.

Viral particles can persist for 24 hours or more on nonporous surfaces, but quantities of the virus for human infection are susceptible for shorter periods. Although the relative importance of different viruses transfer from inanimate objects to human is not well known yet, hand transfer of the virus to the mucous membranes of the eyes, nose and mouth causing infection is very likely to occur. Undoubtedly, hand hygiene, use of tissues to cover nose and mouth when sneezing or coughing, and use of surgical masks by suspected cases of influenza are the principal means of interrupting transmission. Furthermore, proper routine cleaning and disinfection activities also play a major role in reducing spread of influenza aboard.

The basic components of effective environmental health management of influenza and acute gastroenteritis include routine cleaning with water, soup or detergent to remove soil and organic matter, followed by the proper use of disinfectants. Reducing the number of viral particles on a surface through these measures may minimize the likelihood of hand transfer of these microorganisms. Viruses and other etiological agents are susceptible to inactivation by a number of chemical disinfectants that are available on the market. All disinfectants produced in Brazil are required to be registered at the Brazilian Sanitary Surveillance Agency – Anvisa. These products must be used in accordance with manufacturer’s instructions.

The following personal protective equipment (PPE) should be used by the designated cleaning staff only during cleaning and disinfection procedures in cabin(s) of suspected cases of AGE or ILI Illness, in accordance with suspected cases definitions of this Brazilian:

- Nitrile gloves – size 33 or 46 inches (at sanitary facilities)
- Half-face particulate respirator (at least N95 or PFF-2);
- Waterproof shoes;
- TYVEK waterproof apron or similar;
• Safety goggles;
• Waterproof slippers.

Cleaning personnel should also use PPE to handle or dilute disinfectants as recommended by the manufacturer of the products.

Use only sanitizers registered in the country of the manufacturer (Brazilian products must be registered at Brazilian Health Sanitary Surveillance Agency – Anvisa) and that are recommended to the suspected etiological agents;

Cleaning and disinfection activities should be supervised and inspected periodically by relevant vessel authorities to ensure that correct procedures are followed to minimize the risk of cross-contamination from “dirty” to “clean” areas.

Routine cleaning and disinfection procedures should be employed throughout the vessel, as follows:

• Restaurants and kitchens;
• Toilets, restrooms, change rooms and sanitary facilities;
• Bars and lounges;
• Casinos, game rooms, and similar facilities;
• Cabins and quarters;
• Gymnasiums, nurseries, children’s clubs, beauty parlor;
• Swimming pools, spas and tubs;
• Lounge chairs;

During outbreaks, in addition to the facilities above mentioned, other areas require special attention such as:

• Door handles;
• Hand rails;
• Elevator buttons;
• Telephones;
• Keyboards and mice;
• Tabletops;
• Armchairs;
• Toilet flush handles;
• Slot machines;
• Sports equipment
• Game room objects – playing cards, chips, etc.;
• Other objects of hand general contact;

All crew outdoor areas only need be cleaned with water and detergent/soap.
Crew members should avoid touching their eyes, mouth or nose until their hands are properly washed in accordance with the procedures described in Annex 1 of this document.

All hard and nonporous surfaces must be cleaned with a detergent or sanitizer and disinfected with a 1,000-5,000 ppm sodium hypochlorite solution, or other bactericidal or virucidal sanitizer authorized. Given the potential for evaporative dilution, bleach solutions should be freshly prepared for use within 24 hours, or the target concentration should be doubled (e.g., 2,000–10,000 ppm) for storage and used within 30 days (Hall et al, 2011).

For use in stainless steel, food/mouth contact items, toys 200 ppm of bleach solution are recommended (MDCH, 2009).

In “dirty” areas, such as sanitary toilets, towels/cloths should be disposable, placed at plastic bags and immediately sealed after use. Cleaning personnel should not use the same cloths to clean sanitary facilities and other parts of the cabin.

Cleaning personnel should avoid the use of brooms, dust mops and other methods that might facilitate dust dispersal, giving preference to use of wet methods of cleaning and disinfection.

Although cleaning with water can contaminate solutions and equipment rapidly, routine cleaning procedures should be adopted to minimize the likelihood of microorganisms spread. Both solutions and equipment should be regularly replaced. Equipment must be sent to disinfection and solutions must be properly discarded.

**BASIC FLOWCHART OF CLEANING AND DISINFECTION PROCEDURES ON AREAS WITH NO EMESIS OR FECES**

1. Wear recommended personal protective equipment
2. Clean the surface with detergent and water
3. Dry the surface with disposable paper towels and then discard them
4. Apply disinfectant solutions in accordance with manufacturer’s instructions. (Pay attention to instructions on product label related to the concentration and contact time)
5. Dry the surface with disposable paper towels and then discard them
6. Remove and discard protective equipment. In case of reusable PPE, store them and get them to be disinfected.
7. When cleaning and disinfection are completed, wash your hands with water and soap. Dry your hands using disposable paper towels.
Areas with vomit or feces should be immediately isolated and covered with disposable paper towels, or specific absorbent products. Cleaning personnel should verify required PPE described above or in accordance with the label’s instructions before use chemical products. PPE and disposable paper towels used, and soil should be immediately placed in sturdy, leak-proof, biohazard plastic bags to be discarded later in ports authorized to receive this type of waste.

**BASIC FLOWCHART OF CLEANING AND DISINFECTION PROCEDURES ON SETTINGS WITH VOMIT AND FECES**

1. Isolate affected area immediately, and avoid that travelers pass around next to the isolated area
2. Use protective equipment recommended
3. Cover vomit/feces with absorbent product or paper towel (If necessary repeat the process until the surface appears visibly clean)
4. Clean the surface with detergent and water (If necessary repeat the process until the surface appears visibly clean)
5. Dry the surface with disposable paper towels and discard them
6. Apply disinfectant products/solutions according to the manufacturer’s instructions (including directions for suitable concentration and contact time)
7. Dry surface with single-use paper towels and dispose them
8. Remove and discard protective equipment. In case of reusable PPE, store them and get them to be disinfected.
9. When cleaning and disinfection are completed, wash your hands with water and soap. Dry your hands using disposable paper towels.
Considering that sanitizers/disinfectants are not registered for use on porous surfaces, removable porous upholstery, rugs, and carpeting that are exposed to emesis or feces should be carefully removed and laundered according to the manufacturer’s instructions, or immediately discarded as described above or cleaned with steam systems that achieve at least 70 °C (only in case of heat-resistant surfaces).

Porous upholstery and carpeting that can be removed should be initially cleaned with water and detergent. The material should then be allowed to air dry. If porous surfaces cannot be removed, a specific carpet shampoo with virucidal properties may be used.

Vacuum cleaners or any other methods that can cause virus recirculation should be avoided. They should only be used after disinfection has taken place and must be equipped with High Efficiency Particulate Air (HEPA) filters which are to be changed according to manufacturer’s instructions.

All porous surfaces must be completely dry before passengers are allowed to enter into these areas.

When cleaning is completed, soiled material must be placed in a sturdy, leak-proof bag that is tied shut and not reopened and discharged in authorized ports. Porous materials that will be laundered should also be placed in sturdy plastic bags or any other bag made by resistant material.

Attention: Cleaning methods that can cause splashing or which might re-aerosolize infectious material should not be used.

Laundry procedures may not require special methods during outbreaks because although viruses can persist on porous materials, their transfer to sheets, bedding and clothing is not as effective as other process of nonporous surfaces. Nonetheless, the following are some preventive measures:

- Handle soiled clothing and linens during collection with a minimum amount of agitation;
- Crew members responsible for handling clothing and linens (cleaning and laundry personnel) should follow carefully the safe procedures trained by the maritime company, and use protective equipment as described above, avoiding skin or body contact with linens before proper cleaning, and
- Keep soiled clothing in specific bags;
- Hand washing or hand hygiene should be immediately done after sorting and adding the clothing to the washer;
- Soiled clothing and linens of suspected cases potentially transmitting infectious agents require separation of the other clothes and should be cleaned with hot water and detergent, if needed.

Cleaning and disinfection equipment used in toilets/restrooms should be different from those used in other areas. In order to facilitate the fulfillment of this
requirement, we recommend the use of a color system or other means of identification.

All mops, brooms and similar items should be detached from their handles and washed at 70 °C or using a suitable virucidal chemical disinfectant. After cleaning, cleaning equipment should be turned upside down to allow it to completely dry. Mops and brooms must not be left in buckets or other containers with water. Buckets should be washed, sanitized and rinsed after use (Guidance for the Management of Norovirus Infection in Cruise Ships” published by Norovirus Working Group of Health Protection Agency – Centre of Infections, 2007).

The water and chemical solutions in cleaning buckets shall be changed after use to avoid infection spread.

Storage areas of cleaning equipment must be kept clean and dry to avoid risks of cross-contamination. All maintenance tools used in cleaning and decontamination of contaminated areas should be disinfected before proper storage.

Towels and disposable cloths should be discarded immediately after use by being placed and sealed in milky white bags labeled with biohazard symbol.

All equipment, such as vacuum or steam cleaners (including their detachable parts) should be cleaned and disinfected after each use. Vacuum cleaner air filters should be replaced according to the manufacturer’s directions.