Influenza Disinfection Procedures

Influenza viruses can perhaps persist on nonporous surfaces for 24 hours or more, but quantities of the virus sufficient for human infection are likely to remain viable for shorter periods of only 2 to 8 hours. Although the relative importance of virus transfer from inanimate objects (fomites) to humans in spreading influenza is not known, hand transfer of the virus to the mucous membranes of the eyes, nose, and mouth resulting in infection is likely to occur. Hand hygiene, cough etiquette and respiratory hygiene are principal means of interrupting transmission of influenza in the absence of influenza vaccine and given limited availability of antiviral medications. Routine cleaning and disinfection practices may also play a role in minimizing the spread of influenza. Normal facility cleaning procedures for environmental surfaces should be followed using standard cleaning products. During a localized outbreak, surfaces that are frequently touched with hands or exposed to aerosols (sneezing, coughing, etc.), and shared objects, should be added to the cleaning schedule.

Routine cleaning with soap or detergent and water to remove soil and organic matter, followed by the proper use of disinfectants to inactivate any remaining virus are the basic components of effective environmental management of influenza. Reducing the number of influenza virus particles on a surface through these steps may reduce the chances of hand or aerosol transfer of virus. Influenza viruses are very susceptible to inactivation by a number of chemical disinfectants readily available from consumer and commercial sources. If the separate use of disinfectants is undertaken, these procedures should be followed.

Disinfectants

Soap and hot water is an effective viral disinfectant. Many disinfection products include a statement that they are effective against the influenza virus. In any case, a product should be registered with EPA if it is marked as having anti-microbial properties. Influenza viruses, including the H1 NI virus, are normally susceptible to the classes of disinfectants listed below and solutions, compounds, or disinfectants containing these active ingredients:

- Sodium hypochlorite (bleach);
- Quaternary ammonia compounds;
- Hydrogen peroxide;
- Ethyl alcohol (95% ethanol hand disinfectant have greater activity than isopropyl alcohol hand disinfectants);
- Phenolic disinfectants; or
- Other germicides with an influenza, MRSA, or tuberculocidal daim on the label are normally effective,

It is very important to follow the manufacturers' recommendations for the use/dilution, contact time, rinsing, and handling of the disinfectants. Use either separate products, or a commercial product that is both a detergent (cleans) and a disinfectant (kills germs). Use the cleaner first, rinse the surface thoroughly, and then follow with a disinfectant. Avoid using products that cause splashing or generate aerosols,

If **a** suitable commercial disinfectant is not available, a dilute solution (1:100 volume/volume, of household chlorine bleach [5.25% or 6.00% sodium hypochlorite) may be used. To prepare this solution, add 1/4 cup of bleach to a gallon of clean water, or 2 teaspoons of bleach to a quart of clean water. This will provide a solution of about 500 parts per million (ppm) available chlorine for use on pre-cleaned surfaces. Higher concentrations may be used, but only on non-corrosive surfaces in well- ventilated areas. Apply to a cleaned surface, preferably with a sponge or cloth moistened with the bleach solution. Leave the surface wet for at least 2 minutes, rinse, and allow the surface to air dry. Use gloves that protect the hands when preparing the bleach solution and pour bleach carefully. Ensure proper ventilation in the area being cleaned, and do not use in conjunction with other cleaning products, particularly ammonia-based products. Bleach solutions degrade overtime and should be kept in a closed container away from sunlight and must be made fresh daily.

General Cleaning/ Disinfection Considerations

- Start with the least likely contaminated areas or surfaces and then move to the more likely contaminated areas, rooms, or surfaces;
- If any body fluids are encountered, existing procedures for cleaning and decontaminating biological waste should be followed;
- Clean floors and other horizontal surfaces such as window sills, countertops, and shelves;
- In addition to cleaning of floors and other surfaces, pay particular attention to disinfection of frequently touched surfaces — desk surfaces, telephones, computer keyboards and equipment, electric controls, doorknobs, faucets, gym equipment, handrails, locker handles, porcelain surfaces, light switches, etc.;
- Other surfaces such as countertops, seats, seatbacks (the plastic and/or metal parts) and armrests, desks, tables, chairs, and benches should also be cleaned and disinfected;
- Sanitizing wipes (containing alcohol, chlorine, or quaternary ammonium compounds) can be used to clean things like computer keyboards and handheld electronics;
- Do not spray (fog) rooms with disinfectant. This is a potentially dangerous practice that has no proven disease control benefit;
- Use damp cleaning methods - Do not clean with dry dusting or sweeping as this may create aerosols carrying viruses;
- Do not use compressed air and/or water under pressure for cleaning, or any other methods that can cause splashing or might re-aerosolize infectious material;
- Change mop heads, rags, and similar items and disinfectant solutions frequently. Consider using disposable cleaning items;
- Use a double bucket method (one bucket for cleaning solution, one for rinsing);
- Clean, disinfect, and dry equipment used for cleaning after each use;
- Dry clothing, bedding, towels, rags, etc. should not be shaken or otherwise handled in a manner that may generate aerosols. Bag these items securely before removing from potentially contaminated areas. Laundry may be washed as usual with warm water and detergent and bleach may be added;
- Vacuum cleaners should be used only after proper cleaning and disinfection of the surface has taken place;
- If *carpeted* areas are involved, use a vacuum cleaner with HEPA filtration;
- Wash hands after contacting potentially contaminated surfaces and handling contaminated laundry or materials or wear disposable gloves. After washing hands, a skin disinfectant containing an alcohol-based solution or gel may be used.

If questions occur as to the disinfection of potentially contaminated surfaces, articles, or equipment please contact the Environmental, Health, and Safety Office at 285-2807.