

# Environmental Infection Control

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Interim Guidance on Environmental  
Management of Pandemic Influenza  
Virus

[www.flu.gov/professional/hospital/influenzguidance](http://www.flu.gov/professional/hospital/influenzguidance)

# Modes of Transmission

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- Predominantly via mucous membrane exposure to respiratory secretions discharged initially as large droplets (a form of direct contact).
    - Not well quantified.
    - Airborne route (aerosolization of fine particles) is also a potential mode, as is hand to mucous membrane.
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# Droplets

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- ❑ Large droplets
  - ❑ Settle out quickly
  - ❑ < 6 feet
  - ❑ Rest of environmental surfaces
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# Persistence

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- Function of type of surface and humidity, and virus characteristics.
    - Hard surfaces → 24-48 hours
    - Porous surfaces → <8 – 12 hours
    - Very moist or wet → increase to 72 hours
    - Hands → studies vary: 3 hrs, 5 min, 2-8 hrs
  
  - Actual contribution to infection is not well studied.
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# Surface Source

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- “Environmental surfaces can serve as reservoirs of infectious virus, although there is no evidence that influenza virus can be transmitted **directly** from environmental surfaces.”
    - Little or no evidence of substantial resuspension into air
    - Hand transfer from surface to mucous membranes appears significant in some settings.
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# Cleaning

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- Influenza is readily sensitive to a large range of products.
  - Clean with soap and water.
    - Remove organic matter that would reduce the effectiveness of disinfection.
    - Routine procedures with standard soap and hot or cold water.
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# Disinfecting

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- Inactivated by many low or intermediate level disinfectants including:
    - Chlorine or hypochlorite (bleach)
    - Aldehydes
    - Quat
    - Phenolics
    - Alcohols
    - Peroxygen compounds
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## ***Clean and disinfect hard surfaces and items in homes and schools***

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- Follow label instructions carefully when using disinfectants and cleaners.
    - Pay attention to any hazard warnings and instructions on the labels for using personal protective items (such as household gloves).
    - Do not mix disinfectants and cleaners unless the labels indicate it is safe to do so.
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- Keep hard surfaces like kitchen countertops, tabletops, desktops, and bathroom surfaces clean and disinfected.
    - Clean the surface with a commercial product that is both a detergent (cleans) and a disinfectant (kills germs). These products can be used when surfaces are not visibly dirty.
    - Another way to do this is to wash the surface with a general household cleaner (soap or detergent), rinse with water, and follow with a disinfectant. This method should be used for visibly dirty surfaces.
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- Use disinfectants on surfaces that are touched often. Clean the surface as explained above before using disinfectants.
  - If disinfectants are not available, use a chlorine bleach solution made by adding 1 tablespoon of bleach to a quart (4 cups) of water; use a cloth to apply this to surfaces and let stand for 3 – 5 minutes before rinsing with clean water. (For a larger supply of disinfectant, add  $\frac{1}{4}$  cup of bleach to a gallon [16 cups] of water.)
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- Keep surfaces touched by more than one person clean and disinfected. Examples of these surfaces include doorknobs, refrigerator door handles, and microwaves.
    - Clean with a combination detergent and disinfectant product. Or use a cleaner first, rinse the surface thoroughly, and then follow with a disinfectant.
    - Use sanitizer cloths to wipe electronic items that are touched often, such as phones, computers, remote controls, and hand-held games.
    - Use sanitizer cloths to wipe car door handles, the steering wheel, and the gear shift.
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# *Use recommended laundry practices*

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- ❑ Gently gather soiled clothing, bedding, and linens without creating a lot of motion or fluffing; for example, do not shake sheets when removing them from the bed.
  - ❑ Clean your hands after handling soiled laundry items.
  - ❑ Use washing machine cycles, detergents, and laundry additives (like softener) as you normally do; follow label instructions for detergents and additives.
  - ❑ Dry the cleaned laundry items as you normally do, selecting the dryer temperature for the types of fabrics in the load. Line- or air-drying can be used to dry items when machine drying is not indicated.
  - ❑ Clean your hands before removing clean laundry from the washer or dryer, especially if you have coughed or sneezed on your hands.
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# ***Use recommended waste disposal practices***

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- Toss tissues into waste baskets after they have been used for coughs, sneezes, and blowing your nose.
  - Place waste baskets where they are easy to use.
  - Avoid touching used tissues and other waste when emptying waste baskets.
  - Clean your hands after emptying waste baskets.
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