

Infection Control Guidelines in Non-Healthcare Settings

The intention of this document is to assist non-healthcare settings in the planning for pandemic influenza by enhancing standard infection control practices.

The primary strategies for preventing pandemic influenza are the same as those for seasonal influenza: vaccination, early detection and treatment with antiviral medication, and the use of infection control measures to prevent transmission during patient care. However, when a pandemic begins, a vaccine may not yet be widely available, and the supply of antiviral drugs may be limited. In addition, antiviral drugs do not eliminate viral shedding or obviate the need for personal protective equipment. The ability to limit transmission in the non-healthcare settings will, therefore, rely heavily on the appropriate application of infection control measures.

Infection control guidance is based on knowledge of routes of influenza transmission, the pathogenesis of influenza, and the effects of influenza control measures used during past pandemics and inter-pandemic periods. However, the characteristics of a pandemic strain may be different. Planning must allow for flexibility and real-time decision-making that takes new information into account as the pandemic unfolds.

1. Background

Despite the prevalence of influenza every year, the amount of empirical data on influenza transmission is limited. Epidemiologic patterns suggest spread through large infectious respiratory droplets that are deposited on the oral, nasal or conjunctival mucosa of a susceptible host. Transmission via large droplets requires close contact between the infectious host and the susceptible individual. Special air handling and ventilation are not required to prevent transmission of disease transmitted primarily by droplets, as large particle droplets do not remain suspended in the air and generally travel only short distances (about three feet) through the air.

The significance of direct contact, indirect contact and airborne transmission has not been well established. The most appropriate form of respiratory protection during a pandemic remains controversial. The most recent recommendations can be found at <http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html>.

The incubation period for routine seasonal influenza is 1 – 4 days, with an average of 2 days. The incubation period of a novel influenza strain would be unknown until the time it is circulating in the population. Therefore, the maximum interval between exposure and symptom onset for pandemic influenza will be considered 10 days for the purposes of this document.

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Influenza is contagious for approximately 24 – 48 hours prior to symptom onset and throughout most of the symptomatic period. Certain individuals, such as those with immunocompromising conditions and children, may shed the virus for longer periods.

Individuals involved in pandemic influenza planning for non-healthcare settings, might want to familiarize themselves with the explanation of standard, droplet, airborne and contact precautions outlined by the Center for Disease Control and Prevention (CDC) found at http://www.cdc.gov/ncidod/dhqp/gl_isolation.html.

Avian Influenza A (H5N1) is highly contagious among birds and does not usually infect people. Although a few avian influenza viruses have crossed the species barrier to infect humans, it is still considered to be a very rare disease in people. The H5N1 virus does not infect humans easily, and if a person is infected, it is very difficult for the virus to spread to another person. Of the human cases associated with the ongoing H5N1 outbreaks in Asia, parts of Europe, the Near East and Africa, the infections have occurred mostly from people having direct or close contact with H5N1-infected poultry or H5N1-contaminated surfaces.

Because all influenza viruses have the ability to change, scientists are concerned that the H5N1 virus might one day be able to infect humans and spread easily from one person to another. If the H5N1 virus gains the capacity to spread easily from person to person, there will be little or no immune protection in the human population and an influenza pandemic could begin. At this point in time, infection control guidelines for those confirmed or suspected to be infected with the H5N1 strain differ in some respects from the guidance in this document. For more information about the avian influenza, go to the CDC website: <http://www.cdc.gov/flu/avian/gen-info/facts.htm> or the NJDHSS website at <http://www.state.nj.us/health/flu/avianflu.shtml>.

2. Home Healthcare-Specific Infection Control Guidance

Home Healthcare personnel face considerable challenges when attempting to implement standard infection control practices in the home setting. Unlike hospitals and long-term care facilities, space is often limited and cleaning of the environment is not under the control of the healthcare provider. The home healthcare worker is subject to uncontrolled and unpredictable events and circumstances. In addition, the need for home healthcare services may increase during a pandemic and the acuity of patients being cared for at home may increase as acute care facilities are unable to meet the demand for care. A pandemic influenza planning checklist for home health care services can be found at <http://www.pandemicflu.gov/plan/healthcare.html>.

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- Home health agencies should ensure that there is a qualified individual(s) specifically assigned responsibility for infection control and occupational health.
- Assess infection control and occupational health policies to assure that they are consistent with current guidelines.
- Develop strategies to assess possible transmission risk to the healthcare worker in the home based on referral information:
 - Assure referrals from discharge planners or primary care physicians address the presence of communicable diseases.
 - Develop a communication plan to notify staff going into the home if precautions beyond standard precautions are indicated.
- Assure personal protective equipment is available for staff and that staff receive appropriate training.
- Assure hand hygiene materials are accessible. Alcohol-based rubs, soap and paper towels should be in easy access for the healthcare worker at the point of care.
- Ask symptomatic individuals in the home to don a surgical mask while the healthcare worker is present to decrease the risk of aerosolization of respiratory secretions.
- The agency should have staff trained and fit-tested to use particulate respirators in the event the patient meets criteria for the institution of airborne precautions.
- Designate an individual(s) to obtain current information on the status and epidemiology of the pandemic. Ensure that this information is communicated to all clinical staff and direct patient-care providers. Information can be found at www.state.nj.us/health or will be distributed via LINCS/CHAIN.
- Develop a plan to expeditiously administer vaccine and antiviral medication to staff, in the event they are available and recommended.
- Review policies regarding home laboratory testing, referral for evaluation and/or treatment, and accessing transportation of symptomatic individuals.
- Review Occupation Health Issues found in 2C.

3. Emergency Medical Services-Specific Infection Control Guidance

Patients with severe influenza or comorbid conditions are likely to require emergency transport to the hospital. EMS workers should:

- Screen patients requiring emergency transport for symptoms of influenza.
- Follow standard and droplet precautions when transporting symptomatic patients.

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- If possible, ask family members of symptomatic patients accompanying the patient to don a surgical mask to prevent aerosolization of respiratory secretions.
- EMS should have staff trained and fit-tested to use particulate respirators in the event the patient meets criteria for the institution of airborne precautions.
- Optimize the vehicles ventilation to increase the volume of air exchange during transport. When possible, use vehicles that have separate driver and patient compartments that can provide separate ventilation to each.
- Notify the receiving facility that a patient with influenza-like-illness is being transported.
- Follow standard operating procedures for routine cleaning of the vehicle and reusable patient care equipment.
- Oxygen delivery with a non-rebreather face mask can be used to provide oxygen during transport. If needed, positive-pressure ventilation should be performed using a resuscitation bag-valve mask.
- Unless medically necessary, aerosol-generating procedures, such as intubation, should be avoided during pre-hospital care.
- Develop a plan to expeditiously offer and administer vaccine and antiviral medication to staff, in the event they are available and recommended.

4. Care of Pandemic Influenza Patients in the Home

Most patients with pandemic influenza will be able to remain at home during the course of their illness and be cared for by other family members, or others who live in the household, provided the home is a suitable location for them during their illness. Voluntary home confinement by symptomatic persons will limit their contact with uninfected persons and help slow the spread of the disease. Anyone residing in a household with an influenza patient during the incubation period and illness is at risk for developing influenza. A key objective in this setting is to limit transmission of influenza within and outside the home. See www.hhs.gov/pandemicflu/plan/sup4.html#care for care, management and Infection control measures in the home.

All persons in the household should follow recommendations for hand hygiene. When care is provided by the household member, basic infection control precautions should be in place. These include:

- Physically separating the symptomatic individual from non-ill persons living in the home.
- Keeping the symptomatic individual at home at all times during the period when they are most infectious to others. When movement outside the home is necessary, the symptomatic individual should

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follow respiratory etiquette/universal respiratory precautions and wear a surgical mask, if available.

- Using surgical mask by the symptomatic patient or by the caregiver during interactions, if one is available.
- Disposing of tissues immediately.

5. Care of Pandemic Influenza Patients at Alternative Sites

If an influenza pandemic overwhelms the healthcare system, it may become necessary to provide patient care at alternative sites (e.g., auditoriums, conference centers, hotels). The infection control guidelines will vary depending on the location and should specifically address the following infection control and patient care needs:

- Bed capacity and spatial separation that prevents the flow of patients with respiratory illness from contact with non-infectious patients
- Facilities and supplies for hand hygiene at the point of care and in waiting areas including tissues and no-touch receptacles
- Lavatory and shower capacity for large numbers of patients
- Food services (refrigeration, food handling and preparation)
- Medical Services
- Staffing for patient care and support services (e.g., housekeeping)
- Ensure adequate supplies of PPE at the point of care
- Cleaning/disinfection supplies and adequate disposal of infectious wastes
- Environmental services (linen, laundry, waste)
- Safety and security
- Appropriate signage and educational materials

The same principles of infection control should apply in these settings as in other healthcare settings. Planning is necessary to ensure that resources are available and procedures are in place to adhere to the key principles of infection control.

6. Infection Control in the Workplace

- Encourage symptomatic workers to stay away from the workplace while they are infectious.
- Promote respiratory hygiene/cough etiquette and hand hygiene as for any respiratory infection. The benefit of asymptomatic individuals wearing masks in these settings has not been established. Surgical masks or procedure masks should be

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considered for those individuals who develop symptoms consistent with influenza.

- Ensure that materials for respiratory hygiene/cough etiquette (i.e., tissues and no-touch receptacles) and hand hygiene are readily available.
- Place appropriate signage and provide appropriate educational materials to staff.

See <http://www.osha.gov/Publications/OSHA3327pandemic.pdf> for guidance on preparing workplaces for an influenza pandemic.

7. Infection Control in Schools:

- Keep symptomatic students away from the school while they are infectious.
- Promote respiratory hygiene/cough etiquette and hand hygiene as for any respiratory infection. The benefit of asymptomatic individuals wearing masks in these settings has not been established. Surgical masks or procedure masks should be considered for those individuals who develop symptoms consistent with influenza.
- Ensure that materials for respiratory hygiene/cough etiquette (i.e., tissues and no-touch receptacles) and hand hygiene are readily available.
- Place appropriate signage and provide appropriate educational materials to students, staff and parents.

8. Infection Control in Community Settings

- Keep symptomatic individuals out of community areas.
- Promote respiratory hygiene/cough etiquette and hand hygiene as for any respiratory infection. The benefit of asymptomatic individuals wearing masks in these settings has not been established. Surgical masks or procedure masks should be considered for those individuals who develop symptoms consistent with influenza. Further information on use of facemasks in the community can be found at <http://www.pandemicflu.gov/plan/community/maskguidancecommunity.html>.
- Ensure that materials for respiratory hygiene/cough etiquette (i.e., Tissues and no-touch receptacles) and hand hygiene are readily available.
- Place appropriate signage and provide appropriate educational materials in community settings.