



State of California—Health and Human Services Agency
California Department of Public Health



**Infection Control Recommendations for Shelter Residents
with Influenza-Like Illness, December 2018***

KAREN L. SMITH, MD, MPH
Director and State Public Health Officer

EDMUND G. BROWN JR.
Governor

This document provides recommendations for shelter residents with influenza-like illness (ILI) who are ambulatory, i.e., not ill enough to be confined to bed.

Whenever possible, shelters should implement routine/standard infection prevention and control strategies used in health care settings to prevent and control the spread of disease. However, during disasters, resources may be limited and normal standards of care may need to be altered. In those situations, less effective interventions can be implemented, but should only be used when standard practices cannot be achieved. In shelters, helping people to understand the practice of respiratory hygiene/cough etiquette (containing respiratory secretions) may be beneficial.

“Infection Prevention and Control for Shelters during Disasters,” published by the Association of Professionals in Infection Control and Prevention (APIC), outlines both standard practices and decreasingly effective interventions. This document may be accessed at:

[https://apic.org/Resource /TinyMceFileManager/Practice_Guidance/Emergency_Preparedness /Shelters_Disasters.pdf](https://apic.org/Resource/TinyMceFileManager/Practice_Guidance/Emergency_Preparedness/Shelters_Disasters.pdf)

For a working summary of this document, please see the Appendix, Infection Control Checklist for use in Managing Shelter Clients with Influenza-like Illness.

Background Information

Shelters that are set up during disasters are considered temporary and are not expected to administer health care services in the traditional sense. Often, the temporary interval may be prolonged beyond expectation at initiation of a shelter. However, triage and infection prevention and control strategies are critical to identify potentially infectious or acutely ill individuals and prevent the spread of disease within a shelter. Shelter residents who are very ill or require specialty care should be transferred to a medical facility or alternate care site as soon as feasible. In situations in which potentially infectious residents cannot be transferred, shelter staff must implement infection prevention and control interventions to decrease the risk of disease spread within the shelter. It is important to note that respiratory viruses other than influenza may also be circulating in the community during the influenza season.

***Adapted from Florida Department of Health “Shelter Respiratory Guidance in Special Needs Shelter Operations,” January 2015.**

Influenza vaccine

Influenza vaccine is the most effective intervention to prevent severe influenza illness and outbreaks in shelters and should be administered to shelter residents during the usual influenza season (October-March). Volunteers and other staff members should be advised to obtain influenza vaccine before appearing at the shelter. All vaccine administered should be recorded so that information may be entered into the immunization registry at a later time.

Triage Definition for Influenza-like Illness

ILI is defined as fever (temperature of 100°F* [37.8°C] or greater) and a cough and/or a sore throat in the absence of a KNOWN cause other than influenza.

*Older people and those with impaired immune systems may not present with fever, therefore, clinical judgement is needed in assessing ILI in the elderly and immunocompromised.

Transmission of Influenza-like Illness

The transmission of many respiratory infections is thought to occur largely through inhalation of respiratory aerosols, most often at distances of less than 6 feet. Transmission is common among close contacts and likely to account for the majority of transmission.

Infection may also occur when respiratory droplets expelled by an infectious person land directly upon the eyes of another person. Self-inoculation of the eyes or nose is also possible when hands are contaminated after touching contaminated objects or surfaces.

Influenza Symptoms:

- Fever* or feeling feverish/chills
- Cough
- Sore throat
- Runny or stuffy nose
- Muscle or body aches
- Headaches
- Fatigue (tiredness)
- Some people may have vomiting and diarrhea; this is more common in children than adults

*Not everyone with influenza will have a fever.

Incubation Period of Influenza

The incubation period (the time from exposure to development of illness) varies, depending on the cause of the infection and several other factors. The incubation period for influenza may range from one to seven days.

Period of Communicability of Influenza Virus

Adults with influenza can transmit the virus from at least one day **before** symptoms develop and up to five days **after** becoming ill. Children may be infectious for longer than seven days.

Susceptible Contacts

Those at increased risk of illness are those with close contact with someone who is ill, including persons providing care, persons living in the same household or persons in direct contact with respiratory secretions (saliva droplets of a suspected case, coughing, or sneezing).

Separation of the Ill

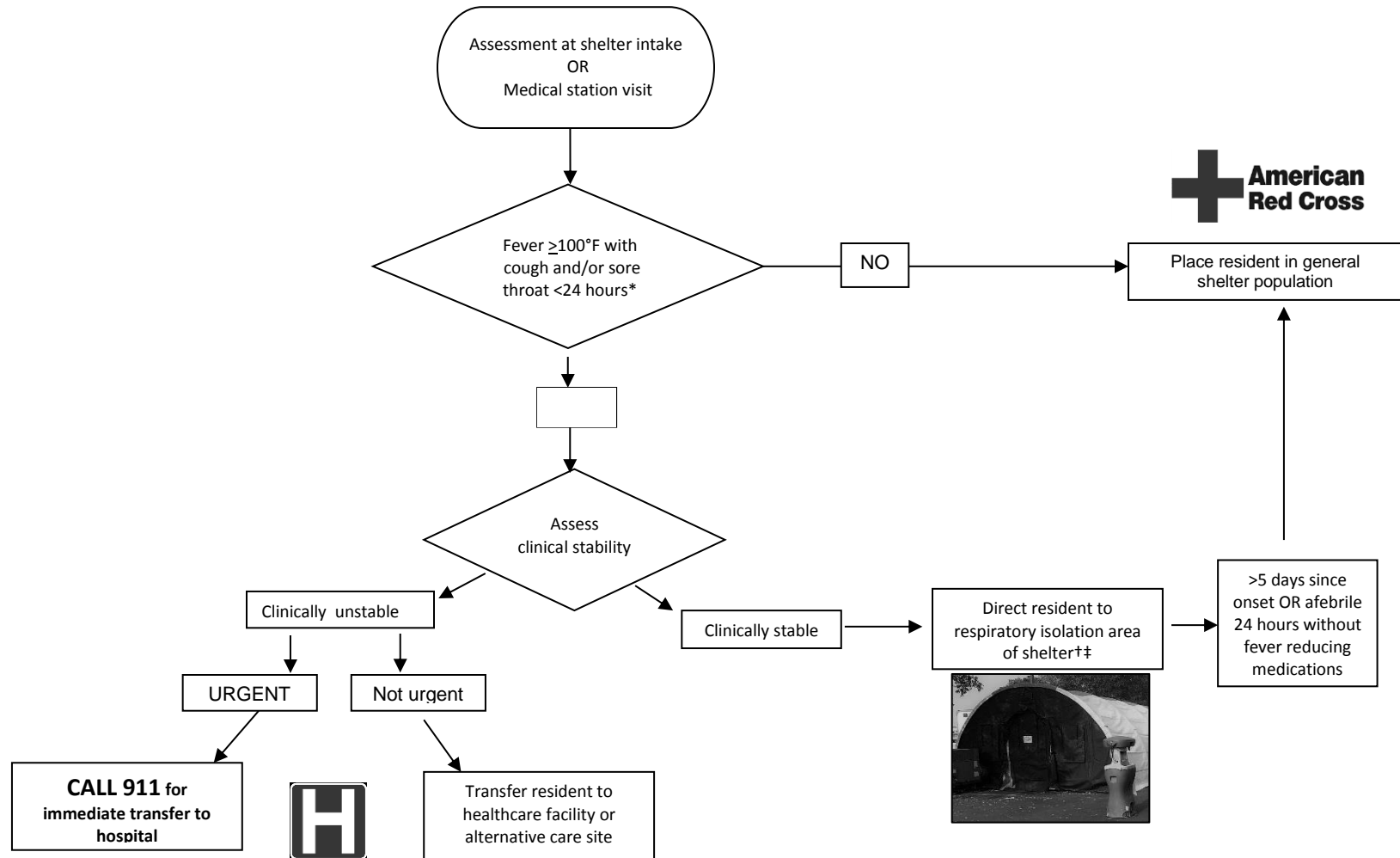
A separate building, room, or designated area should be set up for use as a temporary respiratory isolation area.

Triage

Shelters should develop an ILI assessment plan to triage people when they first arrive at the site. Persons with ILI symptoms within the past 24 hours should be triaged according to the algorithm below. Signage or staff should direct people with ILI symptoms away from the usual waiting areas for entry to the triage area.

Some persons, especially those housed outside in tents or RVs may not present in the first 24 hours after illness onset. Clinical judgement should be used when assessing late presenting residents with ILI symptoms. Any resident presenting within 5 days of symptom onset should be managed via the triage protocol below, using date of symptom onset to determine how long resident should be housed in the respiratory isolation area.

Triage Algorithm for Shelter Residents with Influenza-like Illness when Space is Available in Respiratory Isolation Area



*Older persons and those with impaired immune systems may not present with fever, therefore, clinical judgement is needed in assessing ILI in the elderly and immunosuppressed.

†Provide ill resident with surgical or procedure masks, if available, and direct to the respiratory isolation area. Promote distances of >6 feet between residents. One adult may accompany a child with ILI. Encourage respiratory hygiene/cough etiquette (cover coughs and sneezes or cough/sneeze into sleeve, if no masks are available) and good hand hygiene at all times.

‡Maintain recommended precautions until ill resident has been fever free for 24 hours without the use of fever reducing medications, whether or not antiviral medication has been prescribed. After discharge, residents should be advised to continue respiratory hygiene/cough etiquette and hand hygiene. Staff should also be cohorted to this area on any given shift.

On-going Case Finding for Influenza-like Illness

Shelters should develop a process to monitor both residents and staff for influenza-like illness.

Shelter residents

- New shelter residents should be screened for ILI at entry. New residents with ILI should be directed away from usual waiting areas for entry to the triage area. See triage algorithm.
- All shelter residents should be instructed verbally and with signage to report any new onset of ILI symptoms (fever $\geq 100^{\circ}\text{F}^*$, cough and/or sore throat). Residents reporting ILI should be assessed via the triage algorithm.
- If space is *not* available in the respiratory isolation area, ambulatory residents with ILI may be accepted or maintained in the general shelter population but should be provided with a surgical or procedure mask, if available, and instructed to wear a mask at all times when <6 feet of other people. If masks are not available, ill residents should be instructed to stay >6 feet, when possible, but no less than 3 feet away from other people. Ill residents who are not placed in the respiratory isolation area should also:
 - Avoid shelter areas where other people are congregating.
 - Use respiratory hygiene/cough etiquette (if masks are not available, cover coughs and sneezes with a tissue or cough/sneeze into elbow or sleeve).
 - Perform frequent hand hygiene.
- Maintain recommended infection control precautions until ill residents have been afebrile for 24 hours without the use of antipyretics, whether or not antiviral medication has been prescribed.
 - Residents should be instructed to continue respiratory hygiene/cough etiquette and hand hygiene.
- Shelter staff should not work with the general shelter population AND in the respiratory isolation area during the same shift.

*Older people and those with impaired immune systems may not present with fever, therefore, clinical judgement is needed in assessing ILI in the elderly and immunocompromised.

Shelter staff

- Shelter staff should be instructed to stay home if they develop ILI symptoms while at home.
- Shelter staff who develop ILI symptoms while at the shelter should self-isolate, and leave the shelter as soon as they can - either to go home or to seek medical care.
- Shelter staff with ILI should be excluded from the shelter for seven days from symptom onset or until 24 hours after the resolution of symptoms, whichever is longer.

During an outbreak or if shelter residents are not reliably reporting ILI symptoms, active surveillance, i.e., daily rounds of shelter residents for ILI, should be considered. During an outbreak, shelter staff and visitors should be screened for ILI at entry.

Key Infection Control Principles for Reducing Influenza Transmission in Shelters

There are four main principles for limiting the spread of respiratory infections in shelters:

1. **Source controls:** This involves limiting dispersion of infectious aerosols from an infectious person.
 - Respiratory hygiene/cough etiquette - All people in the shelter should practice respiratory hygiene/cough etiquette at all times (covering coughs and sneezes, if ill, when in close contact with others). Coughs and sneezes may be contained with tissues, or by coughing/sneezing into the elbow or sleeve. Used tissues should be disposed of in a waste container.
 - Infection control information for children is available at: <http://professionals.site.apic.org/>
 - Use of masks - If sufficient supplies exist, surgical/procedure masks are recommended for ill residents when they are in close contact with others (i.e., less than 6 feet away).
 - If masks are not available, ambulatory ill residents should practice “spatial (or social) distancing,” i.e., attempt to maintain a distance of >6 feet, but no less than 3 feet, from other people.
 - Hand hygiene – All people in the shelter should practice frequent hand hygiene with soap and water or an alcohol-based hand rub. Alcohol-based hand rub is effective against influenza viruses, and most other respiratory viruses.
 - Treatment of cases - Treatment with antivirals is recommended to reduce the period of infectiousness. See “CDPH Influenza Antiviral Guidance for Shelter Residents, December, 2018”. Antiviral agents should be started within the first 48 hours of symptom onset for maximum benefit.
2. **Environmental controls:** These include methods to reduce the concentration of infectious respiratory aerosols in the air and the presence of any contaminated surfaces and items.
 - Ventilation - Adequate ventilation to ensure good airflow and prevent concentration of respiratory aerosols.
 - Sanitation - Cleaning and disinfection of contaminated surfaces and items. The disinfection agent used to clean shelters should be an EPA-registered chemical disinfectant, if available. Manufacturer’s recommendations for dilution and contact time should be used.
 - If an EPA-registered disinfectant is not available, refer to the APIC document for alternative disinfectants (e.g., household bleach solution) that can be used temporarily.
 - Waste management - Follow routine procedures for biomedical waste generated at shelters. Masks are only necessary if close contact with an ill resident is anticipated during waste collection.
3. **Administrative controls:** These include establishing an appropriate infection-control infrastructure and implement appropriate infection-control measures.
 - Staffing – Implement staffing plan that promotes an adequate resident-to-staff ratio and mitigates illness and burnout. Provide appropriate vaccination coverage to staff.
 - Cohorting and isolation in triage and respiratory isolation areas - Separate the ill from other residents to reduce the risk of transmission of infection from ill residents to others and limit contact between infected and uninfected people (including nonessential staff).
 - Active surveillance during outbreaks – Institute surveillance for ILI in staff and clients.

- Spatial separation between residents - Beds should be placed at least 6 feet apart or head-to-toe with beds 3 feet apart if space is limited. Mobile screens can be used to encourage compliance with separation areas.
- Supplies and equipment – Use disposable supplies or dedicate equipment to the respiratory isolation area, if possible (such as blood-pressure cuffs, stethoscopes, oxygen masks, and tubing. Provide PPE for staff as appropriate.
- Infection control precautions - Use of appropriate infection control precautions should be instituted.
 - **Standard Precautions** - Routine infection control precautions that apply to all contacts in all health care and shelter settings. They involve respiratory hygiene/cough etiquette (cover coughs and sneezes); hand hygiene; and use of appropriate PPE by staff when handling blood, body substances, excretions, and secretions, including eye protection if splashes onto eye mucosa are anticipated.
 - **Droplet Precautions** (used in addition to Standard Precautions) – Requires the use of surgical or procedure masks for routine care of potentially infectious persons with ILI. Surgical masks can be used for the administration of nebulized medications and the collection of nasopharyngeal specimens.
- **Respiratory hygiene/cough etiquette** and good **hand hygiene** are recommended at all times.

4. Personal protective equipment: The strategies listed above reduce, but do not eliminate, the possibility of exposure to infection. To further reduce these risks to healthcare workers and other people interacting with ill residents in the shelter, PPE should be used together with the strategies above in situations that pose an increased risk of pathogen transmission. PPE use should be used according to risk of exposure. Careful risk assessment is needed on an ongoing basis to assess the need for and appropriateness of PPE. The effectiveness of PPE is dependent on adequate supplies, staff training, appropriate use, and proper hand hygiene. Hand hygiene should be performed after removal of all PPE.

- **Masks and Respirators** - Masks, if properly worn, are likely to be the most effective of all PPE used to protect against a disease that is spread by the respiratory route. Priority for use of masks is as follows: (a) protection of caregivers and healthcare staff, i.e., those in close contact with residents; (b) controlling transmission at the source by providing a mask to ill residents. Surgical masks or procedure masks (usually with ear loops) are recommended for routine care provided by staff and caregivers, when they are in close contact with ill residents (i.e., less than 6 feet away).
 - Particulate respirators (e.g., NIOSH-certified N95 respirators) are recommended for aerosol-generating situations/procedures associated with an increased risk of respiratory disease transmission (in addition to eye protection, plus gloves and gowns as appropriate).
 - Aerosol generating procedures include emergency airway procedures, intubation, and open suctioning of airway secretions.
 - Particulate respirators should be used according to the manufacturer's instructions and the user should perform a seal check before each use, for which training is required.
 - When particulate respirators are not used properly, their effectiveness may be no greater than surgical or procedure masks.

- All medical masks (particulate respirator, surgical, procedure) should fit the user's face tightly covering the mouth and nose.
 - After removing or changing masks, hand hygiene should be performed.
 - PPE is single use when supplies are sufficient and should be disposed of appropriately after use within the Respiratory Isolation Area before exiting.
 - Care must be taken not to touch the face or mask with the hands in order to avoid contamination from particles that may be on the outside of the mask.
- **Eye Protection** - Eye protection should also be used during aerosol- generating procedures. Eye protection with goggles or a visor should also be used in conjunction with masks when in direct close contact with a patient (less than 6 feet), and sprays of secretions onto the eye mucosa are anticipated.
 - **Gloves** – Gloves should be worn if contact with blood, body fluids, respiratory secretions, excretions, mucous membranes, or non-intact skin is anticipated, including during aerosol-generating procedures associated with a possible risk of pathogen transmission. Gloves do not provide full protection against hand contamination. Change gloves between tasks and procedures on the same patient and after contact with potentially infectious material. Gloves should be removed after use, before touching non-contaminated items and surfaces, and before going to another patient.
 - **Gowns** – Gowns should be worn to protect skin and prevent soiling of clothing during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions. Select a gown that is appropriate for the activity and amount of fluid likely to be encountered. If the gown in use is not fluid-resistant, and splashing or spraying of potentially infectious material is anticipated, a waterproof apron should be worn over the gown. Remove a soiled gown as soon as possible and place it in a waste or laundry receptacle (as appropriate).

Appendix: Infection Control Checklist for use in Managing Shelter Residents and Staff with ILI

Source Controls

- Respiratory hygiene/cough etiquette - cover coughs and sneezes; hand hygiene (use signage and ensure that respiratory and hand hygiene supplies are available).
- Use of masks by ill residents to reduce transmission, if available.
- Hand hygiene.
- Provide treatment if indicated.

Environmental Controls

- Select a separate location with good ventilation for isolation of people with ILI.
- Clean and disinfect contaminated surfaces and items using an EPA-registered chemical disinfectant. Manufacturer's recommendations for dilution and contact time should be used.
- Ensure proper waste management and disposal.

Administrative Controls

- Staffing - staff planning to promote an adequate patient-to-staff ratio and to avoid illness and burnout.
- Ensure that shelter residents and staff have access to influenza vaccination.
- Institute active surveillance for ILI illness in staff (if necessary) and exclude from work for 7 days from symptom onset or until 24 hours after the resolution of symptoms, whichever is longer.
- Use a triage system and cohort ill clients until they are fever free for 24 hours without the use of fever reducing medication. Separate the ill from other shelter residents to reduce the risk of direct or indirect contact transmission of infection from the source patient to others.
- Institute active surveillance for ILI illness in clients accepted into the shelter (if necessary) and cohort ill clients until they are fever free for 24 hours without the use of fever reducing medication.
- Spatially separate ill residents (>6 feet, but no less than 3 feet) from others, if possible.
- Supplies and Equipment – use disposal supplies or dedicate equipment to the respiratory isolation area, if possible (such as blood-pressure cuffs, stethoscopes, oxygen masks, and tubing. Provide PPE as appropriate.
- Establish the use of appropriate infection prevention and control measures and precautions with training of new staff and reinforcement at regular intervals.

Personal Protective Equipment

- Provide a supply of clean PPE (masks, respirators, eye protection, gloves, and gowns) outside of the respiratory isolation area.
- Select the appropriate level of PPE.
- Ensure that PPE (masks, respirators, eye protection, gloves, and gowns) is being used appropriately.
- Provide a means to dispose of used PPE.

Syndromic Surveillance

The shelter should develop a communicable disease assessment plan to monitor individuals and staff at the site. Formal assessment/triage should be conducted on sheltered individuals and shelter staff to identify any potential infectious diseases or conditions.

Infection Control Triage*

This table is intended as a guideline and is not all-inclusive. Standard Precautions should be used for all patient encounters. Consider the possibility of a bacterial infection in residents with respiratory distress and high fever. Such persons need immediate medical assessment.

Symptoms/syndrome: Respiratory	Isolation precautions	Individual placement/separation	Medical assessment
Cough, runny nose, watery eyes	Standard	None	No
Fever (temp $\geq 100^{\circ}\text{F}$) and cough or sore throat in adults	Droplet	Cohorting; spatial distancing ²	Yes
Fever (temp $\geq 100^{\circ}\text{F}$) and cough or sore throat in children	Droplet	Cohorting; spatial distancing ²	Yes
Fever (temp $\geq 100^{\circ}\text{F}$), cough with bloody sputum, and weight loss	Airborne ³	Airborne infection isolation room or negative pressure area/room; cohorting; spatial distancing ²	Yes

¹ If the disaster is an infectious disease disaster (bioterrorism or pandemic) and the causative disease is known, the appropriate isolation precautions for that disease should be used.

² Spatial distancing involves separating the potentially infectious person from others, preferably by a distance of >6 feet, but no less than 3 feet.

³ Transfer to healthcare facility as soon as possible.

⁴ Spatial distancing for eye infections and vomiting consists of instructing the symptomatic resident or parent (if the resident is a child) to remain with the family unit and away from others in the shelter, perform frequent hand hygiene, and inform shelter workers if symptoms progress. These actions should continue until symptoms subside.

***Adapted from the APIC document “Infection Prevention and Control for Shelters during Disasters”**