

TDH Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected Novel H1N1 Influenza A (Swine flu) Virus Infection in a Healthcare Setting

May 5, 2009 (16:00 CT)

This document provides interim guidance for healthcare facilities (e.g., hospitals, long-term care and outpatient facilities, and other settings where healthcare is provided) and will be updated as needed.

Background

To date, human cases of swine influenza A (H1N1) virus infection have been confirmed in residents of several U.S. states and Mexico (for the most up-to-date list please see <http://www.cdc.gov/h1n1flu/>). Investigations of these cases suggest that on-going human-to-human swine influenza A (H1N1) virus is occurring. Illness signs and symptoms have consisted of influenza-like illness - fever and respiratory tract illness (cough, sore throat, runny nose), headache, muscle aches - and some cases have had vomiting and diarrhea. Cases of severe respiratory disease, including fatal outcomes, have been reported.

The swine influenza A (H1N1) virus that has infected humans in the U.S. and Mexico is a novel influenza A virus that has not previously been identified in North America. This virus is resistant to the antiviral medications amantadine and rimantadine, but is sensitive to oseltamivir and zanamivir.

Implementation of Respiratory Hygiene/Cough Etiquette

To prevent the transmission of **all** respiratory infections in healthcare settings, including swine influenza A (H1N1), Respiratory Hygiene/Cough Etiquette infection control measures (see <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>) should be implemented at the first point of contact with a potentially infected person. They should be incorporated into infection control practices as one component of Standard Precautions.

Healthcare facilities should establish mechanisms to screen patients for signs and symptoms of febrile respiratory illness who are presenting to any point of entry to the facility for care or making appointments to be seen at the facility. Provisions should be made to allow for prompt segregation and assessment of symptomatic patients.

Implementation of facility contingency plans

The current situation with swine flu in the United States is evolving quickly. Staff in healthcare settings should monitor <http://www.cdc.gov/swineflu> and state and local health department websites for the latest information. Healthcare facilities should be reviewing and making plans to implement their facility contingency response and/or pandemic response plans. This should include making plans for managing increasing patient volume and potential staffing limitations.

Interim Infection Control Recommendations

If the patient is presenting in a community where swine influenza A (H1N1) transmission is occurring (based upon information provided by state and local health departments), these infection control recommendations should apply to all patients with febrile respiratory illness (defined as fever [greater than 37.8° Celsius] plus one or more of the following: rhinorrhea or nasal congestion; sore throat; cough).

If the patient is presenting in a community without swine influenza A (H1N1) transmission, these infection control recommendations should apply to those patients with febrile respiratory illness AND:

- close contact with a person who is a confirmed, probable, or suspected case of swine influenza A (H1N1) virus infection, within the past 7 days OR
- travel to a community either within the United States or internationally where there are one or more confirmed swine influenza A (H1N1) cases within 7 days

As the situation evolves, the ability to use epidemiologic links to identify potentially infectious patients may be lost and these recommendations may need to be applied to all patients with febrile respiratory illness. This situation will be monitored, and these guidelines will be updated as needed.

As of May 5, 2009, in view of mounting evidence, that the current wave of the H1N1 influenza virus is behaving similarly to seasonal influenza, the Tennessee Department of Health (TDH) recommends that healthcare facilities should consider applying the following modifications to the CDC guideline (published May 4, 2009). These recommendations are similar to those recommended by the WHO and Health Canada, (e.g., http://www.who.int/csr/resources/publications/infection_control/en/index.html. All guidance from the TDH is interim and subject to change as additional information becomes available:

For all patients with a febrile respiratory illness (FRI) (i.e., not just suspect or confirmed cases of H1N1):

- *Practice good hand hygiene (patient and staff)*
- *Practice good respiratory hygiene (patient and staff)*
- *Practice standard precautions (i.e., treat all body-fluids as potentially infectious, including stool; wear gown, gloves and eye-protection if risk of splash)*
- *Wear surgical mask if within 6 feet of a patient with a febrile respiratory illness if:*
 - *the patient is compliant (willing and able) with respiratory hygiene practices or*
 - *the patient has a weak or no cough (individuals who may have a weak cough are the frail elderly and pediatric patients).*
- *Wear a N-95 respirator (fit-tested) or PAPR; eye-protection (face-shield^(1, 2) or goggles); gown and gloves (all persons in the room):*
 - *IF conducting aerosol-generating medical procedures⁽³⁾ OR*
 - *WHEN the patient is coughing forcefully AND the patient is unable/unwilling to comply with respiratory hygiene (e.g., coughing patient who is unable or unwilling to wear a surgical mask)*

Notes:

- (1) *Face-shields are preferred over goggles because:*
 - *goggles may alter facial contours and impair the proper fit of N-95 respirators that were fit-tested without wearing goggles*
 - *face-shields are easier to clean than goggles*
- (2) *Face-shields should cover the eyes and preferably extend over the chin*
- (3) *Aerosol-generating procedures include: collection of clinical specimens, endotracheal intubation, suctioning (if not using a closed system), administration of nebulized medications, bronchoscopy, and resuscitation involving emergency intubation or cardiac pulmonary resuscitation. See additional CDC guidance below.*

Infection Control of Ill Persons in a Healthcare Setting

Screening of patients presenting to medical facilities

Patient placement and transport

Any patients who are confirmed, probable or suspected cases and present for care at a healthcare facility should be placed directly into individual rooms with the door kept closed. Healthcare personnel interacting with the patients should follow the infection control guidance in this document. For the purposes of this guidance, healthcare personnel are defined as persons, including employees, students, contractors, attending clinicians, and volunteers, whose activities involve contact with patients in a healthcare or laboratory setting.

Procedures that are likely to generate aerosols (e.g., bronchoscopy, elective intubation, suctioning, administering nebulized medications), should be done in a location with negative pressure air handling whenever feasible. An airborne infection isolation room (AIIR) with negative pressure air handling with 6 to 12 air changes per hour can be used.

Air can be exhausted directly outside or be recirculated after filtration by a high efficiency particulate air (HEPA) filter. Facilities should monitor and document the proper negative-pressure function of AIIRs, including those in operating rooms, intensive care units, emergency departments, and procedure rooms.

Procedures for transport of patients in isolation precautions should be followed. Facilities should also ensure that plans are in place to communicate information about suspected cases that are transferred to other departments in the facility (e.g., radiology, laboratory) and other facilities. The ill person should wear a surgical mask to contain secretions when outside of the patient room, and should be encouraged to perform hand hygiene frequently and follow [respiratory hygiene / cough etiquette practices](#).

Limitation of healthcare personnel entering the isolation room

Healthcare personnel entering the room of a patient in isolation should be limited to those performing direct patient care.

Isolation precautions

Standard and Contact precautions plus eye protection should be used for all patient care activities for patients being evaluated or in isolation for swine influenza A (H1N1) (i.e., including all healthcare personnel who enter the patient's room). Maintain adherence to hand hygiene by washing with soap and water or using alcohol-based hand sanitizer immediately after removing gloves and other equipment and after any contact with respiratory secretions. Nonsterile gloves and gowns along with eye protection should be donned upon room entry. (See <http://www.cdc.gov/ncidod/dhqp/ppe.html>)

Respiratory protection: All healthcare personnel who enter the rooms of patients in isolation for swine influenza should wear a fit-tested disposable N95 respirator or equivalent (e.g., powered air purifying respirator)*. Respiratory protection should be donned upon room entry.

Note that this recommendation differs from current infection control guidance for seasonal influenza, which recommends that healthcare personnel wear surgical masks for patient care. The rationale for the use of respiratory protection is that a more conservative approach is needed until more is known about the specific transmission characteristics of this new virus. This recommendation is also outlined in the in the in the October 2006 “Interim Guidance on Planning for the Use of Surgical Masks and Respirators in Healthcare Settings during an Influenza Pandemic” <http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html>³.

Management of visitors

Limit visitors to patients in isolation for swine influenza A virus (H1N1) infection to persons who are necessary for the patient's emotional well-being and care. Visitors who have been in contact with the patient before and during hospitalization are a possible source of swine influenza A virus (H1N1). Therefore, schedule and control visits to allow for appropriate screening for acute respiratory illness before entering the hospital and appropriate instruction on use of personal protective equipment and other precautions (e.g., hand hygiene, limiting surfaces touched) while in the patient's room. Visitors should be instructed to limit their movement within the facility.

Visitors may be offered a gown, gloves, eye protection, and respiratory protection (i.e., N95 respirator) and should be instructed by healthcare personnel on their use before entering the patient's room.

Duration of precautions

Isolation precautions should be continued for seven (7) days from symptom onset or until the resolution of symptoms, whichever is longer.

Persons with swine influenza A (H1N1) virus infection should be considered potentially contagious from one day before to 7 days following illness onset. Persons who continue to be ill longer than 7 days after illness onset should be considered potentially contagious until symptoms have resolved. Children, especially younger children, might be contagious for longer periods.

Surveillance of healthcare personnel

In communities where swine influenza A (H1N1) virus transmission is occurring, healthcare personnel should be monitored daily for signs and symptoms of febrile respiratory illness. Healthcare personnel who develop these symptoms should be

instructed not to report to work, or if at work, should cease patient care activities and notify their supervisor and infection control personnel.

In communities without swine influenza A (H1N1) virus transmission, healthcare personnel working in areas of a facility where there are patients being assessed or isolated for swine influenza infection should be monitored daily for signs and symptoms of febrile respiratory infection. This would include healthcare personnel exposed to patients in an outpatient setting or the emergency department. Healthcare personnel who develop these symptoms should be instructed not to report to work, or if at work, should cease patient care activities and notify their supervisor and infection control personnel.

Healthcare personnel who do not have a febrile respiratory illness may continue to work. Asymptomatic healthcare personnel who have had an unprotected exposure to swine influenza A (H1N1) also may continue to work if they are started on antiviral prophylaxis. Interim guidance on antiviral recommendations for close contacts of patients with confirmed or suspected swine influenza A (H1N1) virus infection can be found at <http://www.cdc.gov/h1n1flu/recommendations.htm>.

Management of ill healthcare personnel

Healthcare personnel should not report to work if they have a febrile respiratory illness. In communities where swine influenza virus transmission is occurring, healthcare personnel who develop a febrile respiratory illness should be excluded from work for 7 days or until symptoms have resolved, whichever is longer.

In communities without swine influenza virus transmission, healthcare personnel who develop a febrile respiratory illness and have been working in areas of the hospital where swine influenza patients are present, should be excluded from work for 7 days or until symptoms have resolved, whichever is longer.

In communities where swine influenza virus transmission is not occurring, healthcare personnel who develop febrile respiratory illness and have not been in areas of the facility where swine influenza patients are present should follow facility guidelines on returning to work.

Stewardship of personal protective equipment and antivirals

Facilities should implement plans to ensure appropriate allocation of personal protective equipment, including N95 respirators, and antivirals.

Environmental infection control

Routine cleaning and disinfection strategies used during influenza seasons can be applied to the environmental management of swine influenza. Management of laundry, utensils and medical waste should also be performed in accordance with procedures followed for

seasonal influenza. More information can be found at http://www.cdc.gov/ncidod/dhqp/gl_enviroinfection.html.

Facility access control

Facilities should have signage at entry points instructing patients and visitors about hospital policies, including the need to notify staff immediately if they have signs and symptoms of febrile respiratory illness. Facilities in communities where swine influenza transmission is occurring should limit points of entry to the facility..

Administration of the current 2008-2009 seasonal influenza vaccine

It is not anticipated that the seasonal influenza vaccine will provide protection against the swine flu H1N1 viruses. However, in some parts of the country, seasonal influenza viruses are still circulating. Influenza vaccination is effective against these seasonal viruses and should continue to be given to unvaccinated patients in areas where seasonal influenza cases are still occurring.

*Respirator use should be in the context of a complete respiratory protection program in accordance with Occupational Safety and Health Administration (OSHA) regulations. Information on respiratory protection programs and fit test procedures can be accessed at <http://www.osha.gov/SLTC/etools/respiratory>. Staff should be medically cleared, fit-tested, and trained for respirator use, including: proper fit-testing and use of respirators, safe removal and disposal, and medical contraindications to respirator use.

Additional information on N95 respirators and other types of respirators may be found at: <http://www.cdc.gov/niosh/npptl/topics/respirators/factsheets/respfact.html>, and at <http://www.fda.gov/cdrh/ppe/masksrespirators.html>.

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