

Infection Control to Prevent the Spread of 2009 H1N1 Flu in Healthcare Settings

With the current news about 2009 H1N1 flu, healthcare workers and healthcare facilities need to take immediate steps to determine if their workplace is ready to manage a 2009 H1N1 flu outbreak.

Flu spreads from person to person through the air and by contact with infected surfaces such as telephones and doorknobs. There are three well-established methods for managing an outbreak of the flu virus:

- 1) Vaccines to prevent catching the flu or to reduce its symptoms;
- 2) Antiviral medications to treat symptoms of flu; and
- 3) Implementation of standard infection control procedures to prevent spread of infection.

Frequently Asked Questions

Q. Is there a vaccine for the 2009 H1N1 flu virus?

A. There currently are good vaccines available to prevent the spread and/or reduce the severity of seasonal flu symptoms. However, with 2009 H1N1 flu, there is no vaccine. There is one in the works, but it will take many months, and then the vaccine will need to be tested to see if it is effective.

Q. Is there a treatment for flu?

A. The Food and Drug Administration has approved antiviral medications to treat seasonal flu. Patients with 2009 H1N1 flu appear to be responding favorably to at least two of these drugs. However, for these drugs to work, they need to be administered within 48 hours after symptoms appear.

(See www.cdc.gov/H1N1flu/antiviral.htm)

Q. Why is infection control so important?

A. Due to the lack of a vaccine and the limited supplies of antivirals, infection control is our best tool for controlling the spread of the virus and is the cornerstone of any early prevention effort. It is critical to limiting the spread of any potential flu pandemic that we now implement comprehensive infection control procedures, especially in healthcare settings.

Q. Will the 2009 H1N1 flu become a pandemic?

A. This is the fear that we all have. Currently countries around the world are mobilizing to identify, quarantine and treat patients suspected of having 2009 H1N1 flu. Laboratories are confirming the cases. A pandemic could infect millions of people, spreading quickly from person to person, travel quickly around the globe, and take months or years to run its course.

Q. How would a 2009 H1N1 flu outbreak affect the average healthcare setting?

A. If cases of 2009 H1N1 flu cannot be contained and it becomes a pandemic, large numbers of people with illness could severely affect the healthcare community's ability to respond. First responders and healthcare workers would be doubly exposed to the virus; both through their normal, everyday community activities and in the healthcare environment where sick patients come for care.

In a pandemic, hospitals may be unprepared for the huge surge in numbers of patients needing care. To protect patients and other workers, hospitals will need policies that encourage sick workers to stay home without fear of losing their job, pay or benefits. At the same time, they would need access to additional staff, perhaps even volunteers, to substitute for the healthcare workers who become ill. This is why strict infection control is so crucial.

Because of the serious threat posed by a pandemic flu, hospitals and other healthcare facilities have been encouraged to plan and prepare for the past five years for how they would manage an outbreak of pandemic flu. Now is the time to check to see if this planning and preparation has been effective.

Q. What are the current infection control precautions for 2009 H1N1 flu from CDC?

A. According to the CDC standard, Droplet, Contact and Airborne precautions should be used for all patient care activities, and maintained for seven days after illness onset or until symptoms have resolved. Maintain adherence to hand hygiene by washing with soap and water or using hand sanitizer immediately after removing gloves and other equipment and after any contact with respiratory secretions. Personnel providing care or collecting clinical specimens from suspected or confirmed cases should wear disposable nonsterile gloves, gowns, and eye protection (e.g., goggles) to prevent conjunctival exposure.

Q. What type of respiratory protection should healthcare workers be wearing to protect against the 2009 H1N1 flu?

A. Because of a concern for the airborne transmission of flu, CDC recommends that all personnel providing direct patient care for suspected or confirmed 2009

H1N1 flu cases should wear a fit-tested disposable N95 respirator when entering the patient's room.

Surgical or procedure masks do not protect against airborne transmission and should not be used instead of proper respiratory protection.

Personnel engaged in aerosol generating activities (e.g., collection of clinical specimens, endotracheal intubation, nebulizer treatment, bronchoscopy, and resuscitation involving emergency intubation or cardiac pulmonary resuscitation) for suspected or confirmed 2009 H1N1 flu cases should wear a fit-tested disposable N95 respirator or a more protective respirator, such as a PAPR (powered air-purifying respirator).

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 found at www.osha.gov/SLTC/etools/respiratory. Staff should be medically cleared, currently 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. A proper fit-test will take at least 15 minutes per person.

Patients with suspected or confirmed case-status should be placed in a single-patient room with the door kept closed. If available, an airborne infection isolation room (AIIR) with negative pressure air handling with six 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. For suctioning, bronchoscopy, or intubation, use a procedure room with negative pressure air handling.

The ill person should wear a surgical mask when outside of the patient room, and should be encouraged to wash hands frequently and follow respiratory hygiene practices. Cups and other utensils used by the ill person should be washed with soap and water before use by other persons. Routine cleaning and disinfection strategies used during influenza seasons can be applied to the environmental management of 2009 H1N1 influenza.

Q. What are standard infection control precautions?

A. Standard infection control precautions include hand hygiene, use of PPE and good respiratory hygiene/cough etiquette for patients.

Q. What is considered good hand hygiene?

A. Hand washing is the foundation of any infection control program. Employers need to create a positive workplace environment that encourages workers to

thoroughly clean hands with soap and water, antimicrobial soap and water, or alcohol-based hand-rub products between patient contacts, immediately after removing gloves, and after touching blood, body fluids, secretions, excretions, or contaminated items.

Instead of workplace culture that rewards workers for working faster, employers should support workers who work more safely. This may require the employer to address staff shortages that cause workers to cut corners—and not wash their hands as thoroughly as they should as they rush from one patient to the next.

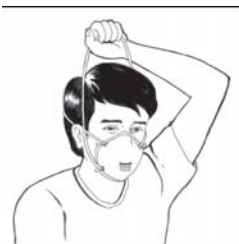
Q. What types of PPE are available?

A. PPE is specialized clothing or equipment that protects against infectious materials. PPE includes particulate respirators (not surgical or procedure masks), eye protection, face shields, surgical masks, gowns, and gloves. Appropriate PPE should be used during procedures and patient care activities that are likely to generate coughing, splashes or sprays of blood, body fluids, or secretions.

Q. What is the difference between a particulate respirator and a surgical mask?

A. Respiratory protection (at a minimum, N95 respirators or better) helps you avoid inhaling airborne infection. However, some government agencies and some healthcare employers incorrectly recommend surgical masks to use against airborne infections. Surgical masks are not designed to protect against inhaling airborne infection and should not be used by healthcare workers.

Therefore, at a minimum, we need to ensure that all healthcare workers are provided with and use NIOSH-certified particulate respirators during this 2009 H1N1 flu outbreak. A respirator helps prevent you from breathing airborne particles because it has filtering materials that are superior to surgical masks. Respirators form a tight seal around the nose, mouth, and chin and are secured by elastic bands on the head, preventing leakage where the respirator touches the face.



A worker puts on his N95 particulate respirator.



A particulate respirator displaying the NIOSH certification notation.

Keep in mind that facial hair can compromise the effect of a seal and may require a different type of respirator. In that case, your union health and safety representative can help you determine the type of mask that works best for you.

Q. How do other types of PPE help control infection?

A. There are several types of equipment that help protect workers from infection:

- **Goggles** protect eyes by fitting snugly over and around eyes. Goggles with antifogging features improve clarity. Personal glasses are not a substitute for goggles.
- **Face shields** protect the face, nose, mouth and eyes. They should cover the forehead and extend below the chin, wrapping around the side of the face.
- **Gowns** are for use during procedures and patient care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated.
- **Gloves** are for use when touching blood, body fluids, secretions, excretions, contaminated items, mucous membranes, and nonintact skin. Nonlatex gloves should be made available for workers who are allergic to latex.

Q. What steps should patients take for proper respiratory hygiene/cough etiquette?

A. In one instance, it is appropriate to advocate the use of surgical masks: patients should wear them when symptomatic. For the protection of all healthcare workers and their patients, hospitals need strong policies requiring that patients who are coughing wear surgical masks. This may require facilities to change the way they interact with patients. It is essential to educate patients about wearing surgical masks to reduce the likelihood of infecting healthcare workers and prevent the spread of infection to other patients. Large posters stating this policy should be placed in the emergency room and in other patient waiting areas. Managers should implement and support a policy that identifies waiting patients who are coughing and enforces the use of these masks.

Symptomatic patients should be required to follow these standard precautions:

- Wear surgical masks when symptomatic—including coughing;
- Use a tissue to cover the mouth and nose when sneezing;
- Dispose of used tissues in no-touch receptacles; and
- Observe hand hygiene after soiling hands with respiratory secretion (for example, after coughing or sneezing into hands).

Q. What steps can I take to protect myself against airborne infection?

A. You can be a major player in protecting yourself, your patients, and your co-workers by following the infection control procedures set up by your healthcare facility in accordance with the CDC guidelines, especially the airborne precautions, since they will be new to some healthcare workers.

1) Encourage co-workers to also implement these steps. The sooner these steps become a part of your regular routine, the better prepared you'll be should possible 2009 H1N1 flu patients show up at your facility.

2) Each employer should have a pandemic flu plan in place that includes standard precautions against infection. If standard precautions outlined above are not already a part of your workplace operations, educate your co-workers and bring this fact sheet to the attention of your supervisor. Your union representative can work with your management team to ensure that good infection control policy is in place, that everyone is trained in prevention control procedures, and that everyone at your facility has as much protection as needed against airborne infection.

Q. How can I get more information about flu and protecting myself, my co-workers and patients from becoming infected?

A. For more details about flu and infection control:

For up-to-date information on the current 2009 H1N1 Flu outbreak, refer to the CDC at <http://www.cdc.gov/H1N1flu/>

For the CDC's current Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected 2009 H1N1 Flu Virus Infection in a Healthcare Setting, refer to http://www.cdc.gov/H1N1flu/guidelines_infection_control.htm

For additional information about respirators, refer to the OSHA guidance in the October 2006 Interim Guidance on Planning for the Use of Surgical Masks and Respirators in Healthcare Settings during an Influenza Pandemic at <http://www.pandemicflu.gov/plan/healthcare/maskguidancehc.html>

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>