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## **Joint Guidelines for Infection Control with Respect to Influenza Including 2009 H1N1 Influenza in Healthcare Settings**

**Massachusetts Department of Public Health (MDPH)  
Boston Public Health Commission (BPHC)**

**Note: See page 4 of this document for an Addendum dated November 24, 2009 concerning nasopharyngeal swabs and precautions to be taken by vaccinated healthcare workers.**

The Healthcare Infection Control Practices Advisory Committee (HICPAC) recommends droplet precautions for seasonal influenza. Pandemic influenza A 2009 H1N1 continues to cause disease similar to seasonal influenza in both clinical manifestations and epidemiology. Precautions appropriate to seasonal influenza should be appropriate and sufficient for influenza A 2009 H1N1. HICPAC, the Society of Healthcare Epidemiologists of America (SHEA), the Association of Practitioners in Infection Control and Epidemiology (APIC) and the Infectious Diseases Society of America (IDSA) recommend droplet precautions to prevent the transmission of pandemic influenza A 2009 H1N1 in healthcare settings. However, the federal Centers for Disease Control and Prevention (CDC) recently reiterated a recommendation for fit tested N95 respirator or greater level of respiratory protection for healthcare workers caring for patients with suspected or confirmed pandemic influenza A 2009 H1N1 infection. These inconsistencies in recommendations have caused confusion.

MDPH has surveyed Massachusetts hospitals and confirmed that most are experiencing difficulties in obtaining adequate supplies of N95 respirators. This is consistent with national information on supply availability and indications are that supplies are even more limited in non-acute care settings. The Massachusetts Department of Public Health and the Boston Public Health Commission recommend that each facility assess its current supply of respirators, project future need (through at least May 2010, when the current influenza season is expected to end), seek additional supplies if warranted, document in writing their good faith efforts to obtain additional supplies, and determine how to maximize the use of available respirators. If a facility recognizes that it will not have sufficient supplies of N95 respirators during this influenza season to fully comply with the CDC guidelines, a policy should be developed for how the facility will approach prioritization of available supplies.

In the situation of insufficient supply, the Massachusetts Department of Public Health and the Boston Public Health Commission recommend the use of standard and droplet precautions in the care of patients with suspected, probable or confirmed influenza, including 2009 H1N1. These precautions

should apply in inpatient, ambulatory care and emergency department settings. These precautions should be accompanied by a hierarchy of control measures, including policies and procedures consistent with respiratory hygiene/cough etiquette for reducing the risk of respiratory virus transmission in healthcare settings.

Droplet precautions are intended to prevent transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions (see:

<http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Isolation2007.pdf>).

- Because these pathogens do not remain infectious over long distances, special air handling and ventilation are not required to prevent droplet transmission.
- Healthcare personnel should wear a surgical type mask for close contact (within 6 feet) to patients with suspected or confirmed influenza; the mask is generally donned upon room entry.
- Use of gowns and gloves as components of standard precautions is likewise indicated when direct contamination of hands, skin or clothing with respiratory droplets is likely. Eye protection should be used for patient care when there is a reasonable likelihood of respiratory droplets getting into the eyes.
- Indirect exposure to infectious droplets may also occur via contamination of the hands or through contact with environmental surfaces recently contaminated. To prevent such indirect contact, scrupulous hand hygiene is essential, as well as appropriate environmental cleaning.
- A single patient room is preferred for patients who require droplet precautions. When a single-patient room is not available, consultation with infection prevention personnel is recommended to assess the various risks associated with other patient placement options (e.g., cohorting, keeping the patient with an existing roommate). Spatial separation of  $\geq 3$ -6 feet is important for patients with infections transmitted by the droplet route.
- Patients on droplet precautions who must be transported outside of the room should wear a surgical mask, if it can be tolerated, and follow respiratory hygiene/cough etiquette.
- For procedures and treatments that may generate small droplet aerosols of respiratory secretions, respiratory protection with a fitted N95 respirator or higher level of respiratory protection is indicated; otherwise respiratory protection consistent with droplet precautions, i.e. surgical type mask, is recommended. Examples of procedures that may generate aerosols, include collection of respiratory specimens by nasopharyngeal swab, bronchoscopy, intubation and extubation, and deep tracheal suctioning using an open system. Conduct aerosol-generating procedures in an airborne infection isolation room (AIIR), when feasible.
- These guidelines should be applied to all febrile, viral respiratory illness regardless of cause and test results.

The CDC continues to recommend the use of N95 respirators or higher respiratory protection for those caring for patients with suspect or confirmed pandemic influenza A 2009 H1N1. As noted above, other authoritative sources of infection prevention guidance suggest droplet precautions, with N95 respirator or higher respiratory protection only with aerosol-generating procedures. This is the suggested level of infection prevention recommended by the MDPH and the BPHC. However, healthcare providers and facilities should be aware that the Occupational Safety and Health Administration (OSHA) has indicated that it will enforce a requirement of adherence to the CDC recommendations, including documentation of a good faith effort to use N95 respirators.

The CDC guidance on infection control for pandemic 2009 H1N1 influenza contains valuable information on a hierarchy of controls that can reduce the risk of influenza virus transmission. These include administrative and engineering controls, as well as personal protective equipment. Healthcare providers and facilities should review these suggested measures in the CDC guidelines carefully. The CDC guidelines are referenced below, with a web link.

An essential component of any influenza control program is appropriate and effective surveillance for respiratory disease consistent with influenza-like illness in staff, patients, and visitors, with earliest possible recognition and application of control measures, including isolation, appropriate precautions and exclusion of ill staff or visitors.

Respiratory hygiene/cough etiquette in healthcare settings consists of visual alerts and informational materials advising patients and visitors to inform healthcare personnel of symptoms of a respiratory infection when they first register for care, to cover coughs and sneezes, and to practice hand hygiene. Supplies of tissues, hand sanitizer and waste disposal containers should be provided. Also, patients with respiratory illness should be >3 feet from others and wear a surgical type mask if tolerated (see: <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm> for details).

## **PERIOD OF EXCLUSION FOR HEALTH CARE PROVIDERS WITH ILI**

The CDC also recommends exclusion of healthcare workers with influenza-like illness from patient care until 24 hours after resolution of fever in the absence of antipyretics, consistent with exclusion recommended for work and school settings in general. Many public health experts, infection preventionists and hospital epidemiologists feel that this might be too short an exclusion from the direct care of patients and that an individualized criterion is difficult to implement. The standard isolation period for patients with influenza is 5 days or 24 hours after resolution of fever without use of antipyretic medication, whichever is longer (however, it should be noted that the CDC recommends a 7 day isolation period for hospitalized patients with influenza A H1N1 2009). The MDPH and the BPHC recommend an exclusion period of 5 days or 24 hours after resolution of fever without antipyretic medication, whichever is longer, for healthcare workers as a general standard. In all circumstances, appropriate infection prevention methods and behaviors are crucial.

## **REFERENCES AND BACKGROUND INFORMATION:**

- CDC: Interim Guidance on Infection Control Measures for 2009 H1N1 Influenza in Healthcare Settings, Including Protection of Healthcare Personnel: <http://www.cdc.gov/h1n1flu/guidance/ill-hcp.htm>
- OSHA Statement Re: H1N1-Related Inspections: [http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=NEWS\\_RELEASES&p\\_id=16602](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=16602)
- Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, June 2007: <http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Isolation2007.pdf>
- SHEA Position Statement: Interim Guidance on Infection Control Precautions for Novel Swine-Origin Influenza A H1N1 in Healthcare Facilities: [http://www.shea-online.org/Assets/files/policy/061209\\_H1N1\\_on\\_Letterhead.pdf](http://www.shea-online.org/Assets/files/policy/061209_H1N1_on_Letterhead.pdf)
- WHO: Infection Prevention and Control in Health Care for Confirmed or Suspected Cases of Pandemic (H1N1) 2009 and Influenza-like Illnesses: [http://www.who.int/csr/resources/publications/SwineInfluenza\\_infectioncontrol.pdf](http://www.who.int/csr/resources/publications/SwineInfluenza_infectioncontrol.pdf) .

## Addendum to Guidance

### **Joint Guidelines for Infection Control with Respect to Influenza, Including 2009 H1N1 Influenza, in Healthcare Settings**

**Massachusetts Department of Public Health (MDPH)  
Boston Public Health Commission (BPHC)**

**Since release of the guidance referenced above on November 11, 2009, two questions have arisen that are addressed in this addendum.**

#### **1. Nasopharyngeal swabs**

In the November 11 guidance, collection of nasopharyngeal swab specimens (NP swab) was listed as an aerosol-generating procedure. This was not present in earlier MDPH/BPHC guidance and NP swab collection is not listed by the Centers for Disease Control and Prevention (CDC) as an aerosol-generating procedure. Therefore, the Massachusetts Department of Public Health and the Boston Public Health Commission are **eliminating nasopharyngeal swabs from the list of aerosol-generating procedures.**

#### **2. Precautions to be taken by vaccinated healthcare workers**

With the expectation of a high degree of efficacy of the influenza A 2009 H1N1 influenza vaccine in adults, and in light of widespread vaccination of healthcare workers, a question has arisen about recommendations for infection prevention in vaccinated healthcare workers. While it would be expected that adults vaccinated with pandemic 2009 influenza A H1N1 vaccine would have a high level of protection by 2 weeks, the same MDPH/BPHC and CDC recommendations for unvaccinated personnel currently apply to vaccinated personnel. However, the CDC did provide, in posted guidelines, advice for prioritizing the use of N95 respirator or greater respiratory protection based on vaccination status at: [http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm).

The summary table for this prioritization is presented below.

## Prioritization of Respiratory Protection During Respirator Shortages for Healthcare Personnel Not Participating in Aerosol-Generating Procedures<sup>a</sup>

(Numbers 1 through 4 indicate relative priorities for respiratory protection, with 1 the highest priority and 4 the lowest priority)

| <b>Exposure Scenario</b>  | <b>Not Vaccinated<sup>b</sup></b> | <b>Vaccinated<sup>c</sup></b> |
|---|-----------------------------------|-------------------------------|
| <i>Personnel Without Risk Factors for Influenza-Related Complications<sup>d</sup></i> |                                   |                               |
| Routine care – frequent close exposure <sup>e</sup>                                   | 2                                 | 4                             |
| Routine care – infrequent close exposure <sup>f</sup>                                 | 3                                 | 4                             |
| <i>Personnel With Risk Factors for Influenza-Related Complications<sup>g</sup></i>    |                                   |                               |
| Routine care – frequent close exposure  | 1                                 | 3                             |
| Routine care – infrequent close exposure  | 2                                 | 4                             |

**a** – This table is provided as an example of prioritization that considers intensity and duration of exposure, personal health risk factors for complications of infection, and vaccination status. Advance planning is critical to efficient implementation of prioritized use during supply shortages.


**b** – Not vaccinated: not vaccinated or less than 14 days after vaccination. Consider including those with immunosuppressive conditions or treatment with immunosuppressive therapies anticipated to impair vaccine response in this group.

**c** – Vaccinated: 14 or more days after vaccination.

**d** - See section on “Healthcare Personnel at Higher Risk for Complications of Influenza” for list of personal risk factors for influenza-related complications; also see: <http://www.cdc.gov/h1n1flu/recommendations.htm>.

**e** – Personnel frequently in close contact with patients with suspected or confirmed 2009 H1N1 influenza. For the purposes of this document, close contact is defined as working within 6 feet of the patient or entering into a small enclosed airspace shared with the patient (e.g., average patient room). This generally includes personnel working in settings where cases of suspected or confirmed 2009 H1N1 influenza are routinely seen (e.g. emergency departments and primary care in environments such as clinics in outpatient settings, employee healthcare facilities, and correctional facilities).

**f** – Personnel infrequently in close contact with patients with suspected or confirmed 2009 H1N1 influenza. This generally includes personnel working in settings where cases of suspected or confirmed 2009 H1N1 influenza are not routinely seen and/or having job duties not involving close contact.

**g**– Gathering of personal information for the purposes of pandemic planning and response must be done in a fashion that is compliant with all applicable rules and regulations, including the Americans with Disabilities Act (ADA). A short technical assistance document is available at the following web address: [http://www.eeoc.gov/facts/pandemic\\_flu.html](http://www.eeoc.gov/facts/pandemic_flu.html).  Consider offering alternative work environments as an accommodation for employees at highest risk for complications of influenza during periods of increased influenza activity or if influenza severity increases.