



California Department of Public Health

Guidance for Influenza Prevention in Health Care Settings

November 5, 2010

Supersedes "GUIDANCE FOR INFECTION CONTROL FOR 2009 H1N1 INFLUENZA IN HEALTH CARE SETTINGS (2/4/2010)"

Background

In September 2010, the Centers for Disease Control and Prevention (CDC) published updated guidance for infection control for influenza in health care settings. The updated guidance supersedes previous CDC guidance for seasonal influenza, and the specific guidance for 2009 H1N1 influenza that was based on conditions as they existed in October 2009. The new guidance is available at the [CDC website](http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm). (<http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>)

Since October 2009, a vaccine for the 2009 H1N1 influenza virus has been widely available and is included in the 2010-2011 trivalent seasonal influenza vaccine. In addition, the overall risk of hospitalization and death among people infected with the 2009 H1N1 influenza strain is now known to be substantially lower than pre-pandemic assumptions.

In health care settings, spread of influenza virus can occur among patients, health care personnel (HCP), and visitors. In addition, HCP may acquire influenza from or transmit influenza to persons in their household or community. Therefore, preventing transmission in health care settings and among HCP is a critical component of the California Department of Public Health (CDPH) comprehensive efforts to prevent and mitigate the impact of influenza in California.

Updated Recommendations

CDPH agrees with CDC's recommendations for a comprehensive influenza prevention strategy in health care settings.

CDPH believes that preventing transmission of influenza virus and other infectious agents within health care settings requires a multi-faceted approach. Therefore, CDPH recommends that core strategies for the prevention of influenza transmission in health

care settings should include:

- Administration of influenza vaccine to HCP as the foundation for effective influenza prevention;
- Implementation of respiratory hygiene and cough etiquette;
- Appropriate management of ill HCP;
- Adherence to infection control precautions for all patient-care activities and aerosol-generating procedures; and
- Implementation of environmental and engineering infection control measures.

Successful implementation of these prevention strategies depends on the implementation of facility-specific administrative policies and organizational leadership that promote and facilitate adherence to these recommendations in the health care environment.

Below, CDPH comments on CDC's **changed recommendations regarding the use of respiratory protection** as one component of protection against influenza transmission. These comments pertain to Sections 5 and 6 of the CDC guidance.

Adherence to Droplet Precautions during Patient Care (Section 5 of CDC Guidance)

CDC recommends that HCP should don a **facemask** (i.e., surgical mask) when entering the room of a patient with suspected or confirmed influenza, consistent with procedures known as "droplet precautions" and previous guidance for seasonal influenza. Previous CDC guidance for 2009 H1N1 influenza recommended the use of a fit-tested **N95 respirator** under these circumstances.

The CDC guidance acknowledges that airborne transmission of influenza may occur "via small particle aerosols in the immediate vicinity of the infectious individual" but states that the "relative contribution of the different modes of influenza transmission is unclear." As stated by CDC, facemasks by design do not seal closely to the face and do not prevent inhalation of small particles that may be transmitted by exhalation, coughs, or certain medical procedures.

Thus, the use of a facemask instead of a fit-tested N95 respirator during patient care may increase the risk of influenza transmission to HCP. Widespread vaccination of HCP for seasonal influenza (including 2009 H1N1) will substantially reduce this risk across the workforce as a whole. Effectively implementing all of the other core prevention strategies, as outlined above, will further reduce the risk.

Therefore, **health care employers should consider allowing HCP to use respiratory protection at least as effective as fitted N95 respirators during influenza patient care based on an individual employee's preference for added protection.** Supplies should be adequate to meet anticipated needs and employees who choose to wear respiratory protection should not be discouraged from doing so or discriminated against for making this choice. Employers may also voluntarily choose to implement a facility-

wide respiratory protection policy that calls for the use of N95 respirators during influenza patient care.

Finally, health care employers should implement comprehensive respiratory protection programs that prepare HCP to use respiratory protection when it is recommended under the CDC guidance (see section below) and/or when required under the Cal/OSHA Aerosol Transmissible Diseases standard (Title 8 CCR Section 5199).

Caution When Performing Aerosol-Generating Procedures (Section 6 of CDC Guidance)

The CDC guidance recommends the use of additional control measures, including respiratory protection, for aerosol-generating procedures that may be more likely to generate higher concentrations of infectious respiratory aerosols than coughing, sneezing, talking, or breathing. CDC has identified certain procedures, which are thought to potentially put HCP at an increased risk for influenza exposure, as including:

- sputum induction;
- bronchoscopy;
- open suctioning of airways;
- intubation;
- extubation;
- cardiopulmonary resuscitation; and
- autopsy procedures.

The CDC guidance recommends that HCP take additional precautions when aerosol-generating procedures are performed on suspected or confirmed influenza patients, including the use of airborne infection isolation rooms, when feasible, and other engineering, work practice, and administrative controls. CDC also recommends the use of **respiratory protection at least as effective as fitted N95 respirators** when these procedures are being performed.

CDPH Position on Precautions for Aerosol-Generating Procedures

CDPH concurs with CDC and recommends the use of airborne infection isolation for aerosol-generating procedures performed on patients with confirmed or suspected influenza, including:

- Only performing these procedures on patients with suspected or confirmed influenza if they are medically necessary and cannot be postponed;
- Limiting the number of HCP exposed to the procedure;
- Conducting the procedures in an airborne infection isolation room when feasible;
- Considering the use of portable HEPA filtration units to increase effective ventilation rates in areas where procedures are performed;
- HCP wearing gloves, gown, and a faceshield that fully covers the front and side of the face or goggles as part of standard precautions;

- **HCP using respiratory protection at least as effective as fitted N95 respirators, within the context of a comprehensive respiratory protection program;**
- Preventing unprotected employees from entering areas where aerosol-generating procedures were performed until the required clearance time has elapsed; and
- Performing surface environmental cleaning following procedures.

CDPH also recommends that individual health care employers:

- Review all procedures performed by HCP in their facility, service, or operation for their capacity to generate higher concentrations of aerosols;
- Determine which should be designated as aerosol-generating (or high hazard) procedures that require the use of respiratory protection when performed by HCP on a suspected or confirmed influenza patient;
- Include a list of the high hazard procedures and job classifications who may perform them in the employer's Aerosol Transmissible Diseases Exposure Control Plan;
- Ensure that all HCP who may perform these procedures are included under the employer's comprehensive respiratory protection program; and
- Ensure that adequate respiratory protection supplies are procured to meet anticipated needs.

Note that reuse, redonning, or extended use practices for filtering facepiece respirators (such as N95s) were only under consideration during the 2009-10 flu season when major respirator supply issues were experienced and the situation was deemed an emergency. There is currently no approved method for disinfecting filtering facepiece respirators. Therefore, in 2009 CDC stated that redonning, reuse, and extended use increase the risk of contact transmission, although the precise level of risk is unknown. Similarly, there is a lack of information about the longest duration for which a filtering facepiece respirator can be used (See CDC website). Therefore **CDPH recommends that facilities do not implement redonning, reuse, or extended use of filtering facepiece respirators.** Employers may select respirators such as powered air purifying respirators or elastomeric facepiece respirators that can be cleaned and disinfected between uses.

Aerosol-Generating Procedures and Other Diseases Requiring Droplet Precautions

The CDC recommendation for the use of respiratory protection during aerosol-generating procedures performed on influenza patients represents the first time respiratory protection (as opposed to facemasks, which are not considered respiratory protection) has been recommended for a disease that otherwise calls for droplet precautions. This recommendation raises the issue of whether this added level of protection is warranted for other infectious diseases (e.g., pertussis, meningococcal disease) that currently call for droplet precautions.

Coughing, talking, exhalation, and certain medical procedures generate respiratory particles in a wide range of sizes, not just very large droplets that either launch directly to the mucosal surfaces or drop to the floor. Particles begin to evaporate and become smaller immediately upon emission and particles ranging from very small in size up to 100 microns are inhalable by persons in the near vicinity. Current knowledge of aerosols indicates that there is no bright line between droplet and airborne transmission based on particle size.

CDPH will continue to study the issue of whether respiratory protection should be recommended for HCP performing aerosol-generating procedures on patients with other diseases classified as being droplet transmitted and may provide additional guidance in the future. Additional scientific information to better describe transmission risks to HCP and to support decisions regarding appropriate protections for HCP will be critical to these efforts.

Therefore, **CDPH recommends further research to characterize the particle sizes and concentrations generated by the various procedures designated as “high hazard” or aerosol-generating, to enable a comparison to aerosol sizes and concentrations generated by coughing, sneezing, talking, and breathing.**

CDC Updated Guidance and the Cal/OSHA Aerosol Transmissible Diseases Standard

Cal/OSHA has stated it will enforce these CDPH recommendations, including the use of droplet precautions for patients with suspected or confirmed influenza and additional airborne infection isolation precautions as described above for aerosol-generating procedures.