Cal/OSHA Guidance for the 2010-2011 Influenza Season regarding the Application of the Aerosol Transmissible Diseases Standard (Issue Date: 11/5/2010)

In September 2010, the Centers for Disease Control and Prevention (CDC) published "Prevention Strategies for Seasonal Influenza in Healthcare Settings", which supersede previous CDC guidance for 2009 H1N1 and for seasonal influenza. The California Department of Public Health (CDPH) has issued guidance concurring with these recommendations and emphasizing the need for specific precautions for activities that increase the risk of transmission. The purpose of this guidance is to explain how Cal/OSHA's Aerosol Transmissible Diseases Standard[1] (ATD standard) applies during the 2010-2011 influenza season with regard to protecting employees against contracting influenza in health care and other workplaces and operations covered by the standard.

Revised CDC and CDPH Recommendations

When the 2009 H1N1 influenza virus was first detected, the CDC and CDPH recommended airborne infection isolation procedures, including the use of respirators, for all contact with suspected or confirmed cases. After reviewing the experience to date with this virus and the effectiveness of the influenza vaccine, the CDC has recommended the use of standard and droplet precautions for patient contact other than aerosol generating procedures, and the CDPH has adopted those recommendations.

Droplet precautions permit the use of surgical masks rather than respiratory protection, i.e., use of respirators. Recognizing that surgical masks do not provide protection against inhalation of airborne infectious aerosols, the CDPH has stated that facilities that implement surgical masks for contact with influenza patients should also consider making respirators available to health care personnel who prefer this level of protection.

The CDC and CDPH have also recommended airborne infection isolation measures, including the use of respirators, for aerosol generating procedures such as sputum induction, bronchoscopy, open suctioning, cardiopulmonary resuscitation, intubation, extubation, and autopsy procedures on people who are suspected or confirmed cases of influenza. These measures include:

- Only performing these procedures on patients with suspected and confirmed influenza if they are medically necessary and cannot be postponed;
- Limiting the number of health care personnel (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;

[1] California Code of Regulations, Title 8, Section 5199

- 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.

Application of Cal/OSHA Regulations

California's ATD standard requires employers to develop comprehensive procedures to protect employees against diseases that may be spread by infectious aerosols. Because no one specific measure will protect all employees against influenza, it is important that employers in health care and other high risk environments take all practical measures at their disposal to reduce the risk of infection.

Control measures required by the ATD standard for influenza include all of the following:

- Written infection control procedures. Depending on the type of employer, these procedures may need to be incorporated into an aerosol transmissible diseases exposure control plan or a biosafety plan.
- Engineering and administrative controls, such as patient triage and appropriate placement, and cleaning and disinfection procedures.
- Source control, including providing instructions and masks or other materials to patients and visitors for covering their cough.
- Droplet precautions for patient care other than in connection with aerosol generating procedures, as described in CDC and CDPH guidelines.
- Providing influenza vaccine at no cost and during working hours to all employees who have occupational exposure. The employer must maintain a confidential vaccination record for the employee, or if the employee declines to be vaccinated, maintain a signed declination record for the most recent year.

The ATD standard also requires employers, e.g., hospitals that perform aerosol-generating procedures to list those procedures, and the job titles of employees who may be involved with performance of the procedures, in their ATD exposure control plan.

The CDC, CDPH, the Institute of Medicine, and many other researchers have found that influenza may be transmitted through the inhalation of infectious aerosols. These aerosols are emitted not only by "aerosol generating procedures," but whenever an infected person coughs or sneezes.

Respirators, such as N95 filtering facepiece respirators or elastomeric respirators with N95 filters, are devices certified by the National Institute for Occupational Safety and Health (NIOSH) as providing at least 95 percent filtration for particles that are small enough to be inhaled. When a respirator forms an effective seal to a person's face, the inhaled air is forced through that filter, and therefore respirators reduce inhalation of infectious aerosols.

Surgical masks cannot provide equivalent protection, because they are not designed to seal to the person's face and they are not tested to the filtration efficiencies of respirators. Respirators provide significantly greater protection from inhalable aerosols than surgical masks offer, and in some circumstances employees may wish to opt for use of a respirator even though it is not required.

Based on the recommendations of the CDC and CDPH, Cal/OSHA will enforce the use of airborne infection isolation procedures as described by the CDC and CDPH when employees perform high-hazard, i.e., aerosol-generating procedures on patients who have or are suspected to have influenza. These procedures include the use of airborne infection isolation rooms when feasible, and the use of respiratory protection, at least as effective as an N95 respirator.

Consistent with CDC and CDPH recommendations, Cal/OSHA will not enforce the use of respirators during the 2010-2011 influenza season for other patient contact activities. However, Cal/OSHA strongly encourages health care facilities to continue to include all employees who have direct contact with influenza patients in their respiratory protection program, and to provide fitted respirators to employees who may request to use them in place of surgical masks. This is particularly important for employees who may be immunologically compromised or have other good reasons to want to minimize in every possible way their risk of contracting influenza. A respirator policy such as this will both make respirators available to employees who wish to protect themselves against influenza and help to ensure that preparedness is maintained against other infectious disease threats that may arise.

CDC, CDPH, and other researchers are continuing to investigate the role of different routes of transmission for influenza, including inhalation of infectious aerosols. Cal/OSHA will continue to monitor the information developed, and will update this guidance as necessary.

Respirator Use

California's Respiratory Protection Program[2] standard requires employers to develop and implement a written program for respirator use. This program must include procedures for selection of respirators, employee medical evaluation, fit-testing and training, respirator use, cleaning and maintenance, recordkeeping, and program review.

In 2009, health care facilities experienced significant respirator shortages, and these shortages resulted in the release of respirators that had been stockpiled by local agencies and CDPH. In order to ensure that filtering facepiece N95 respirators would remain available during this shortage, facilities were permitted to adopt procedures such as extended use[3] and reuse/redonning[4]. There is currently no approved method for disinfecting filtering facepiece respirators. Therefore the CDC stated that redonning, reuse and extended use increase the risk of contact transmission, although the precise level of risk is unknown

[2] California Code of Regulations, Title 8, Section 5144. Respiratory Protective Equipment.

[3] Extended use refers to wearing disposable N95 respirators for serial patient encounters, where the respirator has not been removed and re-donned between encounters.

[4] Redonning/reuse refers to removal of a respirator and putting it back on (redonning) between patient encounters.

(http://www.cdc.gov/h1n1flu/guidelines_infection_control_qa.htm#ex_use). The CDC further stated that there was insufficient information to determine how long a filtering facepiece respirator could be used.

This year, respirator supplies are expected to be adequate for the purposes for which they are recommended. Therefore, filtering facepiece respirators should be discarded after each patient encounter. Other types of respirators, such as powered air purifying respirators and elastomeric facepiece respirators may be disinfected and reused, in accordance with manufacturer recommendations.