

Rationale for Mandated Influenza Vaccination for Healthcare Personnel

Health Officer Order

In 2014, as Health Officer for San Diego County, Dr. Wilma J. Wooten issued a Health Officer Order mandating that all licensed acute care hospitals, ambulatory and community clinics, emergency medical service agencies, long-term care and skilled nursing facilities, and private physician practices in San Diego County require their healthcare personnel (HCP) to receive an annual influenza vaccination or, if they decline, to wear a mask while in contact with patients or working in patient care areas during each annual influenza season. The Order has been updated on November 1, 2017. This updated version is issued to also include private physician practices and clarification for emergency medical service agencies, which includes emergency medical technicians (EMTs), advanced EMTs, and paramedics.

Date of Issue

This Health Officer Order was originally issued on November 4, 2014. An updated version is dated November 1, 2017.

Rationale

In the United States, flu season occurs in the fall and winter. While influenza viruses circulate throughout the entire year, most of the time flu activity peaks between December and February, but activity can last as late as May.¹ Since 2010, Centers for Disease Control and Prevention (CDC) estimates that influenza has resulted in between 9.2 million and 35.6 million illnesses (3-12% of population), between 140,000 and 710,000 hospitalizations, and between 12,000 and 56,000 deaths annually.²⁻⁷ Persons with chronic medical conditions, infants and children, seniors, and pregnant women are at greater risk for severe influenza-related illnesses and deaths. All HCP are both at risk for influenza and can transmit the virus to their vulnerable patients. Patients in our healthcare facilities are especially vulnerable to influenza. Therefore, vaccinations of HCP protect patients and reduce employee absenteeism during influenza season.

CDC recommends that all HCP, including physicians, nurses, paramedics, emergency medical technicians, employees of nursing homes and chronic care facilities, students in these professions, and volunteers, should receive annual vaccination against influenza.⁸

There are two legislative actions in California requiring that general acute care hospitals offer influenza vaccinations to employees: 1) California Health & Safety Code §1288.7(a), effective July 1, 2007 and affecting acute care hospital staff. 2) California Code of Regulations, Title 8, §5199 (c)(6)(D) and (h)(10), Aerosol Transmissible Diseases standard of the California Division of Occupational Safety and Health Administration (CalOSHA); effective September 1, 2010 and affecting a broader range of healthcare workers. If hospital employees decline vaccination, they are required to sign a declination statement in lieu of vaccination. Compliance rates with these State laws, and this local order, are high. In San Diego County, during the 2015-16 influenza season, the influenza vaccination rate of employees at 22 hospitals was 91.2%. The rate for all HCP combined was 86.9%. Statewide, the highest coverage occurred in counties which had a mandatory mask policy for HCP who declined vaccination.⁹ In addition, coverage has been shown to occur in facilities with institutional requirements for influenza vaccination of employees.¹⁰

The Healthy People 2020 targets a 90% seasonal influenza vaccination rate for all HCP.¹¹ The Joint Commission has included the Healthy People 2020 objective for influenza vaccination coverage as apart of hospital accreditation requirements since 2012).¹¹

The intent of this Health Officer order is to enhance patient protection by requiring unvaccinated HCP to wear a face mask while in contact with patients or working in patient care areas during the influenza season. Mandatory vaccination combined with masking policies for unvaccinated HCP have been shown to increase HCP vaccination rates to above 95%.¹² Once implemented, hospital administrators should consider influenza vaccination coverage among HCP as a measure of quality of care.¹³

The most effective strategy for preventing influenza is annual vaccination.¹⁴ Therefore, the goal of this order – making influenza vaccination mandatory – is to increase the coverage rates of influenza vaccination of HCP, reduce employee absenteeism during influenza season, and reduce transmission of influenza from HCP to patients.

Supporting Rationale

Flu in the workplace can lead to increased absences, lower productivity, and higher medical costs. In addition, nosocomial transmission from healthcare personnel to patients has been documented in a variety of acute care settings including neonatal intensive care units, pediatric and general medical wards, transplant units, oncology units, and emergency departments.¹⁵

Influenza vaccination is effective in reducing influenza, and mandatory vaccination programs in healthcare settings have demonstrated increased influenza vaccination rates. Thus, mandatory vaccination policies in healthcare facilities can lead to decreased illness among personnel, decreased staff absenteeism, and would logically lead to decreased morbidity and mortality among patients.

Truths about Influenza in Healthcare Settings

Unvaccinated personnel can transmit the flu to other personnel, which can lead to decreased productivity and increased absenteeism. Healthcare personnel can also transmit influenza to patients.

- Studies suggest that up to 25% of HCP are infected with influenza each season.^{16,17}
- Healthcare personnel may be more likely to work when ill than other professions, which increases the risk for flu transmission in healthcare facilities.
- As many as 1 in 2 infected people never show classic flu symptoms,¹⁸ but can shed virus for 5-10 days. Thus, asymptomatic personnel can spread influenza unknowingly.
- Patient admissions and HCP absenteeism are typically higher during the flu season, which increases the impact of flu-related absenteeism on operations of these healthcare facilities.
- Influenza infection that is acquired during a hospital stay (nosocomial) leads to increased hospital days and mortality for inpatients¹⁹ and the CDC notes that higher staff vaccination levels have been associated with a lower risk of nosocomial flu cases and mortality.^{20,21}

Impact of Influenza Vaccination on Infection, Illness and Absenteeism

When well matched to the circulating flu strains, Inactivated Influenza Vaccine (flu shot) is effective in preventing illness and may lead to reductions in provider visits, complications, hospitalizations, and absenteeism in healthy adults under 65 years of age. Reduced absenteeism during the flu season is especially beneficial for hospitals, when bed-days and staff illness tend to be high.

- Two randomized control studies have shown reductions in influenza illness. In a season when the flu vaccine was well matched to circulating strains, influenza vaccination was found to be 88% effective in preventing influenza type A infection and 89% effective in preventing influenza type B

infection in HCP.²² In the second study, healthy working adults who were vaccinated against flu were found to have 34% fewer incidents of influenza-like illness (ILI), 42% fewer doctor visits, and 32% fewer sick days.²³

- Results of research focused on absenteeism vary, but several studies suggest that vaccination of HCP can reduce work absences.
- A randomized, placebo-controlled double-blind study of the impact of vaccination on absenteeism in a children's hospital found that influenza vaccination reduced absenteeism related to respiratory infections by 28%.²⁴
- In another randomized double-blind controlled trial conducted over three consecutive years, vaccinated personnel had 29% fewer cumulative days of febrile respiratory illness and 53% fewer cumulative days of work absence than those in the control group. While the results were in the expected direction, neither difference was statistically significant. The authors note that the impact of vaccination on absenteeism may have been moderated by the fact that HCP may work when ill. Of note, no absences related to adverse vaccination events were reported among study subjects.²²

Impact of Influenza Vaccination in Healthcare Settings Relative to Patient Protection

Several research studies suggest that vaccinating healthcare personnel can reduce patient morbidity and mortality. Prior to the current legislation, HCP vaccination rates ranged between 65-70%. By increasing vaccination rates substantially, among HCP, patient morbidity and mortality is likely to decrease.

Long-term Care Facilities

Despite the fact that a 2010 Cochrane review raised methodological questions regarding several studies which demonstrate the impact of HCP vaccination on patient health,²⁵ there is substantial evidence from other studies, which demonstrate that vaccination in healthcare settings does decrease influenza transmission from HCP to patients, particularly in long-term care settings.^{16,17} Studies in long-term care settings have shown that staff vaccination against influenza has been associated with reductions in all-cause mortality among patients,^{16,17} influenza-like illness (ILI),²⁶ and hospitalizations with ILI.²⁵ In addition, one long-term care study suggested that although staff vaccination rates did not independently predict ILI outbreaks, high rates of vaccination among *both* staff and residents can substantially reduce the rate and impact of influenza outbreaks.²⁷

Acute Care Facilities

Three published studies suggest a potential positive impact of HCP vaccination on patient outcomes in acute care settings. A study conducted in a tertiary care academic hospital in the United States suggested that there is a significant inverse association between HCP vaccination rates and the rate of nosocomial influenza among patients, suggesting that increasing rates may lower nosocomial infections.²⁸ A modeling study suggested that the relative effect of HCP vaccination is lower in hospitals than nursing homes, but that the absolute number of infections that can be prevented in the hospital is higher, because of higher hazard rates.²⁹ Further, a pragmatic cluster randomized controlled trial conducted recently in the Netherlands demonstrated that the intervention hospitals, where influenza vaccination was higher, showed approximately half the rate of nosocomial influenza and/or pneumonia infection in hospital inpatients.³⁰

Impact of Mandatory Vaccination Policies on Vaccination Rates

Flu vaccination rates among healthcare personnel have historically been suboptimal, leaving workers and patients, at higher risk for illness, complications, and potential death. Mandatory vaccination seems to offer the best opportunity to significantly increase vaccination coverage among HCP.

- Mandatory vaccination policies instituted at acute care hospitals have proven to increase immunization rates among HCP. At the national level, coverage for personnel working in hospitals that required influenza vaccination in the 2011-2012 flu season was 95.2%, compared to 68.2% for personnel working in hospitals that did not require vaccination.¹²
- In San Diego County, during the 2012-13 influenza season, local hospital rates of influenza vaccination of employees ranged from 57% to 99%.⁹
- In a review of hospital policies and state laws regarding HCP vaccination, increased HCP vaccination rates were significantly associated with mandated vaccination policies that included termination or other repercussions for non-compliance, including masking or reassignment. California legislation, which require hospitals to offer vaccine to employees at no cost, educate employees, and/or require staff to be vaccinated or sign a declination, has been found to show an association with higher vaccination rates among personnel.⁹
- At this time, there is insufficient evidence on whether masking asymptomatic personnel reduces flu transmission, but anecdotal reports suggest that requiring masking for unvaccinated staff can increase compliance with mandatory vaccination policies. This was reported by researchers in Germany, where flu vaccination rates for HCP increased from 33% to 52% in the 10 days following implementation of a masking requirement for unvaccinated personnel.³¹ In the U.S., an author of a five-year study at University of California Irvine Medical Center suggested that the masking requirement included in their mandatory vaccination program may have “provided sufficient disincentive to encourage healthcare providers to prioritize vaccination.”³²
- Mandatory vaccination policies have been instituted by hospitals, the Department of Defense, and municipalities. In addition, a California law, Cal-OSHA, and The Joint Commission require facilities to offer influenza vaccinations at no charge to personnel, as part of the facilities’ infection control programs.
- Despite improvements in the past three years, seasonal flu vaccination rates among HCP fall short of the Healthy People 2020 target of 90%.¹¹
- Nationally, during the 2015-2016 flu season, an estimated 79% of HCP were vaccinated against influenza.³³
- According to the California Department of Public Health, [*Influenza Vaccination among Healthcare Personnel in California General Acute Care Hospitals for the 2015-2016 Influenza Season*](#),⁹ hospitals that achieved 60% vaccination rates went from 50% in 2010-11 to 91% during the 2015-16 influenza season. For this latter influenza season, 65% of hospitals achieved the 78% vaccination rate, with only 24% of hospitals statewide achieving the Healthy People 2020 target of 90% (Table 4).

Since the issuance of the local Health Officer Order, during the 2014/15 influenza season, San Diego County has seen significant improvement in HCP influenza vaccination rates, with increases occurring each influenza season. To compare hospital vaccination rates from 2011/12 to 2015/16 (see Table 5) at: https://www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/2015HCP_FluT05.pdf.⁹

For influenza season 2015/16 (the latest data available), San Diego County achieved the following results:⁹

- 91.2% employees and 80.9% non-employees were vaccinated, for an overall average of 87% of all healthcare personnel combined, who were vaccinated (Table 1 on the above state website).
 - While San Diego did meet the Healthy People Objective to achieve a 90% vaccinate rate for employees, this target was not achieved for non-employees.
- For targeted reporting rates:
 - 96% (21 of 22) hospitals achieved the 60% vaccination rate.
 - 86% (19 of 22) hospitals achieved the 78% vaccination rate.
 - 27% (6 of 22) hospitals achieved the 90% vaccination rate (*HP 2020 Objective* target).
- Non-employees now include “licensed independent practitioners.”

Legal Authority

- The Health Officer has the authority to “take measures as may be necessary to prevent and control the spread of disease within the territory under their jurisdiction” (California Health and Safety Code 120175).
- State law requires that general acute care hospitals and certain employers offer influenza vaccinations to employees. If employees decline vaccination, they are required to sign a declination statement in lieu of vaccination. A violation of these provisions (by the employer) is punishable as a misdemeanor. (California Health and Safety Code, 1288.7, effective January 1, 2007, and Aerosol Transmissible Diseases standard of Cal OSHA, effective September 1, 2010).
- Beginning January 2013, the Centers for Medicare and Medicaid Services (CMS) required acute care hospitals to report HCP influenza vaccination rates as part of its Hospital Inpatient Quality Reporting Program. These numbers will be available to the public.
- Beginning January 2014, CMS will impose financial penalties on facilities that have not achieved a 90% vaccination rate among their healthcare workers. In addition, CMS has announced that hospital-acquired infections – including nosocomial influenza – will no longer be reimbursed.
- California Senate Bill 1318, vetoed by the Governor, would have required, commencing January 1, 2015, each clinic and health facility to have a 90% or higher vaccination rate. It also would have required the California Department of Public Health (CDPH), in consultation with the California Conference of Local Health Officers (CCLHO), to develop a “model mandatory vaccination policy” by July 15, 2015. For each year the facility did not achieve a 90% or higher vaccination rate, it would be required to adopt the “model mandatory vaccination policy” for the following influenza season. A violation of these provisions would have been punishable as a misdemeanor. This information is significant because the Governor, in his veto message, stated that this is an issue that should be decided by the local public health authority, which has been accomplished through this Order.

Definition of Mask

A simple surgical face mask will meet the requirement for those personnel declining vaccination. The face mask should be changed or appropriately discarded when leaving patient care areas, going off duty, or becoming soiled or wet.

Definition of Healthcare Personnel

For the purposes of this order, CDC defines “healthcare personnel” as all persons, including paid and unpaid employees, contractors, students, and volunteers, who work in areas where patient care is provided in a licensed or unlicensed facility subject to this Order, or who, otherwise, have direct contact with patients at such a facility. Healthcare personnel includes, but is not limited to, physicians (e.g., in private practice or healthcare systems), nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, students and trainees, contractual staff not employed by the health-care facility, and persons (e.g., clerical, dietary, housekeeping, laundry, security, maintenance, administrative, billing, and volunteers) not directly involved in patient care, but potentially exposed to infectious agents that can be transmitted to and from health care workers and patients.²⁰ For the purposes of this Order, emergency medical service personnel include paramedics, emergency medical technicians (EMTs), and advanced EMTs. Physicians who are licensed independent practitioners are also considered healthcare personnel, as well as employees of nursing homes and chronic care facilities, students in these professions, volunteers, and ancillary personnel who provide services within six feet of a patient.²⁰

Definition of Healthcare Facility

This order applies to all healthcare direct service organizations that are licensed or not licensed, and doing business in San Diego County, including, but not limited to, licensed acute care hospitals, skilled nursing facilities, long-term care facilities, ambulatory and community clinics, ambulance providers, and other facilities.

Exemption

Healthcare workers who provide their employer or facility with documentation from their medical provider of an Advisory Committee on Immunization Practices (ACIP) recognized medical contraindication to both inactivated and live attenuated vaccination may opt out of vaccination, but would still be required to wear a mask, consistent with CDC recommendation for Healthcare Personnel.¹²

Questions

- The County of San Diego appreciates your help and support of this Order to protect all individuals in the region.
- For questions please contact the County of San Diego Immunization Program at (866) 358-2966 or info@sdiz.org.
- To obtain additional influenza information, you may access the Immunization Program website at <http://www.sdiz.org/>.

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