Rationale for Mandated Influenza Vaccination for Healthcare Personnel

Health Officer Order

In 2014, as Public 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 was updated on November 1, 2017 to include private physician practices and 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. The most recent version was 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. During the 2019-2020 flu season, the Centers for Disease Control and Prevention (CDC) estimated 38 million people were ill with influenza. 18 million people visited their health care provider, 400,000 people were hospitalized and about 22,000 deaths were recorded. [2-7] The 2020-2021 flu season aligned with the COVID-19 pandemic when stay at home orders and masking mandates were in place; In San Diego County this resulted in 844 influenza cases and 2 influenza-related deaths. In comparison, during the 2019-2020 flu season in San Diego County there were 20,711 influenza cases and 108 influenza-related deaths reported. 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 2018-19 influenza season (the latest data available), the influenza vaccination rate of healthcare personnel at 23 hospitals was 92%.[9] In addition, coverage has been shown to occur in facilities with institutional requirements for influenza vaccination of employees.[10] The Healthy People 2030 targets a 70% seasonal influenza vaccination rate for all persons 6 months and older.11 The Joint Commission encourages organizations to continue to improve influenza vaccination rates and will review organizations based on vaccination rate improvement plans. [35]

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] Also, current CDC guidance stresses the importance of getting flu vaccine during the COVID-19 pandemic: "Flu vaccination will be very important to reduce flu because it can help reduce the overall impact of respiratory illnesses on the population and thus lessen the resulting burden on the healthcare system during the COVID-19 pandemic."[12] 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 and live, attenuated influenza vaccines are 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 2016 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 caresettings.[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 from 2009 to 2011in the Netherlands demonstrated that the intervention hospitals, where influenza vaccination was higher, had 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. According to CDC estimates, at the national level, 94.4% of healthcare personnel, who worked in hospitals which required influenza vaccination, reported receiving influenza vaccination during the 2019-20 flu season.[12] Workplaces which did not require, promote, or offer influenza vaccinations had the lowest coverage at 52.3%.[12]
- In San Diego County, during the 2018-19 influenza season, hospital rates of influenza vaccination of employees ranged from 78% to 99%.[9]
- 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.
- Nationally, during the 2019-2020 flu season, an estimated 80.6% of HCP were vaccinated against influenza.[12] According to the California Department of Public Health, *Influenza Vaccination Among Health Care Personnel in California Hospitals: 2018-19 Annual Report*[9] for the 2018-19 influenza season, overall, California hospitals reached 85% influenza vaccination among HCP, showing a steady increase since 2010.

- An overall average of 92% of healthcare personnel were vaccinated in the County of San Diego (Table 4 in the state report referenced above).
- Eighteen (18) out of 23 hospitals were on track to achieve 90% of healthcare personnel vaccinated by 2020 (measured by having 87% or more personnel vaccinated). Of those hospitals, 14 have achieved 90% or more of HCP vaccinated.

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 through 2017-18. To compare hospital vaccination rates from 2012-13 to 2017-18 (see Table 2) at: *Influenza Vaccination Among Health Care Personnel in California Hospitals: 2018-19 Annual Report*[9].

For influenza season 2018-19, San Diego County achieved the following results:[9]

- An overall average of 92% of healthcare personnel were vaccinated (Table 4 in the state report referenced above).
- Eighteen (18) out of 23 hospitals were on track to achieve 90% of healthcare personnel vaccinated by 2020 (measured by having 87% or more personnel vaccinated). Of those hospitals, 14 have achieved 90% or more of HCP vaccinated.

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).
- Since January 2013, the Centers for Medicare, and Medicaid Services (CMS) has 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.
- CMS may impose financial penalties on facilities that do not achieve a 90% vaccination rate among their healthcare workers.
- 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 are employees of nursing homes and chronic care facilities, students in those 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[34] 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. Additional influenza information and resources are available on the Immunization Unit website at https://www.sandiegocounty.ca.gov/iz

For questions, please contact the County of San Diego Immunization Unit at **(866) 358-2966** or IZINFO.HHSA@sdcounty.ca.gov.

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