

Mandatory seasonal influenza vaccination of health care workers: a way forward to improving influenza vaccination rates

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Abstract. Vaccine-preventable diseases cause significant mortality and morbidity. Immunisation of healthcare workers (HCW) plays a significant role in preventing nosocomial transmission in healthcare settings. Non-immune HCW put themselves, their contacts and patients at risk of preventable diseases. Achieving 100% protection for HCW and patients should be an achievable target; however, voluntary vaccination programs fail to achieve this rate of protection. This is true in the case of influenza, which contributes to the highest mortality and morbidity of any vaccine-preventable disease. Despite available safe, effective vaccines for seasonal influenza and recommendations by local and international authoritative bodies, the annual influenza vaccination rates amongst HCW remain disappointingly low despite recommendations by local and international authoritative bodies. Voluntary strategies of increasing access, offers of free vaccines, education, and highly visible publicity campaigns have had limited success. In the US, more innovative ideas have been proposed to complement these steps. We discuss such strategies including mandatory influenza vaccination and its possible implementation.

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An interest in a national mandatory influenza vaccination policy for healthcare workers (HCW) has recently been raised within both the Australian medical literature¹ and the mass media.² Seasonal influenza is the leading cause of vaccine-preventable disease (VPD)-associated hospitalisations and deaths annually in Australia.³ It afflicts our sickest patients,⁴ and causes healthcare-associated transmission with significant clinical sequelae.⁴ In the wider literature, these healthcare-associated outbreaks have been described in many diverse patient populations in both acute- and long-term care facilities (LTC)^{5–7} as having led to disruption of medical services, the closing off of hospital wards, an increase in HCW morbidity and absenteeism, and caused significant financial burden.⁵

A commonly-touted key strategy to prevent influenza morbidity and mortality in healthcare settings is annual, seasonal, flu vaccination of HCW. High HCW influenza vaccination rates have been shown to lead to significant reduction in healthcare-associated influenza transmissions⁶ and improved patient morbidity as well as all-cause mortality

outcomes in long-term care facilities.^{6,8} The vaccines are safe, effective and even with mismatches of seasonal flu and vaccine strains, afford a significant level of protection.^{7,8} Indeed, the World Health Organization (WHO),⁹ the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP),⁷ and the Australian Immunisation Handbook¹⁰ actively recommend annual influenza immunisation of HCW.

Despite these recommendations, the rates of influenza vaccination amongst HCW in Australia remain suboptimal ranging from 16.3 to 58.7%,⁹ not different from rates overseas.^{5,9} The need for annual vaccinations, attitudinal passive non-compliance, and prevalence of false assumptions amongst HCW of serious vaccine-related adverse effects have contributed to poor vaccine uptakes.^{11,12} The media publicity on poor influenza vaccination uptake amongst HCW locally is surely undesirable,¹ and can do harm in terms of public trust and future adoption of other health strategies. Existing voluntary strategies of increasing access, offering of free vaccines, education and highly visible publicity

campaigns are not enough, with vaccination rates often not reaching the 50% mark.^{7,8,13}

Newer strategies therefore need to be considered to improve these rates. One such strategy, the introduction of mandatory, signed, declination forms, was employed by a prominent cancer-care tertiary hospital in Melbourne alongside multi-modal efforts and strong hospital hierarchical support, leading to an overall uptake of 78% amongst HCW.¹ Correspondence with the authors revealed that the 22% of HCW who did not take up on the seasonal vaccine did so for medical, moral or no reasons, and that no punitive measures were undertaken. Although this significantly improved vaccination rates, there remains room for improvement. We argue that universal protection for patients and HCW from influenza, across all healthcare settings, must be a goal.

Overseas, the concept of mandatory vaccination has met with remarkable success. This policy, which requires vaccination as a condition of employment combined with strict criteria for vaccine exemption and the wearing of surgical masks for the entire influenza season for those granted these accommodations, has led to sustained vaccination rates of more than 95% in several hospital systems in the USA.^{8,13} At a local level, a pilot study looking at influenza vaccination versus a mask mandate was carried out in a renal ward at a large, tertiary hospital. This resulted in a vaccine uptake of 92.8% in 2013, which compares favourably to a rate of 47% in 2012 and 52.1% in the rest of the hospital still employing voluntary strategies.¹⁴

With the Victorian State Department of Health setting a target vaccination rate of 75% for all HCW from 2014 onwards, achieving this target will be difficult without some form of mandatory vaccination being endorsed.¹⁵ Mandatory vaccination policies have previously been employed in Australia, but the experience has thus far had only variable success. In 2007, the NSW government specified that all HCW have their immune status assessed before employment and that immunity against measles, mumps, rubella, varicella, pertussis and hepatitis B must be demonstrated, whilst influenza vaccination is recommended but not mandated. HCW who do not comply with all requirements must acknowledge this in writing and engage with employers to determine whether work redeployment is required. Data from nine health services surveyed in NSW showed that the policy implementation has led to, in some instances, 50% of existing staff being fully compliant with the new recommendations, whilst the number of non-compliant staff who were managed by being redeployed to other areas or had their employment terminated was extremely low (0–3 staff)¹².

What can be done to achieve universal HCW compliance in influenza immunisation?

(1) Strong governance and visible leadership support is critical.⁹ If mandatory vaccination is adopted, hospital, state and federal authorities will need resources to support the establishment and implementation of such a plan. Strengthening old vaccination strategies such as increasing access, especially during influenza seasons,

providing free vaccines to all HCW, allowing testing for allergies, and offering of alternative vaccines e.g. live, attenuated, intranasal influenza vaccine, need to be continued.⁸ Avenues to address grievances need to be put in place, complemented with a system for feedback and education. Religious and medical exemptions should be properly verified before being accepted. The authorities should be clear and steadfast on HCW who refuse vaccination, and alternatives to counter these refusals should exist, such as masking up during the whole influenza season or potentially being reassigned to a different work location or designation.

(2) HCW and their employers need to recognise their duty and responsibility to protect themselves, their contacts and their patients from influenza.⁷ HCW must be cognizant of the seriousness of influenza, the safety of the vaccine and the reason for annual vaccination. They need to appreciate that protection afforded by vaccines in certain populations is diminished^{8,13} and transmission occurs even when healthy hosts are asymptomatic,⁸ making HCW immunisation crucial in preventing healthcare-associated transmission. Concerns about real or perceived vaccine-associated adverse effects⁷ need to be allayed, and views by anti-vaccination campaigners must be effectively countered.

Low uptake of influenza vaccines is usually caused by passive non-compliance¹² and the majority of HCW accept the concept of mandatory vaccination policy.⁸ An attitudinal change amongst HCW is therefore absolutely crucial in the effort to increase vaccine uptake. Importantly, hospitals adopting mandatory vaccination in the US have shown that staff satisfaction in fact improved with implementation of such a vaccination program.¹³

(3) The health system needs to embrace vaccination as a core patient and HCW safety practice. This 'safety culture' in healthcare settings needs to be strongly encouraged, much like hand hygiene. The rate of vaccination can be a key performance index (KPI) and its adoption would show the system's commitment towards safe, quality care.⁸

(4) A national standardised system of surveillance for both HCW vaccination and healthcare-associated transmission of influenza should be developed and implemented across all health care settings. This would allow appropriate and equivalent comparisons, a prerequisite to providing reliable public assurance of patient and HCW protection.

(5) Streamlined, effective communication between departments, hospitals, government agencies and key stakeholders was found to be instrumental in attempting to mandate vaccinations in NSW. Lessons from this experience can be extrapolated to a wider, national scheme.¹²

(6) Vaccination alone is not enough. The influenza vaccine should be thought of as part of a health bundle, much like many other contemporary infection-prevention strategies.

Whilst it is a powerful weapon against healthcare-associated influenza transmissions, it is not a perfect vaccine. A recent meta-analysis estimates an overall modest protection of only 59% for seasonal trivalent influenza vaccine in healthy adults under the age of 65 years,¹⁶ less than the touted 70 to 90% protection in some position papers,¹⁷ although this protection is variable according to season and vaccine match. Until we discover more effective vaccines, affording better efficacy, longer protection and across different strains, the seasonal influenza vaccine will continue to be the most critical arm of protection against healthcare-associated transmissions.

Early case suspicion, prompt diagnosis, patient isolation or cohorting, establishing strict droplet precautions, promoting hand hygiene compliance, correct timely initiation of antivirals on patients, and encouraging HCW to stay home when unwell, need to also prominently feature in infection-prevention policies to complement a strong influenza vaccination stance for HCW.

Influenza vaccination remains the most important measure of preventing healthcare-associated transmission of seasonal influenza. To increase vaccine uptake, national bodies like the Australian Society of Infectious Diseases and the Australian College of Infection Prevention and Control must consider formulating a formal national guideline incorporating mandatory vaccination with partnership from key government stakeholders. Other leading nations in health have shown that mandatory vaccination against influenza and other VPD can be adopted practically. High vaccination rates against VPD must be made a core safety practice and used as a key performance index (KPI) for healthcare facilities.

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Conflicts of interest

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