

Mandatory influenza vaccination of healthcare workers: is it necessary or sufficient to protect patients?

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Abstract. In response to recent calls for mandatory influenza vaccination policies, we argue that these policies are neither necessary nor sufficient to protect patients from healthcare-associated respiratory viral infection.

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We note Chean and colleagues' editorial suggesting mandatory vaccination to protect patients from influenza.¹ We strongly support influenza vaccination of staff to protect themselves and patients from influenza. However, we suggest that mandatory influenza vaccination is neither necessary nor sufficient to protect patients from healthcare-associated respiratory virus infections.

The influenza vaccine is clearly not sufficiently protective to justify mandatory vaccination. Although it is commonly quoted that the vaccine provides 70–90% protection, more recent clinical trials employing the specific outcome of confirmed influenza (by nucleic acid detection) have estimated vaccine effectiveness to be ~59%,² with efficacy as low as 16% in some non-pandemic seasons.³ Enforcement of the wearing of masks is impractical, and redeployment, particularly for specialised clinical staff, may present considerable logistical problems.

Although other vaccine-preventable diseases (VPDs) may be less common, mandatory vaccination might be considered first nationally for infections where vaccines are highly effective, such as measles. However, Chean *et al.* cite NSW data suggesting that a policy of mandatory vaccination or reporting of immune status for VPDs (not including influenza) resulted in only 50% of staff being compliant and a small number of staff being terminated or redeployed.⁴ This raises questions about the implementation and enforcement of the policy for non-compliant staff, 2 years after release. Despite recommendations, mandatory programs for VPDs have not been enforced for healthcare workers within Australia, and implementation remains a challenge. A recent study of Victorian healthcare workers highlighted the requirement for dedicated resourcing of vaccination programs to

satisfactorily implement strategies in accordance with NHMRC guidelines for VPDs other than influenza.⁵

A principle of public health is that the least restrictive policies should be used to achieve the desired outcome. We dispute the assertion by Chean *et al.* that a goal of 75% of staff being vaccinated would not be possible without mandatory vaccination policies. At Alfred Health in June 2014, almost 90% of staff with patient contact had been approached, with vaccine coverage close to 80% for the 2014 season. This was achieved using a social marketing campaign supported by the hospital executive together with reporting to managers listing staff not yet approached for vaccination. These figures are similar to those reported in 2013 by the Royal Melbourne Hospital (pers. comm.) and the Peter Macallum Cancer Centre,⁶ both achieved without enforcement of mandatory policies.

We believe that the goal is to protect patients from healthcare-associated infections with respiratory viruses, not just influenza, as poor outcomes have been reported in patients with non-influenza respiratory viral infections. To achieve this, 'horizontal' interventions, such as reducing the proportion of healthcare workers attending work while unwell with respiratory illnesses ('presenteeism'), are likely to be more effective.⁷ This approach is readily accommodated by promoting existing policies and would be expected to reduce transmission of non-influenza respiratory viruses. It would also be effective in seasons where there may be a significant mismatch between circulating and vaccine strains, and for vaccine failures.

Finally, there is little evidence that nosocomial influenza poses a significant burden of illness to justify mandatory vaccination. Although case finding may be incomplete, we

only detected 26 cases in a national surveillance program over two seasons where influenza was diagnosed >7 days after hospital admission.⁸ These cases were clinically significant, but they do not necessarily implicate unvaccinated healthcare workers as the source of infection, as infection may have been acquired from vaccinated healthcare workers with influenza or other close contacts. A recent review of published reports of outbreaks suggested that influenza in patients or relatives were at least as common a source as outbreaks involving staff.⁹ Additionally in our series, at least half of patients were unvaccinated, reinforcing the need for efforts to improve vaccine coverage in populations at high risk of complications.⁸

While we strongly promote vaccination of patients, staff and other close contacts as important measures to protect patients from influenza, we do not feel that mandatory staff vaccination for influenza is justified. Physical measures and reducing the proportion of staff and visitors that attend hospital while unwell are also likely to be effective in reducing healthcare-associated respiratory infections.

References

1. Chean R, Ferguson JK, Stuart RL. Mandatory seasonal influenza vaccination of health care workers: a way forward to improving influenza vaccination rates. *Healthc Infect* 2014; 19: 42–4. doi:10.1071/HI13041
2. Osterholm MT, Kelley NS, Sommer A, Belongia EA. Efficacy and effectiveness of influenza vaccines: a systematic review and meta-analysis. *Lancet Infect Dis* 2012; 12(1): 36–44. doi:10.1016/S1473-3099(11)70295-X
3. Kelly H, Carville K, Grant K, Jacoby P, Tran T, Barr I. Estimation of influenza vaccine effectiveness from routine surveillance data. *PLoS ONE* 2009; 4(3): e5079doi:10.1371/journal.pone.0005079
4. Helms C, Leask J, Robbins SC, Chow MY, McIntyre P. Implementation of mandatory immunisation of healthcare workers: observations from New South Wales, Australia. *Vaccine* 2011; 29(16): 2895–901. doi:10.1016/j.vaccine.2011.02.011
5. Leung V, Harper S, Slavin M, Thursky K, Worth L. Are they protected? Immunity to vaccine-preventable diseases in healthcare workers at an Australian hospital. *Aust N Z J Public Health* 2014; 38(1): 83–6. doi:10.1111/1753-6405.12163
6. Leung VK, Harper SE, Slavin MA. Influenza vaccination uptake in an Australian hospital: time to make it mandatory for health care workers? *Med J Aust* 2012; 197(10): 552. doi:10.5694/mja12.11199
7. Kumar S, Grefenstette JJ, Galloway D, Albert SM, Burke DS. Policies to reduce influenza in the workplace: impact assessments using an agent-based model. *Am J Public Health* 2013; 103(8): 1406–11. doi:10.2105/AJPH.2013.301269
8. Macesic N, Kotsimbos TC, Kelly P, Cheng AC. Hospital-acquired influenza in an Australian sentinel surveillance system. *Med J Aust* 2013; 198(7): 370–2. doi:10.5694/mja12.11687
9. Voirin N, Barret B, Metzgera MH, Vanhems P. Hospital-acquired influenza: a synthesis using the Outbreak Reports and Intervention Studies of Nosocomial Infection (ORION) statement. *J Hosp Infect* 2009; 71(1): 1–14. doi:10.1016/j.jhin.2008.08.013