

## Editorial

# Influenza vaccination for healthcare workers: towards improving uptake

Joe McCormack<sup>1,2,4</sup> MB, BCh, FRCP, MD, FRACP

Brad McCall<sup>3</sup> MB, BS, MPH, FAFPHM

<sup>1</sup>Mater Hospitals and University of Queensland, South Brisbane, Qld 4104, Australia.

<sup>2</sup>University Department of Medicine and Infectious Diseases, Mater Adult Hospital, South Brisbane, Qld 4101, Australia.

<sup>3</sup>Brisbane Southside Population Health Unit, Coopers Plains, Qld 4108, Australia.

<sup>4</sup>Corresponding author. Email: [jmccorma@mater.org.au](mailto:jmccorma@mater.org.au)

Winter is approaching in the southern hemisphere and it is time to roll out the annual discussion and implementation of influenza vaccination. The protective efficacy of vaccination in reducing the incidence of acute infection from influenza, deaths from pneumonia and influenza, and all-cause mortality in the elderly has been known for many years.<sup>1</sup> New studies in the past year or so have demonstrated some longer-term benefits of vaccination. In a Cochrane review, influenza vaccine was shown to significantly reduce the frequency of acute exacerbations of chronic obstructive pulmonary disease.<sup>2</sup> In a review of cohort studies and a randomised controlled trial, annual influenza vaccine was shown to reduce cardiovascular morbidity and all-cause mortality in patients with cardiovascular disease.<sup>3</sup> In a study of 17 393 adults hospitalised because of community-acquired pneumonia over a 4-year period, prior influenza vaccine was associated with improved survival.<sup>4</sup> The clinical benefit of influenza vaccination, indications and contraindications, and risk groups who are likely to benefit most are well documented in the Australian Immunisation Handbook<sup>5</sup> and by the World Health Organization<sup>6</sup> and the Centers for Disease Control (CDC).<sup>7</sup> Although influenza vaccination is recognised as a very effective prophylactic measure, further research into better vaccines and better predictive models is desirable. The US Food and Drug Administration has recently approved the use of a live, attenuated nasal influenza vaccine in children aged 6 months and older; this vaccine has previously been available to adults.<sup>8</sup>

Healthcare workers (HCWs) and others whose jobs involve frequent and close contact with patients represent a group for whom annual influenza vaccine is recommended based on their potential to transmit influenza to those at high risk of complications.<sup>5</sup> The CDC has extended the definition of HCWs who should receive vaccine to include employees of assisted-living and other residences for persons in groups at high risk, persons who provide home care to persons at high risk, and household contacts of persons in groups at high risk.<sup>7</sup> Although influenza can affect anyone, there is a disproportionate impact on

morbidity and mortality for hospital inpatients and residents of long-term care facilities (LTCFs). Vaccination of HCWs in the LTCF setting has a demonstrated association with improvement in mortality among patients.<sup>9</sup> A recent outbreak of influenza in a Queensland LTCF demonstrated the importance of vaccination of residents and HCWs as a key preventive strategy in LTCFs.<sup>10</sup> It would be reasonable to expect that HCWs involved with such institutions are keenly aware of their duty of care to patients and residents, and that they would lead by example in having annual vaccination themselves. Sadly, this has not been the case. In 2005, only 38% of more than 63 000 permanent health employees in Victorian hospitals were vaccinated (ranging from 34% of non-clinical staff to 42% of laboratory staff).<sup>11</sup> The figure may be even lower for casual staff, who form an important part of the health service workforce, especially during times of peak demand (e.g. influenza season). The situation is similar in LTCFs, with ~32% of the aged-care workforce in south Brisbane receiving influenza vaccine in 2007 (Brisbane Southside Population Health Unit, pers. comm.). The economic benefits of increased HCW influenza vaccination coverage have been described.<sup>12</sup>

Why are HCW vaccination rates so low and what can be done to improve them? A Canadian study suggested that a message that emphasises the health benefits of influenza vaccination as part of a wellness program was likely to be more successful than more traditional approaches.<sup>13</sup> Factors that predict acceptance of influenza vaccination amongst HCWs in LTCFs include older age, female gender, married status, higher socioeconomic status, longer period of employment and prior absenteeism resulting from influenza.<sup>14</sup> One study involving HCWs in 70 LTCFs in California examined the effects of two interventions: a dedicated free vaccine day and an educational program. The vaccine day, either alone or in conjunction with the educational program, resulted in a significant increase in vaccination rates; however, the educational program alone had no such effect.<sup>15</sup> Other initiatives to improve staff access to vaccination include mobile vaccination carts, peer advocacy and 'drop-in' clinics.<sup>16</sup>

So, how should we approach the issue of influenza vaccination amongst HCWs in Australia? It is clear that if we sit back and wait for people to turn up, we will have a similar uptake as in previous years. Influenza activity was higher than usual in the winter of 2007, with 10 534 notifications of laboratory-confirmed cases compared with an annual average of just over 3000 notifications during the previous 6 years.<sup>17</sup> However, people have short memories and we cannot rely on this to provide an incentive to boost vaccination rates. Vaccination uptake is higher in those facilities that offer routine vaccination, so providing influenza vaccine free of charge to all HCWs as part of a routine staff health program in all healthcare facilities and LTCFs would be a good start.<sup>9</sup> Many healthcare institutions already have educational programs and some have dedicated (free) vaccination days, but these need to be broadened and enhanced to improve access and uptake by all HCWs, including casual employees. Correcting some common myths and misunderstandings among HCWs about the indications, side-effects and effectiveness of influenza vaccine must be a priority in any education strategy. Potential incentives for HCWs may range from mandation to a variety of potential workplace benefits, including less absence from the workplace due to illness.

Perhaps we can learn from other groups of health advocates such as those in Ontario, Canada, where influenza vaccination is made available free to all members of the population, and a strong, active coalition of public health and clinical healthcare professionals implement the influenza vaccination strategy, which is supported by a wide variety of media resources and service provision.<sup>18</sup> With the potential benefits being so obvious, an Australian nationally funded program to provide for vaccination costs and program support within healthcare facilities and LTCFs is long overdue. The case must be presented to Commonwealth and State governments to secure more funding for staff vaccination programs in healthcare facilities and LTCFs throughout Australia. Such programs should include both public and private facilities, and may require funding from a combination of public and private insurance sources. Who should lead and coordinate such a program to improve influenza vaccine uptake in Australian HCWs? What role should national organisations such as the Australian Infection Control Association (AICA), the Australasian Society for Infectious Diseases (ASID), the Thoracic Society of Australia and New Zealand (TSANZ), the Department of Health and Ageing (DOHA) or the Communicable Diseases Network Australia (CDNA) play in this? There are lots of questions regarding influenza vaccine uptake and, although it is a strategy that produces significant community benefits vaccination, rates remain unacceptably low, particularly among HCWs. It is not unreasonable to expect HCWs to lead by example by having themselves vaccinated and we have a collective responsibility to take whatever measures are required to achieve this. The time to act is now.

## References

1. Vu T, Farish S, Jenkins M, Kelly H. A meta-analysis of effectiveness of influenza vaccine in persons aged 65 years and over living in the community. *Vaccine* 2002; 20: 1831–6. doi:10.1016/S0264-410X(02)00041-5
2. Poole PJ, Chacko E, Wood-Baker RW, Cates CJ. Influenza vaccine for patients with chronic obstructive pulmonary disease. *Cochrane Database Syst Rev* 2000; 4: CD002733.
3. Davis MM, Taubert K, Benin AL, Brown DW, Mensah GA, Baddour LM, *et al*. Influenza vaccination as secondary prevention for cardiovascular disease: a science advisory from the American Heart Association/American College of Cardiology. *J Am Coll Cardiol* 2006; 48: 1498–502. doi:10.1016/j.jacc.2006.09.004
4. Spaude KA, Abrutyn E, Kirchner C, Kim A, Daley J, Fishman DN. Influenza vaccination and risk of mortality among adults hospitalized with community acquired pneumonia. *Arch Intern Med* 2007; 167: 53–9. doi:10.1001/archinte.167.1.53
5. National Health and Medical Research Council. Australian Immunisation Handbook (8th ed). Canberra: National Health and Medical Research Council; 2003. [Australian Immunisation Handbook (9th ed), Influenza chapter released August 2007].
6. World Health Organization. Influenza. Geneva: World Health Organization; 2008. Available online at: <http://www.who.int/csr/disease/influenza> [Accessed 2 January 2008].
7. Centers for Disease Control and Prevention. 2007–08 Influenza prevention and control recommendations. Vaccination of specific populations. Atlanta: Centers for Disease Control and Prevention; 2007. Available online at: <http://www.cdc.gov/flu/professionals/acip/specificpopulations.htm> [Accessed 2 January 2008].
8. US Food and Drug Administration. FDA News. FDA approves nasal influenza vaccine for use in younger children. Rockville, MD: US Food and Drug Administration; 2007. Available online at: <http://www.fda.gov/bbs/topics/NEWS/2007/NEW01705.html> [Accessed 2 January 2008].
9. Carman W, Elder A, Wallace L, McAulay K, Walker A, Murray G, *et al*. Effects of influenza vaccination of health care workers on mortality of elderly people in long term care: a randomised controlled trial. *Lancet* 2000; 355: 93–7. doi:10.1016/S0140-6736(99)05190-9
10. McCall BJ, Mohr CM, Jarvinen KAJ. Observations on managing an outbreak of influenza A infection in an aged care facility. *Commun Dis Intell* 2007; 31: 410–12.
11. Bull A, Bennett N, Pitcher H, Russo P, Richards M. Influenza vaccine coverage among health care workers in Victorian public hospitals. *Med J Aust* 2007; 186: 185–6.
12. Boersma B, Rhames T, Keegan JM. Additional cost savings of an effective employee influenza program on prevention of nosocomial influenza. *Am J Infect Control* 1999; 27: 177–8. doi:10.1016/S0196-6553(99)70096-9
13. Manuel DG, Henry B, Hockin J, Naus M. Health behavior associated with influenza vaccination among healthcare workers in long term care facilities. *Infect Control Hosp Epidemiol* 2002; 23: 609–14. doi:10.1086/501980
14. Doebbeling BN, Edmond MB, Davis CS, Woodin JR, Zeitler RR. Influenza vaccination of healthcare workers: evaluation of factors that are important in acceptance. *Prev Med* 1997; 26: 68–77. doi:10.1006/pmed.1996.9991
15. Kimura AC, Nguyen CN, Higa JI, Hurwitz EL, Vugia DJ. The effectiveness of vaccine day and educational interventions on influenza vaccine coverage among health care workers at long term care facilities. *Am J Public Health* 2007; 97: 684–90. doi:10.2105/AJPH.2005.082073

16. Centers for Disease Control and Prevention (CDC). Interventions to increase influenza vaccination of health-care workers – California and Minnesota. *MMWR Morb Mortal Wkly Rep* 2005; 54: 196–9. .
17. Communicable Diseases Australia, National Notifiable Diseases Surveillance System. Canberra: Department of Health and Ageing; 2007. Available online at: [http://www9.health.gov.au/cda/Source/Rpt\\_4.cfm](http://www9.health.gov.au/cda/Source/Rpt_4.cfm) [Accessed 31 December 2007].
18. Ontario Ministry of Health and Long-Term Care. Health care providers. Influenza immunization program: 2007–2008. Toronto: Ministry of Health and Long-Term Care; 2007. Available online at: <http://www.gettheflushot.ca/providers/providers.html> [Accessed 31 December 2007].