Making influenza vaccination mandatory for health care workers: the views of NSW Health administrators and clinical leaders

***Julie Leask*[A,B,D], *Charles M. Helms*[C], *Maria Y. Chow*[A], *Spring C. Cooper Robbins*[A,B] *and Peter B. McIntyre*[A,B]**

[A]*National Centre for Immunisation Research and Surveillance, The Children's Hospital at Westmead*

[B]*Sydney Medical School, The University of Sydney*

[C]*2008 Fulbright Senior Scholar, The University of Sydney*

[D]*Corresponding author. Email: JulieL3@chw.edu.au*

Abstract: The challenges of maintaining high influenza vaccination rates in health care workers have focused worldwide attention on mandatory measures. In 2007, NSW Health issued a policy directive requiring health care workers to be screened/vaccinated for certain infectious diseases. Annual influenza vaccine continued to be recommended but not required. This paper describes the views of NSW Health administrators and clinical leaders about adding influenza vaccination to the requirements. Of 55 staff interviewed, 45 provided a direct response. Of these, 23 supported inclusion, 14 did not and eight were undecided. Analysis of interviews indicated that successfully adding influenza vaccination to the current policy directive would require four major issues to be addressed: (1) providing and communicating a solid evidence base supporting the policy directive; (2) addressing the concerns of staff about the vaccine; (3) ensuring staff understand the need to protect patients; and (4) addressing the logistical challenges of enforcing an annual vaccination.

Influenza causes substantial morbidity and mortality in Australia. In the non-pandemic period 2000–2002, 6275 hospitalisations and 87 deaths from influenza were reported.[1] During the 2009 H1N1 pandemic period there were 1214 hospitalisations, 255 admissions to intensive care and 48 deaths in New South Wales (NSW) alone.[2] Nosocomial transmission of influenza places significant burden on patients, staff and the health care system. One study found that over a quarter of influenza infections that resulted in admission to intensive care or death were hospital acquired.[3]

Vaccinating health care workers has been associated with reduced mortality among long-term care patients, decreased rates of nosocomial influenza in hospitalised patients, reduced staff absenteeism, and cost savings.[4–6]

Maintaining high immunisation rates among health care workers remains a significant challenge. Previously documented coverage levels in Australian hospital settings have been poor and, depending on the setting, have ranged from 18 to 58%.[7–10] Health care workers hold misconceptions about the risk and severity of influenza and the safety and efficacy of the vaccine.[11–13] While addressing psychological and other barriers can make voluntary programs to increase uptake of the vaccine by health care workers more successful, these programs appear difficult to sustain.[14–16] This has resulted in widespread interest in mandatory influenza vaccination of health care workers in institutional settings.[17–22]

In February 2007, NSW Health introduced a unique policy directive requiring employees to be vaccinated against specified vaccine-preventable diseases. Required vaccines include measles, mumps, rubella, varicella, hepatitis B, diphtheria, tetanus and pertussis.[23] Annual influenza A vaccine is recommended but not mandatory. Health care workers who do not comply with policy directive requirements must acknowledge this in writing and subsequently engage with the employer to determine whether restrictions on the nature of work undertaken are required.[23]

We conducted a qualitative investigation with key personnel involved in the implementation of the policy directive. Among the study's aims was one to ascertain views about the feasibility of including influenza vaccine within the existing mandatory provisions. These findings form the subject of this paper.

Methods

The study was carried out from February to June 2009. Participants were selected, via stratified purposeful sampling,[24] for qualitative semi-structured interviews. We

selected from four groups of staff closely involved with policy directive development and/or implementation. These groups were: (1) staff from the NSW Department of Health; (2) the NSW Health Implementation Group (a policy implementation group specifically formed in relation to this policy and consisting of representatives from each area health service); (3) staff of NSW public hospitals; and (4) staff of professional associations and university student liaison groups.

This study was approved by the NSW Health Population Health Research Ethics Committee and individual hospital sites from which participants were recruited. Participation was voluntary and written consent was obtained. The Chief Executive of each hospital approved participation. We then approached individuals from each of the groups confidentially.

A single interviewer (CH) conducted all interviews and each lasted between 40 and 60 minutes. While concentrating on questions about barriers and facilitators to policy directive implementation, the following question was also asked of participants from groups 1, 2 and 3 above: '*What are your views on a similar policy directive which includes yearly influenza vaccination for staff?*' Participants from group 4 were asked about the impact such a requirement would have on their organisation. Interviews were digitally recorded and transcribed.

All interviews were read and a list of themes developed, compared and re-developed by the authors. The agreed themes were coded using NVivo software Version 8 (QSR International, Cambridge, USA). These findings were compared across hospital types and professional groups to identify if a professional/workplace role or circumstance influenced opinions. Given the large number of interviewees, we were able to quantify responses according to whether the participant's answer indicated they supported, did not support, or were undecided about including mandatory influenza vaccination under the current policy directive. This was done with participant groups 1, 2 and 3.

Interpretation was undertaken by authors with differing positions on mandatory vaccination for health care workers.[25,26]

Results

Fifty-eight participants were interviewed: eight from the NSW Department of Health; five from the NSW Health Implementation Group; 37 from a range of public hospitals (administrative leaders, clinical managers and clinicians); and eight from unions and professional associations.

Of the 45 participants providing a direct response to the question, 23 (51%) favoured mandatory influenza vaccination inclusion in the policy directive, 14 (31%) were not supportive and eight (17%) were undecided.

Support for mandating influenza vaccination

Supportive participants felt that mandating influenza vaccination would provide extra 'teeth' to their current efforts to vaccinate staff each influenza season, with many feeling that existing efforts struggled to attain even 50% (and sometimes as low as 25%) influenza vaccination coverage.

Reducing absenteeism and protecting patients both rated as rationales for support. Staff protection also factored in, but was less compelling as a rationale because many felt that staff did not see themselves to be at risk. One occupational health service manager commented on the incongruity of their department potentially driving a policy that was essentially about patient protection:

> I think it has to happen but I don't think it'll come from us … it'll come from a public health [standpoint, as a] patient safety issue.
> (Hospital clinical manager)

Participants at higher administrative levels tended to have more support than those at a clinical management level. Four of the five infectious disease specialists interviewed supported mandatory influenza vaccination. When asked about the impact on their organisations, participants representing unions did not voice any major concerns; as one put it: 'I don't think that there would be a big backlash.'

Potential barriers to mandating influenza vaccine

Regardless of whether or not participants supported influenza vaccine inclusion in the policy directive, they cited similar barriers to such an inclusion. The more commonly cited barriers tended to be unique to influenza vaccination and centred on: the logistics of mandating and enforcing a yearly vaccination (mentioned by 17 participants); the persistence of staff resistance to influenza vaccination based on misunderstandings of the vaccine's necessity, safety and efficacy (mentioned by 19 participants); and the felt need of some staff for better evidence to support influenza immunisation of health care workers (mentioned by eight participants).

Logistics

Experiences with the current policy directive had brought to the forefront the challenges of implementing such a requirement. Staff acknowledged that vaccinating a large number of staff within a short period of time and enforcing such a requirement would necessitate a significant amount of money and resources, such as trained staff and immunisation clinics, and more active approaches to immunise

staff, such as ward visits. A few participants were concerned about the ability to enforce such a requirement. A few felt the resources necessary for influenza vaccination's full inclusion would make overall compliance with the policy directive an unattainable goal.

> I'd support it – in principle. In actual operational terms it would be a logistical nightmare. We're talking about getting the entire staff of a hospital influenza-vaccinated within a 4-week period instead of over a whole year or over a whole lifetime, and we would have to do that each and every year.
> (Hospital clinical manager)

The following comment from a hospital clinical manager encapsulates the struggle – evident in many supportive participants – between the logistical challenges and the potential support such an inclusion might engender:

> My views are that philosophically it should happen. Practically, I think it may be a bit of a nightmare, particularly until the [existing policy directive is] embedded, much more adequately resourced and [there are] better data collection systems. Having said that, a lot of effort goes into encouraging influenza vaccination each season and I suspect if it were mandatory less effort would be required to encourage people, if it became more or less an automatic thing.
> (Hospital clinical manager)

Staff resistance

Much of the concern about logistical challenges came in the context of a perception that staff would resist the mandate. Many participants, regardless of their support, felt there was a history of staff not wanting to receive influenza vaccination because of reservations around the efficacy, necessity and safety of the vaccine. Some participants spoke of a 'backlash', 'resentment' and 'opposition' from staff, as well as 'stigma' surrounding the vaccine. They anticipated this based on previous experience and two participants who themselves believed the vaccine caused a respiratory illness:

> A lot of people get reactions to the flu vax [vaccination]. The first flu vax they have they get a very bad cold and they nearly die.
> (Hospital clinical manager)

In addition to the perceived staff backlash against mandatory influenza vaccination, some participants mentioned that staff did not need to be vaccinated because they were not at risk of influenza and 'didn't get sick'. This belief, also held by a few of the participants, appeared to be underscored by an assumption that influenza vaccination is primarily to protect staff, not patients.

Need for evidence

In particular, medical specialists wanted clearer epidemiological and disease modelling evidence about the impact of influenza vaccination in health care settings to justify the policy.

> If you're mandating something then you really have to show that the efficacy of that is almost universal.
> (Administrative leader)

Other needs

The interviews offered an opportunity to explore what participants felt was needed to enable influenza vaccine to be a requirement rather than a recommendation. Along with the desire for more evidence, various individuals mentioned the need for 'political will', a consultative and 'critical dialogue with health professionals and the broader community', and 'innovative' campaigns. Others mentioned wanting information on the best way to implement such a policy. One participant felt that a lifelong vaccine would help greatly by eliminating the annual requirement.

Discussion

This study of staff involved with policy implementation demonstrates mixed attitudes towards adding influenza vaccine to an existing state mandatory immunisation program for health care workers. NSW Health currently has no specific plan to include influenza vaccination under the policy directive. However, the issue may arise in the future, particularly in light of public concern about pandemic (H1N1) 2009 influenza and several recently published implementation reports of success with mandatory approaches to influenza immunisation in United States hospital workers.[17,19,20]

This investigation has provided insight into issues that it would be helpful to address should a mandatory influenza immunisation policy for health care workers be considered in the future. While the study is not a representative sample of all health care workers in NSW, it provides insights from people with experience in developing and implementing a mandatory program. For them, the primary issues were:

- *Providing and communicating a solid evidence base.* This was particularly important for infectious diseases physicians, who are ideally placed to champion such a policy. The evidence base could also include continuous feedback of current data on the success of the NSW mandatory policy directive and careful monitoring of ongoing mandatory health care worker influenza immunisation programs in the United States.
- *Addressing the concerns of staff about influenza vaccine safety and efficacy*. Many participants felt staff would not accept this vaccine. Anticipated staff resistance to influenza vaccination appeared to be a barrier to

participants' sense of confidence and competence (self-efficacy) to successfully implement and enforce such a requirement. Therefore, any campaign efforts would need to increase staff support for the vaccine and provide evidence of protection of this support to those implementing the mandate.

- *Ensuring staff understand the need to primarily protect patients.* It appears there is a belief that vaccinating staff against influenza is primarily to protect staff. Protecting patients by reducing the risk of transmission needs to be a clear message and is likely to appeal to an underlying professional value of duty of care. This would be particularly relevant for staff working with patients at high risk of complications from influenza including the immunocompromised and those with cardiorespiratory disease. For administrators, the role of staff vaccination in assuring full staffing in health care settings in influenza epidemics could also be emphasised.
- *Addressing the logistical challenges.* Challenges include capacity to execute and enforce vaccination of a large number of staff within a short period of time and feasible options for management of non-compliant staff.

Conclusion

The unique nature of influenza vaccination, its yearly requirement and staff beliefs about its safety and efficacy makes mandating it as part of the current policy directive challenging, but not insurmountable. More broadly, institutions or jurisdictions which consider mandatory influenza vaccination as part of their future efforts to improve uptake must recognise and address the potential barriers to such a measure, including those identified above.

Acknowledgments

We gratefully acknowledge the assistance of the NSW Health Immunisation Branch for their support and assistance in the study, in particular Sue Campbell-Lloyd, Su Reid and Dennis Meijer. We would also like to thank all participants for their time and contribution to this study.

References

1. Brotherton J, McIntyre P, Puech M, Wang H, Gidding H, Hull B et al. Vaccine preventable diseases and vaccination coverage in Australia 2001–2002. *Commun Dis Intell* 2004; 28(Suppl. 2): vii–S116.
2. Population Health Division. NSW Health. Influenza monthly epidemiology report, NSW (January 2010). Available from: http://www.health.nsw.gov.au/publichealth/Infectious/reports/influenza_05022010.asp (Cited 11 May 2010.)
3. Kappagoda C, Isaacs D, Mellis C, Peat J, De Silva L, O'Connell A. Critical influenza virus infection. *J Paediatr Child Health* 2000; 36(4): 318–21. doi:10.1046/j.1440-1754.2000.00507.x
4. Hayward AC, Harling R, Wetten S, Johnson AM, Munro S, Smedley J et al. Effectiveness of an influenza vaccine programme for care home staff to prevent death, morbidity, and health service use among residents: cluster randomised controlled trial. *BMJ* 2006; 333(7581): 1241. doi:10.1136/bmj.39010.581354.55
5. Burls A, Jordan R, Barton P, Olowokure B, Wake B, Albon E et al. Vaccinating healthcare workers against influenza to protect the vulnerable–is it a good use of healthcare resources? A systematic review of the evidence and an economic evaluation. *Vaccine* 2006; 24(19): 4212–21. doi:10.1016/j.vaccine.2005.12.043
6. Saxén H, Virtanen M. Randomized, placebo-controlled double blind study on the efficacy of influenza immunization on absenteeism of health care workers. *Pediatr Infect Dis J* 1999; 18(9): 779–83. doi:10.1097/00006454-199909000-00007
7. Ballestas T, McEvoy SP, Doyle J. Co-ordinated approach to healthcare worker influenza vaccination in an area health service. *J Hosp Infect* 2009; 73(3): 203–9. doi:10.1016/j.jhin.2009.07.028
8. Kaufman J, Davis J, Krause V. Influenza immunisation of doctors at an Australian tertiary hospital: immunisation rate and factors contributing to uptake. *Commun Dis Intell* 2008; 32(4): 443–8.
9. Murray SB, Skull SA. Poor health care worker vaccination coverage and knowledge of vaccination recommendations in a tertiary Australia hospital. *Aust N Z J Public Health* 2002; 26(1): 65–8. doi:10.1111/j.1467-842X.2002.tb00273.x
10. Seale H, Leask J, Macintyre CR. Do they accept compulsory vaccination? Awareness, attitudes and behaviour of hospital health care workers following a new vaccination directive. *Vaccine* 2009; 27(23): 3022–5. doi:10.1016/j.vaccine.2009.03.038
11. Hofmann F, Ferracin C, Marsh G, Dumas R. Influenza vaccination of healthcare workers: a literature review of attitudes and beliefs. *Infection* 2006; 34(3): 142–7. doi:10.1007/s15010-006-5109-5
12. Lee T, Saskin R, McArthur M, McGeer A. Beliefs and practices of Ontario midwives about influenza immunization. *Vaccine* 2005; 23(13): 1574–8. doi:10.1016/j.vaccine.2004.09.024
13. Lester RT, McGeer A, Tomlinson G, Detsky AS. Use of effectiveness of, and attitudes regarding influenza vaccine among house staff. *Infect Control Hosp Epidemiol* 2003; 24(11): 839–44. doi:10.1086/502146
14. 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(8): 196–9.
15. National Foundation for Infectious Diseases. Improving influenza vaccination rates in health care workers: strategies to increase protection for workers and patients. Bethesda, Maryland: National Foundation for Infectious Diseases; 2004.
16. Sartor C, Tissot-Dupont H, Zandotti C, Martin F, Roques P, Drancourt M. Use of a mobile cart influenza program for vaccination of hospital employees. *Infect Control Hosp Epidemiol* 2004; 25(11): 918–22. doi:10.1086/502320
17. Rakita RM, Hagar BA, Crome P, Lammert JK. Mandatory influenza vaccination of health care workers: a 5-year study. *Infect Control Hosp Epidemiol* 2010; 31(9): 881–8. doi:10.1086/656210
18. Anikeeva O, Braunack-Mayer A, Rogers W. Requiring influenza vaccination for health care workers. *Am J Public Health* 2009; 99(1): 24–9. doi:10.2105/AJPH.2008.136440

19. Babcock HM, Gemeinhart N, Jones M, Dunagan WC, Woeltje KF. Mandatory influenza vaccination of health care workers: translating policy to practice. *Clin Infect Dis* 2010; 50(4): 459–64. doi:10.1086/650752

20. Palmore TN, Vandersluis JP, Morris J, Michelin A, Ruprecht LM, Schmitt JM et al. A successful mandatory influenza vaccination campaign using an innovative electronic tracking system. *Infect Control Hosp Epidemiol* 2009; 30(12): 1137–42. doi:10.1086/648084

21. Pavia AT. Mandate to protect patients from health care-associated influenza. *Clin Infect Dis* 2010; 50(4): 465–7. doi:10.1086/650753

22. Stewart AM. Mandatory vaccination of health care workers. *N Engl J Med* 2009; 361(21): 2015–7. doi:10.1056/NEJMp0910151

23. NSW Health. Policy directive: Occupational assessment, screening and vaccination against specified infectious diseases. Document Number PD2007_006. 2007. Available from: http://www.health.nsw.gov.au/policies/pd/2007/pdf/PD2007_006.pdf (Cited 11 May 2010.)

24. Patton MQ. Qualitative evaluation and research methods. 2nd ed. Newbury Park, California: Sage; 1990.

25. Isaacs D, Leask J. Should influenza immunisation be mandatory for healthcare workers? No. *BMJ* 2008; 337(oct28_3): a2140. doi:10.1136/bmj.a2140

26. Helms CM, Polgreen PM. Should influenza immunisation be mandatory for healthcare workers? Yes. *BMJ* 2008; 337(oct28_3): a2142. doi:10.1136/bmj.a2142