

Requiring Influenza Vaccination for Health Care Workers

The case for mandatory vaccination with informed declination.

Fewer than half of U.S. health care workers receive the flu vaccine annually, although such inoculation is a safe and effective method of disease prevention.¹ While educational campaigns have increased vaccination coverage among health care workers in some locales and settings, the overall vaccination rate for this group remains about 40%.¹ Studies conducted in this country and in Europe suggest that nurses may be among those least likely to receive the vaccine.²⁻⁵ Low rates of immunization among health care workers pose a public health threat, in particular to hospitalized patients already vulnerable to nosocomial infection. We believe that mandatory vaccination with informed declination (refusal) is warranted.

Approximately 36,000 influenza-related deaths occur annually in this country^{6,7}; it kills more Americans annually than AIDS.⁸ Data from studies in Scotland, Canada, and this country suggest that between 14% and 37% of health care workers become infected with the influenza virus each year,⁹⁻¹¹ and spread the illness within their facilities.¹²

Influenza outbreaks involving unvaccinated health care workers in acute and long-term health care settings are deadly and well-documented.^{1,13-15} Many health care institutions have prioritized staff immunization, often promoting it through annual drives and educational campaigns and

offering free or low-cost vaccinations on site. Higher rates of influenza vaccination among health care workers in the United Kingdom have been associated with lower rates of patient deaths.^{14,16,17} And during one 12-year study at a tertiary care center in Virginia, the rate of hospital-acquired influenza among patients decreased from 32% to 0%, while vaccination rates among health care workers rose from 4% to 67% and the proportion of laboratory-confirmed influenza cases among health care workers dropped from 42% to 9%.¹⁸ Immunizing health care workers to help protect patients is also in line with the concept of herd immunity, a phenomenon that “occurs when a sufficiently large percentage of a group is vaccinated such that an epidemic cannot gain traction and spread in that group.”¹⁹

Higher rates of influenza vaccination among health care workers has also been associated with reduced absenteeism.⁹⁻¹¹ Lower vaccination rates might result in increased absenteeism, which could compromise patient safety—and increased “presenteeism,” a term recently coined to describe “work slowdowns caused by illness on the job.”²⁰ Because symptoms (which can include fever, headache, fatigue, muscle aches, cough, and sore throat) typically appear one to four days after infection, health care workers who become infected may initially be unaware that they are contagious and con-

tinue to work. Those who show symptoms pose a dual threat to patient safety: not only are they contagious, but their illness might impair their cognitive and physical functioning. Some evidence suggests that presenteeism associated with influenza-like, “febrile respiratory” illnesses may occur among health care workers more often than absenteeism.¹¹

With all of this evidence to support influenza vaccination, why don’t more health care workers get immunized? For more information on the legal and ethical issues, go to <http://links.lww.com/A361>.

Comparing influenza vaccination with other health-promoting and illness-preventing strategies provides some clues. Many such strategies, which include a healthful diet, regular exercise, routine screenings, limited use of alcohol,²¹ nicotine cessation, and use of protective equipment such as seat belts and bicycle helmets, tend to be practiced inconsistently by health care workers.²¹⁻²⁴ However, with most of these strategies, relatively few people will be affected by one person’s adherence or nonadherence. But every health care worker’s decision either to get or to forgo influenza vaccination can greatly affect a lot of people, including coworkers and patients, for better or worse.

Of all health care personnel, nurses are likely to have the closest contact with patients. Yet multiple studies demonstrate that nurses tend to have lower

vaccination rates than other clinicians.²⁻⁵ The reasons health care workers give for declining influenza vaccination consistently include a lack of knowledge about the vaccine, doubts about its safety and effectiveness, dislike of injections, fear of adverse effects, inconvenience, and limited support from leadership.^{3, 25, 26} Recently, Ofstead and colleagues (including two of us, SJT and GAP) studied the factors influencing vaccination decision making among 513 RNs²⁷; more than 90% reported receiving education on influenza vaccination at work, and about 85% reported they had received information sufficient to permit a good decision, yet only about 65% planned to be immunized in the upcoming influenza season. This suggests that the factors that go into a decision to be immunized are not yet well understood.

The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) has been recommending annual vaccination of health care workers since 1981.²⁸ While educational campaigns and annual drives typically lead to *temporary* increases in vaccination rates, *sustained* high vaccination rates have not been demonstrated.^{1, 29, 30} To address this, in 2007 the ACIP added a recommendation that health care facilities "implement policies to encourage [staff] vaccination" with informed declination.¹ Several organizations have issued similar recommendations. The American Nurses Association passed a resolution in December 2006 stating that "influenza vaccination of registered nurses and other health care providers is a patient care safety issue as well as 'an ethical

responsibility'" and endorsing "aggressive and comprehensive vaccination programs for registered nurses that aim for 100% vaccination rates" with an informed declination option.³¹ Fifteen states now have laws requiring health care workers in long-term care facilities to be vaccinated against influenza, although they permit informed

Society of America, the U.S. Department of Defense, the American College of Physicians, the Minnesota Department of Health, and the American Society of Health-System Pharmacists. The American Medical Association supports the ACIP's recommendation; the Expert Panel on Strengthening Adult Immunization supports making required health

Low rates of immunization among health care workers pose a public health threat.

declination for medical (and in some states, religious or philosophical) reasons, and at least five states require it of all health care workers.³²

Many individual medical centers have instituted policies requiring influenza vaccination, with or without informed declination, for their health care workers, with excellent results. These include Virginia Mason Medical Center in Seattle, the Cleveland Clinic at various locations in Ohio and Florida, and some public hospitals in New York City. For example, Virginia Mason Medical Center has reported a 98% vaccination compliance rate among its employees since introducing mandatory vaccination in 2004 (medical and religious exemptions are granted on a case-by-case basis).³³

Other professional organizations supporting required influenza vaccination with informed declination for health care workers include the Society of Hospital Epidemiologists of America, the Infectious Diseases

care worker immunization, with or without informed declination, a condition of Joint Commission accreditation. Many experts have also endorsed the rationale for mandatory influenza vaccination for health care workers.^{34, 35} The public's demands for improved patient safety and quality of care is likely to ensure that this trend continues.

Perhaps the question is best framed in this manner: if your elderly mother or infant daughter had to be hospitalized during flu season, would you want her care provided by a nurse who had declined vaccination because she or he believed it wasn't safe, found it inconvenient, or just didn't like needles? Or would you want the assurance that the nurse had been vaccinated (or at least had to provide a statement of informed declination)? It is our position that leaving vaccination up to personal preference can no longer be defended as ethical or professional. After all, we don't allow nurses to arbitrarily decide whether they

want to be immunized against measles, rubella, or hepatitis B, or even whether they want annual tuberculosis screening. Requiring health care workers to receive influenza vaccination is a safe, effective patient-safety measure—and it's the right thing to do. ▼

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REFERENCES

1. Fiore AE, et al. Prevention and control of influenza. Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2007. *MMWR Recomm Rep* 2007;56(RR-6):1-54.
2. de Juanes JR, et al. Influenza vaccination coverage among hospital personnel over three consecutive vaccination campaigns (2001-2002 to 2003-2004). *Vaccine* 2007;25(1):201-4.
3. Harbarth S, et al. Influenza immunization: improving compliance of healthcare workers. *Infect Control Hosp Epidemiol* 1998;19(5):337-42.
4. Christini AB, et al. Influenza vaccination rates and motivators among healthcare worker groups. *Infect Control Hosp Epidemiol* 2007;28(2):171-7.
5. Martinello RA, et al. Correlation between healthcare workers' knowledge of influenza vaccine and vaccine receipt. *Infect Control Hosp Epidemiol* 2003;24(11):845-7.
6. Thompson WW, et al. Mortality associated with influenza and respiratory syncytial virus in the United States. *JAMA* 2003;289(2):179-86.
7. Harper SA, et al. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep* 2004;53(RR-6):1-40.
8. Centers for Disease Control and Prevention. *HIV/AIDS statistics and surveillance: basic statistics*. 2007. <http://www.cdc.gov/hiv/topics/surveillance/basic.htm#ddaids>.
9. Elder AG, et al. Incidence and recall of influenza in a cohort of Glasgow healthcare workers during the 1993-4 epidemic: results of serum testing and questionnaire. *BMJ* 1996;313(7067):1241-2.
10. Lester RT, et al. Use of, effectiveness of, and attitudes regarding influenza vaccine among house staff. *Infect Control Hosp Epidemiol* 2003;24(11):839-44.
11. Wilde JA, et al. Effectiveness of influenza vaccine in health care professionals: a randomized trial. *JAMA* 1999;281(10):908-13.
12. Dash GP, et al. APIC position paper: Improving health care worker influenza immunization rates. *Am J Infect Control* 2004;32(3):123-5.
13. Salgado CD, et al. Influenza in the acute hospital setting. *Lancet Infect Dis* 2002;2(3):145-55.
14. Carman WF, 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(9198):93-7.
15. Stott DJ, et al. Nosocomial transmission of influenza. *Occup Med (Lond)* 2002;52(5):249-53.
16. Potter J, et al. Influenza vaccination of health care workers in long-term-care hospitals reduces the mortality of elderly patients. *J Infect Dis* 1997;175(1):1-6.
17. Hayward AC, 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.
18. Salgado CD, et al. Preventing nosocomial influenza by improving the vaccine acceptance rate of clinicians. *Infect Control Hosp Epidemiol* 2004;25(11):923-8.
19. Steckel CM. Mandatory influenza immunization for health care workers—an ethical discussion. *AAOHN J* 2007;55(1):34-9.
20. Warner J. "Presenteeism" hurts employees and employers: sluggish employees cost companies more than sick days. *WebMD Medical News* 2004 Apr 23. <http://www.webmd.com/mental-health/news/20040423/presenteeism-employees-employers>.
21. Schwartz-Barcott D, Schwartz TP. Are nurses healthier and happier than the general public? *Nurs Forum* 1990;25(4):19-24, 34.
22. Pratt JP, et al. Health behaviors of nurses and general population women. *Health Values* 1994;18(5):41-6.
23. Callaghan P. Health beliefs and their influence on United Kingdom nurses' health-related behaviours. *J Adv Nurs* 1999;29(1):28-35.
24. Tucker S, et al. *Registered nurses' self-reported health and health behaviors: do we practice what we preach?* Midwest Nursing Research Society Annual Research Conference; 2007 Mar 23-26; Omaha, NE; 2007. <http://www.resourcenter.net/images/MNRS/Files/WebPrelim.pdf>.
25. Nace DA, et al. Achieving and sustaining high rates of influenza immunization among long-term care staff. *J Am Med Dir Assoc* 2007;8(2):128-33.
26. Willis BC, Wortley P. Nurses' attitudes and beliefs about influenza and the influenza vaccine: a summary of focus groups in Alabama and Michigan. *Am J Infect Control* 2007;35(1):20-4.
27. Ofstead C, et al. Influenza vaccination among registered nurses: information receipt, knowledge, and decision-making at an institution with a multifaceted educational program. *Infect Control Hosp Epidemiol* 2008;29(2):99-106.
28. Office of Technology Assessment. *Cost effectiveness of influenza vaccination*. Washington, D.C.: Office of Technology Assessment. U.S. Congress; 1981 Dec. NTIS order # PB82-178492. <http://www.princeton.edu/~ota/disk3/1981/8112/8112.PDF>.
29. Dey P, et al. Promoting uptake of influenza vaccination among health care workers: a randomized controlled trial. *J Public Health Med* 2001;23(4):346-8.
30. Smedley J, et al. A survey of the delivery and uptake of influenza vaccine among health care workers. *Occup Med (Lond)* 2002;52(5):271-6.
31. American Nurses Association. *Report to the Board of Directors on seasonal influenza vaccination for registered nurses. Consent action report*. 2006 Dec 8. <http://www.preventinfluenza.com/ANAonHCW.pdf>.
32. Association for Professionals in Infection Control and Epidemiology. *Mandatory vaccination of healthcare workers*. Washington, D.C. 2007.
33. Hagar B. *Implementing a mandatory medical center influenza immunization program: insights from Virginia Mason Medical Center*. National Influenza Vaccine Summit; 2007 Apr 20; Atlanta, GA: American Medical Association and the Centers for Disease Control and Prevention; 2007. http://www.preventinfluenza.com/summits/2007/Session_Four/Hagar_2007.pdf.
34. Poland GA, et al. Requiring influenza vaccination for health care workers: seven truths we must accept. *Vaccine* 2005;23(17-18):2251-5.
35. Hoffmann CJ, Perl TM. The next battleground for patient safety: influenza immunization of healthcare workers. *Infect Control Hosp Epidemiol* 2005;26(11):850-1.