COMMENTARY

Mandatory Influenza Vaccine

Mark B. Russi, MD, MPH;[1,2] Robert. S. Baltimore, MD[3,4,5]

(See the article by Maurer et al, on pages 213–221.)

Maurer et al[1] have shown, on the basis of a questionnaire administered to 1,664 healthcare workers, that 57.4% agreed with the statement "healthcare workers should be required to be vaccinated for seasonal flu." Support for mandatory annual vaccination was highest (94.7%) among a relatively small group of 75 individuals working in settings where vaccination was required but where no penalty reportedly existed for not receiving vaccination. In settings where penalties existed for nonadherence to vaccination requirements, support for a vaccine requirement was expressed by 76.6% of a group of 111 individuals. The majority of those sampled worked in settings where vaccine was not required; among that group of 1,478 individuals, slightly more than half (761) supported mandatory vaccination.

The study appears at a time when considerable attention is focused on influenza vaccination of healthcare workers and on the question of what workplace policies should be administered to improve vaccination rates, which have been disappointing in past years. The Advisory Committee on Immunization Practices has long recommended vaccination of all healthcare workers to protect themselves, their families, and the vulnerable patients that they treat.[2] More recently, the American Hospital Association and a number of professional societies have issued position statements supporting mandatory vaccination policies. Healthcare worker resistance to such policies has been concerning to many, and healthcare workers whose employment has been terminated for noncompliance with a mandatory vaccine policy have instituted legal actions against some hospitals. In that context, healthcare worker attitudes with respect to influenza vaccine and mandatory vaccination as well as the predictors of such attitudes have bearing on the success of interventions to educate healthcare workers and to boost vaccination rates.

Maurer et al[1] have demonstrated that healthcare workers are more likely to support mandatory vaccination if they consider themselves and others around them to be at risk for getting influenza, if they considered influenza to be a serious threat, and if they regarded influenza vaccine as protective of themselves and those around them. Somewhat alarming was the finding that nearly half of the sampled healthcare workers did not consider influenza to be a serious threat to their own health and that approximately one-quarter did not consider influenza to be a serious threat to the health of those around them. Nearly one-third of sampled healthcare workers did not believe that receiving influenza vaccination would help to protect those around them from influenza and approximately one-fifth did not think that influenza vaccination would protect them from seasonal influenza. It seems probable that a substantial percentage of US healthcare workers are not adequately informed about the potential benefits of influenza vaccination, and the findings of Maurer et al[1] suggest that there is an ongoing need to better educate them.

With renewed focus upon influenza vaccination, however, it is important that we are clear and forthcoming with those educational messages. The vaccine does not always work; some recent studies suggest that its effectiveness may be closer to 40%–60% than to more optimistic (and commonly quoted) estimates.[3,4] Although overall mortality among residents of long-term care facilities appears to be lower in settings where healthcare worker influenza vaccination rates are higher, a relatively small fraction of overall mortality among residents of long-term care facilities can be ascribed to influenza or its complications, and questions remain regarding whether vaccinating healthcare workers effectively lowers the risk of pneumonia, death from pneumonia, or serologically proven influenza among long-term patients under their care.[5-8] So, although we are inclined to react with dismay at the number of healthcare workers in the Maurer et al[1] study who do not think that influenza vaccine will protect them or those around them, we must bear in mind that the vaccine may not protect

Affiliations: 1. Department of Medicine and Public Health, Yale University School of Medicine, New Haven, Connecticut; 2. Occupational Health Services, Yale–New Haven Hospital, New Haven, Connecticut; 3. Department of Pediatrics, Yale–New Haven Hospital, New Haven, Connecticut; 4. Department of Pediatrics, Yale University School of Medicine, New Haven, Connecticut; 5. Division of Pediatric Infectious Diseases, Yale University School of Medicine, New Haven, Connecticut.

Received December 5, 2011; accepted December 6, 2011; electronically published January 17, 2012.

 0899-823X/2012/3303-0002$15.00. DOI: 10.1086/664493

them and that questions remain with respect to which outcomes among patient populations are likely to be impacted by healthcare worker influenza vaccination.

All of that said, influenza vaccine is likely to be the best weapon currently available to us to protect healthcare workers and those around them. The fact that it is not 100% effective and that we need to continue to study its impact upon patient populations should not dissuade us from communicating that vaccination is a relatively low-risk intervention that has a reasonable likelihood of enhancing the safety of both caregivers and patients. The study results suggest that we need to be more effective in that communication.

Whether the vaccine is sufficiently effective to make it mandatory for every US healthcare worker is another question entirely. In that context, and with respect to whether and how vaccination is established as a condition of employment, the examination of attitudes among healthcare workers is critical, and Maurer et al[1] have accomplished important work in this area. We do have concerns regarding the omission of certain details. Although the questionnaire asked healthcare workers whether an employer vaccination policy existed and offered the choices of "none," "recommended," "required (without penalty)," and "required (with penalty)," we are not told what was included among those penalties or which penalties were acknowledged by study participants from the questionnaire lists. Obligatory wearing of a surgical mask, reassignment to a non–patient contact position, furlough, and termination of employment have unique impacts upon a healthcare worker, and much that must be addressed with respect to healthcare worker attitudes toward mandatory vaccination must be addressed within the specific context of each of those consequences. Where there are questions of attitude, the authors also collapsed the responses of participants into categories of agreement or disagreement, leaving out any possible nuance (eg, "strongly agree," "no opinion," and "slightly disagree").

Beyond that, greater clarity is needed to distinguish between programs in which vaccine is recommended and those in which it is required but without penalty for nonadherence. The lack of clarity with respect to that distinction likely reflects a similar lack of clarity among the vaccine programs themselves. What does it mean for a healthcare institution to require influenza vaccination but for there to be no consequence to those who choose not to be vaccinated? Ironically, it was among healthcare workers working under just such a policy that support for "mandatory" vaccination was highest. It is likely that such healthcare workers assign a different meaning to a vaccine requirement than do individuals from institutions where workers' employment is terminated if they choose not to receive vaccine.

Despite intriguing results, we believe Maurer et al[1] have paved the way for additional qualitative research examining the spectrum of attitudes of healthcare workers toward mandatory vaccination policies, for greater clarity around the specific details of institutional vaccine policies, particularly with respect to consequences for noncompliance, and how those specific policies impact the perspectives of healthcare workers upon mandatory vaccination programs.

ACKNOWLEDGMENTS

Potential conflicts of interest. Both authors report no conflicts of interest relevant to this article. All authors submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest, and the conflicts that the editors consider relevant to this article are disclosed here.

Address correspondence to Robert S. Baltimore, MD, Department of Pediatrics, Yale University School of Medicine, Box 208064, New Haven, CT, 06520 (robert.baltimore@yale.edu).

REFERENCES

1. Maurer J, Harris KM, Black CL, Euler GL. Support for seasonal influenza vaccination requirements among US healthcare personnel. *Infect Control Hosp Epidemiol* 2012;33(3):213–221 (in this issue).
2. Fiore AE, Uyeki T, Broder K, et al. Prevention and control of influenza with vaccines. Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2010. *MMWR Recomm Rep* 2010;59(RR-8):1–62.
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):e5079.
4. 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.
5. Potter J, Stott DJ, Roberts M, 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.
6. Hayward AC, Harling R, Wetten S, et al. Effectiveness of an influenza vaccine programme for care home staff to prevent death, morbidity, and health service use among residents: cluster randomized controlled trial. *BMJ* 2006;333:1241.
7. Lemaitre M, Meret T, Rothan-Tondeur M, et al. Effect of influenza vaccination of nursing home staff on mortality of residents: a cluster-randomized trial. *J Am Geriatr Soc* 2009;57:1580–1586.
8. Thomas RE, Jefferson T, Lasserson TJ. Influenza vaccination for healthcare workers who work with the elderly. *Cochrane Database Syst Rev* 2010;(2):CD005187.