

Public Health in Emergency Medicine

ATTITUDES AND PRACTICES REGARDING INFLUENZA VACCINATION AMONG EMERGENCY DEPARTMENT PERSONNEL

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Abstract—In the United States, infections related to influenza result in a huge burden to the health care system and emergency departments (EDs). Influenza vaccinations are a safe, cost-effective means to prevent morbidity and mortality. We sought to understand the factors that contribute to the professional and personal influenza vaccination practices of health care workers in the ED setting by assessing their knowledge, attitudes, and practices with regards to the influenza vaccine. A cross-sectional study of all full-time ED staff (nurses, emergency medicine residents, and emergency medicine faculty) at an urban academic medical center in Boston treating > 90,000 ED patients annually, was performed. We examined knowledge, attitudes, and practices regarding personal influenza vaccination and support of an ED-based influenza vaccination program using an anonymous, self-administered questionnaire. Of 130 ED staff, 126 individuals completed the survey (97% response rate). Overall, 69% of respondents reported that they were very or extremely likely to be vaccinated before the coming influenza season. Residents (94%) and attending physicians (82%) were significantly more likely than nurses (42%) to be vaccinated ($p < 0.001$). Respondents likely to be vaccinated this year were more likely to support a vaccination program for ED patients (80% vs. 55% of those not vaccinated, $p < 0.001$). Providing regular education on the efficacy of preventive vaccination therapy and dispelling misconceptions regarding adverse effects may reduce barriers to vaccination programs. An educational initiative may result in acceptance of influenza vaccination by ED providers themselves, which could re-

sult in increased support for an influenza vaccination program for ED patients. © 2009 Elsevier Inc.

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INTRODUCTION

In the United States, over 36,000 deaths and up to 114,000 hospital admissions annually are related to influenza (1–3). Influenza vaccinations are a safe, cost-effective means to prevent morbidity and mortality (4–6). To reduce the likelihood of infection, as well as to limit the rate of transmission to hospitalized patients, the Centers for Disease Control and Prevention recommend that all health care workers (HCW) involved in direct patient care receive influenza vaccinations annually (7). Research suggests that providers who get vaccinated themselves are more likely to recommend influenza vaccination to their patients (8–10). Moreover, an important determinant of patients' influenza vaccination behaviors is their provider's recommendation to get vaccinated (11,12). However, despite long-standing recommendations for the routine influenza vaccination of HCWs, the vaccination rate in the United States is reported to be 38% (13).

The emergency department (ED) setting has been proposed as a venue for expanding vaccination coverage to adults at high risk for complications from influenza infection (14–20). A majority of unvaccinated ED patients indicated that they would accept vaccination if it were offered (14,15). Over half of emergency physicians reported their willingness to prescribe influenza vaccination (16,17). Still, every year in the United States, there are an estimated 2.8 million people treated in the ED setting with limited access to health care who are at high risk for influenza-related complications, but who go without being vaccinated (18). We sought to understand the factors that contribute to the professional and personal influenza vaccination practices of HCW in the ED setting by assessing their knowledge, attitudes, and practices with regards to the influenza vaccine. We hypothesized that barriers to being vaccinated against influenza among HCWs would differ by provider type. We also hypothesized that acceptance of influenza vaccination by HCWs in the ED was associated with support for an influenza vaccination program for ED patients.

METHODS

Study Design and Protocol

In September 2005, we performed a cross-sectional study of all full-time ED staff (nurses, emergency medicine residents, and emergency medicine faculty) at an urban academic medical center in Boston treating > 90,000 ED patients annually. We examined knowledge, attitudes, and practices regarding personal influenza vaccination and support of an ED-based influenza vaccination program using an anonymous, self-administered questionnaire. We excluded temporary or per diem ED personnel. Research assistants distributed anonymous surveys to ED personnel. A separate list was maintained to identify ED personnel who had returned completed surveys. Surveys were redistributed to non-responders who had not returned surveys within 2 weeks.

Measurement Instrument

After a review of the topic, we created a survey instrument that incorporated elements from a composite of

previous studies testing HCW knowledge and attitudes about influenza vaccination in other settings. We then piloted these preliminary survey questions among non-clinical research staff with expertise in survey-based research for content and readability. The primary outcome measures were 1) likelihood of HCWs getting vaccinated themselves during the upcoming influenza season; and 2) HCW support for an influenza vaccination program for ED patients. We used a four-point Likert scale to examine previous exposure to influenza or influenza vaccination; perceptions regarding influenza risk, severity, and consequences; perceptions regarding influenza vaccination; appropriateness of the ED vs. other venues (e.g., clinic, inpatient ward) for providing influenza vaccination; and professional and personal influenza vaccination practices.

Data Analysis

We used chi-squared or Fischer's exact tests to test for factors associated with the outcome variables. We dichotomized responses (e.g., extremely/very and somewhat/unlikely). Cochran-Mantel-Haenszel chi-squared tests were used to control for provider type. All analyses were done with SAS 9.1 (SAS Institute Inc., Cary, NC). The study was approved by the Institutional Review Board at our institution.

RESULTS

Of 130 ED staff, 126 individuals completed the survey (97% response rate); 46% of respondents were nurses, 28% were residents, and 26% were attending physicians. The three groups did not differ significantly on gender distribution, age, or number of years of clinical practice (Table 1).

Overall, 69% of respondents reported that they were very or extremely likely to be vaccinated before the coming influenza season (Table 2). Residents (94%) and attending physicians (82%) were significantly more likely than nurses (42%) to be vaccinated ($p < 0.001$). When asked who should receive the influenza vaccine, 100% of residents, 94% of attending physicians, and 67% of nurses felt that all health care workers should be vaccinated ($p < 0.001$).

Table 1. Sample Characteristics, All Respondents

	Attendings n = 33	Residents n = 35	Nurses n = 58	Total n = 126
Years of age (mean, SD)	42.3 (8.8)	30.6 (2.5)	43.6 (8.59)	39.5 (9.3)
% Male	72.8	48.6	22.4	42.9
Years of clinical practice (mean, SD)	11.8 (7.8)	2.7 (1.3)	19.0 (9.7)	12.6 (10.3)

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