The vital role of influenza vaccination of health care personnel

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Many health care personnel (HCP) are at risk of exposure to and transmission of vaccine-preventable diseases. HCP can be defined as any paid or unpaid individuals working in health care settings with the potential for exposure to patients or infectious materials produced by patients. Among these vaccine-preventable diseases is influenza. Although the Centers for Disease Control and Prevention continues to recommend influenza vaccination for all HCP without medical contraindications, the influenza vaccination rate for HCP during the 2011–12 season was only 63.4%. 

The greatest concern of low HCP vaccination rates is not morbidity and mortality among HCP but that HCP may transmit influenza to patients. One serosurvey conducted at two Baltimore teaching hospitals demonstrated that 23% of HCP had serologic evidence of influenza virus infection during a single influenza season, the majority of whom had mild illness or subclinical infection. In a review of 56 studies on the dynamics of viral shedding and symptoms following influenza infection, asymptomatic influenza infection occurred among 33.1% of seasonal influenza cases. Although few data concerning viral shedding in these cases were available, some asymptomatic patients shed virus, leading to disease transmission. Despite this real capacity of HCP to transmit influenza to patients, up to three-quarters of health care workers with influenza-like illness (ILI) continue to work while ill.

Preventing influenza among HCP can reduce ILI and complications among patients at high risk. One cluster-randomized controlled trial that included 1,703 HCP in 44 nursing homes studied mortality, rates of ILI, and health service use among residents in facilities that offered HCP vaccinations (48.2% HCP vaccination rate) and those in facilities without vaccination offered to HCP (5.9% HCP vaccination rate). 

Vaccinating facilities had a significantly lower mortality rate (rate difference per 100 residents per period of influenza activity = −5.0 [95% CI −7.0 to −2.0], \( P = 0.002 \)) and lower rates of ILI (\( P = 0.004 \)), general practitioner consultations for ILI (\( P = 0.002 \)), and HCP hospital admissions (\( P = 0.004 \)).

A parallel-group study examined 20 hospitals and compared 6-month mortality between institutions that routinely offered (50.9% vaccine uptake) and did not routinely offer (4.9% vaccine uptake) HCP vaccinations. Patient mortality rate was 13.6% in vaccinating hospitals and 22.4% in no-vaccine hospitals (odds ratio 0.58 [95% CI 0.40–0.84], \( P = 0.014 \)). Of samples taken from deceased patients tested for influenza by polymerase chain reaction, none of those in vaccinating hospitals were positive and 20% were positive in no-vaccine hospitals (\( P = 0.055 \)). Increasing HCP vaccination rates in health care institutions may decrease patient mortality, but these trends are of little consequence without widespread implementation of strategies to ensure increased vaccine use.

Various strategies have been used by individual institutions to increase HCP influenza vaccination rates. These efforts have generally concentrated on educational and promotional campaigns, increased immunization access, or declination statements. Hybrid programs that combine multiple approaches are common in many HCP vaccination policies today. These strategies, particularly combination approaches, may increase vaccine uptake in individual institutions, but lack of standardized regulation and policy for HCP influenza vaccination has yielded inadequate HCP coverage.

Influenza vaccination as a requirement of employment is an option that many health care institutions are beginning to explore. BJC HealthCare, a large Midwestern health care organization with more than 26,000 employees, provided free vaccines available at multiple sites and instances, extensive publicity, incentives, education programs, and declination statements. In 2007, despite the campaign’s numerous services, HCP vaccination rates remained below the BJC goal of 80%. In 2008, BJC implemented a mandatory influenza vaccination policy for all employees to propel their vaccination rates to goal. In the 2008–09 season, vaccination rates increased to 98.4% (a 43.4% increase compared with 2006 rates), with exemptions allowed only for confirmed medical contraindications and religious accommodations. Eight employees were not vaccinated or granted an exemption, resulting in termination of employment.

Among other successful programs is the Virginia Mason Medical Center in Seattle, WA, which conducted a 5-year study on HCP influenza vaccination rates after implementing a vaccination requirement. The vaccination campaign used
Various strategies to improve HCP convenience, including multiple methods of vaccination delivery, one of which was a drive-through vaccination station that also provided free coffee. HCP were allowed to apply for accommodation for medical or religious reasons but were required to wear a mask at work during the influenza season if an exemption was granted. In the first year of the study, 4,588 of 4,703 HCP were vaccinated (97.6%; an increase of 44% from the rate 2 years earlier) and the influenza vaccination rate was sustained above 98% over the next 4 years. Throughout the study, seven HCP left voluntarily and two were terminated as a result of nonadherence with the influenza vaccine requirement.

Although requiring HCP influenza vaccination has been shown to be effective, waiting for individual institutions to mandate annual influenza vaccination (unless a valid medical or religious contraindication precludes vaccination) as a condition of employment for all persons employed by, completing education and training within, or volunteering for, an organization which provides pharmacy services or operates a pharmacy or pharmacy department. Based on these recommendations from APHA and the support of other prominent health care organizations, pharmacists should strive to require vaccination for all personnel working in their health care institutions, regardless of whether they are based in the community, long-term care, or inpatient setting. For institutions unable to achieve adequate influenza vaccination rates through voluntary means, influenza vaccination requirements for HCP are the most reliable way to protect HCP and their patients from influenza. Influenza vaccination of HCP as a condition of employment via state legislation is the next logical step in ensuring comprehensive influenza infection control in the health care setting.

**Table 1. Professional organizations supporting mandatory influenza vaccination for health care personnel**

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<tr>
<th>Organization</th>
<th>Institution</th>
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<tbody>
<tr>
<td>American Academy of Family Physicians</td>
<td>American Academy of Pediatrics</td>
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<tr>
<td>American College of Physicians</td>
<td>American Hospital Association</td>
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<tr>
<td>American Medical Directors Association</td>
<td>American Pharmacists Association</td>
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<tr>
<td>American Public Health Association</td>
<td>Association for Professionals in Infection Control and Epidemiology</td>
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<tr>
<td>Infectious Diseases Society of America</td>
<td>Society for Healthcare Epidemiology of America</td>
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Source: Reference 11.

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Influenza vaccination of HCP is a vital component in promoting and maintaining the health of both HCP and patients; however, voluntary campaigns often do not provide sufficient motivation to yield adequate coverage. Proponents of HCP vaccination requirements are numerous; many prominent health organizations have clearly expressed their support for requiring influenza vaccination of HCP (Table 1). The American Pharmacists Association (APhA) “supports an annual influenza vaccination (unless a valid medical or religious contraindication precludes vaccination) as a condition of employment for all persons employed by, completing education and training within, or volunteering for, an organization which provides pharmacy services or operates a pharmacy or pharmacy department.”

Based on these recommendations from APHA and the support of other prominent health care organizations, pharmacists should strive to require vaccination for all personnel working in their health care institutions, regardless of whether they are based in the community, long-term care, or inpatient setting. For institutions unable to achieve adequate influenza vaccination rates through voluntary means, influenza vaccination requirements for HCP are the most reliable way to protect HCP and their patients from influenza. Influenza vaccination of HCP as a condition of employment via state legislation is the next logical step in ensuring comprehensive influenza infection control in the health care setting.

**References**


