



Special issue

Protection from Influenza for Especially Vulnerable Populations

This special issue is devoted to discussing the protection of two populations that are especially vulnerable to the life-threatening effects of influenza infection. The first two sections deal with protecting hospitalized patients from influenza that may be transmitted to them through contact with infected hospital personnel. The last section discusses protecting pregnant women and their infants under 6 months of age, both of whom have been demonstrated to be much more susceptible to developing serious influenza infections than the general population.

American Hospital Association Endorses Patient Safety Policies Requiring Influenza Vaccination of HealthCare Workers

Following extensive discussions at American Hospital Association (AHA) Regional Policy Board meetings and with the AHA's Committee on Health Professions, in April 2011, the Board of Trustees of AHA approved the following new AHA policy:

“America's hospitals are committed to protecting the health and well-being of patients and staff. Evidence has emerged over the past few years clearly indicating that health care workers can unintentionally expose patients to seasonal influenza if they (the workers) have not been vaccinated, and such exposure can be dangerous to vulnerable patients.

To protect the lives and welfare of patients and employees, AHA supports mandatory patient safety policies that require either influenza vaccination or wearing a mask in the presence of patients across health care settings during flu season. The aim is to achieve the highest possible level of protection.”

The Centers for Disease Control and Prevention (CDC) has been recommending annual influenza vaccination of health-care personnel (HCP) for 30 years. In 2006, the Advisory Committee on Immunization Practices (ACIP) and the Healthcare Infection Control Practices Advisory Committee (HICPAC) recommend that all HCP be vaccinated annually against influenza.¹ Several other professional organizations (including the Association of Professionals in Infection Control, the American Academy of Pediatrics, the American College of Physicians Adult Immunization Advisory Board, the American Academy of Family Physicians, the Infectious Disease Society of America, the National Patient Safety Foundation, and the Society for Healthcare Epidemiology of America) have endorsed similar mandatory policies for influenza vaccination as a condition of employment.

For the 2010-11 influenza season, CDC conducted an internet-based survey of 1,931 HCP who participated in three online survey panels.² Overall influenza vaccination coverage among HCP was 63.5% during the 2010-11 influenza season, similar to coverage for the 2009-10 season. Among HCP who reported working at a facility where vaccination was required by their employer, 98.1% were vaccinated for influenza, compared with 58.3% among those without employer requirements. Among

¹ CDC. Influenza Vaccination of Health-Care Personnel: Recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP). MMWR 2006; 55(RR-2). <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5502a1.htm>

² CDC. Influenza Vaccination Coverage Among Health-Care Personnel — United States, 2010–11 Influenza Season. MMWR 2011; 60:1073-1077. <http://www.cdc.gov/mmwr/PDF/wk/mm6032.pdf>

HCP without such an employer requirement but who were offered vaccination onsite, greater coverage was associated with a personal reminder from the employer to get vaccinated (69.9%), vaccination availability at no cost (67.9%), and vaccination availability for >1 day (68.8%).

Vaccination of HCP against influenza has been shown to reduce illness and absenteeism and to reduce transmission of influenza among HCP, their families, and their patients.¹ **As influenza vaccination programs for HCP do not succeed in providing the best protection of patients without making vaccination mandatory, MSDH supports hospitals requiring their employees to be vaccinated.**

A well-structured program contains a strong component of employee education with the aim of increasing employee understanding and reducing resistance. Concerns that employees may leave employment have been unfounded, as documented by published reports, where less than 0.2% and 0.03% of employees, respectively, refused vaccination and left employment.^{3,4} A sample hospital policy can be found at: http://www.vaccineethics.org/files/Penn_Influenza_Policy_1.pdf

CDC Recommendations on Control of Influenza Infection in Healthcare Settings

The following is excerpted and summarized from CDC guidelines and recommendations for Prevention Strategies for Seasonal Influenza in Healthcare Settings.⁵

- Health care facilities need a comprehensive approach to influenza.
 - Vaccinate your workforce
 - Enforce sick leave policies
 - Enforce respiratory hygiene and cough etiquette for patients and personnel
 - Establish facility access control measures and triage procedures
 - Manage visitor access and movement within the facility
 - Control patient placement and transport
 - Apply isolation precautions
- Health care personnel and patient safety are paramount.
 - Health care personnel are the first line of defense in diagnosing, treating, and preventing further spread of the influenza virus.
 - The goal is to ensure that health care personnel are kept safe and healthy, so they can do their important jobs while not spreading influenza among patients.
- By using a multi-faceted approach, facilities can prevent influenza virus transmission within healthcare settings by:
 - Promoting and administering seasonal influenza vaccine
 - There are several systematic strategies that can be employed to improve vaccination rates.
 - Tracking influenza vaccination coverage among healthcare personnel can be an important component of a systematic approach to protecting patients and workers
 - Taking steps to minimize potential exposures
 - Instruct patients and persons who accompany them to inform healthcare personnel upon arrival if they have symptoms of any respiratory infection and to take appropriate preventive actions (e.g., wear a facemask upon entry, follow triage procedure)
 - Ensure all persons with symptoms of a respiratory infection adhere to respiratory hygiene, cough etiquette, hand hygiene, and triage procedures throughout the duration of the visit.
 - Monitoring and managing ill health care personnel

³ Rakita, et al. Mandatory Influenza Vaccination of Healthcare Workers: A 5-Year Study. *Infect Control Hosp Epidemiol* 2010; 31(9):881-888.

⁴ Babcock, et al. Mandatory Influenza Vaccination of Health Care Workers: Translating Policy to Practice. *Clinical Infectious Diseases* 2010;50:459-464

⁵ CDC website. Guidelines and Recommendations Prevention Strategies for Seasonal Influenza in Healthcare Settings. <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>

- Develop sick leave policies for personnel that are non-punitive, flexible and consistent with public health guidance to allow and encourage personnel with suspected or confirmed influenza to stay home.
- Instruct ill health care personnel who develop fever and respiratory symptoms not to report to work, or if at work, to stop patient-care activities
- Enforce adherence to respiratory hygiene and cough etiquette after returning to work
- Adhering to infection control standards
 - Health care personnel should perform hand hygiene frequently
 - Gloves should be worn for any contact with potentially infectious material
 - Gowns should be worn for any patient-care activity when contact with blood, body fluids, secretions (including respiratory), or excretions is anticipated.
 - Adhere to droplet precautions
 - Adhere to enhanced precautions when performing aerosol-generating procedures on patients with suspected or confirmed influenza
- Using engineering controls
 - Consider designing and installing engineering controls to reduce or eliminate exposures by shielding health care personnel and other patients from infected individuals such as installing physical barriers such as partitions in triage areas or curtains that are drawn between patients in shared areas.

Influenza Protection for Pregnant Women and their Infants

The following is adapted from several publications by the Centers for Disease Control and Prevention (CDC). For detailed references, please see the referenced CDC publications.

Women are at increased risk for morbidity and mortality from influenza during pregnancy.⁶

Vaccinating pregnant women for influenza can protect both the women and their infants, especially infants aged <6 months who are not old enough to receive influenza vaccination.⁷ The mechanism for protection of infants could be due to decreased influenza exposure from the vaccinated mother and/or from transplacentally acquired antibodies.⁸ Since 2004, the Advisory Committee on Immunization Practices and the American College of Obstetricians and Gynecologists have recommended inactivated influenza vaccine for all women who are pregnant during influenza season, regardless of trimester.^{6,9}

Influenza-related excess deaths among pregnant women were reported during the pandemics of 1918-1919, 1957-1958, and 2009-2010.⁶ Severe infections among postpartum women (those delivered within the previous 2 weeks) also were observed in the 2009-10 pandemic. Case reports and several epidemiologic studies also indicate that pregnancy increases the risk for seasonal influenza complications for the mother. Pregnant women have an increased number of medical visits for respiratory illnesses during influenza season compared with non-pregnant women. Among pregnant women, rates of hospitalization for respiratory illness were twice as common during influenza season.

⁶ CDC. Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2010. MMWR 2010; 59(No. RR-8). <http://www.cdc.gov/mmwr/pdf/rr/rr5908.pdf>

⁷ CDC. Influenza Vaccination Coverage Among Pregnant Women — United States, 2010–11 Influenza Season. MMWR 2011;60(32); 1078-1082 <http://www.cdc.gov/mmwr/PDF/wk/mm6032.pdf>

⁸ Eick AA, Uyeki TM, Klimov A, et al. Maternal influenza vaccination and effect on influenza virus infection in young infants. Arch Pediatr Adolesc Med 2011;165:104—11.

⁹American College of Obstetricians and Gynecologists Committee on Obstetric Practice. Influenza vaccination and treatment during pregnancy. Obstet Gynecol 2004; 104(5 pt 1):1125-6.



A retrospective cohort study of approximately 134,000 pregnant women conducted in Nova Scotia during 1990-2002 compared medical record data for pregnant women to data from the same women during the year before pregnancy. Among pregnant women, 0.4% were hospitalized for a respiratory illness, and 25% visited a clinician during pregnancy for a respiratory illness. The rate of third-trimester hospital admissions during the influenza season was five times higher than the rate during the influenza season in the year before pregnancy and more than twice as high as the rate during the non-influenza season.

Before 2009, estimated influenza vaccination coverage among pregnant women had been consistently low (approximately 15%).⁷ However, vaccination levels increased substantially in response to the 2009 influenza A (H1N1) pandemic to nearly 50%. To estimate influenza vaccination coverage among pregnant women for the 2010-11 season, CDC analyzed data from an internet panel survey conducted in April, 2011 among women who were pregnant any time during October, 2010-January, 2011. Among 1,457 survey respondents, 49% reported that they had received influenza vaccination: 12% were vaccinated before pregnancy, 32% during pregnancy, and 5% after pregnancy. Sixty-two percent of women were offered influenza vaccination by a health-care provider, and among those 71% were vaccinated compared to only 14% of women who were not offered vaccine. Women who were offered influenza vaccine were also more likely to have positive attitudes about vaccine effectiveness and safety. **These results emphasize the critical role of healthcare providers in promoting influenza vaccination.** Continued efforts are needed to encourage healthcare providers to strongly recommend and offer influenza vaccination to pregnant patients to protect both the mothers and their infants.