



AADE POSITION STATEMENT

Vaccination Practices for Hepatitis B, Influenza and Pneumococcal Disease for People with Diabetes

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Introduction

Hepatitis B, Influenza and pneumococcal disease are common, preventable infectious diseases with high morbidity and mortality in people with chronic diseases, such as diabetes, renal failure and in the elderly.¹ Observational studies of patients with a wide variety of chronic illnesses have shown that these conditions are associated with a higher hospitalization rate for influenza and its complications compared to persons without chronic health complications. Annual administration of the influenza vaccine has been shown to decrease diabetes-related hospital admissions for influenza during “flu epidemics” by as much as 79% based on reports of case-controlled series.²

Background/Rationale and Evidence

There are an average 36,000 deaths associated with influenza disease annually. The number of death associated with pneumococcal disease is unknown. People with diabetes are six times more likely to be hospitalized and three times more likely to die from complications of influenza or pneumonia than those in the general population.¹

According to a Behavioral Risk Factor Surveillance Survey (BRFSS) conducted in 2003, substantial variation in vaccination coverage by area of the United States was observed.³ For respondents with diabetes, median influenza coverage was 49.0% and ranged from 26.5% to 62.4%; the median pneumococcal coverage was 37.1% and ranged from 19.5% to 58.2%. Vaccination rates were higher among those aged 50--64 years (for influenza vaccine, median: 56.5%; range: 23.7%--73.1% and for pneumococcal vaccine, median: 42.6%; range: 19.7%--68.1%) than among persons aged 18--49 years (for influenza, vaccine median: 37.8%; range: 22.2%--59.9% and for pneumococcal vaccine, median: 28.3%; range: 13.3%--56.7%).³

Among adults <65 years old, there is a lack of awareness of the need for vaccinations among those with high-risk conditions, such as diabetes or asthma. This is indicated by a 2003 survey in which approximately 75% of unvaccinated persons aged 18--64 years with diabetes reported that they were unaware of the need for influenza vaccine (CDC, unpublished data, 2003).

Those with renal failure or pre-end-stage renal disease (ESRD) have an increased rate of infections with a variety of pathogens including pneumococcus and hepatitis B.⁴

Recommendations

- All people with diabetes have the potential for abnormal immune function, which may lead to increased morbidity and mortality from influenza infection. Influenza vaccination is recommended in the fall of each year anytime after six (6) months of age and/or older. The 2007 Advisory Committee on Immunization Practices (ACIP) guidelines state that immunization providers should offer influenza vaccine and schedule immunization clinics throughout the influenza season.⁵ Also, influenza may make blood glucose management more difficult during the infectious process.^{1, 3, 6}

- Influenza affects health care providers as well. Influenza transmission and outbreaks in hospitals and nursing homes are well documented. Healthcare personnel/providers (HCP)/diabetes educators can acquire influenza from patients or transmit influenza to others. Despite the “preaching” HCP/diabetes educators do about vaccinations to their patients, vaccination coverage among HCP/diabetes educators remain low (i.e., <50%). Because diabetes educators provide care to patients at high risk for complications of influenza, who should be considered a high priority for expanding influenza vaccine use. In addition, older HCP/diabetes educators (i.e., aged ≥ 65 years) and those who have underlying chronic medical conditions or who might be pregnant are at increased risk for influenza-related complications.

Achieving and sustaining high vaccination coverage among HCP/diabetes educators will protect staff and their patients, and reduce disease burden and health-care costs. Consequently, every diabetes educator and all other HCPs who work with patients who have diabetes or other high-risk conditions, should be administered an annual influenza vaccination.⁷ Specific changes and updates to the 2007 guidelines state that healthcare facilities should consider the level of vaccination coverage among healthcare personnel to be one measure of a patient safety quality program and should implement policies to encourage vaccination of healthcare personnel, such as obtaining signed statements from healthcare personnel who refuse influenza vaccination.⁵ In the event of a pandemic outbreak of influenza, diabetes educators are advised to seek additional information from the CDC at: <http://www.cdc.gov/flu/avian/>.

- Pneumococcal disease can cause significant morbidity and mortality in patients with diabetes as well. We must assure that our adult patients with diabetes are provided with at least one lifetime pneumococcal vaccination. A one-time revaccination is recommended for individuals for >64 years of age previously immunized when they were <65 years of age if the vaccine was administered >5 years ago. Other indications for repeat vaccination include nephrotic syndrome, chronic renal disease, and other immunocompromised states, such as after transplantation.^{1,5}
- Low vaccination rates among these persons with high-risk conditions might reflect the challenge of targeting patients for vaccinations on the basis of high-risk conditions instead of age.³ A substantial proportion of subspecialist physicians did not strongly recommend influenza and pneumococcal vaccinations to their patients who are elderly or considered to have high risk conditions.³ Although a majority of patients seen by subspecialists might be those who most need vaccination, subspecialists might not perceive the provision of preventive services as their role. Diabetes care associations (AADE), diabetes educators, and subspecialists should work together to ensure that persons at high risk receive appropriate vaccinations.
- Hepatitis B vaccination (Recombivax™ HB 40 μg -3 doses at 0, 1 and 3 months) is recommended for all susceptible chronic hemodialysis patients ≥ 20 years old. Hepatitis B vaccination (Recombivax™ HB 10 μg -3 doses at 0, 1 and 3 months) is recommended for patients with chronic kidney disease before they become dialysis dependent and for peritoneal and home dialysis patients because they might require in-center hemodialysis. Patients with uremia who were vaccinated before they required dialysis have been shown to have higher seroconversion rates and antibody titers. The response may also be better in children ≤ 20 years of age (Recombivax™ HB 5 μg -3 doses at 0, 1 and 3 months).⁴

Conclusion

Annual epidemics of influenza lead to high rates of hospitalizations and deaths, especially among persons aged 65 years or older, children younger than 2 years, and persons of any age with diabetes.^{1,5,6} Also, there is sufficient evidence to support that these people have appropriate serologic and clinical responses to vaccinations; thereby the Centers for Disease Control (CDC) and Prevention’s Advisory Committee on Immunization Practices (ACIP) recommend annual fall influenza vaccinations are given to all persons with diabetes and healthcare providers who work with these individuals.

The CDC also recommends that the appropriate vaccinations be given to individuals with diabetes who are at high risk of infection for pneumococcal disease and hepatitis B.

References

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