

Update on adult immunization

Richard E. Donnelly, Richard H. Davis, Jr., Marie-Michele Leger,
Richard D. Muma, James M. Taft, Sarah A. Toth

Childhood vaccination rates in the United States are above 90% for most recommended immunizations; Adult immunization rates are considerably lower. The Clinical and Scientific Affairs Council emphasizes the urgency of improving immunization among adults, especially among high risk groups and minorities. This article provides an update on the risks associated with non-immunization and the benefits of increased adult immunization and offers information on vaccination schedules.

The morbidity and mortality associated with vaccine- preventable disease in adults in the United States is substantial:

- Influenza causes an estimated 20,000 to 40,000 deaths annually.¹
- Pneumococcal disease causes 500,000 cases of pneumonia, 50,000 cases of sepsis, 3,000 cases of meningitis, and more than 40,000 deaths a year. Persons above the age of 65 years are most commonly affected.²
- Approximately 1 million people carry the hepatitis B virus (HBV). An estimated 4,000 people die each year from HBV-related cirrhosis, and 800 die each year from HBV-related liver cancer.^{3,4}
- From 1991 to 1998, more than 214,000 cases of hepatitis A resulted in more than 700 deaths; 14,000 cases of measles resulted in 36 deaths; 13,000 cases of mumps resulted in 2 deaths; and 2,800 cases of rubella resulted in 3 deaths. Fifty deaths occurred in 369 cases of tetanus.⁵
- From 1991 to 1994, 95% of tetanus cases and 100% of deaths from tetanus occurred in adults older than 20 years. Persons older than 15 years accounted for more than 60% of cases of diphtheria during 1985 and 1989, 33% of cases of measles during 1996, and 85% of cases of rubella between 1994 and 1996.^{6,7}

Despite the fact that immunization against vaccine preventable diseases is cost-effective and reduces morbidity and mortality, fewer than 40% of high-risk adults are immunized against influenza and pneumococcal disease (see Table I, page 20). Minority groups are also under immunized. Data from the 1995 Behavioral Risk Factor Surveillance System found that only 40% of African-Americans and 50% of Hispanics who are 65 years or older received influenza vaccine, compared to 61 % of whites. Only 22% of African-Americans and 23% of Hispanics had received pneumococcal vaccine compared to 36% of whites.⁸

Under immunization among adults is related to other factors that should be considered when planning vaccination campaigns. Hispanics, non-Hispanic African-Americans, and chronically ill persons who are younger than 65 years are at risk for under immunization, as are persons who reside in an inner city; have a low socioeconomic or educational level, or both; or lack access to medical services or health insurance.

Between 1900 and 1996, influenza and pneumococcal disease caused 50 to 100 times more deaths than all other vaccine-preventable diseases and were the sixth-leading cause of death in the United States in 1996.⁸ Efforts are focused on improving immunization rates against these two diseases, especially among high-risk groups and minorities.

Practitioners are urged to take the following steps:

- Identify available programs that promote immunization against influenza and pneumococcal disease and programs that help provide low-cost vaccines, such as those run by county or state health departments
- Explain to patients the risks and benefits of vaccination against specific diseases
- Educate the patient who may have misperceptions about immunization

- Encourage immunization in high-risk and minority patients by providing either the vaccine or information on where it can be obtained.

Table 1. High-risk conditions for complications of influenza and pneumococcal disease
Age >50 y, influenza; >65 y, pneumococcal disease; especially chronically ill
Chronic cardiac disease/heart failure
Chronic kidney disease (chronic renal failure, nephrotic syndrome)
Chronic lung disease (chronic obstructive pulmonary disease, emphysema)
Current cancer therapy
Diabetes mellitus
HIV infection
Immunocompromised or receiving immunosuppressive therapy
Liver disease or cirrhosis
Organ transplant

The National Coalition for Adult Immunization (NCAI) and the Centers for Disease Control and Prevention (CDC) are implementing programs to improve immunization rates and surveillance methods.

For example, state agencies and private practices are encouraged to use registries to enter immunization data for more accurate reporting and retrieval of information. CDC guidelines help organizations to set up standing orders for vaccination updates on patients in long-term care facilities and acute care centers (hospitals and emergency departments). The NCAI urges all professional medical organizations and national voluntary organizations to implement policies, guidelines, and standards of care that will increase immunization in adults. The goal is the Healthy People 2010 target of immunizing 90% of persons aged 65 and older and institutionalized adults and 60% of high-risk adults between 18 and 64 years of age against pneumococcal and influenza infection.⁹

Special programs are being developed and organized to reach minority populations through community-based efforts. Anticipating a serious influenza pandemic, the CDC encourages each state to develop a plan to achieve immunization rates of 80% or more of adults, especially those at high risk, in health care, and in close contact with high-risk groups.

Several organizations have developed guidelines and recommendations on adult immunization, including the CDC's Advisory Committee on Immunization Practices (see Table 2, page 20), the U.S. Preventive Services Task Force (USPSTF),¹⁰ the American Academy of Family Physicians (AAFP),¹¹ and the American College of Preventive Medicine (ACPM).¹² All agree on benefits and harms commonly associated with the vaccines and all recommend annual influenza vaccination for older adults. The groups differ, however, on the age at which an adult should receive annual influenza vaccination. The USPSTF and ACPM recommend annual vaccination for adults older than 65 years, and the CDC and AAFP recommend annual vaccination for adults older than 50 years. Recommendations on tetanus booster intervals and the indications for varicella vaccination also differ. A guideline synthesis can be found at the National Guideline Clearinghouse Web site (www.guideline.gov). The CDC offers a summary of adolescent and adult immunization recommendations on the Internet at www.cdc.gov/nip/recs/adultschedule.pdf.

PAs have an important role in increasing immunization rates and decreasing the morbidity and mortality of these highly preventable diseases by keeping current on recommendations, identifying high-risk patients, and taking advantage of opportunities to offer vaccination.

Table 2. Recommended vaccination schedules for adults	
Vaccine	Schedule
Hepatitis A	Two doses, 6-12 mo apart
Hepatitis B	Second dose at least 1 mo after first, with a third at least 5 mo later
Influenza	One dose annually, usually September through December, to healthy adults >50 y, younger if chronically ill or at high risk
Measles, mumps, rubella*	Two doses, at least 28 d apart
Pneumococcal	One dose for persons aged >65 y; one dose followed by booster doses every 5 y for persons aged 2-64 y if chronically ill or at high risk
Tetanus, diphtheria	Second dose 1-2 mo after first, third dose 6-12 mo later; one dose every 10 y thereafter
Varicella†	Two doses, at least 28 d apart
<p>*Should not be given to pregnant women; pregnancy should be avoided for 3 months following vaccination.</p> <p>†Adults who have no previous immunization and no reliable history of chickenpox are susceptible. Varicella vaccine should not be given to pregnant women, and pregnancy should be avoided for 1 month after vaccination.</p>	

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