



## Epidemiologic Notes & Reports

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### Recommended Adult Immunization Schedule — United States, October 2004–September 2005

*Reprinted from MMWR November 19, 2004*

CDC's Advisory Committee on Immunization Practices (ACIP) annually reviews the recommended Adult Immunization Schedule to ensure that the schedule reflects current recommendations for the use of licensed vaccines. In June 2004, ACIP approved the Adult Immunization Schedule for October 2004–September 2005. This schedule has also been approved by the American Academy of Family Physicians and the American College of Obstetricians and Gynecologists.

#### Changes in the Schedule for October 2004–September 2005

The 2004–2005 schedule differs from the previous schedule as follows:

- Both figures now provide a separate row for each vaccine (Figures 1 and 2).
- Health-care workers have been added to the figure that provides immunization recommendations by medical indications and other conditions (Figure 2).
- The special note regarding influenza vaccination of pregnant women reflects the revised ACIP recommendations that all pregnant women should receive influenza vaccination regardless of preexisting chronic conditions (1).

Health-care workers were added to the Adult Immunization Schedule in response to provider requests; this change should facilitate assessment of the vaccination status of health-care workers and

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administration of needed vaccinations. In 2002, 38.4% of health-care workers reported influenza vaccination, and 62.3% reported having completed hepatitis B vaccination series (National Health Interview Survey, CDC, unpublished data, 2003). Influenza vaccination of health-care workers is an important preventive measure for persons at high risk for complications from influenza infection. Health-care workers involved in direct patient care are among the priority groups recommended to receive influenza vaccination for the 2004–05 influenza season, despite the vaccine shortage (2).

The Adult Immunization Schedule is available in English and Spanish at <http://www.cdc.gov/nip/recs/adult-schedule.htm>. General information about adult immunization, including recommendations concerning vaccination of persons with human immunodeficiency virus (HIV) and other immunosuppressive conditions, is available from state and local health departments and from the National Immunization Program at <http://www.cdc.gov/nip>. Vaccine information statements are available at <http://www.cdc.gov/nip/publications/vis>. ACIP statements for each recommended vaccine can be viewed, downloaded, and printed from CDC's National Immunization Program at <http://www.cdc.gov/nip/publications/acip-list.htm>.

*(Continued on Page 2)*


Instructions for reporting adverse events after vaccination to the Vaccine Adverse Event Reporting System (VAERS) are available at <http://www.vaers.org> or by telephone, 800-822-7967.


## References


1. CDC. Prevention and control of influenza: recommendations of the Advisory Committee for Immunization Practices (ACIP). *MMWR* 2004;53(No. RR-6).
2. CDC. Interim influenza vaccination recommendations, 2004--05 influenza season. *MMWR* 2004;53:923--4.

FIGURE 1. Recommended adult immunization schedule, by vaccine and age group—United States, October 2004–September 2005

Vaccine	Age group (yrs)		
	19–49	50–64	≥65
Tetanus, Diphtheria (Td)*	1 dose booster every 10 years <sup>1</sup>		
Influenza	1 dose annually <sup>2</sup>		1 dose annually
Pneumococcal (polysaccharide)	1 dose <sup>3,4</sup>		1 dose <sup>3,4</sup>
Hepatitis B*	3 doses (0, 1–2, 4–6 mos) <sup>5</sup>		
Hepatitis A*	2 doses (0, 6–12 mos) <sup>6</sup>		
Measles, mumps, rubella (MMR)*	1 or 2 doses <sup>7</sup>		
Varicella*	2 doses (0, 4–8 wks) <sup>8</sup>		
Meningococcal (polysaccharide)	1 dose <sup>9</sup>		

 For all persons in this group

 For persons lacking documentation of vaccination or evidence of disease

 For persons at risk (i.e., with medical/exposure indications)

\* Covered by the Vaccine Injury Compensation Program.

1. **Tetanus and diphtheria (Td).** Adults, including pregnant women with uncertain history of a complete primary vaccination series, should receive a primary series of Td. A primary series for adults is 3 doses; administer the first 2 doses at least 4 weeks apart and the 3rd dose 6–12 months after the second. Administer 1 dose if the person received the primary series and if the last vaccination was received ≥10 years previously. Consult recommendations for administering Td as prophylaxis in wound management (see *MMWR* 1991;40[No. RR-10]). The American College of Physicians Task Force on Adult Immunization supports a second option for Td use in adults: a single Td booster at age 50 years for persons who have completed the full pediatric series, including the teenage/young adult booster.

2. **Influenza vaccination.** The Advisory Committee on Immunization Practices (ACIP) recommends inactivated influenza vaccination for the following indications, when vaccine is available. *Medical indications:* chronic disorders of the cardiovascular or pulmonary systems, including asthma; chronic metabolic diseases, including diabetes mellitus, renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or by human immunodeficiency virus [HIV]); and pregnancy during the influenza season. *Occupational indications:* health-care workers and employees of long-term-care and assisted living facilities. *Other indications:* residents of nursing homes and other long-term-care facilities; persons likely to transmit influenza to persons at high risk (i.e., in-home caregivers to persons with medical indications, household/close contacts and out-of-home caregivers of children aged 0–23 months,

household members and caregivers of elderly persons and adults with high-risk conditions); and anyone who wishes to be vaccinated. For healthy persons aged 5–49 years without high-risk conditions who are not contacts of severely immunocompromised persons in special care units, either the inactivated vaccine or the intranasally administered influenza vaccine (FluMist<sup>®</sup>) may be administered (see *MMWR* 2004;53[No. RR-6]). **Note:** Because of the vaccine shortage for the 2004–05 influenza season, CDC has recommended that vaccination be restricted to the following priority groups, which are considered to be of equal importance: all children aged 6–23 months; adults aged ≥65 years; persons aged 2–64 years with underlying chronic medical conditions; all women who will be pregnant during the influenza season; residents of nursing homes and long-term-care facilities; children aged 6 months–18 years on chronic aspirin therapy; health-care workers involved in direct patient care; and out-of-home caregivers and household contacts of children aged <6 months. For the 2004–05 season, intranasally administered, live, attenuated influenza vaccine, if available, should be encouraged for healthy persons who are aged 5–49 years and are not pregnant, including health-care workers (except those who care for severely immunocompromised patients in special care units) and persons caring for children aged <6 months (see *MMWR* 2004;53:923–4).

3. **Pneumococcal polysaccharide vaccination.** *Medical indications:* chronic disorders of the pulmonary system (excluding asthma); cardiovascular diseases; diabetes mellitus; chronic liver diseases, including liver disease as



**FIGURE 2. Recommended adult immunization schedule, by vaccine and medical and other indications — United States, October 2004–September 2005**

Vaccine	Indication						
	Pregnancy	Diabetes, heart disease, chronic pulmonary disease, chronic liver disease (including chronic alcoholism)	Congenital immunodeficiency, cochlear implants, leukemia, lymphoma, generalized malignancy, therapy with alkylating agents, antimetabolites, CSF† leaks, radiation, or large amounts of corticosteroids	Renal failure/ end-stage renal disease, recipients of hemodialysis or clotting factor concentrates	Asplenia (including elective splenectomy and terminal complement component deficiencies)	HIV§ infection	Health-care workers
Tetanus, Diphtheria (Td)*,1	Yellow						
Influenza <sup>2</sup>	Yellow		Yellow		C	Yellow	
Pneumococcal (polysaccharide) <sup>3,4</sup>	Yellow		D		D, E, F	D, G	Purple
Hepatitis B*,5	Purple			H	Purple	Yellow	Green
Hepatitis A*,6	Purple						
Measles, mumps, rubella (MMR)*,7	Red	Green	Red	Green	Green	J	Green
Varicella*,8	Red	Green	K	Green	Green	Red	Green

For all persons in this group    
 For persons lacking documentation of vaccination or evidence of disease    
 For persons at risk (i.e., with medical/exposure indications)    
 Contraindicated

\* Covered by the Vaccine Injury Compensation Program.

† Cerebrospinal fluid.

§ Human immunodeficiency virus.

#### Special Notes for Medical and Other Indications

- A. Although chronic liver disease and alcoholism are not indications for influenza vaccination, administer 1 dose annually if the patient is aged  $\geq 50$  years, has other indications for influenza vaccine, or requests vaccination.
- B. Asthma is an indication for influenza vaccination but not for pneumococcal vaccination.
- C. No data exist specifically on the risk for severe or complicated influenza infections among persons with asplenia. However, influenza is a risk factor for secondary bacterial infections that can cause severe disease among persons with asplenia.
- D. For persons aged  $< 65$  years, revaccinate once after  $\geq 5$  years have elapsed since initial vaccination.
- E. Administer meningococcal vaccine and consider *Haemophilus influenzae* type b vaccine.
- F. For persons undergoing elective splenectomy, vaccinate  $\geq 2$  weeks before surgery.
- G. Vaccinate as soon after diagnosis as possible.
- H. For hemodialysis patients, use special formulation of vaccine (40  $\mu\text{g}/\text{mL}$ ) or two 20  $\mu\text{g}/\text{mL}$  doses administered at one body site. Vaccinate early in the course of renal disease. Assess antibody titers to hepatitis B surface antigen (anti-HB) levels annually. Administer additional doses if anti-HB levels decline to  $< 10$  mIU/mL.
- I. For all persons with chronic liver disease.
- J. Withhold MMR or other measles-containing vaccines from HIV-infected persons with evidence of severe immunosuppression (see *MMWR* 1998;47 [No. RR-8]:21–2 and *MMWR* 2002;51 [No. RR-2]:22–4).
- K. Persons with impaired humoral immunity but intact cellular immunity may be vaccinated (see *MMWR* 1999;48 [No. RR-6]).

a result of alcohol abuse (e.g., cirrhosis); chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection, leukemia, lymphoma, multiple myeloma, Hodgkins disease, generalized malignancy, or organ or bone marrow transplantation); chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids; or cochlear implants. *Geographic/other indications:* Alaska Natives and certain American Indian populations. *Other indications:* residents of nursing homes and other long-term-care facilities (see *MMWR* 1997;46 [No. RR-8] and *MMWR* 2003;52:739–40).

4. Revaccination with pneumococcal polysaccharide vaccine. One-time revaccination after 5 years for persons with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection, leukemia, lymphoma, multiple myeloma, Hodgkins disease, generalized malignancy, or organ or bone marrow transplantation); or chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids. For persons aged  $\geq 65$  years, one-time revaccination if they were vaccinated  $\geq 5$  years previously and were aged  $< 65$  years at the time of primary vaccination (see *MMWR* 1997;46 [No. RR-8]).

**5. Hepatitis B vaccination.** *Medical indications:* hemodialysis patients or patients who receive clotting factor concentrates. *Occupational indications:* health-care workers and public-safety workers who have exposure to blood in the workplace; and persons in training in schools of medicine, dentistry, nursing, laboratory technology, and other allied health professions. *Behavioral indications:* injection-drug users; persons with more than one sex partner during the previous 6 months; persons with a recently acquired sexually transmitted disease (STD); all clients in STD clinics; and men who have sex with men. *Other indications:* household contacts and sex partners of persons with chronic hepatitis B virus (HBV) infection; clients and staff members of institutions for the developmentally disabled; inmates of correctional facilities; or international travelers who will be in countries with high or intermediate prevalence of chronic HBV infection for >6 months (<http://www.cdc.gov/travel/diseases/hbv.htm>) (see *MMWR* 1991;40[No. RR-13]).

**6. Hepatitis A vaccination.** *Medical indications:* persons with clotting factor disorders or chronic liver disease. *Behavioral indications:* men who have sex with men or users of illegal drugs. *Occupational indications:* persons working with hepatitis A virus (HAV)-infected primates or with HAV in a research laboratory setting. *Other indications:* persons traveling to or working in countries that have high or intermediate endemicity of hepatitis A. If the combined Hepatitis A and Hepatitis B vaccine is used, administer 3 doses at 0, 1, and 6 months (<http://www.cdc.gov/travel/diseases/hav.htm>) (see *MMWR* 1999;48[No. RR-12]).

**7. Measles, mumps, rubella (MMR) vaccination.** *Measles component:* Adults born before 1957 can be considered immune to measles. Adults born during or after 1957 should receive  $\geq 1$  dose of MMR unless they have a medical contraindication, documentation of  $\geq 1$  dose, or other acceptable evidence of immunity. A second dose of MMR is recommended for adults who 1) were recently exposed to measles or in an outbreak setting, 2) were previously vaccinated with killed measles vaccine, 3) were vaccinated with an unknown vaccine during 1963-1967, 4) are students in postsecondary educational institutions, 5) work in health-care facilities, or 6) plan to travel internationally. *Mumps component:* 1 dose of MMR vaccine should be adequate for protection. *Rubella component:* Administer 1 dose of MMR vaccine to women whose rubella vaccination history is unreliable and counsel women to avoid becoming pregnant for 4 weeks after vaccination. For women of childbearing age, regardless of birth year,

regularly determine rubella immunity and counsel women regarding congenital rubella syndrome. Do not vaccinate pregnant women or those planning to become pregnant during the next 4 weeks. For women who are pregnant and susceptible, vaccinate as early in the postpartum period as possible (see *MMWR* 1998;47[No. RR-8] and *MMWR* 2001;50:1117).

**8. Varicella vaccination.** Recommended for all persons lacking a reliable clinical history of varicella infection or serologic evidence of varicella zoster virus (VZV) infection who might be at high risk for exposure or transmission. This includes health-care workers and family contacts of immunocompromised persons; persons who live or work in environments where transmission is likely (e.g., teachers of young children, child care employees, and residents and staff members in institutional settings); persons who live or work in environments where VZV transmission can occur (e.g., college students, inmates, and staff members of correctional institutions, and military personnel); adolescents aged 11-18 years and adults living in households with children; women who are not pregnant but who might become pregnant; and international travelers who are not immune to infection. **Note:** Approximately 95% of U.S.-born adults are immune to VZV. Do not vaccinate pregnant women or those planning to become pregnant during the next 4 weeks. For women who are pregnant and susceptible, vaccinate as early in the postpartum period as possible (see *MMWR* 1999;48[No. RR-6]).

**9. Meningococcal vaccine (quadrivalent polysaccharide for serogroups A, C, Y, and W 135).** *Medical indications:* adults with terminal complement component deficiencies or those with anatomic or functional asplenia. *Other indications:* travelers to countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of sub-Saharan Africa and Mecca, Saudi Arabia). Revaccination after 3-5 years might be indicated for persons at high risk for infection (e.g., persons residing in areas where disease is epidemic). Counsel college freshmen, especially those who live in dormitories, regarding meningococcal disease and availability of the vaccine to enable them to make an educated decision about receiving the vaccination (see *MMWR* 2000;49[No. RR-7]). The American Academy of Family Physicians recommends that colleges should take the lead on providing education on meningococcal infection and availability of vaccination and offer it to students who are interested. Physicians need not initiate discussion of meningococcal quadrivalent polysaccharide vaccine as part of routine medical care.

This schedule indicates the recommended age groups for routine administration of currently licensed vaccines for persons aged  $\geq 19$  years. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. Providers should consult manufacturers' package inserts for detailed recommendations. Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available by telephone, 800-822-7967, or from the VAERS website at <http://www.vaers.org>.

Information on how to file a Vaccine Injury Compensation Program claim is available at <http://www.hrsa.gov/osp/vicp> or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, DC 20005, telephone 202-219-9657.

Additional information about the vaccines listed above and contraindications for immunization is available at <http://www.cdc.gov/nip> or from the National Immunization Hotline, 800-232-2522 (English) or 800-232-0233 (Spanish). Approved by the Advisory Committee on Immunization Practices (ACIP), the American College of Obstetricians and Gynecologists (ACOG), and the American Academy of Family Physicians (AAFP).

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**Questions on adult immunizations?  
Call the Communicable Disease Branch (502) 564-3261.**

### Reporting of Pediatric Deaths Due to Influenza

Kentucky health care providers are asked to voluntarily report influenza-associated deaths in children (<18 years). Forms and instructions have been sent to those who subscribe to the CHS Infection Control Hospitals/Health Departments list serve. Please report to Peggy Dixon, RN, CIC, Division of Epidemiology and Health Planning toll free, 888/973-7678, or by secure fax 502/696-3803.

Beginning October 1, 2004, the CDC added influenza-associated pediatric mortality (<18 years) to the list of conditions reportable to the National Notifiable Diseases Surveillance System.

The goals of this surveillance are to: (1) monitor and describe the incidence, distribution, and basic epidemiologic characteristics of deaths among children related to influenza virus infection; (2) provide data to guide future influenza immunization policy; and (3) rapidly recognize influenza seasons in which the impact of influenza appears to be unusually severe among children.

For surveillance purposes, a confirmed case is an influenza-associated death resulting from a clinically compatible illness, confirmed to be influenza by an appropriate laboratory or rapid diagnostic test. There should be no period of complete recovery between the illness and death.

Laboratory testing for influenza virus infection may be done on pre- or post-mortem clinical specimens, and include identification of influenza A or B virus infections by a positive result from:

- Respiratory specimens through tissue cell culture, RT-PCR, IFA, or rapid influenza diagnostic test.
- IHC staining for influenza viral antigens in respiratory tract tissue from autopsy specimens; or,
- Four-fold rise in influenza HI antibody titer in paired acute and convalescent sera. Single serum samples are not interpretable.

For additional information visit the CDC Influenza Home page at <http://www.cdc.gov/flu>.

### Kentucky Embraces Technology by Implementing Electronic Birth Transference

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The Office of Vital Statistics implemented the electronic transference of certificates of birth January 1, 2004. The application is based on a centralized Microsoft SQL Server database housed on a server located in Frankfort. This application is published on a Citrix server with Secure Access Manager for web access. This allows the hospitals to use the Electronic Birth Transference (EBT) application through a secure web site. Currently there are fifty-six birthing hospitals participating in EBT.

Each hospital has up to three users identified by each facility with individual logins and passwords. Once certificates of birth are entered into the system by hospital staff, the certificate is printed and forwarded to their local health department to be filed locally. The health department keeps a copy and forwards the original to the Office of Vital Statistics. Once the certificates are received the certificate is then validated and assigned a State File Number. Certified copies can then be issued.

The obvious benefits of EBT are efficiency and accuracy due to built in editing. It eliminates third-party data entry and allows data to be available to other agencies and transmitted directly to, for example, the Social Security Administration and the National Center for Health Statistics.

The Office of Vital Statistics embraced this challenge by preparing birthing hospitals for change. There were several training sessions held throughout the State that allowed them to know what to expect and assured them of our commitment to train and assist in every way available. All hospitals were trained on how to use the system and were given manuals for reference. To assist hospitals there is a Help Desk available to provide instruction and respond to questions regarding EBT. The Help Desk is available from 8:00 am until 4:30 pm Monday through Friday and can be contacted at 502-564-6956 and 502-564-6958.

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Interim Editor

**RETURN SERVICE REQUESTED**

## **Bicillin® L-A Syphilis Treatment Clarification**

CDC's 2002 Sexually Transmitted Diseases Treatment Guidelines recommend Bicillin® L-A penicillin G benzathine injectable suspension for the treatment of syphilis. Recently it has been noted that multiple clinics in the United States have **incorrectly** used Bicillin C-R when treating syphilis patients. Administration of Bicillin C-R instead of Bicillin L-A in the treatment for syphilis may result in inadequate treatment. The use of the incorrect medication was likely due to the similarity in packaging and appearance of the products. To help health care professionals distinguish between the two types of Bicillin and to assure the proper use of each product, cartons and syringes have been modified to provide greater distinction between the C-R and L-A products. Specifically, the background color for the C-R cartons has been changed from white to pale green (Bicillin C-R) and pale purple (Bicillin C-R 900/300). A reminder statement, "NOT FOR THE TREATMENT OF SYPHILIS", now appears on cartons and syringes of both C-R products.

Kentucky care providers who have recently administered Bicillin treatment to patients diagnosed with syphilis are urged to review records to assure that Bicillin L-A was used. Patients who received Bicillin C-R should return to receive Bicillin L-A in the appropriate amounts recommended by the CDC. Copies of the publication Sexually Transmitted Diseases Treatment Guidelines 2002 can be accessed on-line at <http://www.cdc.gov/mmwr> or by contacting the Kentucky Sexually Transmitted Disease Program at 502-564-4804.