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CBER 20058 Reg 2,

MMWR

Weekly

October 11, 2002 / 51(40);904-908

Notice to Readers: Recommended Adult Immunization Schedule --- United States, 2002--2003

Please note: A clarification has been published for this article. To view the clarification, please click

Although the childhood immunization program in the United States has reduced the burden of vaccine-preventable disease substantially among children, substantial vaccine-preventable morbidity and mortal from diseases such as hepatitis A, hepatitis B, influenza, and pneumococcal infections continue to occu among adults. In February 2002, the Advisory Committee on Immunization Practices (ACIP) approved the first time a schedule for the routine vaccination of persons aged ≥19 years. The Adult Immunizatior Schedule has been accepted by the American Academy of Family Physicians (AAFP) and the Americai College of Obstetricians and Gynecologists (ACOG). ACIP will review and approve annually both the recommended adult and childhood immunization schedules. Together, these schedules provide a comprehensive summary of recommendations for prevention of vaccine-preventable diseases during th span of persons in the United States.

The Adult Immunization Schedule is based on published recommendations of ACIP (*1*), AAFP (*2*), AC (*3*), and the American College of Physicians--American Society of Internal Medicine (ACP-ASIM) wit Infectious Diseases Society of America (*4*) and was developed by members of these organizations and (The schedule presents a tabular, color-coded summary of vaccine indications by age group (Figure 1) a medical condition (Figure 2). Footnotes included in Figure 1 are summaries of the ACIP recommendati for specific vaccines since 1991. Figure 2 includes special considerations or contraindications for vacci persons with specific medical conditions. Licensed combination vaccines can be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicate Providers should consult manufacturers' package inserts for detailed recommendations. CDC and ACIP update the schedule annually through collaboration with members of AAFP, ACOG, and ACP-ASIM.

Providers should report all postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS), telephone 800-822-7967. Reporting forms and instructions on filing a VAERS report are ava at http://www.vaers.org. Tetanus-diphtheria (Td); hepatitis B; measles, mumps, and rubella (MMR); an varicella vaccines are covered by the Vaccine Injury Compensation Program (VICP). Health-care provi are required to give adult patients copies of the Vaccine Information Statements developed by CDC bef administering each dose of the vaccines covered by VICP. Information on how to file a claim with VIC available at 800-338-2382.

The schedule provides an up-to-date tool for family physicians, gynecologists, internists, and other heal

care providers to assess the vaccine needs of patients during office visits and to administer the appropri vaccines. Providers can use the schedule to promote the use of standing orders, patient- reminder/recall systems, provider-reminder systems, and other strategies that reduce missed opportunities to vaccinate t patients. The notes accompanying the age-based table and the footnotes for highlighting issues unique t chronic disease groups provide information for providers who might be unfamiliar with the dosage or contraindications of a particular vaccine.

Because adult vaccination requires the participation of health-care providers in three medical specialtie (internal medicine, family practice, and obstetrics and gynecology) that do not include vaccinations in c training, tools such as the adult immunization schedule could play an important role in educating health providers who want to vaccinate their adult patients.

A printable, annotated, color version of the schedule will be available at http://www.cdc.gov/nip. Addit information on adult immunization and ordering instructions for *Increasing Adult Vaccination Rates: W Works*, a CD-ROM--based continuing education program offering primary-care providers strategies for increasing vaccination rates among their adult patients, also will be available at this website.

References

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4. American College of Physicians. Guide for adult immunization. 3rd ed. Philadelphia, Pennsylvan American College of Physicians, 1994.

Figure 1

FIGURE 1. Recommended adult immunization schedule — United States, 2002–2003

Vaccine	Age group (yrs) 19–49	50–64	≥65
Tetanus, diphtheria (Td)*	1 dose booster every 10 years†		
Influenza	1 dose annually for persons with medical or occupational indications or household contacts of persons with indications§	1 annual dose	
Pneumococcal (polysaccharide)	1 dose for persons with medical or other indications (1 dose revaccination for immunosuppressive conditions)¶**		1 dose for unvaccinated person 1 dose revaccination**
Hepatitis B*	3 doses (0, 1–2, 4–6 months) for persons with medical, behavioral, occupational, or other indications††		
Hepatitis A	2 doses (0, 6–12 months) for persons with medical, behavioral, occupational, or other indications§§		
Measles, mumps, rubella (MMR)*	1 dose if MMR vaccination history is unreliable; 2 doses for persons with occupational, geographic, or other indications¶¶		
Varicella*	2 doses (0, 4–8 weeks) for persons who are susceptible***		
Meningococcal (polysaccharide)	1 dose for persons with medical or other indications†††		

For all persons in this age group

For persons with medical/exposure indications

Catch-up on childhood vaccinations

[‡] Covered by the Vaccine Injury Compensation Program.

[†] A primary series for adults is 3 doses: the first 2 doses administered ≥4 weeks apart and the third dose administered 6–12 months after the second dose. Administer 1 dose if the person had received the primary series and the last vaccination was ≥10 years ago. The American College of Physicians Task Force on Adult Immunization supports a second option: a single Td booster at age 50 years for persons who have completed the full pediatric series, including the teenage/young-adult booster (1).

[§] *Medical indications*: chronic disorders of the cardiovascular or pulmonary systems including asthma; chronic metabolic diseases, including diabetes mellitus, renal dysfunction, hemoglobinopathies, immunosuppression (including immunosuppression caused by medications or by human immunodeficiency virus [HIV]), requiring regular medical followup or hospitalization during the preceding year; or women who will be in the second or third trimester of pregnancy during the influenza season. *Occupational indications*: health-care workers. *Other indications*: residents of nursing homes and other long-term–care facilities; persons likely to transmit influenza to persons at high risk (in-home caregivers to persons with medical indications, household contacts and out-of-home caregivers of children aged ≤23 months or children with asthma or other indicator conditions for influenza vaccination, and household members and caregivers of elderly persons and adults with high-risk conditions); and anyone who wishes to be vaccinated (2).

[¶] *Medical indications*: chronic disorders of the pulmonary system (excluding asthma), cardiovascular diseases, diabetes mellitus, chronic liver diseases including liver disease as 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, Hodgkin's disease, generalized malignancy, and organ or bone marrow transplantation), chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids. *Geographic/other indications*: American Indian/Alaska Native. *Other indications*: residents of nursing homes and other long-term–care facilities (3).

[**] 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, Hodgkin's disease, generalized malignancy, and organ or bone marrow transplantation), chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids. For persons aged ≥65 years, one-time revaccination if they were vaccinated ≥5 years previously and were aged <65 years at the time of primary vaccination (3).

[††] *Medical indications*: hemodialysis patients and patients who receive clotting-factor concentrates. *Occupational indications*: health-care workers and public-safety workers who are exposed to blood in the workplace; 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 preceding 6 months, persons with a recently acquired sexually transmitted disease (STD), all clients in STD clinics, and men who have sex with men (MSM). *Other indications*: household contacts and sex partners of persons with chronic hepatitis B virus (HBV) infection, clients and staff of institutions for the developmentally disabled, international travelers who will be located for >6 months in countries with high or intermediate prevalence of chronic HBV infection, and inmates of correctional facilities (4).

[§§] For the combined hepatitis A–hepatitis B vaccine, use 3 doses at 0 and 6 months. *Medical indications*: persons with clotting-factor disord or chronic liver disease. *Behavioral indications*: MSM and users injection-drug and noninjecting illegal drugs. *Occupational indicatic* persons working with hepatitis A virus (HAV)–infected primates or v HAV in a research laboratory setting. *Other indications*: pers traveling to or working in countries that have high or intermedi endemicity of hepatitis A (5).

[¶¶] *Measles component*: Adults born before 1957 might be considere be immune to measles. Administer 2 doses of MMR for adults wit least one of the following conditions and without vaccination histo

- adults born after 1956
- persons vaccinated with killed-measles–virus vaccine dur 1963–1969
- students in postsecondary education institutions
- health-care workers
- susceptible international travelers to countries in which measle endemic.

Mumps component: 1 dose of MMR should be adequate for protecti *Rubella component*: Administer 1 dose of MMR to women whose rub vaccination history is unreliable and counsel women to avoid becom pregnant for 4 weeks after vaccination. For women of childbear age, regardless of birth year, determine rubella immunity and cour women routinely regarding congenital rubella syndrome. Do vaccinate pregnant women or those planning to become pregn during the next 4 weeks. If pregnant and susceptible, vaccinate early in postpartum period as possible (6).

[***] Recommended for all persons who do not have reliable clinical hist of varicella infection or serologic evidence of varicella zoster vi (VZV) infection; health-care workers and family contacts immunocompromised persons; those who live or work in environme in which transmission is likely (e.g., teachers of young children, care employees, and residents and staff members in institutio settings); persons who live or work in environments in which V transmission can occur (e.g., college students, inmates and s members of correctional institutions, and military personn adolescents and adults living in households with children; women v are not pregnant but who might become pregnant in the future; a international travelers who are not immune to infection. Do not vaccin pregnant women or those planning to become pregnant during next 4 weeks. If pregnant and susceptible, vaccinate as early postpartum period as possible (7,8).

[†††] Meningococcal vaccine (quadrivalent polysaccharide for serogro A, C, Y, and W-135). *Medical indications*: consider vaccination for ad with terminal complement-component deficiencies or with anato or functional asplenia. *Other indications*: travelers to countries in wh disease is hyperendemic or epidemic (e.g., the "meningitis belt" sub-Saharan Africa and Mecca [Saudi Arabia] during Ha Revaccination at 3–5 years might be indicated for persons at high r for infection (e.g., persons residing in areas in which disease epidemic). Counsel college freshmen, especially those who live dormitories, about meningococcal disease and the vaccine so t they can make an educated decision about receiving the vaccinat (9). AAFP recommends that colleges should take the lead in provid education about meningococcal infection and vaccination and offe to those who are interested. Health-care providers need not initi discussion of the meningococcal quadravalent polysaccharide vacc as part of routine medical care.

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Figure 2

FIGURE 2. Recommended immunizations for adults with medical conditions — United States, 2002–2003

Medical condition	Vaccine						
	Tetanus-diphtheria (Td)*	Influenza	Pneumo-coccal (poly-saccharide)	Hepatitis B*	Hepatitis A	Measles, mumps, rubella (MMR)*	Varicell
Pregnancy		A					
Diabetes, heart disease, chronic pulmonary disease, and chronic liver disease, including chronic alcoholism		B	C		D		
Congenital immunodeficiency, leukemia, lymphoma, generalized malignancy, therapy with alkylating agents, antimetabolites, radiation, or large amounts of corticosteroids			E				F
Renal failure/end stage renal disease and recipients of hemodialysis or clotting factor concentrates			E	G			
Asplenia including elective sphlenectomy and terminal complement-component deficiencies			E,H,I				
Human immunodeficiency virus (HIV) infection			E,J			K	

For all persons in this age group | For persons with medical/exposure indications | Catch-up on childhood vaccinations | Contraindi

* Covered by the Vaccine Injury Compensation Program.
A. If pregnancy is at second or third trimester during influenza season.
B. Although chronic liver disease and alcoholism are not indicator conditions for influenza vaccination, administer 1 dose annually if the patient is age years, has other indications for influenza vaccine, or if patient requests vaccination.
C. Asthma is an indicator condition for influenza but not for pneumococcal vaccination.
D. For all persons with chronic liver disease.
E. Revaccinate once if ≥5 years have elapsed since initial vaccination.
F. Persons with impaired humoral but not cellular immunity might be vaccinated (*8*).
G. Hemodialysis patients: Use special formulation of vaccine (40 μg/mL) or two 1.0 mL 20 μg doses administered at one site. Vaccinate early in the c of renal disease. Assess antibody titers to hepatitis B surface antigen (anti-HBs) levels annually. Administer additional doses if anti-HBs levels de to <10 milliinternational units (mIU)/mL.
H. Also administer meningococcal vaccine.
I. Elective splenectomy: Vaccinate ≥2 weeks before surgery.
J. Vaccinate as close to diagnosis as possible when CD4 cell counts are highest.
K. Withhold MMR or other measles-containing vaccines from HIV-infected persons with evidence of severe immunosuppression (*10*).

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Page converted: 10/10/2002