

Provider Bulletin

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Immunization Benefits

This bulletin provides a summary of the Colorado Medicaid immunization benefits and billing guidelines for adults and children. The Immunization Quick Coding Reference, page 9, contains information regarding valid ages and reimbursement rates for each covered Current Procedural Terminology (CPT) code.

The Recommended Childhood Immunization Schedule, page 12, indicates the recommended ages for routine administration of vaccines for children ages 0 through 18. The Recommended Adult Immunization Schedule, page 15, indicates the recommended ages for administration of vaccines for adults. Immunizations for the sole purpose of international travel are not a benefit for Colorado Medicaid clients.

Any qualified Colorado Medicaid enrolled provider, including but not limited to private practitioners, public health agencies, Rural Health Centers (RHC), hospital outpatient clinics, and Federally Qualified Health Centers (FQHC) may provide immunization services.

Providers must use CPT procedure codes to submit all immunization claims.

Immunizations for adults ages 21 and older

Benefit information

Immunizations for adults ages 21 and older are a Colorado Medicaid benefit when medically necessary. Medical necessity may include the need to enter the work force, or to attend school.

Billing information

Providers must submit claims for adult immunization services on the Colorado 1500 or 837 professional claim form. Colorado Medicaid will reimburse for both vaccine administration and the vaccine product itself. The administration codes 90465-90474 need to be billed as one line item and the vaccine product should be billed as a separate line item. In order for an immunization claim to be reimbursed both an administration code and the vaccine product must be billed. All vaccine administration codes will be reimbursed at \$6.50.

If an immunization is the only service rendered, providers may not submit charges for an Evaluation/Management (E/M) service. If E/M services are rendered in addition to the immunization administration, by an appropriate provider, enter the diagnosis and appropriate procedure code on the claim.

Reimbursement rate

Adult immunizations are reimbursed using the following formula:

Average Wholesale Price (AWP) at the time vaccine is covered by Medicaid plus 10 percent.

Immunizations for children ages 20 and under

Benefits information

Immunizations for children age 20 and under are a Colorado Medicaid benefit when medically necessary. Medical necessity may include: when needed to enter the work force, or to attend school.

Covered CPT codes are listed on page 9. Benefits are as follows:

• An administration fee of \$6.50 can be billed in conjunction with each vaccine given. Vaccines available through the VFC are not reimbursed by Colorado Medicaid.

The Colorado Department of Public Health and Environment (CDPHE) furnishes some vaccines to medical providers at no cost through two programs, the federal VFC Program and the Colorado Immunization Program.

1. VFC Program

Children under age 19 are eligible to receive vaccines at no cost through the VFC Program if they are:

- On Medicaid,
- Uninsured,
- American Indian/Native Alaskan, or
- Underinsured (only eligible when provided by RHCs or FQHCs. Children are considered underinsured if their insurance does not provide immunizations as a regular benefit).

For questions or additional information regarding the VFC Program, please contact Rosemary Spence at CDPHE at 303-692-2798.

2. Colorado Immunization Program

The Colorado Immunization Program furnishes vaccines at no cost to providers for Colorado Medicaid clients who are 19 and 20 years of age. The vaccines are provided only for clients on Medicaid at the time of service. The free vaccine obtained through the Colorado Immunization Program may be used only for Colorado Medicaid clients ages 19 and 20.

CDPHE monitors vaccine usage by comparing the number of doses billed to Colorado Medicaid with the number of vaccine doses shipped to providers. Only doses billed to and paid for by Colorado Medicaid are recognized. It is important that providers use accurate procedure codes and bill vaccine doses to Colorado Medicaid as soon as possible after the vaccine is administered.

Vaccines available from the VFC and the Colorado Immunization Programs are shown on page 10.

Provider Participation in CDPHE Vaccine Programs

Participation in the VFC and Colorado Immunization Programs is strongly encouraged by Colorado Medicaid. Providers, including but not limited to private practitioners, managed care providers, public health agencies, RHCs, hospital outpatient clinics, and FQHCs, who wish to participate in the immunization programs must enroll with the CDPHE.

Information about the CDPHE immunization programs is available at:

Colorado Department of Public Health and Environment Immunization Program DCEED-IMM-A4 4300 Cherry Creek Drive South Denver, Colorado 80246-1530 Phone 303-692-2798/303-692-2363

Providers are required to give clients the federally required "Important Information Statement" or, for vaccines covered by the national Vaccine Injury Compensation Program, the appropriate "Vaccine Information Statement". These statements may be downloaded from the Centers for Disease Control and Prevention (CDC) web site at:

http://www.cdc.gov/nip/publications/VIS/default.htm.

Billing information

Immunizations can be given during an Early Periodic Screening Diagnosis and Treatment (EPSDT) periodic screening appointment, an EPSDT inter-periodic visit, or any other medical appointment.

If immunizations are given during an EPSDT periodic screening appointment or during any
other medical care appointment, referred to as an EPSDT inter-periodic visit, submit claims
on the Colorado 1500 or 837 Professional (P) using the appropriate Evaluation and
Management CPT and diagnosis codes which may include "Need for Vaccination" codes,
V03.0 through V06.9. Practitioners must maintain records that document the full nature and
extent of the services rendered during this visit.

• If immunization is the only service provided to a Colorado Medicaid client age 20 and under, the service must be billed on the Colorado 1500 or 837P. Practitioners should use the appropriate Evaluation and Management CPT and diagnosis codes, which may include "Need for Vaccination" codes, V03.0 through V06.9.

Reimbursement rate

 If the vaccine is not available by the VFC and Colorado Immunization Programs, providers are reimbursed using the following formula:

Average Wholesale Price (AWP) at the time vaccine is covered by Medicaid plus 10 percent.

• If the vaccine is available through the VFC or Colorado Immunization Program, Colorado Medicaid pays providers an administration fee for immunizations. Because the vaccine is available at no cost through these programs, providers who choose to obtain vaccines from other suppliers may not request nor receive reimbursement from Colorado Medicaid for the vaccine. Vaccines available from the VFC and Colorado Immunization Programs are shown on page 9.

Provider Specific Billing Instructions

Managed Care Programs

Colorado Medicaid Health Maintenance Organization (HMO) or Prepaid Inpatient Health Plan (PIHP) enrolled clients must receive immunization services from the HMO or PIHP and providers may not bill Medicaid for vaccines provided to these clients. For clients enrolled in the Primary Care Physician Program (PCPP), the primary care physician (PCP) should provide the immunization services.

Outpatient, Emergency Room, or Inpatient Hospital

Immunization administration may be billed as part of an outpatient or emergency room visit when the visit is for medical reasons. Outpatient or emergency room visits cannot be billed for the sole purpose of immunization administration. Administration of an immunization at the time of an inpatient stay is included in the DRG.

Federally Qualified Health Centers (FQHC) and Rural Health Centers (RHC)

FQHCs and RHCs may bill an encounter fee even if the only service provided is administering an immunization. If an immunization is administered in addition to a routine office visit, then an additional encounter fee should not be billed.

Nursing Facilities

Nursing facility residents may receive immunizations if ordered by their physician. The skilled nursing component for immunization administration is included in the facility's rate. The vaccine itself may be billed directly to Colorado Medicaid by a Colorado Medicaid enrolled pharmacy. The pharmacy must bill the appropriate National Drug Code (NDC) for the individual vaccine dose under the client's Colorado Medicaid ID.

Home Health

A client confined to the home and receiving home health services may receive an immunization if the administration is part of a normally scheduled home health visit. A home health visit for sole purpose of immunization administration is not a benefit.

The pharmacy bills the vaccine as an individual dose under the client's Colorado Medicaid ID. The home health agency may not bill for the vaccine.

Alternative Health Care Facilities (ACFs) / Group Homes

Residents of an ACF may receive immunizations from their own physician. They may also receive vaccines under home health as stated above in the home health guideline.

Colorado Medicaid does not pay for home health agencies, physicians, or other non-physician practitioners to go to nursing facilities, group homes, or residential treatment centers to administer immunizations (for example: flu vaccines) to groups of clients.

Medicare crossover claims

For Medicare crossover claims, Colorado Medicaid pays the Medicare deductible and coinsurance or Colorado Medicaid allowed benefit minus the Medicare payment, whichever amount is less. If Medicare's payment for immunization services is the same or greater than the Colorado Medicaid allowable benefit, no additional payment is made. If Medicare pays 100 percent of the Medicare allowable, Colorado Medicaid makes no additional payment.

Additional Information on Synagis Immune Globulin and Influenza Vaccine

Colorado Medicaid receives numerous questions regarding Synagis immune globulin and influenza vaccine. The following information addresses these questions and applies only to Synagis immune globulin and influenza vaccine. Please note that all benefit, billing, and reimbursement information prior to this section also applies to Synagis immune globulin and influenza vaccine.

Synagis Immune Globulin

Synagis (Palivizumab) is used to prevent serious lower respiratory tract disease caused by Respiratory Syncytial Virus (RSV) in pediatric patients at high risk for RSV disease. Synagis is administered by intramuscular injections, at 15 mg per kg of body weight, once a month during expected periods of RSV frequency in the community.

When Synagis is administered in a Provider's Office or Outpatient Hospital:

Prior Authorization is not required if:

- The client is under age 3 at the start of the current RSV season or at the time of the first injection for the current RSV season, with a chronic lung or respiratory condition, and was either full term or premature.
- The client was born prematurely, less then 28 weeks, and is under the age of 12 months at time of first injection, with or without a chronic lung or respiratory condition (e.g., ICD9 765.0).
- The client was born prematurely, 29-35 weeks, and is under the age of 6 months at time of first injection, with or without a chronic lung or respiratory condition (e.g., ICD9 765.1).

Prior authorization is required for:

- Children ages 3 or older at the start of each RSV season, or
- Children who do not meet the above criteria but whose physician believes that they medically require Synagis.

- The client's risk is increased due to one or more of the following conditions, as recommended by the American Academy of Pediatrics:
 - Body Mass <5kg
 - Congenital Heart Disease
 - Low Socioeconomic Status
 - T-cell immunodeficiency
- School age siblings

• Day care attendance

Birth within 6 months before onset of RSV season

Two or more individuals sharing a bedroom

- Passive smoke exposure
- Multiple births

Providers administering Synagis in the office must furnish the immune globulin and must use CPT code 90378 to bill Synagis on the CO 1500 or 837 professional claim format. Bill one unit per 50mg vial; limit 6 units per day. Providers may not ask clients to obtain Synagis from a pharmacy and bring it to the practitioner's office for administration. Outpatient hospitals should bill using the appropriate revenue code.

Prior Authorization Requests (PARs) should be sent to:

PARs

P.O. Box 30

Denver, CO 80201-0030

For questions, providers may contact the fiscal agent's prior authorization line at 303-534-0279 or 1-800-237-7647

When Administered At Home Or In a Long-Term Care Facility:

A prior authorization is required when Synagis is dispensed by a pharmacy and administered at home or in a long-term care facility. The prior authorization will be approved for six months for a diagnosis of RSV or the prevention of RSV. Only physicians and pharmacists from long-term care pharmacies and infusion pharmacies, who are acting as the agents of the physicians, may request a prior authorization. When the prior authorization is approved, the pharmacy should bill Colorado Medicaid electronically at the point of sale. Prior authorizations may be requested by calling or faxing a Pharmacy PAR to the ACS prior authorization help desk:

Phone: 1-800-365-4944

Fax: 1-888-772-9696

Influenza Vaccine

Free influenza vaccine is available through the VFC Program and the Colorado Immunization Program for Colorado Medicaid enrolled children (age 20 and under) meeting any of the following criteria:

- Children aged 6 months through 23 months
- Children and adolescents aged 6 months through 18 years with chronic disorders of the pulmonary or cardiovascular systems, including asthma
- Children and adolescents aged 2 through 18 years who have required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or by HIV)
- Children and adolescents aged 2 through 18 years who are receiving long-term aspirin therapy and may therefore be at risk for developing Reye's Syndrome after influenza

- Children and adolescents aged 2 through 18 years who are residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions
- Adolescent females under 19 years of age who will be pregnant during influenza season
- Children (6 months 18 years) who have any condition (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration
- Children and adolescents aged 2 years through 18 years who are household contacts or outof-home caregivers of persons in the following high-risk groups:
 - 1. Children less than 2 years old
 - 2. Adults aged 50 years or older
 - 3. Persons with chronic disorders of the pulmonary or cardiovascular systems, including asthma
 - 4. Persons who have required regular medical follow-up or hospitalization during the preceding year for chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or by HIV)
 - 5. Children and adolescents ages 2 through 18 years who are receiving long-term aspirin therapy and may therefore be at risk for developing Reye syndrome after influenza
 - 6. Residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions
 - 7. Women who will be pregnant during influenza season
 - 8. Persons who have any condition (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration

Who should get influenza immunization?

Influenza immunization is strongly recommended for individuals who are 6 months of age or older and because of age or underlying medical conditions are at increased risk for complications of influenza. Health care workers and other contacts (including household contacts) of individuals in high-risk groups should also be vaccinated.

High-risk groups include:

- Children who meet the criteria for VFC influenza vaccine (see previous section)
- Persons 65 years of age and older
- Persons with chronic disorders of the pulmonary or cardiovascular systems, including asthma
- Persons who have required regular medical follow-up or hospitalization during the proceeding year because of chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications)
- Residents of nursing homes and other chronic-care facilities that house persons at any age who have chronic medical conditions

Flu vaccine may also be administered to individuals who wish to reduce the chance of becoming infected with influenza.

Dosages

At risk children should receive vaccine in an age appropriate dosage (0.25 ml if age 6-35 months or 0.5 ml if age is greater or equal to 3 years). Two doses of vaccine are recommended for children less than 9 years of age if they have not been previously vaccinated for influenza. The two doses should be administered at least one month apart and, if possible, the second dose should be given before December. Note: Only one dose is necessary if a child has received one dose of influenza vaccine in any previous year.

Billing information

Influenza vaccine is a benefit for children and adults. Valid CPT codes are as follows:

CPT Code	Valid Ages	Reimbursement for children (under age 21)	Reimbursement for adults (age 21 and older)	Administration reimbursement
90655	6 – 35 months	\$0	Not a benefit	\$6.50
90656	3 years and above	\$0	\$18.57	\$6.50
90657	6 – 35 months	\$0	Not a benefit	\$6.50
90658	3 years and above	\$0	\$14.62	\$6.50
90660	2 – 20 years	\$0	Not a benefit	\$6.50

CPT codes 90465 – 90474 for vaccine administration are a benefit and can be billed in conjunction with the vaccine code. They are reimbursed at \$6.50. Please note that CPT code 90660, Influenza virus vaccine, live, for intranasal use (brand name FluMist) is not a benefit for adults aged 21 or older. For more information on FluMist, please see the Centers for Disease Control Vaccine Information Statement at:

http://www.cdc.gov/nip/publications/VIS/vis-flulive.pdf

For clients 20 and under, influenza vaccine reimbursement is limited to an administration fee of \$6.50. Because influenza vaccine is available at no cost through the Vaccines for Children (VFC) and Colorado Immunization Programs, providers who choose to obtain vaccine from other suppliers may not request nor receive reimbursement in addition to the administration payment.

Immunization Coding Quick Reference

Practitioners billing for immunizations to Colorado Medicaid enrolled children (age 20 and under) when vaccine is available at no-cost through the Vaccines for Children and Colorado Immunization Programs are paid an administration fee of \$6.50 for each immunization using CPT codes 90465 – 90474.

Medically necessary vaccines that are not provided to practitioners at no cost by the VFC or Colorado Immunization Programs, are reimbursed using the following formula:

Average Wholesale Price (AWP) at time covered by Medicaid plus 10 percent

Codes listed as "manually priced" means that there was insufficient AWP information available to establish a reimbursement rate using the formula shown above. Manually priced codes are processed on a perclaim basis by fiscal agent staff to determine the appropriate reimbursement rate for the claim.

Key						
lg – imm	une globulin	INJ – jet injection		SQ – subcutaneou	S	
IM – intra	amuscular	IV – intravenous		vacc – vaccine		
Code	De	escription	Valid Ages	Maximum Allowable Reimbursement	VFC Program Benefit	Colorado Immunization Program Benefit
Immune	Globulins			·	·	
90281	Human Ig, IM		All ages	Manually priced		
90283	Human Ig, IV		All ages	Manually priced		
90284	Human Ig, SQ		All ages	Manually priced		
90287	Botulinum antitox	kin, equine	All ages	Manually priced		
90288	Botulism Ig, IV		All ages	Manually priced		
90291	CMV Ig, IV		All ages	Manually priced		
90296	Diphtheria antito:	xin, equine	All ages	Manually priced		
90371	Hep B Ig, IM		All ages	\$176.31		
90375	Rabies Ig, IM/SC	2	All ages	\$101.43		
90376	Rabies Ig, heat-t	reated, IM/SQ	All ages	\$100.35		
90378	RSV lg, IM, 50m	g (Synagis)	0-2	\$771.40		
90379	RSV lg, IV		0-2	\$21.26		
90384	Rh Ig, full-dose,	Μ	All ages	\$120.80		
90385	Rh Ig, mini-dose	, IM	All ages	\$54.98		
90386	Rh Ig, IV		All ages	Manually priced		
90389	Tetanus Ig, IM		All ages	Manually priced		
90393	Vaccinia Ig, IM		All ages	Manually priced		
90396	Varicella-zoster I	g, IM	All ages	Manually priced		
90399	Unlisted immune	globulin	All ages	Manually priced		

Code	Description	Valid Ages	Maximum Allowable Reimbursement	VFC Program Benefit	Colorado Immunization Program Benefit
Vaccine	s, Toxoids				
90476	Adenovirus vacc, type 4, oral	All Ages	Manually priced		
90477	Adenovirus vacc, type 7, oral	All ages	Manually priced		
90632	Hep A vacc, adult, IM	19-20 21+	\$0 \$82.70		\checkmark
90633	Hep A vacc, ped/adol, 2 dose, IM	0-18	\$0		
	Hep A & Hep B vacc adult, IM	18+	\$110.80		
	Hib vacc HbOC, 4 dose, IM	0-4	\$0		
	Hib vacc, PRP-OMP, 3 dose, IM	0-4	\$0		
	Hib vacc, PRP-T, 4 dose, IM	0-4	\$0	\checkmark	
		9-20	\$0	I	1
90649	H papilloma vacc 3 dose, IM	21-26	\$167.00	\sim	\checkmark
90655	Flu vacc, 6-35 mo, preserv free, IM	0-2	\$0		
		3-20	\$0	.1	
90656	Flu vacc, 3 yrs +, preserv free, IM	21+	\$18.57	\checkmark	
90657	Flu vacc, 6-35 mo, IM	0-2	\$0	\checkmark	
00050		3-20	\$0	- 1	
90658	Flu vacc, 3 yrs +, IM	21+	\$14.62	Ň	
90660	Flu vacc, live, intranasal	2-20	\$0	\checkmark	\checkmark
90669	Pneum conj vacc, polyval, < 5 yrs, IM	0-4	\$0	\checkmark	
90675	Rabies vacc, IM	All ages	\$201.63		
90680	Rotavirus vacc, pentavalent, oral	0-1	\$0	\checkmark	
90681	Rotavirus vacc, attenuated, oral	0-1	\$0	\checkmark	
90696	D Tap-IPV vacc, IM	4-6	\$0	\checkmark	
90700	DTaP vacc, < 7 yrs, IM	0-6	\$0	\checkmark	
90702	DT vacc, < 7 yrs, IM	0-6	\$0	\checkmark	
90703	Tetanus vacc, IM	All ages	\$55.20		
90704	Mumps vacc, SQ	All ages	\$31.24		
90705	Measles vacc, SQ	All ages	\$24.59		
90706	Rubella vacc, SQ	All ages	\$27.16		
00707	MMP years SO	0-20	\$0	\sim	\checkmark
90707	MMR vacc, SQ	21+	\$55.78	N	v
90708	Measles-rubella vacc, SQ	All ages	\$29.84		
90710	MMRV vacc, SQ	1-12	\$0	\checkmark	
90713	Poliovirus vacc, IPV, SQ, IM	0-20	\$0	- 1	2
30713		21+	\$66.61	N	\checkmark

Code	Description	Valid Ages	Maximum Allowable Reimbursement	VFC Program Benefit	Colorado Immunization Program Benefit
90714	Td vacc, 7 yrs +, preserv free, IM	7-20	\$0	\checkmark	
		21+	\$53.81		· ·
90715	Tdap vacc, 7 yrs +, IM	7-20	\$0	\checkmark	
		21+	\$101.54	,	, ,
90716	Varicella (chicken pox) vacc, SQ	0-20	\$0	\checkmark	
		21+	\$106.98	•	,
90718	Td vacc, 7 yrs +, IM	7-20	\$0	\checkmark	
507 10		21+	\$30.08	•	v
90719	Diphtheria vacc, IM	All ages	\$10.92		
90721	DTaP/Hib vacc, IM	0-6	\$0	\checkmark	
90723	DTaP-Hep B-IPV vacc, IM	0-6	\$0	\checkmark	
90732	Pneum polysacc vacc, 23 valent, adult or ill pat, SQ/IM	2+	\$79.69		
90733	Meningococcal polysacc vacc, SQ	All ages	\$123.77		
90734	Meningococcal conj vacc, serogrp A, C,	11-18	\$0	\checkmark	
90734	Y, W-135, IM	19-25	\$114.75	N	
90735	Encephalitis vacc, SQ	All ages	\$121.72		
90736	Zoster vacc, SQ	Сс	de 90736 is not a b	penefit at t	his time
90740	Hep B vacc, ill pat, 3 dose, IM	0-20	\$0	\checkmark	\checkmark
90743	Hep B vacc, adol, 2 dose, IM	11-15	\$0	\checkmark	
90744	Hep B vacc, ped/adol, 3 dose, IM	0-18	\$0	\checkmark	
00746		18-20	\$0		
90746	Hep B vacc, adult, IM	21+	\$76.01		N
90747	Hep B vacc, ill pat, 4 dose, IM	0-20	\$0	\checkmark	\checkmark
90748	Hep B/Hib vacc, IM	0-6	\$0	\checkmark	
90749	Unlisted vaccine/toxoid	All ages	Manually priced		
S0195	Pneum conj, polyvalent, IM, 5-9 yrs with no previous dose	5-9	\$0	\checkmark	

Recommended Immunization Schedule for Persons Aged 0 Through 6 Years—United States • 2009

For those who fall behind or start late, see the catch-up schedule

Vaccine▼ Age►	Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	19–23 months	2–3 years	4–6 years	
Hepatitis B ¹	HepB		рB	see footnote 1		He						
Rotavirus ²			RV	RV	RV ²							Range of recommended
Diphtheria, Tetanus, Pertussis ³	*****		DTaP	DTaP	DTaP	see footnote3	D1	[aP			DTaP	ages
Haemophilus influenzae type b ⁴	,		Hib	Hib	Hib ⁴	Н						
Pneumococcal ⁵			PCV	PCV	PCV	PC	ov 🗸				sv	Certain
Inactivated Poliovirus			IPV	IPV		IP	v	·			IPV	high-risk groups
Influenza ⁶						4	Influ	enza (Ye	early)			
Measles, Mumps, Rubella ⁷	*****					M	MR	5	see footnote	•7	MMR	
Varicella ⁸	*****		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Vari	cella		see footnote	8	<mark>Varicella</mark>	
Hepatitis A ⁹								2 doses		HepA	Series	
Meningococcal ¹⁰										М	сv	

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 1, 2008, for children aged 0 through 6 years. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. Licensed combination vaccines may be used whenever any component of the combination is indicated and other components are not contraindicated and if approved by the Food and Drug Administration for that dose of

1. Hepatitis B vaccine (HepB). (Minimum age: birth) At birth:

- Administer monovalent HepB to all newborns before hospital discharge.
 If mother is hepatitis B surface antigen (HBsAg)-positive, administer HepB
- and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
 If mother's HBsAg status is unknown, administer HepB within 12 hours of birth. Determine mother's HBsAg status as soon as possible and, if HBsAg-positive, administer HBIG (no later than age 1 week).
- After the birth dose:
- The HepB series should be completed with either monovalent HepB or a combination vaccine containing HepB. The second dose should be administered at age 1 or 2 months. The final dose should be administered no earlier than age 24 weeks.
- Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg (anti-HBs) after completion of at least 3 doses of the HepB series, at age 9 through 18 months (generally at the next well-child visit).
- 4-month dose:
- Administration of 4 doses of HepB to infants is permissible when combination vaccines containing HepB are administered after the birth dose.
- 2. Rotavirus vaccine (RV). (Minimum age: 6 weeks)
 - Administer the first dose at age 6 through 14 weeks (maximum age: 14 weeks 6 days). Vaccination should not be initiated for infants aged 15 weeks or older (i.e., 15 weeks 0 days or older).
 - Administer the final dose in the series by age 8 months 0 days.
 - If Rotarix[®] is administered at ages 2 and 4 months, a dose at 6 months is not indicated.
- 3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP). (Minimum age: 6 weeks)
 - The fourth dose may be administered as early as age 12 months, provided
 - at least 6 months have elapsed since the third dose.
- Administer the final dose in the series at age 4 through 6 years.
 Haemophilus influenzae type b conjugate vaccine (Hib). (Minimum age: 6 weeks)
 - If PRP-OMP (PedvaxHIB[®] or Comvax[®] [HepB-Hib]) is administered at ages 2 and 4 months, a dose at age 6 months is not indicated.
- TriHiBit[®] (DTaP/Hib) should not be used for doses at ages 2, 4, or 6 months but can be used as the final dose in children aged 12 months or older.
- Pneumococcal vaccine. (Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV])
 - PCV is recommended for all children aged younger than 5 years. Administer 1 dose of PCV to all healthy children aged 24 through 59 months who are not completely vaccinated for their age.

the series. Providers should consult the relevant Advisory Committee on Immunization Practices statement for detailed recommendations, including high-risk conditions: http://www.cdc.gov/vaccines/pubs/acip-list.htm. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

- Administer PPSV to children aged 2 years or older with certain underlying medical conditions (see MMWR 2000;49[No. RR-9]), including a cochlear implant.
- 6. Influenza vaccine. (Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 2 years for live, attenuated influenza vaccine [LAN])
 - Administer annually to children aged 6 months through 18 years.
 For healthy nonpregnant persons (i.e., those who do not have underlying medical conditions that predispose them to influenza complications) aged 2 through 49 years, either LAIV or TIV may be used.
 - Children receiving TIV should receive 0.25 mL if aged 6 through 35 months or 0.5 mL if aged 3 years or older.
 - Administer 2 doses (separated by at least 4 weeks) to children aged younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.
- 7. Measles, mumps, and rubella vaccine (MMR). (Minimum age: 12 months)
- Administer the second dose at age 4 through 6 years. However, the second dose may be administered before age 4, provided at least 28 days have elapsed since the first dose.
- 8. Varicella vaccine. (Minimum age: 12 months)
- Administer the second dose at age 4 through 6 years. However, the second dose may be administered before age 4, provided at least 3 months have elapsed since the first dose.
- For children aged 12 months through 12 years the minimum interval between doses is 3 months. However, if the second dose was administered at least 28 days after the first dose, it can be accepted as valid.
- 9. Hepatitis A vaccine (HepA). (Minimum age: 12 months)
 - Administer to all children aged 1 year (i.e., aged 12 through 23 months). Administer 2 doses at least 6 months apart.
 - Children not fully vaccinated by age 2 years can be vaccinated at subsequent visits.
 - HepA also is recommended for children older than 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See MMWR 2006;55(No. RR-7).
- Meningococcal vaccine. (Minimum age: 2 years for meningococcal conjugate vaccine [MCV] and for meningococcal polysaccharide vaccine [MPSV])
 - Administer MCV to children aged 2 through 10 years with terminal complement component deficiency, anatomic or functional asplenia, and certain other high-risk groups. See MMWR 2005;54(No. RR-7).
 - Persons who received MPSV 3 or more years previously and who remain at increased risk for meningococcal disease should be revaccinated with MCV.

The Recommended Immunization Schedules for Persons Aged 0 Through 18 Years are approved by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/recs/acip), the American Academy of Pediatrics (http://www.aap.org), and the American Academy of Family Physicians (http://www.aafp.org). DEPARTMENT OF HEALTH AND HUMAN SERVICES • CENTERS FOR DISEASE CONTROL AND PREVENTION

CS108164

Recommended Immunization Schedule for Persons Aged 7 Through 18 Years—United States • 2009 For those who fall behind or start late, see the schedule below and the catch-up schedule

Vaccine▼ Age►	7–10 years	11–12 years	13-18 years
Tetanus, Diphtheria, Pertussis ¹	see footnote 1	Tdap	Tdap
Human Papillomavirus²	see footnote 2	HPV (3 doses)	HPV Series
Vleningococcal ³	MCV	MCV	MCV
nfluenza ⁴		Influenza (Yearly)	
Pneumococcal⁵		PPSV	
lepatitis A ⁶		HepA Series	
lepatitis B ⁷		HepB Series	r r
nactivated Poliovirus ⁸		IPV Series	
Vleasles, Mumps, Rubella ⁹		MMR Series	
Varicella ¹⁰		Varicella Series	

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 1, 2008, for children aged 7 through 18 years. Any dose not administered at the recommended age should be administered at a subsequent visit, when indicated and feasible. Licensed combination vaccines may be used whenever any component of the combination is indicated and other components are not contraindicated and if approved by the Food and Drug Administration for that dose of

1. Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap). (Minimum age: 10 years for BOOSTRIX® and 11 years for ADACEL®)

- Administer at age 11 or 12 years for those who have completed the recommended childhood DTP/DTaP vaccination series and have not received a tetanus and diphtheria toxoid (Td) booster dose.
- · Persons aged 13 through 18 years who have not received Tdap should receive a dose
- · A 5-year interval from the last Td dose is encouraged when Tdap is used as a booster dose; however, a shorter interval may be used if pertussis immunity is needed.

2. Human papillomavirus vaccine (HPV). (Minimum age: 9 years)

- Administer the first dose to females at age 11 or 12 years. · Administer the second dose 2 months after the first dose and the third dose 6 months after the first dose (at least 24 weeks after the first dose).
- Administer the series to females at age 13 through 18 years if not previously vaccinated.

3. Meningococcal conjugate vaccine (MCV).

- Administer at age 11 or 12 years, or at age 13 through 18 years if not previously vaccinated.
- · Administer to previously unvaccinated college freshmen living in a dormitory.
- MCV is recommended for children aged 2 through 10 years with terminal complement component deficiency, anatomic or functional asplenia, and certain other groups at high risk. See MMWR 2005;54(No. RR-7).
- · Persons who received MPSV 5 or more years previously and remain at increased risk for meningococcal disease should be revaccinated with MCV.

4. Influenza vaccine

- Administer annually to children aged 6 months through 18 years. For healthy nonpregnant persons (i.e., those who do not have underlying medical conditions that predispose them to influenza complications) aged 2 through 49 years, either LAIV or TIV may be used.
- Administer 2 doses (separated by at least 4 weeks) to children aged younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.

the series. Providers should consult the relevant Advisory Committee on Immunization Practices statement for detailed recommendations, including high-risk conditions: http://www.cdc.gov/vaccines/pubs/acip-list.htm. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

 5. Pneumococcal polysaccharide vaccine (PPSV).
 • Administer to children with certain underlying medical conditions (see MMWR 1997;46[No. RR-8]), including a cochlear implant. A single revaccination should be administered to children with functional or anatomic asplenia or other immunocompromising condition after 5 years.

- 6. Hepatitis A vaccine (HepA).
 Administer 2 doses at least 6 months apart.
 - · HepA is recommended for children older than 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See MMWR 2006;55(No. RR-7).

7. Hepatitis B vaccine (HepB).

- Administer the 3-dose series to those not previously vaccinated.
- A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB^e is licensed for children aged 11 through 15 years.

8. Inactivated poliovirus vaccine (IPV).

- For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if the third dose was administered at age 4 years or older.
- . If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child's current age.

9. Measles, mumps, and rubella vaccine (MMR).

If not previously vaccinated, administer 2 doses or the second dose for those who have received only 1 dose, with at least 28 days between doses

10. Varicella vaccine.

- For persons aged 7 through 18 years without evidence of immunity (see MMWR 2007;56[No. RR-4]), administer 2 doses if not previously vaccinated or the second dose if they have received only 1 dose.
- · For persons aged 7 through 12 years, the minimum interval between doses is 3 months. However, if the second dose was administered at least 28 days after the first dose, it can be accepted as valid.
- For persons aged 13 years and older, the minimum interval between doses is 28 days.

munization Schedules for Persons Aged 0 Through 18 Years are approved by the Advisory Committee on Immunization Practices (www.cdc.g the American Academy of Pediatrics (http://www.aap.org), and the American Academy of Family Physicians (http://www.aafp.org). The Recommended Im mization Practices (www.cdc.gov/vaccines/recs/acip), DEPARTMENT OF HEALTH AND HUMAN SERVICES • CENTERS FOR DISEASE CONTROL AND PREVENTION

Catch-up Immunization Schedule for Persons Aged 4 Months Through 18 Years Who Start Late or Who Are More Than 1 Month Behind—United States • 2009

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age.

	CA	TCH-UP SCHEDULE FOR PERSONS	S AGED 4 MONTHS THROUGH 6 Y	EARS				
Vaccine	Minimum Age	Minimum Interval Between Doses						
vaccille	for Dose 1	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose			
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)					
Rotavirus ²	6 wks	4 weeks	4 weeks ²					
Diphtheria, Tetanus, Pertussis ³	6 wks	4 weeks	4 weeks	6 months	6 months ³			
<i>Haemophilus influenzae</i> type b ⁴	6 wks	4 weeks if first dose administered at younger than age 12 months 8 weeks (as final dose) if first dose administered at age 12-14 months No further dose administered at age if first dose administered at age 15 months or older	4 weeks ⁴ if current age is younger than 12 months 8 weeks (as final dose) ⁴ if current age is 12 months or older and second dose administered at younger than age 15 months No further doses needed if previous dose administered at age 15 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 months through 59 months who received 3 doses before age 12 months				
Pneumococcal [§]	6 wks	4 weeks if first dose administered at younger than age 12 months 8 weeks (as final dose for healthy children) if first dose administered at age 12 months or older or current age 24 through 59 months No further doses needed for healthy children if first dose administered at age 24 months or older	4 weeks if current age is younger than 12 months 8 weeks (as final dose for healthy children) if current age is 12 months or older No further doses needed for healthy children if previous dose administered at age 24 months or older	8 weeks (as final dose) This dose only necessary for children aged 12 months through 59 months who received 3 doses before age 12 months or for high-risk children who received 3 doses at any age				
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks	4 weeks ⁶				
Measles, Mumps, Rubella ⁷	12 mos	4 weeks						
Varicella ⁸	12 mos	3 months						
Hepatitis A ⁹	12 mos	6 months						
		CATCH-UP SCHEDULE FOR PERS	SONS AGED 7 THROUGH 18 YEAR	S				
Tetanus, Diphtheria/ Tetanus, Diphtheria, Pertussis ¹⁰	7 yrs¹º	4 weeks	4 weeks if first dose administered at younger than age 12 months 6 months if first dose administered at age 12 months or older	6 months if first dose administered at younger than age 12 months				
Human Papillomavirus ¹¹	9 yrs	Rou	tine dosing intervals are recor	nmended ¹¹	/			
Hepatitis A ⁹	12 mos	6 months						
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)					
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks	4 weeks ⁶				
Measles, Mumps, Rubella ⁷	12 mos	4 weeks						
Varicella ⁸	12 mos	3 months if the person is younger than age 13 years						
		4 weeks if the person is aged 13 years or older						

1. Hepatitis B vaccine (HepB).

dminister the 3-dose series to those not previously vaccinated. · A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB* is licensed

for children aged 11 through 15 years.

2. Rotavirus vaccine (RV).

- The maximum age for the first dose is 14 weeks 6 days. Vaccination should not be initiated for infants aged 15 weeks or older (i.e., 15 weeks 0 days or older).
 Administer the final dose in the series by age 8 months 0 days.
- . If Rotarix® was administered for the first and second doses, a third dose is not indicated.
- 3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP). The fifth dose is not necessary if the fourth dose was administered at age 4 years or older.
- Haemophilus influenzae type b conjugate vaccine (Hib).
 Hib vaccine is not generally recommended for persons aged 5 years or older. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in persons who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy; administering 1 dose of Hib vaccine to these persons is not contraindicated.
 - these persons is not contraminicated. If the first 4 does were PRP-OMP (PedvaxHB® or Corrivax®), and administered at age 11 months or younger, the third (and final) does should be administered at age 12 through 15 months and at least 8 weeks after the second dose. If the first dose was administered at age 7 through 11 months, administer 2 doses separated by 4
 - weeks and a final dose at age 12 through 15 months.
- 5. Pneumococcal vaccine.
 - Administer 1 dose of pneumococcal conjugate vaccine (PCV) to all healthy children aged 24 through 59 months who have not received at least 1 dose of PCV on or after age 12 months. For children aged 24 through 59 months with underlying medical conditions, administer 1 dose

 - of PCV if 3 does were received previously or administer 1 does of PCV at least 8 weeks apart if favor than 3 doses were received previously, or administer 2 doses of PCV at least 8 weeks apart if favor than 3 doses were received previously.
 Administer pneumococcal polysaccharide vaccine (PPSV) to children aged 2 years or older with cer-tain underlying medical conditions (see *MMWR* 2000;49[No. RR-9]), including a cochlear implant, at least 8 weeks after the last dose of PCV.

- Inactivated poliovirus vaccine (IPV).
 For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not
 - In ordinate who can be and a second a second provide the second s

7. Measles, mumps, and rubella vaccine (MMR).

- Administer the second dose at age 4 through 6 years. However, the second dose may be administered before age 4, provided at least 28 days have elapsed since the first dose.
 If not previously vaccinated, administer 2 doses with at least 28 days between doses.
- 8. Varicella vaccine.
 - · Administer the second dose at age 4 through 6 years. However, the second dose may be
 - administered before age 4, provided at least 3 months have elapsed since the first dose. For persons aged 12 months through 12 years, the minimum interval between doses is 3 months. However, if the second dose was administered at least 28 days after the first dose, it can be accepted as valid.
- For persons aged 13 years and older, the minimum interval between doses is 28 days 9. Hepatitis A vaccine (HepA).
 - HepA is recommended for children older than 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See *MMWR* 2006;55(No. RR-7).
- 10. Tetanus and diphtheria toxoids vaccine (Td) and tetanus and diphtheria toxoids and acellular pertussis vaccine (Td) and tetanus and diphtheria toxoids vaccine (Td) and tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap).
 Doses of DTa² are counted as part of the Td/Tdap series
 Tdap should be substituted for a single dose of Td in the catch-up series or as a booster for children aged 10 through 18 years; use Td for other doses.
- 11. Human papillomavirus vaccine (HPV).
 - Administer the series to females at age 13 through 18 years if not previously vaccinated. Use recommended routine dosing intervals for series catch-up (i.e., the second and third doses should be administered at 2 and 6 months after the first dose). However, the minimum interval between the first and second doses is 4 weeks. The minimum interval between the second and third doses is 12 weeks, and the third dose should be given at least 24 weeks after the first dose.

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Information about reporting reactions siter immunization is available colline at http://www.waers.htm.gov or by telephone, 800-822-7967. Suspected cases of vaccine-preventable diseases should be reported to the state or boal health department. Additional information including preventions and contraindications for immunization, is available from the National Center for Immunization and Respiratory Diseases at http://www.cdc.gov/vacches or telephone, 800-CDC-INFO (800-232-4636). DEPARTMENT OF HEALTH AND HUMAN SERVICES . CENTERS FOR DISEASE CONTROL AND PREVENTION

Recommended Adult Immunization Schedule — United States, 2009

Weekly

January 9, 2009 / Vol. 57 / No. 53

The Advisory Committee on Immunization Practices (ACIP) annually reviews the recommended Adult Immunization Schedule to ensure that the schedule reflects current recommendations for the licensed vaccines. In October 2008, ACIP approved the Adult Immunization Schedule for 2009. No new vaccines were added to the schedule; however, several indications were added to the pneumococcal polysaccharide vaccine footnote, clarifications were made to the footnotes for human papillomavirus, varicella, and meningococcal vaccines, and schedule information was added to the hepatitis A and hepatitis B vaccine footnotes.

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Additional information is available as follows: schedule (in English and Spanish) at http://www.cdc.gov/vaccines/recs/ schedules/adult-schedule.htm; adult vaccination at http:// www.cdc.gov/vaccines/default.htm; ACIP statements for specific vaccines at http://www.cdc.gov/vaccine/pubs/acip-list. htm; and reporting adverse events at http://www.vaers.hhs. gov or by telephone, 800-822-7967.

Changes for 2009

Format Changes (Figures 1 and 2)

To make the figures easier to understand, several formatting changes were implemented to both the age group-based schedule and the medical and other indications schedule. The changes include 1) increasing the number of age groups; 2) deleting the hatched yellow bar for tetanus, diphtheria, pertussis (Td/Tdap) vaccine while adding explanatory text to the Td/Tdap bar; 3) simplifying the figures by removing schedule text from the vaccine bars; 4) revising the order of the vaccines to more appropriately group the vaccines, and 5) adding a legend box to clarify the meaning of blank spaces in the table.

The Recommended Adult Immunization Schedule has been approved by the Advisory Committee on Immunization Practices, the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Physicians.

Suggested citation: Centers for Disease Control and Prevention. Recommended adult immunization schedule—United States, 2009. MMWR 2008;57(53).

Footnote (Figures 1 and 2)

- The human papillomavirus (HPV) footnote (#2) has language added to indicate that health-care personnel are not at increased risk because of occupational exposure, but they should be vaccinated consistent with age-based recommendations. Also, text has been added to indicate that vaccination with HPV may begin at age 9 years.
- The varicella footnote (#3) has language added to clarify that adults who previously received only 1 dose of vaccine should receive a second dose.
- Asthma and cigarette smoking have been added as indications for pneumococcal polysaccharide vaccination (#7). Also, text has been added to clarify vaccine use in Alaska Natives and American Indians.
- The Hepatitis A footnote (#9) has additional schedule information for the 4-dose combined hepatitis A/hepatitis B vaccine.
- The Hepatitis B footnote (#10) has additional schedule information for the 4-dose combined hepatitis A/hepatitis B vaccine, and a clarification of schedule information for special formulation indications has been added.
- The meningococcal vaccine footnote (#11) clarifies that the revaccination interval is 5 years.

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VACCINE ▼ AGE GROUP ►	19–26 years	27–49 years	50–59 years	60–64 years	<u>></u> 65 years
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}	Substitute 1-time	dose of Tdap for Td b	ooster; then boost w	rith Td every 10 yr	Td booster every 10 yrs
Human papillomavirus (HPV) ^{2,*}	3 doses (females)				
Varicella ^{3,*}			2 doses		
Zoster ⁴				1 d	ose
Measles, mumps, rubella (MMR) ^{5,*}	1 or 2	doses		1 dose	
Influenza ^{6,*}			1 dose annually		
Pneumococcal (polysaccharide) ^{7,8}		1 or 2	doses		1 dose
Hepatitis A ^{9,*}			2 doses		
Hepatitis B ^{10,*}			3 doses		
Meningococcal ^{11,*}			1 or more doses		
*Covered by the Vaccine Injury Compensation Progr		ns in this category who meet the s and who lack evidence of immu		ed if some other risk factor is , on the basis of medical,	No recommendatio

FIGURE 1. Recommended adult immunization schedule by vaccine and age group — United Sates, 2009

NOTE: The above recommendations must be read along with the footnotes on pages Q2-Q4 of this schedule.

vidence of prior infection

1. Tetanus, diphtheria, and acellular pertussis (Td/Tdap) vaccination Tdap should replace a single dose of Td for adults aged 19 through 64 years who have not received a dose of Tdap previously Adults with uncertain or incomplete history of primary vaccination series with

tetanus and diphtheria toxoid-containing vaccines should begin or complete a primary vaccination series. A primary series for adults is 3 doses of tetanus and diphtheria toxoid-containing vaccines; administer the first 2 doses at least 4 weeks apart and the third dose 6-12 months after the second. However, Tdap can substitute for any one of the doses of Td in the 3-dose primary series The booster dose of tetanus and diphtheria toxoid-containing vaccine should be administered to adults who have completed a primary series and if the last vaccination was received 10 or more years previously. Tdap or Td vaccine may be used, as indicated.

If a woman is pregnant and received the last Td vaccination 10 or more years previously, administer Td during the second or third trimester. If the woman received the last Td vaccination less than 10 years previously, administer Tdap during the immediate postpartum period. A dose of Tdap is recommended for postpartum women, close contacts of infants aged less than 12 months, and all health-care personnel with direct patient contact if they have not previously received Tdap. An interval as short as 2 years from the last Td is suggested; shorter intervals can be used. Td may be deferred during pregnancy and Tdap substituted in the immediate postpartum period, or Tdap may be administered instead of Td to a pregnant woman after an informed discussion with the woman.

Consult the ACIP statement for recommendations for administering Td as prophylaxis in wound management. 2. Human papillomavirus (HPV) vaccination

HPV vaccination is recommended for all females aged 11 through 26 years (and may begin at age 9 years) who have not completed the vaccine series History of genital warts, abnormal Papanicolaou test, or positive HPV DNA test is not evidence of prior infection with all vaccine HPV types; HPV vaccination is recommended for persons with such histories.

Ideally, vaccine should be administered before potential exposure to HPV through sexual activity; however, females who are sexually active should still be vaccinated consistent with age-based recommendations. Sexually active females who have not been infected with any of the four HPV vaccine types receive the full benefit of the vaccination. Vaccination is less beneficial for females who have already been infected with one or more of the HPV vaccine types.

A complete series consists of 3 doses. The second dose should be administered 2 months after the first dose; the third dose should be administered 6 months after the first dose

HPV vaccination is not specifically recommended for females with the medical indications described in Figure 2, "Vaccines that might be indicated for adults based on medical and other indications." Because HPV vaccine is not a live-virus vaccine, it may be administered to persons with the medical indications described in Figure 2. However, the immune response and vaccine efficacy might be less for persons with the medical indications described in Figure 2 than in persons who do not have the medical indications described or who are immunocompetent. Health-care personnel are not at increased risk because of occupational exposure, and should be vaccinated consistent with age-based recommendations

3. Varicella vaccination

All adults without evidence of immunity to varicella should receive 2 doses of single-antigen varicella vaccine if not previously vaccinated or the second dose if they have received only one dose, unless they have a medical contraindication. Special consideration should be given to those who 1) have close contact with persons at high risk for severe disease (e.g., health-care personnel and family contacts of persons with immunocompromising conditions) or 2) are at high risk for exposure or transmission (e.g., teachers; child care employees; residents and staff members of institutional settings, including correctional institutions; college students; military personnel; adolescents and adults living in households with children; nonpregnant women of childbearing age; and international travelers).

Evidence of immunity to varicella in adults includes any of the following: 1) documentation of 2 doses of varicella vaccine at least 4 weeks apart; 2) U.S.-born before 1980 (although for health-care personnel and pregnant women, birth before 1980 should not be considered evidence of immunity); 3) history of varicella based on diagnosis or verification of varicella by a health-care provider (for a patient reporting a history of or presenting with an atypical case, a mild case, or both, health-care providers should seek either an epidemiologic link to a typical varicella case or to a laboratory-confirmed case or evidence of laboratory confirmation, if it was performed at the time of acute disease); 4) history of herpes zoster based on health-care provider diagnosis or verification of herpes zoster by a health-care provider; or 5) laboratory evidence of immunity or laboratory confirmation of disease

Pregnant women should be assessed for evidence of varicella immunity. Women who do not have evidence of immunity should receive the first dose

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		Immuno- compromising conditions (excluding human	HIV infection 3, 12, 13 CD4+ T lymphocyte count	Diabetes, heart disease, chronic lung disease,	Asplenia ¹² (including elective splenectomy and terminal complement		Kidney failure, end-stage renal disease,	
VACCINE 🔻	Pregnancy	immunodeficiency virus (HIV)) ¹³	<200 ≥200 cells/µL cells/µL	chronic alcoholism	component deficiencies)	Chronic liver disease	receipt of hemodialysis	Health-care personnel
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}	Td	Subst	itute 1-time d	<mark>ose of Tdap f</mark> e	o <mark>r Td booster</mark>	; then boost v	with Td every	10 yrs
Human papillomavirus (HPV) ^{2,*}				3 doses for f	emales throu	gh age 26 yrs		
Varicella ^{3,*}	Cont	raindicated			2	2 doses		
Zoster ⁴	Cont	raindicated				1 dose		
Measles, mumps, rubella (MMR) ^{5,*}	Cont	raindicated			1.0	r 2 doses		
Influenza ^{6,*}			1 d	ose TIV annu	ally			1 dose TIV or LAIV
								annually
Pneumococcal (polysaccharide) ^{7,8}			·	1 or 2	doses			
Hepatitis A ^{9,*}			:	2 do	oses			
Hepatitis B ^{10,*}		Î	:	3 do				
nepatitis D		[<u>:</u>	3 uc	Jses			
Meningococcal ^{11,*}		1	:	1 or mo	re doses		I	
			:					
*Covered by the Vaccine Injury Compensation Program. requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of proir inflection)								

FIGURE 2. Vaccines that might be indicated for adults based on medical and other indications — United States, 2009

NOTE: The above recommendations must be read along with the footnotes on pages Q2-Q4 of this schedule.

of varicella vaccine upon completion or termination of pregnancy and before discharge from the health-care facility. The second dose should be administered 4-8 weeks after the first dose.

4. Herpes zoster vaccination

A single dose of zoster vaccine is recommended for adults aged 60 years and older regardless of whether they report a prior episode of herpes zoster. Persons with chronic medical conditions may be vaccinated unless their condition constitutes a contraindication.

5. Measles, mumps, rubella (MMR) vaccination

Measles component: Adults born before 1957 generally are considered immune to measles. Adults born during or after 1957 should receive 1 or more doses of MMR unless they have a medical contraindication, documentation of 1 or more doses, history of measles based on health-care provider diagnosis, or laboratory evidence of immunity.

A second dose of MMR is recommended for adults who 1) have been recently exposed to measles or are in an outbreak setting; 2) have been vaccinated previously with killed measles vaccine; 3) have been vaccinated with an unknown type of measles vaccine during 1963–1967; 4) are students in postsecondary educational institutions; 5) work in a health-care facility; or 6) plan to travel internationally.

Mumps component: Adults born before 1957 generally are considered immune to mumps. Adults born during or after 1957 should receive 1 dose of MMR unless they have a medical contraindication, history of mumps based on health-care provider diagnosis, or laboratory evidence of immunity. A second dose of MMR is recommended for adults who 1) live in a community

A second dose of MMH is recommended for adults who 1) live in a community experiencing a mumps outbreak and are in an affected age group; 2) are students in postsecondary educational institutions; 3) work in a health-care facility; or 4) plan to travel internationally. For unvaccinated health-care personnel born before 1957 who do not have other evidence of mumps immunity, administering 1 dose on a routine basis should be considered and administering a second dose during an outbreak should be strongly considered.

an outbreak should be strongly considered. Rubella component: 1 dose of MMR vaccine is recommended for women whose rubella vaccination history is unreliable or who lack laboratory evidence of immunity. For women of childbearing age, regardless of birth year, rubella immunity should be determined and women should be counseled regarding congenital rubella syndrome. Women who do not have evidence of immunity should receive MMR vaccine upon completion or termination of pregnancy and before discharge from the health-care facility.

6. Influenza vaccination

Medical indications: Chronic disorders of the cardiovascular or pulmonary systems, including asthma; chronic metabolic diseases, including diabetes mellitus, renal or hepatic dysfunction, hemoglobinopathies, or immunocompromising conditions (including immunocompromising conditions caused by medications or human immunodeficiency virus [HIV]); any condition that compromises respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration (e.g., cognitive dysfunction, spinal cord injury, or seizure disorder or other neuromuscular disorder); and pregnancy during the influenza season. No data exist on the risk for severe or complicated influenza disease among persons with asplenia; however, influenza is a risk factor for secondary bacterial infections that can cause severe disease among persons with asplenia. Occupational indications: All health-care personnel, including those employed

Occupational indications: All health-care personnel, including those employed by long-term care and assisted-living facilities, and caregivers of children less than 5 years old.

Other indications: Residents of nursing homes and other long-term care and assisted-living facilities; persons likely to transmit influenza to persons at high risk (e.g., in-home household contacts and caregivers of children aged less than 5 years old, persons 65 years old and older and persons of all ages with high-risk condition[s]); and anyone who would like to decrease their risk of getting influenza. Healthy, nonpregnant adults aged less than 50 years without high-risk medical conditions who are not contacts of severely immunocompromised persons in special care units can receive either intranasally administered live, attenuated influenza vaccine. (FluMist[®]) or inactivated vaccine. Other persons should receive the inactivated vaccine.

7. Pneumococcal polysaccharide (PPSV) vaccination

Medical indications: Chronic lung disease (including asthma); chronic cardiovascular diseases; diabetes mellitus; chronic liver diseases, cirrhosis; chronic alcoholism, chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy [if elective splenectomy

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is planned, vaccinate at least 2 weeks before surgery]); immunocompromising conditions; and cochlear implants and cerebrospinal fluid leaks. Vaccinate as close to HIV diagnosis as possible.

Other indications: Residents of nursing homes or other long-term care facilities and persons who smoke cigarettes. Routine use of PPSV is not recommended for Alaska Native or American Indian persons younger than 65 years unless they have underlying medical conditions that are PPSV indications. However, public health authorities may consider recommending PPSV for Alaska Natives and American Indians aged 50 through 64 years who are living in areas in which the risk of invasive pneumococcal disease is increased.

8. Revaccination with PPSV

One-time revaccination after 5 years is recommended for persons with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); and for persons with immunocompromising conditions. For persons aged 65 years and older, one-time revaccination if they were vaccinated 5 or more years previously and were aged less than 65 years at the time of primary vaccination.

9. Hepatitis A vaccination

Medical indications: Persons with chronic liver disease and persons who receive clotting factor concentrates.

Behavioral indications: Men who have sex with men and persons who use illegal drugs.

Occupational indications: Persons working with hepatitisA 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 (a list of countries is available at http:// wwwn.cdc.gov/travel/contentdiseases.aspx) and any person seeking protection from HAV infection.

Single-antigen vaccine formulations should be administered in a 2-dose schedule at either 0 and 6–12 months (Havrix[®]), or 0 and 6–18 months (Vaqta[®]). If the combined hepatitis A and hepatitis B vaccine (Twinrix[®]) is used, administer 3 doses at 0, 1, and 6 months; atternatively, a 4-dose schedule, administered on days 0, 7, and 21 to 30 followed by a booster dose at month 12 may be used. **10. Hepatitis B vaccination**

Medical indications: Persons with end-stage renal disease, including patients receiving hemodialysis; persons with HIV infection; and persons with chronic liver disease.

Occupational indications: Health-care personnel and public-safety workers who are exposed to blood or other potentially infectious body fluids.

Behavioral indications: Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than 1 sex partner during the previous 6 months); persons seeking evaluation or treatment for a sexually transmitted disease (STD);current or recent injection-drug users; 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 persons with developmental disabilities; international travelers to countries with high or intermediate prevalence of chronic HBV infection (a list of countries is available at http://wwwn.cdc.gov/travel/contentdiseases.aspx); and any adult seeking protection from HBV infection.

Hepatitis B vaccination is recommended for all adults in the following settings: STD treatment facilities; HIV testing and treatment facilities; facilities providing drug-abuse treatment and prevention services; health-care settings targeting services to injection-drug users or men who have sex with men; correctional facilities; end-stage renal disease programs and facilities for chronic hemodialysis patients; and institutions and nonresidential daycare facilities for persons with developmental disabilities.

If the combined hepatitis A and hepatitis B vaccine (Twinrix[®]) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, administered on days 0, 7, and 21 to 30 followed by a booster dose at month 12 may be used.

Special formulation indications: For adult patients receiving hemodialysis or with other immunocompromising conditions, 1 dose of 40 μ g/mL (Recombivax HB[®]) administered on a 3-dose schedule or 2 doses of 20 μ g/mL (Engerix-B[®]) administered simultaneously on a 4-dose schedule at 0,1, 2 and 6 months.

 Meningococcal vaccination Medical indications: Adults with anatomic or functional asplenia, or terminal

Medical indicatoris. Adults whe anatorine or university a depend, or whence complement component deficiencies. Other indications: First-year college students living in dormitories; microbiologists routinely exposed to isolates of Neisseria meninglidis; military recruits; and persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of sub-Saharan Africa during the dry season [December–June]), particularly if their contact with

local populations will be prolonged. Vaccination is required by the government of Saudi Arabia for all travelers to Mecca during the annual Haji. Meningococcal conjugate vaccine (MCV) is preferred for adults with any of the preceding indications who are aged 55 years or younger, although meningococcal polysaccharide vaccine (MPSV) is an acceptable alternative. Revaccination with MCV after 5 years might be indicated for adults previously vaccinated with MPSV who remain at increased risk for infection (e.g., persons residing in areas in which

who remain at increased risk for infection (e.g., persons residing in areas in which disease is epidemic). 12. Selected conditions for which Haemophilus influenzae type b (Hib)

vaccine may be used Hib vaccine generally is not recommended for persons aged 5 years

and older. No efficacity is not recommended for persons aged by years and older. No efficacity data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in patients who have sickle cell disease, leukemia, or HIV infection or who have had a splenectomy; administering 1 dose of vaccine to these patients is not contraindicated.

13. Immunocompromising conditions

Inactivated vaccines generally are acceptable (e.g., pneumococcal, meningococcal, and influenza [trivalent inactivated influenza vaccine]) and live vaccines generally are avoided in persons with immune deficiencies or immunocompromising conditions. Information on specific conditions is available at http://www.cdc.gov/vaccines/pubs/acip-list.htm.

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly indicated for adults ages 19 years and older, as of January 1, 2009. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (http://www.cdc.gov/vaccines/pubs/acip-list.htm).

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 at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at http://www.hrsa.gov/vaccinecompensation 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, D.C. 20005; telephone, 202-357-6400.

Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination is also available at http://www.cdc.gov/vaccines or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 24 hours a day, 7 days a week.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.