

# Colorado Immunization Manual

## SECTION 7 Immunization Schedule



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## SECTION 7

### Immunization Schedule

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# 2005 Summary of ACIP/AAP/AAFP Childhood and Adolescent Immunization Recommendations

Colorado Department of Public Health and Environment/Colorado Clinical Guidelines Collaborative

## Children Beginning Immunization In Infancy (please see notes on back)

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2004, for children through age 18 years. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations. [Bars] indicate range of recommended ages for immunization. Any dose not given at the recommended age should be administered as a "catch-up" immunization at any subsequent visit when indicated and feasible. [Ovals] indicate vaccines to be given if previously recommended doses were missed or given earlier than the recommended minimum age. These groups warrant special effort to administer those vaccines not previously administered.

Vaccine	Age	Birth	1 Month	2 Months	4 Months	6 Months	12 Months	15 Months	18 Months	24 Months	4-6 Years	11-12 Years	13-18 Years
Hepatitis B <sup>1</sup>		[Hep B #1]				[Hep B #3]							
Diphtheria, Tetanus, Pertussis <sup>2</sup>			[Hep B #2]				DTaP				DTaP	Td	Td
Haemophilus influenzae type b <sup>3</sup>				DTaP	Hib	Hib	Hib						
Inactivated Polio				IPV	IPV	IPV					IPV		
Measles, Mumps, Rubella <sup>4</sup>							MMR #1				MMR #2		MMR #2
Varicella <sup>5</sup>							Var				Var		
Pneumococcal <sup>6</sup>				PCV	PCV	PCV	PCV				PCV	PPV	
Influenza <sup>7</sup>													
Hepatitis A <sup>8</sup>													

For Updated Information on MCV4 (Menactra) and Tdap (Boostrix and ADACEL)

Visit the CCGC website at [www.coloradoguidelines.org](http://www.coloradoguidelines.org) or the CDPHE website at [www.cdphe.state.co.us/dc/immunization](http://www.cdphe.state.co.us/dc/immunization).

## Accelerated Schedule For Children And Adolescents Aged <7 Years Who Start The Series Late Or Are More Than 1 Month Behind

Visit	Vaccine doses
1st visit (at least 4 months of age)	Hep B #1, DTaP #1, Hib <sup>a</sup> , IPV #1, PCV <sup>b</sup> , MMR and Var (as soon as child is 12 months), Hep A (as soon as child is 24 months), Influenza (≥6-23 months)
4-8 weeks after 1st visit	Hep B #2, DTaP #2, Hib <sup>a</sup> , IPV #2, PCV <sup>b</sup>
4-8 weeks after 2nd visit	DTaP #3, Hib <sup>a</sup> , IPV #3, PCV <sup>b</sup>
6 months after 1st visit	Hep B #3, Hep A #2
6 months after 3rd visit	DTaP #4, Hib <sup>a</sup>
Age 4-6 years (before school entry)	DTaP #5, IPV #4 <sup>c</sup> , MMR #2 (at least 4 weeks after MMR #1)
Age 11-16 years	Td
a. Immunologically normal children aged ≥5 years do not need Hib vaccine. If infant starts series at age 2-6 months, give 3 doses, 2 months apart and booster dose at 12-15 months. If infant starts series at 7-11 months, give 2 doses, 2 months apart and booster dose at 12-15 months. If infant starts at 12-23 months, give 2 doses, 2 months apart, if healthy child starts series at age 24-59 months, give just one dose. (See <i>MMWR</i> Oct. 6, 2000/49(RR-9):1-35.)	
b. Immunologically normal children aged ≥5 years do not need PCV vaccine. If infant starts series at age 2-6 months, give 3 doses, 2 months apart and booster dose at 12-15 months. If infant starts series at 7-11 months, give 2 doses, 2 months apart and booster dose at 12-15 months. If infant starts at 12-23 months, give 2 doses, 2 months apart, if healthy child starts series at age 24-59 months, give just one dose. (See <i>MMWR</i> Oct. 6, 2000/49(RR-9):1-35.)	
c. The US Public Health Service and the AAP consider DTaP #5 and IPV #4 necessary unless the DTaP #4 and IPV #3 were given after the fourth birthday. If OPV and IPV were administered as part of a series, a total of 4 doses should be given regardless of the child's current age.	

## Accelerated Schedule For Children And Adolescents Aged ≥7 Years Who Start The Series Late

Visit	Vaccine doses
1st visit	Hep B #1, Td #1, IPV #1 <sup>a</sup> , MMR #1, Var #1, Hep A #1
4-8 weeks after 1st visit	Hep B #2, Td #2, IPV #2 <sup>a</sup> , MMR #2, Var #2 (if ≥13 years)
6 months after 1st visit	Hep B #3, Hep A #2, IPV #3 <sup>a</sup>
6 months after 2nd visit	Td #3
10 years after 3rd Td	Td

a. Vaccine is not generally recommended for those aged ≥18 years.

## Minimum Intervals Between Vaccine Doses For Children Who Have Delayed Immunizations

Vaccine	Dose 1-2	Dose 2-3	Dose 3-4
Hep B	4 Weeks	8 Weeks*	
Hib	4 Weeks	4 Weeks	4 Weeks
HbOC	4 Weeks	4 Weeks	4 Weeks
PRP-T	4 Weeks	4 Weeks	4 Weeks
PRP-OMP	4 Weeks	4 Weeks	4 Weeks
****Hib booster dose should be administered no earlier than 12 months of age and at least 2 months after the previous dose of Hib vaccine.			
Var	4 Weeks		
PCV	4 Weeks	4 Weeks	8 Weeks****
*****For children vaccinated at age <1 year, minimum interval is 4 weeks. Booster dose should be administered ≥8 weeks after primary series is completed. Minimum interval for children receiving doses at age ≥1 year is 8 weeks.			
Hep A	6 Months		

The above table shows the **minimum** intervals acceptable between doses of vaccine. All vaccines should be administered as close to the recommended schedule as possible in order to maximize the. There is no need to restart a vaccine series regardless of the time that has elapsed between doses.

**<sup>1</sup>Hepatitis B vaccine (Hep B):** All infants should receive the first dose of Hep B soon after birth and before hospital discharge; the first dose may also be administered by age 2 months if the mother is Hepatitis B surface antigen (HBsAg) negative. Only monovalent Hep B may be used for the birth dose. Monovalent or combination vaccine containing Hep B may be used to complete the series. Four doses of vaccine may be administered when a birth dose is given. The second dose should be given at least 4 weeks after the first dose, except for combination vaccines which cannot be administered before age 6 weeks. The third dose should be given at least 16 weeks after the first dose and at least 8 weeks after the second dose. The last dose in the vaccination series (third or fourth dose) should not be administered before age 24 weeks.

**Infants born to HBsAg-positive mothers** should receive Hep B vaccine and 0.5 mL Hep B immune globulin (HBIG) at separate sites within 12 hours of birth. The 2nd dose is recommended at age 1–2 months. The final dose in the immunization series should not be administered before age 24 weeks. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) at age 9–15 months.

**Infants born to mothers whose HBsAg status is unknown or others at high risk (e.g., Alaskan Native and Asian-Pacific Islander children and children born to first-generation immigrants from Hep B virus infection-endemic areas)** should receive the first dose of the Hep B vaccine series within 12 hours of birth. Maternal blood should be drawn at the time of delivery to determine the mother's HBsAg status; if the HBsAg test is positive, the infant should receive HBIG as soon as possible (no later than age 1 week). The second dose is recommended at age 1–2 months. The last dose in the immunization series should not be administered before age 24 weeks.

**All children and adolescents** who have not been immunized against Hep B may begin the series during any visit. Special effort should be made to immunize children who were born in or whose parents were born in areas of the world with moderate or high endemicity of Hep B virus infection.

**<sup>2</sup>Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP):** The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at age 15–18 months. The final dose in the series should be given at age  $\geq 4$  years.

**Tetanus and diphtheria toxoids vaccine (Td)** is recommended at age 11–12 years if at least 5 years have elapsed since the last dose of tetanus and diphtheria toxoid-containing vaccine. Subsequent routine Td boosters are recommended every 10 years.

**<sup>3</sup>Haemophilus influenzae type b conjugate vaccines (Hib):** Three Hib conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB® or ComVax® [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required. Because clinical studies in infants have demonstrated that using some combination products may induce a lower immune response to the Hib vaccine component, DTaP/Hib combination products should not be used for primary immunization in infants at ages 2, 4, or 6 months (unless FDA-approved for these ages) but can be used as boosters after any Hib vaccine. The final dose in the series should be administered at age  $\geq 12$  months.

**<sup>4</sup>Measles, mumps, and rubella vaccine (MMR):** The second dose of MMR vaccine is recommended routinely at age 4–6 years but may be administered during any visit, provided at least 4 weeks have elapsed since the first dose and both doses are administered beginning at or after age 12 months. Those who have not previously received the second dose should complete the schedule by age 11–12 years.

**<sup>5</sup>Varicella vaccine (Var):** Var is recommended at any visit at or after age 12 months for susceptible children (i.e., those who lack a reliable history of chickenpox, as judged by a health care provider, and have not been immunized). Susceptible persons aged  $\geq 13$  years should receive 2 doses administered at least 4 weeks apart.

**<sup>6</sup>Pneumococcal vaccines: Heptavalent pneumococcal conjugate vaccine (PCV)** is recommended for all children aged 2–23 months and for certain children aged 24–59 months.

**Pneumococcal polysaccharide vaccine (PPV)** is recommended in addition to PCV for certain high-risk groups. (See *MMWR* 2000;49(RR-9):1–35.)

**<sup>7</sup>Influenza vaccine:** Influenza vaccine is recommended annually for children aged  $\geq 6$  months with certain risk factors (including but not limited to asthma, cardiac disease, sickle cell disease, HIV, and diabetes), healthcare workers, and other persons (including household members) in close contact with persons in groups at high risk (see *MMWR* 2004;53(RR-6):1–40). In addition, healthy children aged 6–23 months and close contacts of healthy children aged 0–23 months are recommended to receive influenza vaccine (unless contraindications are present) because children in this age group are at substantially increased risk for influenza-related hospitalizations. For healthy persons aged 5–49 years, the intranasally administered, live, attenuated influenza vaccine (LAIV) is an acceptable alternative to the intramuscular trivalent inactivated influenza vaccine (TIV) (see *MMWR* 2004;53(RR-6):1–40). Children receiving TIV should be administered a dosage appropriate for their age (0.25 mL if 6–35 months or 0.5 mL if  $\geq 3$  years). Children aged  $\leq 8$  years who are receiving influenza vaccine for the first time should receive 2 doses (separated by at least 4 weeks for TIV and at least 6 weeks for LAIV).

**<sup>8</sup>Hepatitis A vaccine (Hep A):** Hep A vaccine is recommended for children and adolescents in selected states and regions and for certain high-risk groups. Children and adolescents in these states, regions, and high-risk groups who have not been immunized against Hep A can begin the Hep A immunization series during any visit. The 2 doses in the series should be administered at least 6 months apart. (See *MMWR* 1999;48(RR-12):1–37.) Please note: Colorado is considered a state with intermediate risk for the disease. Vaccination should be considered for all children aged  $\geq 24$  months.

## Immunization Program Resources



Colorado Department  
of Public Health  
and Environment

**General Immunization Questions:** (303) 692-2650

**Vaccine Orders:** (303) 692-2796

**Vaccines for Children (VFC) Program:** (303) 692-2798

**Hepatitis B Project:** (303) 692-2673

**Disease Reports:** 1-800-866-2759

**Vaccine Adverse Event Reporting System (VAERS):** (303) 692-2732

Clinically significant adverse events that follow immunization should be reported to VAERS.

**Vaccine Information Statements (VIS):**

<http://www.cdc.gov/nip/publications/vis>

**Family Healthline (Parent Information):**

(303) 692-2229 (Denver metro area) or 1-800-688-7777

**Website:** <http://www.cdphpe.state.co.us/dc/immunization>

## COLORADO CLINICAL GUIDELINES COLLABORATIVE

### Background

The Colorado Clinical Guidelines Collaborative was formed in 1996 to address the challenges for the use and implementation of clinical guidelines across health care systems in Colorado. Current membership represents 50 health care organizations.

### Mission Statement

*CCGC is a Colorado coalition of healthcare stakeholders (health plans, physicians, hospitals, employers, government agencies, quality improvement organizations and other entities) working collaboratively to implement systems and processes, using evidenced-based clinical guidelines to improve healthcare outcomes in Colorado.*

# Recommended Adult Immunization Schedule — United States, October 2005–September 2006

## MMWR<sup>TM</sup> QuickGuide

Weekly

October 14, 2005 / Vol. 54 / No. 40

The 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 2005, ACIP approved the Adult Immunization Schedule for October 2005–September 2006. 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 2005–September 2006

The 2005–2006 schedule differs from the previous schedule as follows:

- Vaccines listed on the age-based schedule (Figure 1) are displayed so that vaccines recommended for routine use can be differentiated from those recommended for adults with certain risk indicators (similar to the childhood immunization schedule). This is illustrated both by the color scheme and by the broken line.
- The yellow bars (“For all persons in this group”) and the green bars (“For persons lacking documentation of vaccination or evidence of disease”) from the previous schedule have been merged into one yellow bar, which now reads, “For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection).”
- The purple bar has been changed from “For persons at risk (e.g., with medical/exposure indications)” to “Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications).” The purple bar was added to the 50–64 years and ≥65 years age-group columns for measles, mumps, rubella (MMR) vaccine.
- The column, “Diabetes, heart disease, chronic pulmonary disease, or chronic liver disease including chronic alcoholism” has been transposed with the column,

“Congenital immunodeficiency, leukemia, lymphoma, generalized malignancy, therapy with alkylating agents, antimetabolites, cerebrospinal fluid leaks, radiation, or large amounts of corticosteroids” on the medical/other indications schedule (Figure 2) so that contraindications for MMR and varicella vaccines are now side-by-side.

- The row for varicella vaccine has been moved up on both figures (i.e., to immediately after MMR vaccine) because the vaccine is now universally recommended for certain age groups.
- Meningococcal vaccine has been added to the medical/other indications schedule (Figure 2). The footnote has been revised to incorporate the recently published ACIP recommendations for this vaccine (1).
- The tetanus and diphtheria footnote (#1) has been reworded.
- The varicella footnote (#3) has been reworded in accordance with ACIP recommendations adopted in June 2005.
- The influenza footnote (#4) has been revised to add the newest high-risk condition: neuromuscular conditions that compromise respiratory function (2).
- A 10th footnote has been added regarding *Haemophilus influenzae* type b vaccination for populations at high risk (i.e., persons with asplenia, leukemia, and human immunodeficiency virus [HIV] infection).

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 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 the National Immunization Program website at <http://www.cdc.gov/nip/publications/acip-list.htm>. Instructions for reporting adverse events to the Vaccine Adverse Event Reporting System are available at <http://www.vaers.hhs.gov> or by telephone, 800-822-7967.

### References


1. CDC. Prevention and control of meningococcal disease: recommendations of the Advisory Committee for Immunization Practices (ACIP). MMWR 2005;54(No. RR-7).
2. CDC. Prevention and control of influenza: recommendations of the Advisory Committee for Immunization Practices (ACIP). MMWR 2005;54(No. RR-8).


The Recommended Adult Immunization Schedule has been approved by the Advisory Committee on Immunization Practices, the American College of Obstetricians and Gynecologists, and the American Academy of Family Physicians. The standard MMWR footnote format has been modified for publication of this schedule.

Suggested citation: Centers for Disease Control and Prevention. Recommended Adult Immunization Schedule—United States, October 2005–September 2006. MMWR 2005;54:Q1–Q4.

FIGURE 1. Recommended adult immunization schedule, by vaccine and age group — United States, October 2005–September 2006

Vaccine	Age group (yrs)		
	19–49	50–64	≥65
Tetanus, diphtheria (Td) <sup>1*</sup>	1-dose booster every 10 yrs		
Measles, mumps, rubella (MMR) <sup>2*</sup>	1 or 2 doses	1 dose	
Varicella <sup>3*</sup>	2 doses (0, 4–8 wks)	2 doses (0, 4–8 wks)	
Influenza <sup>4*</sup>	1 dose annually	1 dose annually	
Pneumococcal (polysaccharide) <sup>5,6</sup>	1–2 doses		1 dose
Hepatitis A <sup>7*</sup>	2 doses (0, 6–12 mos, or 0, 6–18 mos)		
Hepatitis B <sup>8*</sup>	3 doses (0, 1–2, 4–6 mos)		
Meningococcal <sup>9</sup>	1 or more doses		

 For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

 Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

\* Covered by the Vaccine Injury Compensation Program.

**NOTE:** These recommendations must be read along with the footnotes, which can be found on pages Q2–Q4 of this schedule.

**Approved by the Advisory Committee on Immunization Practices,  
the American College of Obstetricians and Gynecologists,  
and the American Academy of Family Physicians**

**1. Tetanus and diphtheria (Td) vaccination.** Adults with uncertain histories of a complete primary vaccination series with diphtheria and tetanus toxoid-containing vaccines should receive a primary series using combined Td toxoid. A primary series for adults is 3 doses; administer the first 2 doses at least 4 weeks apart and the third 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 the ACIP statement for recommendations for administering Td as prophylaxis in wound management (<http://www.cdc.gov/mmwr/preview/mmwrhtml/00041645.htm>). 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. A newly licensed tetanus-diphtheria-acellular-pertussis vaccine is available for adults. ACIP recommendations for its use will be published.

**2. 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 ≥1 dose of MMR unless they have a medical contraindication, documentation of ≥1 dose, 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) were


recently exposed to measles or in an outbreak setting; 2) were previously vaccinated with killed measles vaccine; 3) were 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. Withhold MMR or other measles-containing vaccines from HIV-infected persons with severe immunosuppression. *Mumps component:* 1 dose of MMR vaccine should be adequate for protection for those born during or after 1957 who lack a history of mumps based on health-care provider diagnosis or who lack laboratory evidence of immunity. *Rubella component:* administer 1 dose of MMR vaccine to women whose rubella vaccination history is unreliable or who lack laboratory evidence of immunity. For women of childbearing age, regardless of birth year, routinely determine rubella immunity and counsel women regarding congenital rubella syndrome. Do not vaccinate women who are pregnant or who might become pregnant within 4 weeks of receiving vaccine. 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.


**3. Varicella vaccination.** Varicella vaccination is recommended for all adults without evidence of immunity to varicella. Special consideration should be given to those who 1) have close contact



**FIGURE 2. Recommended adult immunization schedule, by vaccine and medical and other indications — United States, October 2005–September 2006**

	Indication						
Vaccine	Pregnancy	Congenital immunodeficiency, leukemia, <sup>10</sup> lymphoma, generalized malignancy, therapy with alkylating agents, antimetabolites, cerebrospinal fluid leaks, radiation, or large amounts of corticosteroids	Diabetes, heart disease, chronic pulmonary disease, or chronic liver disease, including chronic alcoholism	Asplenia <sup>10</sup> (including elective splenectomy and terminal complement component deficiencies)	Kidney failure, end-stage renal disease, or recipients of hemodialysis or clotting factor concentrates	Human immunodeficiency virus (HIV) infection <sup>2,10</sup>	Health-care workers
Tetanus, diphtheria (Td) <sup>1*</sup>	1-dose booster every 10 yrs						
Measles, mumps, rubella (MMR) <sup>2*</sup>			1 or 2 doses				
Varicella <sup>3*</sup>			2 doses (0, 4–8 wks)				2 doses
Influenza <sup>4*</sup>	1 dose annually			1 dose annually	1 dose annually		
Pneumococcal (polysaccharide) <sup>5,6</sup>	1–2 doses	1–2 doses					1–2 doses
Hepatitis A <sup>7*</sup>	2 doses (0, 6–12 mos, or 0, 6–18 mos)						
Hepatitis B <sup>8*</sup>	3 doses (0, 1–2, 4–6 mos)				3 doses (0, 1–2, 4–6 mos)		
Meningococcal <sup>9</sup>	1 dose			1 dose	1 dose		

 For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

 Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

 Contraindicated

\* Covered by the Vaccine Injury Compensation Program.

**NOTE:** These recommendations must be read along with the footnotes, which can be found on pages Q2–Q4 of this schedule.

with persons at high risk for severe disease (health-care workers and family contacts of immunocompromised persons) or 2) are at high risk for exposure or transmission (e.g., teachers of young children; 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) documented age-appropriate varicella vaccination (i.e., receipt of 1 dose before age 13 years or receipt of 2 doses [administered at least 4 weeks apart] after age 13 years); 2) U.S.-born before 1966 or history of varicella disease before 1966 for non-U.S.-born persons; 3) history of varicella based on health-care provider diagnosis or parental or self-report of typical varicella disease for persons born during 1966–1997 (for a patient reporting a history of an atypical, mild case, health-care providers should seek either an epidemiologic link with a typical varicella 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 5) laboratory evidence of immunity. Do not vaccinate women who are pregnant or who might become pregnant within 4 weeks of receiving the vaccine. Assess

pregnant women for evidence of varicella immunity. Women who do not have evidence of immunity should receive dose 1 of varicella vaccine upon completion or termination of pregnancy and before discharge from the health-care facility. Dose 2 should be administered 4–8 weeks after dose 1.

**4. Influenza vaccination.** *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 HIV); any condition (e.g., cognitive dysfunction, spinal cord injury, seizure disorder, or other neuromuscular disorder) that compromises respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration; 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:* health-care workers and employees of long-term-care and assisted living facilities. *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 (i.e., in-home household

contacts and caregivers of children aged 0–23 months, or persons of all ages with high-risk conditions), and anyone who wishes to be vaccinated. For healthy, nonpregnant persons aged 5–49 years without high-risk conditions who are not contacts of severely immunocompromised persons in special care units, intranasally administered influenza vaccine (FluMist®) may be administered in lieu of inactivated vaccine.

**5. Pneumococcal polysaccharide vaccination.** *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 [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]); immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection [vaccinate as close to diagnosis as possible when CD4 cell counts are highest], leukemia, lymphoma, multiple myeloma, Hodgkin disease, generalized malignancy, or organ or bone marrow transplantation); chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids; and cochlear implants. *Other indications:* Alaska Natives and certain American Indian populations; residents of nursing homes and other long-term-care facilities.

**6. Revaccination with pneumococcal polysaccharide vaccine.** One-time revaccination after 5 years for persons with chronic renal failure or nephritic 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 disease, generalized malignancy, or organ or bone marrow transplantation); or 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.

**7. 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 (for list of countries, see <http://www.cdc.gov/travel/diseases.htm#hepa>) as well as any person wishing to obtain immunity. Current vaccines should be administered in a 2-dose series at either 0 and 6–12 months, or 0 and 6–18 months. If the

combined hepatitis A and hepatitis B vaccine is used, administer 3 doses at 0, 1, and 6 months.

**8. Hepatitis B vaccination.** *Medical indications:* hemodialysis patients (use special formulation [40 µg/mL] or two 20-µg/mL doses) 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); 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 developmentally disabled persons; all clients of STD clinics; inmates of correctional facilities; and international travelers who will be in countries with high or intermediate prevalence of chronic HBV infection for more than 6 months (for list of countries, see <http://www.cdc.gov/travel/diseases.htm#hepa>).

**9. Meningococcal vaccination.** *Medical indications:* adults with anatomic or functional asplenia or terminal complement component deficiencies. *Other indications:* first-year college students living in dormitories; microbiologists who are routinely exposed to isolates of *Neisseria meningitidis*; military recruits; and persons who travel to or reside 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 contact with local populations will be prolonged. Vaccination is required by the government of Saudi Arabia for all travelers to Mecca during the annual Hajj. Meningococcal conjugate vaccine is preferred for adults meeting any of the above indications who are aged ≤55 years, although meningococcal polysaccharide vaccine (MPSV4) is an acceptable alternative. Revaccination after 5 years might be indicated for adults previously vaccinated with MPSV4 who remain at high risk for infection (e.g., persons residing in areas in which disease is epidemic).

**\* 10. Selected conditions for which *Haemophilus influenzae* type b (Hib) vaccine may be used.** Hib conjugate vaccines are licensed for children aged 6–71 months. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults with the chronic conditions associated with an increased risk for Hib disease. However, studies suggest good immunogenicity in patients who have sickle cell disease, leukemia, or HIV infection or who have had splenectomies; administering vaccine to these patients is not contraindicated.

This schedule indicates the recommended age groups and medical indications for routine administration of currently licensed vaccines for persons aged ≥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. For detailed recommendations, consult the manufacturers' package inserts and the complete statements from ACIP (<http://www.cdc.gov/nip/publications/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 by telephone, 800-822-7967, or from the VAERS website at <http://www.vaers.hhs.gov>.

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 202-357-6400.

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

**\*Erratum: Vol. 54, No. 40 issued November 4, 2005:** In the Recommended Adult Immunization Schedule—United States, October 2005–September 2006, on page Q4, an error occurs in the first sentence under footnote 10, “Selected conditions for which *Haemophilus influenzae* type b (Hib) vaccine may be used.” The sentence should read as follows: “Hib conjugate vaccines are licensed for children aged 6 weeks–71 months.”





# Colorado Department of Public Health and Environment

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of Public Health  
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**Table 1. MINIMUM NUMBER OF DOSES REQUIRED FOR CERTIFICATE OF IMMUNIZATION**

Vaccine	Level of School/Age of Student								
	Child Care 2-3 mos	Child Care 4-5 mos	Child Care 6-14 mos	Child Care 15-17 mos	Pre-school 18-23 mos	Pre-school 24-35 mos	Pre-school 3-4 yrs	Grades K-12 5-18 yrs	College
Pertussis	1	2	3	3	4*	4*	4*	5 <sup>b+,c,*</sup>	
Tetanus/Diphtheria	1	2	3	3	4*	4*	4*	5 <sup>b+,d,*</sup>	
Polio <sup>e</sup>	1	2	2	2	3	3	3	4 <sup>f,+</sup>	
Measles/Mumps/Rubella <sup>e,g,+</sup>				1	1	1	1	2 <sup>h</sup>	2 <sup>h,i</sup>
Haemophilus influenzae type B <sup>+</sup>	1	2	2	3/2/1 <sup>i</sup>	3/2/1 <sup>i</sup>	3/2/1 <sup>i</sup>	3/2/1 <sup>i</sup>		
Pneumococcal Conjugate <sup>a,+</sup>	1	2	3/2 <sup>k</sup>	4/3/2 <sup>k</sup>	4/3/2 <sup>k</sup>				
Hepatitis B <sup>+</sup>	1	2	2	2	3	3	3	3	
Varicella <sup>+</sup>					1 <sup>g</sup>	1 <sup>g</sup>	1 <sup>g</sup>	1 <sup>g</sup>	

**See Table 2 (below) for the year of implementation of Measles, Mumps, and Rubella (MMR-second dose) and Varicella (VAR).**

**Footnotes:**

\*—The requirements for the 4<sup>th</sup> and 5<sup>th</sup> doses of diphtheria, tetanus, and pertussis vaccines will be reinstated September 15, 2004.

+—Vaccine doses administered ≤ 4 days before the minimum interval or age are to be counted as valid.

a—This requirement is indefinitely suspended.

b—Five doses of pertussis, tetanus, and diphtheria vaccines are required at school entry in Colorado unless the 4<sup>th</sup> dose was given at ≥ 48 months (i.e., on or after the 4<sup>th</sup> birthday) in which case only 4 doses are required. Vaccine doses administered ≤ 4 days before the minimum interval or age are to be counted as valid.

c—For students ≥ 7 years who have not had the required number of pertussis doses, no new or additional doses are required.

d—Any student ≥ 7 years at school entry in Colorado who has not completed a primary series of 3 appropriately spaced doses of tetanus and diphtheria vaccine may be certified after the 3<sup>rd</sup> dose if it is given > 6 months after the 2<sup>nd</sup> dose.

e—For polio, measles, mumps, rubella, or hepatitis B, in lieu of immunization, written evidence of a laboratory test showing

immunity is acceptable for the specific disease tested. For varicella, a laboratory test showing immunity or a disease history from a health care provider, parent, or guardian is acceptable.

f—Four doses of polio vaccine are required at school entry in Colorado unless the 3<sup>rd</sup> dose was given ≥ 48 months (i.e., on or after the 4<sup>th</sup> birthday) in which case only 3 doses are required. Vaccine doses administered ≤ 4 days before the minimum interval or age are to be counted as valid.

g—The 1<sup>st</sup> dose of measles, mumps, and rubella vaccine and varicella vaccine must have been administered at ≥ 12 months of age (i.e., on or after the 1<sup>st</sup> birthday) to be acceptable. Vaccine doses administered ≤ 4 days before the minimum interval or age are to be counted as valid.

h—If the student received a 2<sup>nd</sup> measles dose prior to July 1, 1992, the 2<sup>nd</sup> rubella and mumps doses are not required. The 2<sup>nd</sup> dose of measles vaccine or measles, mumps, and rubella vaccine must have been administered at least 28 calendar days after the 1<sup>st</sup> dose. Vaccine doses administered ≤ 4 days before the minimum interval or age are to be counted as valid.

i—Measles, mumps, and rubella vaccine is not required for college students born before January 1, 1957.

j—The number of Haemophilus influenzae type b (Hib) vaccine doses required depends on the student's current age and the age when the Hib vaccine was administered. If any dose is given ≥ 15 months, the Hib vaccine requirement is met. For students who begin the series < 12 months, 3 doses are required of which at least 1 dose must be administered at ≥ 12 months (i.e., on or after the 1<sup>st</sup> birthday). If the 1<sup>st</sup> dose is given at 12-14 months, 2 doses are required. If the current age is ≥ 5 years, no new or additional doses are required. Vaccine doses administered ≤ 4 days before the minimum interval or age are to be counted as valid.

k—The number of pneumococcal conjugate vaccine doses depends on the student's current age and the age when the 1<sup>st</sup> dose was administered. If the 1<sup>st</sup> dose was administered at: (i) ≤ 6 months of age, 3 doses are required at 6-14 months and 4 doses are required at 15-23 months of age with 1 dose administered on or after the 1<sup>st</sup> birthday; (ii) 7-11 months of age, 2 doses are required at 6-14 months and 3 doses are required at 15-23 months of age with 1 dose on or after the 1<sup>st</sup> birthday; (iii) 12-23 months of age, 2 doses are required. If the current age is ≥ 2 years, no new or additional doses are required. Vaccine doses administered ≤ 4 days before the minimum interval or age are to be counted as valid.

**Table 2. TIMETABLE FOR IMPLEMENTATION OF REQUIREMENTS FOR  
SELECTED IMMUNIZATIONS FOR GRADES K-12**

Refer to Table 1 for the minimum number of doses required for a particular grade level. Table 2 shows the year of implementation for a requirement from Table 1 and is restricted to the measles, mumps, and rubella vaccine (MMR) and varicella vaccine (VAR). Requirements and effective dates for other vaccines are listed in Table 1. In Table 2, after a vaccine is required for grades K-12, it is no longer shown, but the requirements listed in Table 1 continue to apply.

School Year	Grade Level												
	K	1	2	3	4	5	6	7	8	9	10	11	12
2005–2006	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2 VAR		MMR2	MMR2	MMR2	MMR2	MMR2	MMR2
2006–2007 MMR2 required for K–12	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2 VAR	MMR2	MMR2	MMR2	MMR2	MMR2	MMR2
2007–2008	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR					
2008–2009	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR				
2009–2010	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR			
2010–2011	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR		
2011–2012	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	
2012–2013 VAR required for K–12	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR	VAR

**Note:** Medical, religious, and personal exemptions are allowed.

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