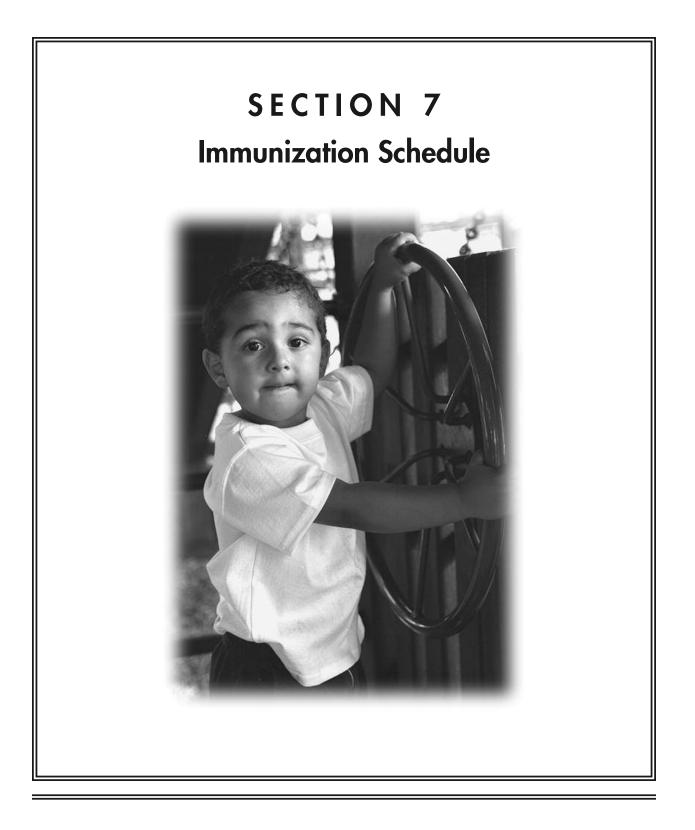
Colorado Immunization Manual



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SECTION 7 Immunization Schedule

CONTENTS

Summary of ACIP/AAP/AAFP Recommendations7-2

2011 Summary of ACIP/AAP/AAFP Recommended Immunization Schedule for Ages 0–6 Years

Colorado Department of Public Health and Environment/HealthTeamWorks

Current as of January 1, 2011. For updated information on pediatric immunizations, visit the HealthTeamWorks website at www.healthteamworks.org or the CDPHE website at www.coloradoimmunizations.com.

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	НерВ	Не	pВ		НерВ						
Rotavirus ²			RV	RV	RV ²						
Diphtheria, Tetanus, Pertussis ³			DTaP	DTaP	DTaP	See footnote 3	DT	aP			DTaP
Haemophilus influenzae type b ⁴			Hib	Hib	Hib⁴	н	ib				
Pneumococcal ⁵			PCV	PCV	PCV	V PCV		PP	PPSV		
Inactivated Poliovirus ⁶			IPV	IPV		IP	V	1			IPV
Influenza ⁷					Influenza (Yearly)						
Measles, Mumps, Rubella ⁸						MMR See footnote 8 MI			MMR		
Varicella ⁹						Varicella See footnote 9		Varicella			
Hepatitis A ¹⁰							HepA (2	2 doses)		НерА	Series
Meningococcal ¹¹										МС	CV4

Range of recommended ages

Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 21, 2010, 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. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Considerations should include provider assessment, patient preference, and the potential for adverse events. 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.

Footnotes -

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

- At 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 as soon as possible and, if HBsAg-positive, administer HBIG (no later than age 1 week).
 Doses following the birth dose:
 The second dose should be administered at age 1 or 2 months. Monovalent HepB should be used for doses administered before age 6 weeks.
- Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg 1 to 2 months after completion of at least 3 doses of the HepB series, at age 9 through 18 months (generally at the next well-child visit). Administration of 4 doses of HepB to infants is permissible when a combination vaccine containing HepB is administered after the birth dose. Infants who did not receive a birth dose should receive 3 doses of HepB on a schedule of 0.1 and 6 months.
- 0, 1, and 6 months. The final (3rd or 4th) dose in the HepB series should be administered no earlier than age
- 24 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 davs or older).
- If Rotarix[®] is administered at ages 2 and 4 months, a dose at 6 months is not indicated.
- 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.
- 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.
 Hiberix® should not be used for doses at ages 2, 4, or 6 months for the primary series but can be used as the final dose in children aged 12 months through 4 years.
- Prounococcal vaccine. (Minimum aged 12 months unough 4 years. [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 vaccinat-
- ed for their age. A PCV series begun with 7-valent PCV (PCV7) should be completed with 13-valent PCV
- (PCV13).
- A single supplemental dose of PCV13 is recommended for all children aged 14 through 59 months who have received an age-appropriate series of PCV7. A single supplemental dose of PCV13 is recommended for all children aged 60 through 71
- months with underlying medical conditions who have received an age-appropriate series of PCV7

- The supplemental dose of PCV13 should be administered at least 8 weeks after the previous dose of PCV7. See *MMWR* 2010:59(No. RR-11).
 Administer PPSV at least 8 weeks after last dose of PCV to children aged 2 years or older with certain underlying medical conditions, including a cochlear implant.
 Inactivated poliovirus vaccine (IPV) (Minimum age: 6 weeks)
 If 4 or more doses are administered prior to age 4 years an additional dose should be administered at age 4 through 6 years.
 The final dose in the series should be administered on or after the 4th birthday and at least 6 months following the previous dose.
 Influenza vaccine (seasonal). (Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 2 years for live, attenuated influenza vaccine [LAIV])
 For healthy children aged 2 years and older (i.e., those who do not have underlying medical conditions that predispose them to influenza complications), either LAIV or TIV may be used, except LAIV should not be given to children aged 2 through 4 years who have had wheezing in the past 12 months.
 Administer 2 doses (separated by at least 4 weeks) to children age 6 months through 8
 - Administer 2 doses (separated by at least 4 weeks) to children aged 6 months through 8 years who are receiving seasonal influenza vaccine for the first time or who were vacci-
 - nated for the first time during the previous influenza season but only received 1 dose. Children aged 6 months through 8 years who received no doses of monovalent 2009 H1N1 vaccine should receive 2 doses of 2010–2011 seasonal influenza vaccine. See

- Children aged 6 months through 6 years with received no doses of montovalent 20se H1N1 vaccine should receive 2 doses of 2010-2011 seasonal influenza vaccine. See *MMWR* 2010;59(No. RR-8):33–34.
 Measles, mumps, and rubella vaccine (MMR). (Minimum age: 12 months)
 The second dose may be administered before age 4 years, provided at least 4 weeks have elapsed since the first dose.
 Varicella vaccine. (Minimum age: 12 months)
 The second dose may be administered before age 4 years, provided at least 3 months have elapsed since the first dose.
 For children aged 12 months through 12 years the recommended minimum interval between doses is 3 months. However, if the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid.
 Hepatitis A vaccine (HepA). (Minimum age: 12 months)
 Administer 2 doses at least 6 months apart.
 HepA is recommended for children aged older than 23 months who live in areas where vaccination programs target older children, who are at increased risk for infection, or for whom immunity against hepatitis A is desired.
 Meningococcal conjugate vaccine, quadrivalent (MCV4). (Minimum age: 2 years)
 Administer 2 doses of MCV4 at least 8 weeks apart to children aged 2 through 10 years with persistent complement component deficiency and anatomic or functional asplenia,
- with persistent complement component deficiency and anatomic or functional asplenia, and 1 dose every 5 years thereafter. Persons with human immunodeficiency virus (HIV) infection who are vaccinated with MCV4 should receive 2 doses at least 8 weeks apart.

- Administer 1 dose of MCV4 to children aged 2 through 10 years who travel to countries with highly endemic or epidemic disease and during outbreaks caused by a vaccine serogroup. Administer MCV4 to children at continued risk for meningococcal disease who were previ-ously vaccinated with MCV4 or meningococcal polysaccharide vaccine after 3 years if the first dose was administered at age 2 through 6 years.

2011 Catch-up immunization schedule for persons aged 4 months-6 years who start late or who are more than 1 month behind

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.

Maasima	Minimum	Minimum interval between doses						
Vaccine	age for Dose 1	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5			
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)					
Rotavirus ²	6 weeks	4 weeks	4 weeks ²					
Diphtheria, Tetanus, Pertussis³	6 weeks	4 weeks	4 weeks	6 months	6 months ³			
Haemophilus influenzae type b⁴	6 weeks	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 doses needed 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 first dose administered at younger than age 12 months and second dose administered at younger than 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 ⁵	6 weeks	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 weeks	4 weeks	4 weeks	6 months ⁶				
Measles, Mumps, Rubella ⁷	12 months	4 weeks						
Varicella ⁸	12 months	3 months						
Hepatitis A ⁹	12 months	6 months						

Footnotes -

1. Hepatitis B vaccine (HepB).

Administer the 3-dose series to those not previously vaccinated. The minimum age for the third dose of HepB is 24 weeks.

- 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).
 The maximum age for the final dose in the series is 8 months 0 days.
 If Rotarix® was administered for the first and second doses, a third dose is not indicated.
- 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).
 1 dose of Hib vaccine should be considered for unvaccinated persons aged 5 years
 - or older who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy. If the first 2 doses were PRP-OMP (PedvaxHIB® or Comvax®), 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 the sec-
 - ond dose at least 4 weeks later and a final dose at age 12 through 15 months.
- Pneumococcal vaccine.
 Administer 1 dose of 13-valent pneumococcal conjugate vaccine (PCV13) to all healthy children aged 24 through 59 months with any incomplete PCV schedule (PCV7 or PCV13)
 - For children aged 24 through 71 months with underlying medical conditions, admin-ister 1 dose of PCV13 if 3 doses of PCV were received previously or administer 2 doses of PCV13 at least 8 weeks apart if fewer than 3 doses of PCV were received previously.

- · A single dose of PCV13 is recommended for certain children with underlying med-
- A single dose of PCV is is recommended for certain children with underlying medical conditions through 18 years of age. See age-specific schedules for details.
 Administer pneumococcal polysaccharide vaccine (PPSV) to children aged 2 years or older with certain underlying medical conditions, including a cochlear implant, at least 8 weeks after the last dose of PCV. A single revaccination should be administered after 5 years to children with functional or anatomic asplenia or an immuno-compromising condition. See *MMWR* 2010;59(No. RR-11).
 Inactivated poliovirus vaccine (IPV).
 The final dose in the series should be administered on or after the 4th birthday and at least 6 months following the previous dose.

- at least 6 months following the previous dose.
 A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months following the previous dose.
- In the first 6 months of life, minimum age and minimum intervals are only recom-mended if the person is at risk for imminent exposure to circulating poliovirus (i.e.,
- Measles, mumps, and rubella vaccine (MMR).
 Administer the second dose routinely at age 4 through 6 years. The minimum interval between the 2 doses of MMR is 4 weeks.
 - Varicella vaccine.
 - Administer the second dose routinely at age 4 through 6 years.
 If the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid.

 Hepatitis A vaccine (HepA).
 HepA is recommended for children older than 23 months who live in areas where vaccination programs target older children, who are at increased risk of infection or for whom immunity against hepatitis A is desired.

2011 Summary of ACIP/AAP/AAFP Recommended Immunization Schedule for Ages 7–18 Years

Colorado Department of Public Health and Environment/HealthTeamWorks

Current as of January 1, 2011. For updated information on pediatric immunizations, visit the HealthTeamWorks website at www.healthteamworks.org or the CDPHE website at www.coloradoimmunizations.com.

Vaccine ▼ Age ►	7–10 years	11–12 YEARS	13–18 years
Tetanus, Diphtheria, Pertussis ¹	See footnote 1	Tdap	Tdap
Human Papillomavirus ²	See footnote 2	HPV (3 doses) (females)	HPV Series
Meningococcal ³	MCV4	MCV4	MCV4
Influenza ⁴		Influenza (Yearly)	
Pneumococcal⁵		Pneumococcal	
Hepatitis A ⁶		HepA Series	
Hepatitis B ⁷		HepB Series	
Inactivated Poliovirus ⁸		IPV Series	
Measles, Mumps, Rubella ⁹		MMR Series	
Varicella ¹⁰		Varicella Series	

Range of recommended ages Catch-up immunization Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 21, 2010, for children aged 7 through 18 years. Any dose not administered at the recommended age should be administered at a sub-sequent visit, when indicated and feasible. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. Considerations should include provider assessment, patient preference, and the potential for adverse events. Providers should consult the relevant Advisory Committee on Immunization Practices statement for detailed recownendations, 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.

Footnotes -

- Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap). (Minimum age: 10 years for Boostrix® and 11 years for Adace®)
 Persons aged 11 through 18 years who have not received Tdap should receive a dose followed by Td booster doses every 10 years thereafter.
 Persons aged 7 through 10 years who are not fully immunized against pertussis (insuling these power unceinstand or with welknown perturbic vaccination etatus)
 - (including those never vaccinated or with unknown pertussis vaccination status) should receive a single dose of Tdap. Refer to the catch-up schedule if additional doses of tetanus and diphtheria toxoid–containing vaccine are needed.
- Tdap can be administered regardless of the interval since the last tetau.
 Tdap can be administered regardless of the interval since the last tetau.
 Human papillomavirus vaccine (HPV). (Minimum age: 9 years)
 Quadrivalent HPV vaccine (HPV4) or bivalent HPV vaccine (HPV2) is recommended for the prevention of cervical precancers and cancers in females.
 - · HPV4 is recommended for prevention of cervical precancers, cancers, and genital warts in females.
 - · HPV4 may be administered in a 3-dose series to males aged 9 through 18 years to
- HPV4 may be administered in a 3-oose series to males aged a through to years to reduce their likelihood of genital warts.
 Administer the second dose 1 to 2 months after the first dose and the third dose 6 months after the first dose (at least 24 weeks after the first dose).
 Meningococal conjugate vaccine, quadrivalent (MCV4). (Minimum age: 2 years)
 Administer MCV4 at age 11 through 12 years with a booster dose at age 16 years.
 Administer 1 dose at age 13 through 18 years if not previously vaccinated.
 Persons who received their first dose at age 13 through 15 years should receive a booster dose at one 16 through 18 years.

 - booster dose at age 16 through 18 years. Administer 1 dose to previously unvaccinated college freshmen living in a dormito-
 - Ádminister 2 doses at least 8 weeks apart to children aged 2 through 10 years with persistent complement component deficiency and anatomic or functional asplenia, and 1 dose every 5 years thereafter.
 - Persons with HIV infection who are vaccinated with MCV4 should receive 2 doses Administer 1 dose of MCV4 to children aged 2 through 10 years who travel to coun-
 - tries with highly endemic or epidemic disease and during outbreaks caused by a vaccine serogroup. Administer MCV4 to children at continued risk for meningococcal disease who were
 - previously vaccinated with MCV4 or meningococcal polysaccharide vaccine after 3 years (if first dose administered at age 2 through 6 years) or after 5 years (if first dose administered at age 7 years or older).

4. Influenza vaccine (seasonal).

- For healthy nonpregnant persons aged 7 through 18 years (i.e., those who do not have underlying medical conditions that predispose them to influenza complications), either LAIV or TIV may be used.
- Administer 2 doses (separated by at least 4 weeks) to children aged 6 months through 8 years who are receiving seasonal influenza vaccine for the first time or

who were vaccinated for the first time during the previous influenza season but only received 1 dose

- Children 6 months through 8 years of age who received no doses of monovalent 2009 H1N1 vaccine should receive 2 doses of 2010-2011 seasonal influenza vaccine. See MMWR 2010;59(No. RR-8):33-34.
- 5. Pneumococcal vaccines.
 A single dose of 13-valent pneumococcal conjugate vaccine (PCV13) may be administered to children aged 6 through 18 years who have functional or anatomic terms of the previous of the second secon asplenia, HIV infection or other immunocompromising condition, cochlear implant or CSF leak. See *MMWR* 2010;59(No. RR-11). The dose of PCV13 should be administered at least 8 weeks after the previous
 - dose of PCV7.
 - Administer pneumococcal polysaccharide vaccine at least 8 weeks after the last dose of PCV to children aged 2 years or older with certain underlying medical con-ditions, including a cochlear implant. A single revaccination should be administered after 5 years to children with functional or anatomic asplenia or an immunocompromising condition
- 6. Hepatitis A vaccine (HepA).
 Administer 2 doses at least 6 months apart.
 - HepA is recommended for children aged older than 23 months who live in areas where vaccination programs target older children, who are at increased risk for
- Administer the 3-dose series to those not previously vaccinated. For those with incomplete vaccination, follow the catch-up schedule.
 Administer the 3-dose series to those not previously vaccinated. For those with incomplete vaccination, follow the catch-up schedule.
 - A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB® is licensed for children aged 11 through 15 years.
- Inactivated poliovirus vaccine (IPV).
 The final dose in the series should be administered on or after the 4th birthday and
- at least 6 months following the previous dose. 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.
 Measles, mumps, and rubella vaccine (MMR).
 The minimum interval between the 2 doses of MMR is 4 weeks.

- 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 forther with the persons does with a month of the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the forther with the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after the second dose was administered at least 28 days after
 - first dose, it can be accepted as valid.
 - · For persons aged 13 years and older, the minimum interval between doses is 28 davs.

2011 Catch-up immunization schedule for persons aged 7–18 years who start late or who are more than 1 month behind

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.

Vaccine	Minimum age for Dose 1	Minimum interval between doses						
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5			
Tetanus, Diphtheria/Tetanus, Diphtheria, Pertussis¹	7 years¹	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 Papillomavirus²	9 years	Routine dosing intervals are recommended ² (females)						
Hepatitis A ³	12 months	6 months						
Hepatitis B⁴	Birth	4 weeks	8 weeks (and at least 16 weeks after first dose)					
Inactivated Poliovirus ⁵	6 weeks	4 weeks	4 weeks	6 months⁵				
Measles, Mumps, Rubella ⁶	12 months	4 weeks						
Varicella ⁷	12 months	3 months if the person is younger than age 13 years 4 weeks if the person is aged 13 years or older						

Footnotes -

- 1. Tetanus and diphtheria toxoids (Td) and tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap). • Doses of DTaP are counted as part of the Td/Tdap series. • Tdap should be substituted for a single dose of Td in the catch-up series for children

 - aged 7 through 10 years or as a booster for children aged 11 through 18 years; use Td for other doses.
- 2. Human papillomavirus vaccine (HPV).
 - Administer the series to females at age 13 through 18 years if not previously vacci-nated or have not completed the vaccine series.
 - Quadrivalent HPV vaccine (HPV4) may be administered in a 3-dose series to males
 - aged 9 through 18 years to reduce their likelihood of genital warts. Use recommended routine dosing intervals for series catch-up (i.e., the second and third doses should be administered at 1 to 2 and 6 months after the first dose). 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 administered at least 24 weeks after the first dose.
- Hepatitis A vaccine (HepA).
 HepA is recommended for children older than 23 months who live in areas where vaccination programs target older children, who are at increased risk of infection or for whom immunity against hepatitis A is desired.

Immunization Program Resources



Colorado Department

of Public Health

and Environment

General Immunization Questions, Vaccine Orders, Vaccines for Children (VFC) Program: (303)692-2650

Website: www.coloradoimmunizations.com

Hepatitis B Project: (303) 692-2673

Disease Reports: 1-800-866-2759

Vaccine Adverse Event Reporting System (VAERS): 1-877-375-2579. Clinically significant adverse events that follow immunization should be reported to VAERS. Guidance about how to obtain and complete a VAERS form is also available at http://www.vaers.hhs.gov.

Vaccine Information Statements (VISs): http://www.cdc.gov/vaccines/pubs/vis Family Healthline (Parent Information): (303) 692-2229 (Denver metro area) or 1-800-688-7777

CDC Information Contact Center (for immunization guestions): 1-800-CDC-INFO (1-800-232-4636); NIPINFO@cdc.gov

- 4. Hepatitis B vaccine (HepB). Administer the 3-dose series to those not previously vaccinated. The minimum age for the third dose of HepB is 24 weeks.
 - A 2-dose series (separated by at least 4 months) of adult formulation Recombivax
- HB[®] is licensed for children aged 11 through 15 years. 5. Inactivated poliovirus vaccine (IPV).
 - The final dose in the series should be administered on or after the 4th birthday and at least 6 months following the previous dose. A fourth dose is not necessary if the third dose was administered at age 4 years or
 - older and at least 6 months following the previous dose.
- Measles, mumps, and rubella vaccine (MMR).
 Administer the second dose routinely at age 4 through 6 years. The minimum interval between the 2 doses of MMR is 4 weeks.
- 7. Varicella vaccine. Administer the second dose routinely at age 4 through 6 years. If the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid.



HealthTeamWorks, formerly known as CCGC, is a non-profit multi-stakeholder collaborative working to redesign the healthcare delivery system and promote integrated communities of care, using evidence-based medicine and innovative systems. Our goals are to optimize health, improve quality and safety, reduce costs, and improve care experience for patients and their healthcare teams.

The Recommended Immunization Schedules for Persons Aged 0–18 Years are approved by the Advisory Committee on Immunization Practices (http://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). 7 - 5

2011 Summary of ACIP/ACOG/AAFP Adult Immunization Recommendations

Colorado Department of Public Health and Environment/HealthTeamWorks

Fig. 1: Recommended Adult Immunization Schedule, by Vaccine and Age Group

Vaccine ▼ Age group ►	19–26 years	27–49 years	50–59 years	60–64 years	≥65 years		
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}	Substitute 1-ti	me dose of Tdap for Td b	ooster; then boost with T	d every 10 yrs	Td booster every 10 yrs		
Human papillomavirus (HPV) ^{2,*}	3 doses (females)						
Varicella ^{3,*}			2 doses				
Zoster ⁴					1 dose		
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				

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, 2011. For all vaccines being recommended on the adult immunization schedule: a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. 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.

Fig. 2: Vaccines That Might Be Indicated for Adults Based on Medical and Other Indications

Indication ► Vaccine ▼	Pregnancy	Immunocompromis- ing conditions (excluding human immunodeficiency virus [HIV]) ^{3-5,12}	CD4+ T	tion ^{3,5,12,13} lympho- count ≥200 cells/µL	Diabetes, heart disease, chronic lung disease, chronic alco- holism	Asplenia ¹³ (includ- ing elective splenectomy) and persistent comple- ment component deficiencies	Chronic liver disease	Kidney fail- ure, end- stage renal disease, receipt of hemodialysis	Health-care personnel
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}	Td	5	ubstitute	: 1-time dos	se of Tdap for To	d booster; then boos	t with Td eve	ery 10 yrs	
Human papillomavirus (HPV) ^{2,*}			1	: 3 (l doses for female	es through age 26 ye	ars	1	I I
Varicella ^{3,*}		Contraindicated			1	2 dos	es I	1	
Zoster ⁴		Contraindicated				1	1 dose	1	
Measles, mumps, rubella (MMR) ^{5,*}		Contraindicated			1	1 or 2 d	oses	1	
Influenza ^{6,*}		T I	1	: 1 dos :	e TIV annually	1	1	1	1 dose TIV or LAIV annually
Pneumococcal (polysaccharide) ^{7,8}			1	:	1 or 2 dose	95 1	1		
Hepatitis A ^{9,*}			2 d	: oses :					
Hepatitis B ^{10,*}				:	3	doses		1	
Meningococcal ^{11,*}		1 or mo	ore doses	:					

NOTE: These schedules must be read along with the footnotes. *Covered by the Vaccine Injury Compensation Program.

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

For updates on vaccines, visit the HealthTeamWorks website at www.healthteamworks.org or the CDPHE website at www.coloradoimmunizations.com.

FOOTNOTES

1. Tetanus, diphtheria, and acellular pertussis (Td/Tdap) vaccination

(Td/Tdap) vaccination Administer a one-time dose of Tdap to adults aged less than 65 years who have not received Tdap previously or for whom vaccine status is unknown to replace one of the 10-year Td boosters, and as soon as feasible to all 1) postpartum women, 2) close contacts of infants younger than age 12 months (e.g., grandparents and child-care providers), and 3) healthcare personnel with direct patient contact. Adults aged ≥65 years who have not previously received Tdap and who have close contact with an infant aged less than 12 months also should be vaccinated. Other adults aged ≥65 years may receive Tdap. Tdap can be adminis-terad regardless of interval since the most recent tetanus or diphtheria-containing vaccine.

Adults with uncertain or incomplete history of com-pleting a 3-dose primary vaccination series with Td-containing vaccines should begin or complete a adults, administer the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second. If incompletely vaccinated (i.e., less than 3 doses), administer remaining doses. Substitute a one-time dose of Tdap for one of the doses of Td, either in the primary series or for the routine booster, whichever comes first.

If a woman is pregnant and received the most recent Td vaccination ≥10 years ago, administer Td during the second or third trimester. If the woman received the most recent Td vaccination <10 years previously, administer Tdap during the immediate postpartum period. At the clinician's dis-cretion, 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 thouwmon with the woman.

The ACIP statement for recommendations for administering Td as prophylaxis in wound man-agement is available at http://www.cdc.gov/ vaccines/pubs/acip-list.htm.

2. Human papillomavirus (HPV) vaccination

HPV vaccination with either quadrivalent (HPV4) vaccine or bivalent vaccine (HPV2) is recommended for females at age 11 or 12 years and catch-up vaccination for females aged 13 through 26 years. Ideally, vaccine should be administered before potential exposure to HPV through sexual activity; potential exposure to HPV through sexual activity; however, females who are sexually active should still be vaccinated consistent with age-based rec-ommendations. Sexually active females who have not been infected with any of the four HPV vaccine types (types 6, 11, 16, and 18, all of which HPV4 prevents) or any of the two HPV vaccine types (types 16 and 18, both of which HPV2 prevents) receive the full benefit of the vaccination. Vaccina-tion is less beneficial for females who have already been infected with one or more of the HPV vaccine types. HPV4 or HPV2 can be administered to per-sons with a history of genital warts. abnormal sons with a history of genital warts, abnormal Papanicolaou test, or positive HPV DNA test, because these conditions are not evidence of pre-vious infection with all vaccine HPV types.

HPV4 may be administered to males aged 9 through 26 years to reduce their likelihood of geni-tal warts. HPV4 would be most effective when administered before exposure to HPV through sexual contact

A complete series for either HPV4 or HPV2 con-sists of 3 doses. The second dose should be administered 1–2 months after the first dose; the third dose should be administered 6 months after the first dose.

Although HPV vaccination is not specifically rec-ommended for persons with the medical indica-tions described in Figure 2, "Vaccines that might be indicated for adults based on medical and other indications," it may be administered to these per-sons because the HPV vaccine is not a live-virus vaccine. However, the immune response and vac-ine officerup might be lass for persons with the cine 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.

3. Varicella vaccination

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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 1 dose, unless they have a medical contraindication. Special consider-ation should be given to those who 1) have close contact with persons at high risk for severe dis-ease (e.g., health-care personnel and family contacts of persons with immunocompromising condi-tions) or 2) are at high risk for exposure or transmission (e.g., teachers; child-care employees; res-idents 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 person-nel and pregnant women, birth before 1980 should not be considered evidence of immunity); 3) histo-ry of varicella based on diagnosis or verification of varicella by a health-care provider (for a patient reporting a history of or having an atypical case, a mild case, or both, health-care providers should seek either an epidemiologic link with a typical varicella case or to a laboratory-confirmed case or evidence of laboratory confirmation, if it was per-formed at the time of acute disease); 4) history of herpes zoster based on diagnosis or verification of herpes zoster by a health-care provider; or 5) labo-ratory evidence of immunity or laboratory confirmation of disease.

Pregnant women should be assessed for evidence of varicella immunity. Women who do not have evi-dence of immunity should receive the first dose 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 regardless of whether they report a prior episode of herpes zoster. Per-sons with chronic medical conditions may be vac-cinated unless their condition constitutes a contraindication.

5. Measles, mumps, rubella (MMR) vaccination

Adults born before 1957 generally are considered immune to measles and mumps. All adults born in 1957 or later should have documentation of 1 or more doses of MMR vaccine unless they have a medical contraindication to the vaccine, laboratory evidence of immunity to each of the three dis-eases, or documentation of provider-diagnosed measles or mumps disease. For rubella, documen tation of provider-diagnosed disease is not consid-ered acceptable evidence of immunity.

Measles component: A second dose of MMR vac-cine, administered a minimum of 28 days after the first dose, is recommended for adults who 1) have first dose, is recommended for adults who 1) have been recently exposed to measles or are in an out-break setting; 2) are students in postsecondary educational institutions; 3) work in a healthcare facility; or 4) plan to travel internationally. Persons who received inactivated (killed) measles vaccine or measles vaccine of unknown type during 1963–1967 should be revaccinated with 2 doses of MMR vaccine. MMR vaccine.

Mumps component: A second dose of MMR vac-cine, administered a minimum of 28 days after the first dose, 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 healthcare facility; or 4) plan to travel internation-ally. Persons vaccinated before 1979 with either killed mumps vaccine or mumps vaccine of unknown type who are at high risk for mumps infection (e.g. persons who are working in a health-care facility) should be revaccinated with 2 doses of MMR vaccine.

Rubella component: For women of childbearing age, regardless of birth year, rubella immunity should be determined. If there is no evidence of should be determined. If there is no evidence of immunity, women who are not pregnant should be vaccinated. Pregnant women who do not have evi-dence of immunity should receive MMR vaccine upon completion or termination of pregnancy and before discharge from the healthcare facility.

Healthcare personnel born before 1957: For unvac-cinated healthcare personnel born before 1957 who lack laboratory evidence of measles, mumps, and/or rubella immunity or laboratory confirmation of disease, healthcare facilities should 1) consider routinely vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), and 2) recommend 2 doses of MMR vaccine at the appropriate interval during an out-break of measles or mumps, and 1 dose during an outbreak of rubella. Complete information about evidence of immunity is available at http:// www.cdc.gov/vaccines/recs/provisional/default.htm. 6. Seasonal influenza vaccination

Annual vaccination against influenza is recom-Annual vaccination against influenza is recom-mended for all persons aged 6 months and older, including all adults. Healthy, nonpregnant adults aged less than 50 years without high-risk medical conditions can receive either intranasally adminis-tered live, attenuated influenza vaccine (FluMist^e), or inactivated vaccine. Other persons should receive the inactivated vaccine. Adults aged 65 years and older can receive the standard influenza vaccine or the high-dose (Fluzone®) influenza vac-cine. Additional information about influenza vac-nation is available at http://www.cdc.gov/vaccines/ web.voc/web/web/ vpd-vac/flu/default.htm.

7. Pneumococcal polysaccharide (PPSV) vaccination

Vaccinate all persons with the following indications Medical: Chronic lung disease (including asthma); chronic cardiovascular diseases; diabetes mellitus; chronic liver diseases; cirrhosis; chronic alcoholism; functional or anatomic asplenia (e.g., sickle cell dis-ease or splenectomy [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]); immunocompromising conditions (including chronic renal failure or nephrotic syndrome); and cochlear implants and cerebrospinal fluid leaks. Vaccinate as close to HIV diagnosis as possible.

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

8. Revaccination with PPSV

One-time revaccination after 5 years is recom-mended for persons aged 19 through 64 years with chronic renal failure or nephrotic syndrome; 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 is recommended if they were vaccinated 5 or more years previously and were aged less than 65 years at the time of primary varcination at the time of primary vaccination.

9. Hepatitis A vaccination

Vaccinate persons with any of the following indica-tions and any person seeking protection from hepatitis A virus (HAV) infection.

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

Occupational: Persons working with HAV-infected primates or with HAV in a research laboratory setting.

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

Unvaccinated persons who anticipate close personal contact (e.g., household contact or regular babysitting) with an international adoptee from a country of high or intermediate endemicity during the first 60 days after arrival of the adoptee in the United States should consider vaccination. The first dose of the 2-dose hepatitis A vaccine series should be administered as soon as adoption is planned, ideally ≥2 weeks before the arrival of the adoptee.

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; alternatively, a 4-dose sched-ule, administered on days 0, 7, and 21–30 followed by a booster dose at month 12 may be used.

10. Hepatitis B vaccination

Vaccinate persons with any of the following indications and any person seeking protection from hepatitis B virus (HBV) infection.

Behavioral: Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than one sex partner dur-ing the previous 6 months); persons seeking eval-uation or treatment for a sexually transmitted dis-



HealthTeamWorks, formerly known as CCGC, is a non-profit multi-stakeholder collaborative working to redesign the healthcare delivery system and promote integrated communities of care, using evidence-based medicine and innovative systems. Our goals are to optimize health, improve quality and safety, reduce costs, and improve care experience for patients and their healthcare teams.

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

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

Other: Household contacts and sex partners of persons with chronic HBV infection; clients and staff members of institutions for persons with developmental disabilities: and international travellerce of chronic HBV infection (a list of countries is available at http://wwwn.cdc.gov/travel/content diseases.aspx).

Hepatitis B vaccination is recommended for all Hepatitis B vaccination is recommended for all adults in the following settings: STD treatment facilities; HIV testing and treatment facilities; facili-ties providing drug-abuse treatment and preven-tion services; health-care settings targeting servic-es 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 nonres-idential day-care facilities for persons with devel-opmental disabilities.

Administer or complete a 3-dose series of hepatitis B vaccine to those persons not previously vacci-nated. The second dose should be administered 1 month after the first dose; the third dose should be administered at least 2 months after the second dose (and at least 4 months after the first dose). If the combined hepatitis A and hepatitis B vaccine (Twinix®) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, admin-istered on days 0, 7, and 21–30 followed by a booster dose at month 12 may be used.

Adult patients receiving hemodialysis or with other immunocompromising conditions should receive 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.

11. Meningococcal vaccination

Meningococcal vaccine should be administered to persons with the following indications:

Medical: A 2-dose series of meningococcal conju-gate vaccine is recommended for adults with anatomic or functional asplenia, or persistent com-plement component deficiencies. Adults with HIV infection who are vaccinated should also receive a routine 2-dose series. The 2 doses should be administered at 0 and 2 months.

Other: A single dose of meningococcal vaccine is recommended for unvaccinated first-year college students living in dormitories; microbiologists rou-tinely exposed to isolates of *Neisseria meningitidis*; tinely exposed to isolates of Neissena meningitidis; military recruits; and persons who travel to or live in countries in which meningococcal disease is hyper-endemic or epidemic (e.g., the "meningitis belt" of sub-Saharan Africa during the dry season [Decem-ber through 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 Hajj.

travelers to Mecca during the annual Haji. Meningococcal conjugate vaccine, quadrivalent (MCV4) is preferred for adults with any of the pre-ceding indications who are aged 55 years and younger; meningococcal polysaccharide vaccine (MPSV4) is preferred for adults aged 56 years and older. Revaccination with MCV4 every 5 years is recommended for adults previously vaccinated with MCV4 or MPSV4 who remain at increased risk for infection (e.g. adults with anatomic or funcrisk for infection (e.g., adults with anatomic or func-tional asplenia, or persistent complement compo-nent deficiencies).

12. Immunocompromising conditions

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

13. Selected conditions for which Haemophilus influenzae type b (Hib) vaccine may be used

1 dose of Hib vaccine should be considered for Persons who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy, if they have not previously received Hib vaccine.



DEPARTMENT OF HEALTH AND HUMAN SERVICES CENTERS FOR DISEASE CONTROL AND PREVENTION

Website: www.cdc.gov/vaccines

CDC Information Contact Center (for immunization questions): 1-800-CDC-INFO (1-800-232-4636); NIPINFO@cdc.gov

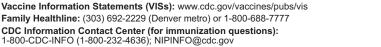
Immunization Program Resources

www.immunizecolorado.com

Hepatitis B Project: (303) 692-2673

immunization should be reported to VAERS. Guidance about how to obtain and complete a VAERS form is also available at http://www.vaers.hhs.gov.

Disease Reports: 1-800-866-2759



1-877-375-2579. Clinically significant adverse events that follow

General Immunization Questions: (303) 692-2650

Vaccine Adverse Event Reporting System (VAERS):

Website: www.coloradoimmunizations.com CAIC Website: (with flu shot clinic listings)

Approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Physicians. Complete statements from ACIP are available at http://www.cdc.gov/vaccines/pubs/acip-list.htm

ease (STD); current or recent injection-drug users; and men who have sex with men.