Figure 1. Recommended Immunization Schedule for Persons Ages 0 through 6 Years, U.S., 2011

For those who fall behind or start late, see the catch-up schedule (Table 1).

<table>
<thead>
<tr>
<th>Vaccine ▼</th>
<th>Age ▶</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mo</th>
<th>4 mo</th>
<th>6 mo</th>
<th>12 mo</th>
<th>15 mo</th>
<th>18 mo</th>
<th>19–23 mo</th>
<th>2–3 yrs</th>
<th>4–6 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Hepatitis B</em></td>
<td></td>
<td>HepB</td>
<td>HepB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Rotavirus</em></td>
<td></td>
<td>RV</td>
<td>RV</td>
<td>RV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Diphtheria, Tetanus, Pertussis</em></td>
<td></td>
<td>DTaP</td>
<td>DTaP</td>
<td>DTaP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DTaP</td>
<td>DTaP</td>
<td></td>
</tr>
<tr>
<td><em>Haemophilus influenzae type b</em></td>
<td></td>
<td>Hib</td>
<td>Hib</td>
<td>Hib</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hib</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Pneumococcal</em></td>
<td></td>
<td>PCV</td>
<td>PCV</td>
<td>PCV</td>
<td>PCV</td>
<td></td>
<td></td>
<td></td>
<td>PPSV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Inactivated Poliovirus</em></td>
<td></td>
<td>IPV</td>
<td>IPV</td>
<td>IPV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Influenza</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Measles, Mumps, Rubella</em></td>
<td></td>
<td>MMR</td>
<td>MMR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Varicella</em></td>
<td></td>
<td>Varicella</td>
<td>Varicella</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Hepatitis A</em></td>
<td></td>
<td>HepA (2 doses)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HepA Series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Meningococcal</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MCV4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This schedule includes recommendations in effect as of December 21, 2010. Any dose not given at the recommended age should be given 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: www.cdc.gov/vaccines/reCs/acip—list.htm. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or by telephone, 800-822-7967.

1. *Hepatitis B vaccine (HepB).* *(Minimum age: birth)*
   - At birth: Give monovalent HepB to all newborns before hospital discharge.
   - If mother is hepatitis B surface antigen (HBsAg)-positive, give newborn HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
   - If another’s HBsAg status is unknown, give newborn HepB within 12 hours of birth.
   - Determine mother’s HBsAg status as soon as possible and, if HBsAg-positive, give newborn HBIG (no later than age 1 week).

2. *Rotavirus vaccine (RV).* *(Minimum age: 6 weeks)*
   - Give the first dose at age 6 through 14 weeks (maximum age: 14 weeks 6 days). Vaccination should not be initiated for infants ages 15 weeks 0 days or older.
   - The maximum age for the final dose in the series is 8 months 0 days.
   - If Rotax is given at ages 2 and 4 months, a dose at age 6 months is not indicated.

3. *Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP).* *(Minimum age: 6 weeks)*
   - The fourth dose may be given as early as age 12 months, provided at least 6 months have elapsed since the third dose.

4. *Haemophilus influenzae type b conjugate vaccine (Hib).* *(Minimum age: 6 weeks)*
   - If PRP-OMP (PedvaxHib or Convax[HepB-Hib]) is given at ages 2 and 4 months, a dose at age 6 months is not indicated.
   - Hibercix 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 ages 12 months through 4 years.

5. *Pneumococcal vaccine.* *(Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV])*
   - PCV is recommended for all children younger than age 5 years. Give 1 dose of PCV to all healthy children ages 24 through 59 months who are not completely vaccinated 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 ages 14 through 59 months who have received an age-appropriate series of PCV7.
   - A single supplemental dose of PCV13 is recommended for all children ages 60 through 71 months with underlying medical conditions who have received an age-appropriate series of PCV7.
   - The supplemental dose of PCV13 should be given at least 8 weeks after the previous dose of PCV7. See MMWR 2010;59(RR-11).

6. *Inactivated poliovirus vaccine (IPV).* *(Minimum age: 6 weeks)*
   - If 4 or more doses are given prior to age 4 years, an additional dose should be given at age 4 through 6 years.
   - The final dose in the series should be given on or after the fourth birthday and at least 6 months following the previous dose.

7. *Influenza vaccine (seasonal).* *(Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 2 years for live, attenuated influenza vaccine [LAIV])*
   - For healthy children age 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 ages 2 through 4 years who have had wheezing in the past 12 months.
   - Give 2 doses (separated by at least 4 weeks) to children ages 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 received only 1 dose.
   - Children ages 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 MMWR 2010;59(RR-8):33–34.

8. *Measles, mumps, and rubella vaccine (MMR).* *(Minimum age: 12 months)*
   - The second dose may be given before age 4 years, provided at least 4 weeks have elapsed since the first dose.

9. *Varicella vaccine.* *(Minimum age: 12 months)*
   - The second dose may be given before age 4 years, provided at least 3 months have elapsed since the first dose.
   - For children ages 12 months through 12 years, the recommended minimum interval between doses is 3 months. However, if the second dose was given at least 4 weeks after the first dose, it can be accepted as valid.

10. *Hepatitis A vaccine (HepA).* *(Minimum age: 12 months)*
    - Give 2 doses at least 6 months apart.
    - HepA is recommended for children older than age 23 months who live in areas where vaccination programs target older children, or who are at increased risk for infection, or for whom immunity against hepatitis A is desired.

11. *Meningococcal conjugate vaccine, quadrivalent (MCV4).* *(Minimum age: 2 years)*
    - Give 2 doses of MCV4 at least 8 weeks apart to children ages 2 through 10 years 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.
    - Give 1 dose of MCV4 to children ages 2 through 10 years who travel to countries with highly endemic or epidemic disease and during outbreaks caused by a vaccine serogroup.
    - Give MCV4 to children at continued risk of meningococcal disease who were previously vaccinated with MCV4 or meningococcal polysaccharide vaccine after 3 years if first dose given at age 2 through 6 years.
Figure 2. Recommended Immunization Schedule for Persons Ages 7 through 18 Years, U.S., 2011
For those who fall behind or start late, see the schedule below and the catch-up schedule (Table 1).

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age</th>
<th>7–10 yrs</th>
<th>11–12 yrs</th>
<th>13–18 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetanus, Diphtheria, Pertussis(^1)</td>
<td></td>
<td>Tdap</td>
<td>Tdap</td>
<td></td>
</tr>
<tr>
<td>Human Papillomavirus(^2)</td>
<td>See footnote 2</td>
<td>HPV (3-doses) (females)</td>
<td>HPV Series</td>
<td></td>
</tr>
<tr>
<td>Meningococcal(^3)</td>
<td>MCV4</td>
<td>MCV4</td>
<td>MCV4</td>
<td></td>
</tr>
<tr>
<td>Influenza(^4)</td>
<td></td>
<td>Influenza (Yearly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal(^6)</td>
<td></td>
<td>Pneumococcal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A(^8)</td>
<td></td>
<td>HepA Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B(^7)</td>
<td></td>
<td>HepB Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inactivated Poliovirus(^4)</td>
<td></td>
<td>IPV Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles, Mumps, Rubella(^9)</td>
<td></td>
<td>MMR Series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella(^10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This schedule includes recommendations in effect as of December 21, 2010. Any dose not given at the recommended age should be given 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: 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) at www.vaers.hhs.gov or by telephone, 800-822-7967.

1. Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap). (Minimum age: 10 years for Boostrix and 11 years for Adacel)
   - Persons ages 11 through 18 years who have not received Tdap should receive a dose followed by Td booster doses every 10 years thereafter.
   - Persons ages 7 through 10 years who are not fully immunized against pertussis (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 given regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.

2. 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 given in a 3-dose series to males ages 9 through 18 years to reduce their likelihood of acquiring genital warts.
   - Give 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).

3. Meningococcal conjugate vaccine, quadrivalent (MCV4). (Minimum age: 2 years)
   - Give MCV4 at age 11 through 12 years with a booster dose at age 16 years.
   - Give 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 age 16 through 18 years.
   - Give 1 dose to previously unvaccinated college freshmen living in a dormitory.
   - Give 2 doses at least 8 weeks apart to children ages 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 at least 8 weeks apart.
   - Give 1 dose of MCV4 to children ages 2 through 10 years who travel to countries with highly endemic or epidemic disease and during outbreaks caused by a vaccine serogroup.
   - Give MCV4 to children at continued risk of meningococcal disease who were previously vaccinated with MCV4 or meningococcal polysaccharide vaccine after 3 years (if first dose given at age 2 through 6 years) or after 5 years (if first dose given at age 7 years or older).

4. Influenza vaccine (seasonal).
   - For healthy nonpregnant persons ages 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.
   - Give 2 doses (separated by at least 4 weeks) to children ages 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 received only 1 dose.
   - Children ages 6 months through 8 years who received no doses of monovalent 2009 H1N1 vaccine should receive 2 doses of 2010–11 seasonal influenza vaccine. See MMWR 2010;59(RR-8):33-34.

5. Pneumococcal vaccines.
   - A single dose of 13-valent pneumococcal conjugate vaccine (PCV13) may be given to children ages 6 through 18 years who have functional or anatomic 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 given at least 8 weeks after the previous dose of PCV7.
   - Give pneumococcal polysaccharide vaccine at least 8 weeks after the last dose of PCV to children age 2 years or older with certain underlying medical conditions, including a cochlear implant. A single revaccination should be given after 5 years to children with functional or anatomic asplenia or an immunocompromising condition.

6. Hepatitis A vaccine (HepA).
   - Give 2 doses at least 6 months apart.
   - HepA is recommended for children older than age 23 months who live in areas where vaccination programs target older children, or who are at increased risk for infection, or for whom immunity against hepatitis A is desired.

7. Hepatitis B vaccine (HepB).
   - Give the 3-dose series to those not previously vaccinated. For those with incomplete vaccination, follow the catch-up schedule (Table 1).
   - A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB is licensed for children ages 11 through 15 years.

8. Inactivated poliovirus vaccine (IPV).
   - The final dose in the series should be given on or after the fourth birthday and at least 6 months following the previous dose.
   - If both OPV and IPV were given as part of a series, a total of 4 doses should be given, regardless of the child’s current age.

   - The minimum interval between the 2 doses of MMR is 4 weeks.

10. Varicella vaccine.
    - For persons ages 7 through 18 years without evidence of immunity (see MMWR 2007;56 [No. RR-4]), give 2 doses if not previously vaccinated or the second dose if only 1 dose has been given.
    - For persons ages 7 through 12 years, the minimum interval between doses is 3 months. However, if the second dose was given at least 4 weeks after the first dose, it can be accepted as valid.
    - For persons ages 13 years and older, the minimum interval between doses is 4 weeks.
Table 1. Catch-up Immunization Schedule for Persons Ages 4 Months through 18 Years Who Start Late or Who Are More Than 1 Month Behind, U. S., 2011

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

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Minimum Interval Between Doses</th>
<th>Catch-up schedule for persons ages 7 through 18 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B†</td>
<td>Birth</td>
<td>4 weeks</td>
<td>Routine dosing intervals are recommended (males)††††</td>
</tr>
<tr>
<td>Rotavirus‡</td>
<td>6 wks</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Diphtheria, Tetanus, Pertussis§</td>
<td>6 wks</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae type b§</td>
<td>6 wks</td>
<td>4 weeks if first dose given before age 12 mos</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal§</td>
<td>6 wks</td>
<td>4 weeks if first dose given before age 12 mos</td>
<td></td>
</tr>
<tr>
<td>Inactivated Poliovirus§</td>
<td>6 wks</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Measles, Mumps, Rubella†</td>
<td>12 mos</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Varicella§</td>
<td>12 mos</td>
<td>3 months</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A§</td>
<td>12 mos</td>
<td>6 months</td>
<td></td>
</tr>
<tr>
<td>Tetanus, Diphtheria, Tetanus, Diphtheria, Pertussis§‡</td>
<td>7 yrs§</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Human Papillomavirus§</td>
<td>9 yrs‡</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A§</td>
<td>12 mos</td>
<td>6 months</td>
<td></td>
</tr>
<tr>
<td>Inactivated Poliovirus§</td>
<td>6 wks</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Measles, Mumps, Rubella§</td>
<td>12 mos</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Varicella§</td>
<td>12 mos</td>
<td>3 months if person is younger than age 13 yrs</td>
<td></td>
</tr>
</tbody>
</table>

1. Hepatitis B vaccine (HepB).
   • Give 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 ages 11 through 15 years.

2. Rotavirus vaccine (RV).
   • The maximum age for the first dose is 14 weeks 6 days. Vaccination should not be initiated for infants age 15 weeks 0 days or older.
   • The maximum age for the final dose in the series is 8 months 0 days.
   • If Rotarix was given for the first and second doses, a third dose is not indicated.

3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP).
   • The fifth dose is not necessary if the fourth dose was given at age 4 years or older.

4. Haemophilus influenzae type b conjugate vaccine (Hib).
   • 1 dose of Hib vaccine should be considered for unvaccinated persons age 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 given at age 11 months or younger, the third (and final) dose should be given at age 12 through 15 months and at least 8 weeks after the second dose.
   • If the first dose was given at age 7 through 11 months, give the second dose at least 4 weeks later and a final dose at age 12 through 15 months.

5. Pneumococcal vaccine.
   • Give 1 dose of 13-valent pneumococcal conjugate vaccine (PCV13) to all healthy children ages 24 through 59 months with any incomplete PCV schedule (PCV7 or PCV13).
   • For children ages 24 through 71 months with underlying medical conditions, give 1 dose of PCV13 if 3 doses of PCV were received previously or give 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 medical conditions through age 18 years. See age-specific schedules for details.
   • Give pneumococcal polysaccharide vaccine (PPSV) to children age 2 years or older with certain underlying medical conditions, including a cochlear implant, at least 8 weeks after the last dose of PCV.

6. Inactivated poliovirus vaccine (IPV).
   • The final dose in the series should be given on or after the fourth birthday and at least 6 months following the previous dose.
   • A fourth dose is not necessary if the third dose was given 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 recommended if the person is at risk for imminent exposure to circulating poliovirus (i.e., travel to a polio-endemic region or during an outbreak).

7. Measles, mumps, and rubella vaccine (MMR).
   • Give the second dose routinely at age 4 through 6 years.
   • The minimum interval between the 2 doses of MMR is 4 weeks.

8. Varicella vaccine.
   • Give the second dose routinely at age 4 through 6 years.
   • If the second dose was given at least 4 weeks after the first dose, it can be accepted as valid.

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

10. 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 ages 7 through 10 years or as a booster for children ages 11 through 18 years; use Td for other doses.

11. Human papillomavirus vaccine (HPV).
    • Give the series to females at age 13 through 18 years if not previously vaccinated or have not completed the vaccine series.
    • Quadrivalent HPV vaccine (HPV4) may be given in a 3-dose series to males ages 9 through 18 years to reduce their likelihood of acquiring genital warts.
    • Use recommended routine dosing intervals for series catch-up (i.e., the second and third doses should be given 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 given at least 24 weeks after the first dose.