This schedule includes recommendations in effect as of January 1, 2014. 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. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at http://www.cdc.gov/vaccines/hcp/acip-recs/index.html. Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (http://www.vaers.hhs.gov) or by telephone (800-822-7967).

The Recommended Immunization Schedules for Persons Aged 0 Through 18 Years are approved by the

Advisory Committee on Immunization Practices
(http://www.cdc.gov/vaccines/acip)

American Academy of Pediatrics
(http://www.aap.org)

American Academy of Family Physicians
(http://www.aafp.org)

American College of Obstetricians and Gynecologists
(http://www.acog.org)
Figure 1. Recommended immunization schedule for persons aged 0 through 18 years – United States, 2014.

(For those who fall behind or start late, see the catch-up schedule [Figure 2]).

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are in bold.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19–23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13–15 yrs</th>
<th>16–18 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B’ (HepB)</td>
<td></td>
<td>1st dose</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>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotavirus’ (RV) RV1 (2-dose series); RV5 (3-dose series)</td>
<td>1st dose</td>
<td>2nd dose</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>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis’ (DTaP: &lt;7 yrs)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</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>
<td></td>
</tr>
<tr>
<td>Tdap</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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus, diphtheria, &amp; acellular pertussis’ (Tdap: ≥7 yrs)</td>
<td>3rd or 4th dose, See footnote 5</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>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae type b’ (Hib)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>See footnote 5</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>
<td></td>
</tr>
<tr>
<td>Pneumococcal conjugate’ (PCV13)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</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>
<td></td>
</tr>
<tr>
<td>Pneumococcal polysaccharide’ (PPSV23)</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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inactivated poliovirus’ (IPV) (&lt;18 yrs)</td>
<td>1st dose</td>
<td>2nd dose</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>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza (IIV; LAIV)</td>
<td>2 doses for some: See footnote 8</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>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella’ (MMR)</td>
<td></td>
<td></td>
<td>1st dose</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>
<td></td>
</tr>
<tr>
<td>Varicella’ (VAR)</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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A’ (HepA)</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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus’ (HPV2: females only; HPV4: males and females)</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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meningococcal’ (Hib-MenCY ≥ 6 weeks; MenACWY-D ≥9 mos; MenACWY-CRM ≥ 2 mos)</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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This schedule includes recommendations in effect as of January 1, 2014. 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. Vaccination providers should consult the relevant Advisory Committee on Immunization Practices (ACIP) statement for detailed recommendations, available online at [http://www.cdc.gov/vaccines/hcp/acip-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/index.html). Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (http://www.vaers.hhs.gov) or by telephone (800-822-7967). Suspected cases of vaccine-preventable diseases should be reported to the state or local health department. Additional information, including precautions and contraindications for vaccination, is available from CDC online (http://www.cdc.gov/vaccines/recs/vac-admin/contraindications.htm) or by telephone (800-CDC-INFO [800-232-4636]).

This schedule is approved by the Advisory Committee on Immunization Practices (http://www.cdc.gov/vaccines/acip), the American Academy of Pediatrics (http://www.aap.org), the American Academy of Family Physicians (http://www.aafp.org), and the American College of Obstetricians and Gynecologists (http://www.acog.org).

**NOTE:** The above recommendations must be read along with the footnotes of this schedule.
FIGURE 2. Catch-up immunization schedule for persons aged 4 months through 18 years who start late or who are more than 1 month behind — United States, 2014.

The figure 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. Always use this table in conjunction with Figure 1 and the footnotes that follow.

### Persons aged 4 months through 6 years

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Minimum Interval Between Doses</th>
<th>Minimum Interval Between Doses</th>
<th>Minimum Interval Between Doses</th>
<th>Minimum Interval Between Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dose 1 to dose 2</td>
<td>Dose 2 to dose 3</td>
<td>Dose 3 to dose 4</td>
<td>Dose 4 to dose 5</td>
</tr>
<tr>
<td>Hepatitis B¹</td>
<td>Birth</td>
<td>4 weeks</td>
<td>8 weeks and at least 16 weeks after first dose; minimum age for the final dose is 24 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotavirus²</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis³</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>6 months³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae type b⁴</td>
<td>6 weeks</td>
<td>4 weeks if first dose administered at younger than age 12 months and first dose administered at age 12 months or older</td>
<td>4 weeks if current age is younger than 12 months and first dose administered at age 12 months or older</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal⁶</td>
<td>6 weeks</td>
<td>4 weeks if first dose administered at younger than age 12 months and first dose administered at age 12 months or older</td>
<td>No further doses needed for healthy children if previous dose administered at age 12 months or older</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inactivated poliovirus⁷</td>
<td>6 weeks</td>
<td>4 weeks³</td>
<td>4 weeks⁷</td>
<td>6 months⁷; minimum age 4 years for final dose</td>
<td></td>
</tr>
<tr>
<td>Meningococcal¹²</td>
<td>6 weeks</td>
<td>8 weeks¹⁰</td>
<td>See footnote 13</td>
<td>See footnote 13</td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella¹</td>
<td>12 months</td>
<td>4 weeks</td>
<td>See footnote 13</td>
<td>See footnote 13</td>
<td></td>
</tr>
<tr>
<td>Varicella¹⁰</td>
<td>12 months</td>
<td>3 months</td>
<td>See footnote 13</td>
<td>See footnote 13</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A¹⁷</td>
<td>12 months</td>
<td>6 months</td>
<td>See footnote 13</td>
<td>See footnote 13</td>
<td></td>
</tr>
</tbody>
</table>

### Persons aged 7 through 18 years

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Minimum Interval Between Doses</th>
<th>Minimum Interval Between Doses</th>
<th>Minimum Interval Between Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dose 1 to dose 2</td>
<td>Dose 2 to dose 3</td>
<td>Dose 3 to dose 4</td>
</tr>
<tr>
<td>Tetanus, diphtheria, tetanus, diphtheria, &amp; acellular pertussis⁴</td>
<td>7 years⁴</td>
<td>4 weeks</td>
<td>4 weeks if first dose of DTaP/DT administered at younger than age 12 months</td>
<td>6 months if first dose of DTaP/DT administered at age 12 months or older and then no further doses needed for catch-up</td>
</tr>
<tr>
<td>Human papillomavirus¹²</td>
<td>9 years</td>
<td>Routine dosing intervals are recommended¹²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A¹⁷</td>
<td>12 months</td>
<td>6 months</td>
<td>See footnote 13</td>
<td>See footnote 13</td>
</tr>
<tr>
<td>Hepatitis B¹</td>
<td>Birth</td>
<td>4 weeks</td>
<td>8 weeks (and at least 16 weeks after first dose)</td>
<td></td>
</tr>
<tr>
<td>Inactivated poliovirus⁷</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks⁷</td>
<td>6 months⁷</td>
</tr>
<tr>
<td>Meningococcal¹³</td>
<td>6 weeks</td>
<td>8 weeks¹⁷</td>
<td>See footnote 13</td>
<td>See footnote 13</td>
</tr>
<tr>
<td>Measles, mumps, rubella¹</td>
<td>12 months</td>
<td>4 weeks</td>
<td>See footnote 13</td>
<td>See footnote 13</td>
</tr>
<tr>
<td>Varicella¹⁰</td>
<td>12 months</td>
<td>3 months if person is younger than age 13 years</td>
<td>4 weeks if person is aged 13 years or older</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** The above recommendations must be read along with the footnotes of this schedule.
Footnotes — Recommended immunization schedule for persons aged 0 through 18 years—United States, 2014

For further guidance on the use of the vaccines mentioned below, see: http://www.cdc.gov/vaccines/hcp/acip-recs/index.html.
For vaccine recommendations for persons 19 years of age and older, see the adult immunization schedule.

Additional information

• For contraindications and precautions to use of a vaccine and for additional information regarding that vaccine, vaccination providers should consult the relevant ACIP statement available online at http://www.cdc.gov/vaccines/hcp/acip-recs/index.html.
• For purposes of calculating intervals between doses, 4 weeks = 28 days. Intervals of 4 months or greater are determined by calendar months.
• Vaccine doses administered 4 days or less before the minimum interval are considered valid. Doses of any vaccine administered ≥5 days earlier than the minimum interval or minimum age should not be counted as valid doses and should be repeated as age-appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see MMWR, General Recommendations on Immunization and Reports / Vol. 60 / No. 2, Table 1. Recommended and minimum ages and intervals between vaccine doses available online at http://www.cdc.gov/mmwr/pdf/rr/rr6002.pdf.
• Information on travel vaccine requirements and recommendations is available at http://wwwnc.cdc.gov/travel/destinations/list.

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

Routine vaccination:
At birth:
• Administer monovalent HepB vaccine to all newborns before hospital discharge.
• For infants born to hepatitis B surface antigen (HBsAg)-positive mothers, administer HepB vaccine and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) 1 to 2 months after completion of the HepB series, at age 9 through 18 months (preferably at the next well-child visit).
• If mother’s HBsAg status is unknown, within 12 hours of birth administer HepB vaccine regardless of birth weight. For infants weighing less than 2,000 grams, administer HBIG in addition to HepB vaccine within 12 hours of birth. Determine mother’s HBsAg status as soon as possible and, if mother is HBsAg-positive, also administer HBIG for infants weighing 2,000 grams or more as soon as possible, but no later than age 7 days.

Doses following the birth dose:
• The second dose should be administered at age 1 or 2 months. Monovalent HepB vaccine should be used for doses administered before age 6 weeks.
• Infants who did not receive a birth dose should receive 3 doses of a HepB-containing vaccine on a schedule of 0, 1 to 2 months, and 6 months starting as soon as feasible. See Figure 2.
• Administer the second dose 1 to 2 months after the first dose (minimum interval of 4 weeks), administer the third dose at least 8 weeks after the second dose AND at least 16 weeks after the first dose. The final (third or fourth) dose in the HepB vaccine series should be administered no earlier than age 24 weeks.
• Administration of a total of 4 doses of HepB vaccine is permitted when a combination vaccine containing HepB is administered after the birth dose.

Catch-up vaccination:
• Unvaccinated persons should complete a 3-dose series.
• A 2-dose series (doses separated by at least 4 months) of adult formulation Recombivax HB is licensed for use in children aged 11 through 15 years.
• For other catch-up guidance, see Figure 2.

2. Rotavirus (RV) vaccines. (Minimum age: 6 weeks for both RV1 [Rotarix] and RV5 [RotaTeq])

Routine vaccination:
Administer a series of RV vaccine to all infants as follows:
1. If Rotarix is used, administer a 2-dose series at 2 and 4 months of age.
2. If RotaTeq is used, administer a 3-dose series at ages 2, 4, and 6 months.
3. If any dose in the series was RotaTeq or vaccine product is unknown for any dose in the series, a total of 3 doses of RV vaccine should be administered.

Catch-up vaccination:
• The maximum age for the first dose in the series is 14 weeks, 6 days; vaccination should not be initiated for infants aged 15 weeks, 0 days or older.
• The maximum age for the final dose in the series is 8 months, 0 days.
• For other catch-up guidance, see Figure 2.

3. Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine. (Minimum age: 6 weeks.

Exception: DTaP-IPV [Kinrix]: 4 years)

Routine vaccination:
• Administer a 5-dose series of DTaP vaccine at ages 2, 4, 6, 15 through 18 months, and 4 through 6 years. The fourth dose may be administered as early as age 12 months, provided at least 6 months have elapsed since the third dose.

Catch-up vaccination:
• The fifth dose of DTaP vaccine is not necessary if the fourth dose was administered at age 4 years or older.
• For other catch-up guidance, see Figure 2.

4. Tetanus and diphtheria toxoids and acellular pertussis (Tdap) vaccine. (Minimum age: 10 years for Boostrix, 11 years for Adacel)

Routine vaccination:
• Administer 1 dose of Tdap vaccine to all adolescents aged 11 through 12 years.
• Tdap may be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.
• Administer 1 dose of Tdap vaccine to pregnant adolescents during each pregnancy (preferred during 27 through 36 weeks gestation) regardless of time since prior Td or Tdap vaccination.

Catch-up vaccination:
• Persons aged 5 years and older who are not fully immunized with DTaP vaccine should receive Tdap vaccine as 1 (preferably the first) dose in the catch-up series; if additional doses are needed, use Td vaccine. For children 7 through 10 years who receive a dose of Tdap as part of the catch-up series, an adolescent Tdap vaccine dose at age 11 through 12 years should NOT be administered. Td should be administered instead 10 years after the Tdap dose.
• Persons aged 11 through 18 years who have not received Tdap vaccine should receive a dose followed by tetanus and diphtheria toxoids (Td) booster doses every 10 years thereafter.
• Inadvertent doses of DTaP vaccine:
  - If administrated inadvertently to a child aged 7 through 10 years may count as part of the catch-up series. This dose may count as the adolescent Tdap dose, or the child can later receive a Tdap booster dose at age 11 through 12 years.
  - If administrated inadvertently to an adolescent aged 11 through 18 years, the dose should be counted as the adolescent Tdap booster.
• For other catch-up guidance, see Figure 2.

5. Haemophilus influenzae type b (Hib) conjugate vaccine. (Minimum age: 6 weeks for PRP-T [ACTHib, DTaP-IPV/Hib (Pentacel) and Hib-MenCY (MenHibrix)], PRP-OMP [PedvaxHIB or COMVAX], 12 months for PRP-T [Hiberix])

Routine vaccination:
• Administer a 2- or 3-dose Hib vaccine primary series and a booster dose (dose 3 or 4 depending on vaccine used in primary series) at age 12 through 15 months to complete a full Hib vaccine series.
• The primary series with ActHib, MenHibrix, or Pentacel consists of 3 doses and should be administered at 2, 4, and 6 months of age. The primary series with PedvaxHib or COMVAX consists of 2 doses and should be administered at 2 and 4 months of age; a dose at age 6 months is not indicated.
• One booster dose (dose 3 or 4 depending on vaccine used in primary series) of any Hib vaccine should be administered at age 12 through 15 months. An exception is Hibericin vaccine. Hibericin should only be used for the booster (final) dose in children aged 12 months through 4 years who have received at least 1 prior dose of Hib-containing vaccine.
5. **Haemophilus influenzae** type b (Hib) conjugate vaccine (cont'd)


**Catch-up vaccination:**

- If dose 1 was administered at ages 12 through 14 months, administer a second (final) dose at least 8 weeks after dose 1, regardless of Hib vaccine used in the primary series.
- If the first 2 doses were PRP-OMP (PedrixHIB or COMVAX), and were administered at age 11 months or younger, the third (and final) dose 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 second dose at least 4 weeks later and a third (and final) dose at age 12 through 15 months or 8 weeks after second dose, whichever is later, regardless of Hib vaccine used for first dose.
- If first dose is administered younger than 12 months of age and second dose is given between 12 through 14 months of age, a third (and final) dose should be given 8 weeks later.
- For other catch-up guidance, see Figure 2. For catch-up guidance related to MenHibrix, please refer to the meningococcal vaccine footnotes and also MMWR March 22, 2013; 62(RR02):1-22, available at [http://www.cdc.gov/mmwr/pdf/rr/rr6202.pdf](http://www.cdc.gov/mmwr/pdf/rr/rr6202.pdf).

**Vaccination of persons with high-risk conditions:**

- Children aged 12 through 59 months who are at increased risk for Hib disease, including those with anatomic or functional asplenia (including sickle cell disease), human immunodeficiency virus (HIV) infection, immunoglobulin deficiency, or early component complement deficiency, who have received either no doses or only 1 dose of Hib vaccine before 12 months of age, should receive 2 additional doses of Hib vaccine 8 weeks apart; children who received 2 or more doses of Hib vaccine before 12 months of age should receive 1 additional dose.
- For patients younger than 5 years of age undergoing chemotherapy or radiation treatment who received a Hib vaccine dose(s) within 14 days starting therapy or during therapy, repeat the dose(s) at least 3 months following therapy completion.
- Recipients of hematopoietic stem cell transplant (HSCT) should be revaccinated with a 3-dose regimen of Hib vaccine starting 6 to 12 months after successful transplant, regardless of vaccination history; doses should be administered at least 4 weeks apart.
- A single dose of any Hib-containing vaccine should be administered to unimmunized* children and adolescents 15 months of age and older undergoing an elective splenectomy; if possible, vaccine should be administered at least 14 days before procedure.
- Hib vaccine is not routinely recommended for patients 5 years or older. However, 1 dose of Hib vaccine should be administered to unimmunized* persons aged 5 years or older who have anatomic or functional asplenia (including sickle cell disease) and unvaccinated persons 5 through 18 years of age with human immunodeficiency virus (HIV) infection.
- * Patients who have not received a primary series and booster doses or at least 1 dose of Hib vaccine after 14 months of age are considered unimmunized.

6. **Pneumococcal vaccines.** (Minimum age: 6 weeks for PCV13, 2 years for PPSV23)

**Routine vaccination with PCV13:**

- Administer a 4-dose series of PCV13 vaccine at ages 2, 4, and 6 months and at age 12 through 15 months.
- For children aged 14 through 59 months who have received an age-appropriate series of 7-valent PCV (PCV7), administer a single supplemental dose of 13-valent PCV (PCV13).

**Catch-up vaccination with PCV13:**

- Administer 1 dose of PCV13 to all healthy children aged 2 through 59 months who are not completely vaccinated for their age.
- For other catch-up guidance, see Figure 2.

**Vaccination of persons with high-risk conditions with PCV13 and PPSV23:**

- All recommended PCV13 doses should be administered prior to PPSV23 vaccination if possible.
- For children 2 through 5 years of age with any of the following conditions: chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma if treated with high-dose oral corticosteroid therapy); diabetes mellitus; cerebrospinal fluid leak; cochlear implant; sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; HIV infection; chronic renal failure; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin disease; generalized malignancy; solid organ transplantation; or multiple myelomas.
  1. Administer 1 dose of PCV13 if 3 doses of PCV (PCV7 and/or PCV13) were received previously.
  2. Administer 2 doses of PCV13 at least 8 weeks apart if fewer than 3 doses of PCV (PCV7 and/or PCV13) were received previously.
  3. Administer 1 supplemental dose of PCV13 if 4 doses of PCV7 or other age-appropriate complete PCV7 series was received previously.
  4. The minimum interval between doses of PCV (PCV7 or PCV13) is 8 weeks.
  5. For children who have no history of PPSV23 vaccination, administer PPSV23 at least 8 weeks after the most recent dose of PCV13.
  6. For children aged 6 through 18 years who have cerebrospinal fluid leak; cochlear implant; sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiencies; HIV infection; chronic renal failure; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin disease; generalized malignancy; solid organ transplantation; or multiple myelomas:
    1. If neither PCV13 nor PPSV23 has been received previously, administer 1 dose of PCV13 now and 1 dose of PPSV23 at least 8 weeks later.
    2. If PCV13 has been received previously but PPSV23 has not, administer 1 dose of PCV13 at least 8 weeks before the most recent dose of PPSV23.
    3. If PPSV23 has been received previously but PCV13 has not, administer 1 dose of PCV13 at least 8 weeks after the most recent dose of PPSV23.

- For children aged 6 through 18 years with chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure), chronic lung disease (including asthma if treated with high-dose oral corticosteroid therapy), diabetes mellitus, alcoholism, or chronic liver disease, who have not received PPSV23, administer 1 dose of PPSV23. If PCV13 has been received previously, then PPSV23 should be administered at least 8 weeks after completion of PCV13.
- A single revaccination with PPSV23 should be administered 5 years after the first dose to children with sickle cell disease or other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiencies; HIV infection; chronic renal failure; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin disease; generalized malignancy; solid organ transplantation; or multiple myelomas.

7. **Inactivated poliovirus vaccine (IPV).** (Minimum age: 6 weeks)

**Routine vaccination:**

- Administer a 4-dose series of IPV at ages 2, 4, through 18 months, and 4 through 6 years. The final dose in the series should be administered on or after the fourth birthday and at least 6 months after the previous dose.

**Catch-up vaccination:**

- 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).
- If 4 or more doses are administered before age 4 years, an additional dose should be administered at age 4 through 6 years and at least 6 months after 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 after 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. IPV is not routinely recommended for U.S. residents aged 18 years or older.
- For other catch-up guidance, see Figure 2.

8. **Influenza vaccines.** (Minimum age: 6 months for inactivated influenza vaccine [IIV], 2 years for live, attenuated influenza vaccine [LAIV])

**Routine vaccination:**

- Administer influenza vaccine annually to all children beginning at age 6 months. For most healthy, nonpregnant persons aged 2 through 49 years, either LAIV or IIV may be used. However, LAIV should NOT be administered to some persons, including 1) those with asthma, 2) children 2 through 4 years who had wheezing in the past 12 months, or 3) those who have any other medical conditions that predispose them to influenza complications. For all other contraindications to use of LAIV, see MMWR 2013; 62 (No. RR-7):1-43, available at [http://www.cdc.gov/mmwr/pdf/rr/rr6207.pdf](http://www.cdc.gov/mmwr/pdf/rr/rr6207.pdf).

**For children aged 6 months through 8 years:**

- For the 2014–15 season, follow dosing guidelines in the 2014 ACIP influenza vaccine recommendations.
- For persons aged 9 years and older:
  - Administer 1 dose.
9. Measles, mumps, and rubella (MMR) vaccine. (Minimum age: 12 months for routine vaccination)
   Routine vaccination:
   • Administer a 2-dose series of MMR vaccine at ages 12 through 15 months and 4 through 6 years. The second
dose may be administered before age 4 years, provided at least 4 weeks have elapsed since the first dose.
• Administer 1 dose of MMR vaccine to infants aged 6 through 11 months before departure from the United
   States for international travel. These children should be revaccinated with 2 doses of MMR vaccine, the first
   at age 12 through 15 months (12 months if the child remains in an area where disease risk is high), and the
   second dose at least 4 weeks later.
• Administer 2 doses of MMR vaccine to children aged 12 months and older before departure from the
   United States for international travel. The first dose should be administered on or after age 12 months
   and the second dose at least 4 weeks later.
Catch-up vaccination:
• Ensure that all school-aged children and adolescents have had 2 doses of MMR vaccine; the minimum
   interval between the 2 doses is 4 weeks.
10. Varicella (VAR) vaccine. (Minimum age: 12 months)
   Routine vaccination:
   • Administer a 2-dose series of VAR vaccine at ages 12 through 15 months and 4 through 6 years. The
     second dose may be administered before age 4 years, provided at least 3 months have elapsed since
     the first dose. If the second dose was administered at least 4 weeks after the first dose, it can be
     accepted as valid.
Catch-up vaccination:
   • Ensure that all persons aged 7 through 18 years without evidence of immunity (see MMWR 2007; 56
     [No. RR-4], available at http://www.cdc.gov/mmwr/pdf/rr/rr5604.pdf) have 2 doses of varicella vaccine.
   For children aged 7 through 12 years, the recommended minimum interval between doses is 3 months
   (if the second dose was administered at least 4 weeks after the first dose, it can be accepted as valid);
   for persons aged 13 years and older, the minimum interval between doses is 4 weeks.
11. Hepatitis A (HepA) vaccine. (Minimum age: 12 months)
   Routine vaccination:
   • Initiate the 2-dose HepA vaccine series at 12 through 23 months; separate the 2 doses by 6 to 18 months.
   • Children who have received 1 dose of HepA vaccine before age 24 months should receive a second
dose 6 to 18 months after the first dose.
   • For any person aged 2 years and older who has not already received the HepA vaccine series, 2 doses
     of HepA vaccine separated by 6 to 18 months may be administered if immunity against hepatitis A virus
     infection is desired.
Catch-up vaccination:
   • The minimum interval between the two doses is 6 months.
Special populations:
   • Administer 2 doses of HepA vaccine at least 6 months apart to previously unvaccinated persons who
     live in areas where vaccination programs target older children, or who are at increased risk for infection.
   This includes persons traveling to or working in countries that have high or intermediate endemicity
   of infection; men having sex with men; users of injection and non-injection illicit drugs; persons who work
   with HAV-infected primates or with HAV in a research laboratory; persons with clotting-factor disorders;
   persons with chronic liver disease; and persons who anticipate close, personal contact (e.g., household
   or regular babysitting) with an international adoptee during the first 60 days after arrival in the United
   States from a country with high or intermediate endemicity. The first dose should be administered as
   soon as the adoption is planned, ideally 2 or more weeks before the arrival of the adoptee.
12. Human papillomavirus (HPV) vaccines. (Minimum age: 9 years for HPV2 [Cervarix] and HPV4
    [Gardasil])
   Routine vaccination:
   • Administer a 3-dose series of HPV vaccine on a schedule of 0, 1-2, and 6 months to all adolescents aged
     11 through 12 years. Either HPV2 or HPV4 may be used for females, and only HPV4 may be used for males.
   • The vaccine series may be started at age 9 years.
   • Administer the second dose 1 to 2 months after the first dose (minimum interval of 4 weeks),
     administer the third dose 24 weeks after the first dose and 16 weeks after the second dose (minimum
     interval of 12 weeks).
   Catch-up vaccination:
   • Administer the vaccine series to females (either HPV2 or HPV4) and males (HPV4) at age 13 through 18
     years if not previously vaccinated.
   • Use recommended routine dosing intervals (see above) for vaccine series catch-up.
13. Meningococcal conjugate vaccines. (Minimum age: 6 weeks for Hib-MenHibrix [MenHibrix], 9 months
    for MenACWY-D [Menactra], 2 months for MenACWY-CRM [Menveo])
   Routine vaccination:
   • Administer a single dose of Menactra or Menveo vaccine at age 11 through 12 years, with a booster
dose at age 16 years if the first dose is administered at age 13 through 15 years, a booster dose should be administered at age 16 through 18 years with a minimum interval of at least 8 weeks between doses.
   • For children aged 2 months through 18 years with high-risk conditions, see below.
Catch-up vaccination:
   • Administer Menactra or Menveo vaccine at age 13 through 18 years if not previously vaccinated.
   • If the first dose is administered at age 13 through 15 years, a booster dose should be administered at
     age 16 through 18 years with a minimum interval of at least 8 weeks between doses.
   • If the first dose is administered at age 16 years or older, a booster dose is not needed.
   • For other catch-up guidance, see Figure 2.
Vaccination of persons with high-risk conditions and other persons at increased risk of disease:
   • Children with anatomic or functional asplenia (including sickle cell disease):
     1. For children younger than 19 months of age, administer a 4-dose infant series of MenHibrix or Menveo at
        2, 4, 6, and 12 through 15 months of age.
     2. For children aged 19 through 23 months who have not completed a series of MenHibrix or Menveo,
        administer 2 primary doses of Menveo at least 3 months apart.
     3. For children aged 24 months and older who have not received a complete series of MenHibrix or
        Menveo, administer 2 primary doses of Menveo at least 3 months apart.
   • Children with persistent complement component deficiency:
     1. For children younger than 19 months of age, administer a 4-dose infant series of either MenHibrix or
        Menveo at 2, 4, 6, and 12 through 15 months of age.
     2. For children 7 through 23 months who have not received vaccination, two options exist depending
        on age and vaccine brand:
        a. For children who initiate vaccination with Menveo at 7 months through 23 months of age, a 2-dose
           series should be administered with the second dose after 12 months of age and at least 3 months
           after the first dose.
        b. For children who initiate vaccination with Menactra at 9 months through 23 months of age, a 2-dose
           series of Menactra should be administered at least 3 months apart.
     3. For children aged 24 months and older who have not received a complete series of MenHibrix, Menveo,
        or Menactra, administer 2 primary doses of either Menactra or Menveo at least 2 months apart.
     • For children who travel to or reside in countries in which meningococcal disease is hyperendemic or
       epidemic, including countries in the African meningitis belt or the Hajj, administer an age-
       appropriate formulation and series of Menactra or Menveo for protection against serogroups A and
       W meningococcal disease. Prior receipt of MenHibrix is not sufficient for children traveling to the
       meningitis belt or the Hajj because it does not contain serogroups A or W.
     • For children at risk during a community outbreak attributable to a vaccine serogroup, administer or
       complete an age- and formulation-appropriate series of MenHibrix, Menactra, or Menveo.
     • For other catch-up recommendations for these persons, refer to MMWR 2013; 62(RR02);1-22,
       available at http://www.cdc.gov/mmwr/pdf/preview/mmwrhtml/r6202a1.htm.

Catch-up recommendations for persons with high-risk conditions:
1. If MenHibrix is administered to achieve protection against meningococcal disease, a complete age-
   appropriate series of MenHibrix should be administered.
2. If MenHibrix is given at or after 12 months of age, a total of 2 doses should be given at least
   8 weeks apart to ensure protection against serogroups C and Y meningococcal disease.
3. For children who initiate vaccination with Menveo at 7 months through 9 months of age, a 2-dose
   series should be administered with the second dose after 12 months of age and at least 3 months
   after the first dose.
4. For other catch-up recommendations for these persons, refer to MMWR 2013; 62(RR02);1-22,
   available at http://www.cdc.gov/mmwr/pdf/preview/mmwrhtml/r6202a1.htm.

For further guidance on the use of the vaccines mentioned below, see: http://www.cdc.gov/vaccines/hcp/acip-recs/index.html.