



# Maryland Department of Health and Mental Hygiene

## 2012 Recommended Childhood Immunization Schedule

| Age ▶<br>Vaccine ▼                          | Birth        | 2 months                  | 4 months     | 6 months     | 9 months    | 12 months    | 15 months   | 18 months   | 2-3 years   | 4-6 years   |
|---|--------------|---------------------------|--------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|
| Hepatitis B <sup>1</sup>                    | <b>Hep B</b> | <b>Hep B</b>              |              | <b>Hep B</b> |             |              |             |             |             |             |
| Rotavirus <sup>2</sup>                      |              | <b>RV</b>                 | <b>RV</b>    | <b>RV</b>    |             |              |             |             |             |             |
| Diphtheria, Tetanus, Pertussis <sup>3</sup> |              | <b>DTaP</b>               | <b>DTaP</b>  | <b>DTaP</b>  |             |              | <b>DTaP</b> |             |             | <b>DTaP</b> |
| Haemophilus Influenzae type b <sup>4</sup>  |              | <b>Hib</b>                | <b>Hib</b>   | <b>Hib</b>   |             |              | <b>Hib</b>  |             |             |             |
| Pneumococcal <sup>5</sup>                   |              | <b>PCV13</b>              | <b>PCV13</b> | <b>PCV13</b> |             | <b>PCV13</b> |             |             | <b>PPSV</b> |             |
| Polio <sup>6</sup>                          |              | <b>IPV</b>                | <b>IPV</b>   | <b>IPV</b>   |             |              |             |             |             | <b>IPV</b>  |
| Influenza <sup>7</sup>                      |              | <b>INFLUENZA (YEARLY)</b> |              |              |             |              |             |             |             |             |
| Measles, Mumps, Rubella <sup>8</sup>        |              |                           |              |              |             | <b>MMR</b>   |             |             |             | <b>MMR</b>  |
| Varicella <sup>9</sup>                      |              |                           |              |              |             | <b>Var</b>   |             |             |             | <b>Var</b>  |
| Hepatitis A <sup>10</sup>                   |              |                           |              |              |             | <b>HepA</b>  |             | <b>HepA</b> | <b>HepA</b> |             |
| Meningococcal <sup>11</sup>                 |              |                           |              |              | <b>MCV4</b> |              |             |             |             |             |

Please see reverse side for footnotes

Certain High-Risk Groups

This schedule includes recommendations in effect as of December 23, 2011. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. 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)

Approved by MedChi - The Maryland State Medical Society

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# Maryland 2012 Recommended Childhood Immunization Schedule Footnotes\*

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

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

**At birth: Administer monovalent HepB 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) completion of at least 3 doses of the HepB series, at age 9 through 18 months (generally at the next well-child visit).
- If mother's HBsAg status is unknown, within 12 hours of birth administer HepB vaccine for infants weighing  $\geq 2,000$  grams, and HepB vaccine plus HBIG for infants weighing  $< 2,000$  grams. Determine mother's HBsAg status as soon as possible and, if she is HBsAg-positive, administer HBIG for infants weighing  $\geq 2,000$  grams (no later than age 1 week).

### Doses following the birth dose:

- The second dose should be administered at age 1 to 2 months. Monovalent HepB vaccine should be used for doses administered before age 6 weeks.
- Administration of a total of 4 doses of HepB vaccine 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 a HepB containing vaccine starting as soon as feasible.
- The minimum interval between dose 1 and dose 2 is 4 weeks, and between dose 2 and 3 is 8 weeks. The final (third or fourth) dose in the HepB vaccine series should be administered no earlier than age 24 weeks and at least 16 weeks after the first dose.

## 2. Rotavirus vaccine (RV). (Minimum age: 6 weeks)

- Administer the first dose at age 6 through 14 weeks (maximum age: 14 weeks 6 days). Vaccination should not be initiated for infants aged 15 weeks 0 days or older.
- The maximum age for the final dose in the series is 8 months 0 days
- If Rotarix is administered at ages 2 and 4 months, a dose at 6 months is not indicated.

## 3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP).

(Minimum age: 6 weeks)

- The fourth dose may be administered as early as age 12 months, provided at least 6 months have elapsed since the third dose and the child is unlikely to return at 15 months of age.

## 4. 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 only be used for the booster (final) dose in children aged 12 months through 4 years.

## 5. Pneumococcal vaccine. (Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV])

- Administer 1 dose of PCV to all healthy children aged 24 through 59 months who are not completely vaccinated for their age.
- For children who have received an age-appropriate series of 7-valent PCV (PCV7), a single supplemental dose of 13-valent PCV (PCV13) is recommended for:
  - All children aged 14 through 59 months
  - Children aged 60 through 71 months with underlying medical conditions.
- 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. See MMWR 2010;59(No. RR-11).

## 6. 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 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 most healthy children aged 2 years and older, either LAIV or TIV may be used. However, LAIV should not be administered to some children, including 1) children with asthma, 2) children 2 through 4 years who had wheezing in the past 12 months, or 3) children who have any other underlying medical conditions that predispose them to influenza complications. For all other contraindications to use of LAIV, MMWR 2010;59(No. RR-8).
- For children aged 6 months through 8 years:
  - For the 2012–13 season, follow dosing guidelines in the 2012 ACIP influenza vaccine recommendations.

## 8. 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.
- Administer MMR vaccine to infants aged 6 through 11 months who are traveling internationally. These children should be revaccinated with 2 doses of MMR vaccine, the first at ages 12 through 15 months and at least 4 weeks after the previous dose, and the second at ages 4 through 6 years.

## 9. 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.

## 10. Hepatitis A vaccine (HepA). (Minimum age: 12 months)

- Administer 2 doses at least 6 months apart.
- Unvaccinated children 24 months and older at high risk should be vaccinated. See MMWR 2006;55(No. RR-7).
- A 2-dose HepA vaccine series is recommended for anyone aged 24 months and older, previously unvaccinated, for whom immunity against hepatitis A virus infection is desired.

## 11. Meningococcal conjugate vaccine, quadrivalent (Minimum age: 9 months for Menactra [MCV4-D], 2 years for Menveo [MCV4-CRM])

- For children aged 9 through 23 months 1) with persistent complement component deficiency; 2) who are residents of or travelers to countries with hyperendemic or epidemic disease; or 3) who are present during outbreaks caused by a vaccine serogroup, administer 2 primary doses of MCV4-D ideally at ages 9 months and 12 months or at least 8 weeks apart.
- For children aged 24 months and older with 1) persistent complement component deficiency who have not been previously vaccinated; or 2) anatomic/functional asplenia, administer 2 primary doses of either MCV4 at least 8 weeks apart.
- For children with anatomic/functional asplenia, if MCV4 (Menactra) is used, administer at a minimum age of 2 years and at least 4 weeks after completion of all PCV doses.
- See MMWR 2011;60:72–6.

# Maryland 2012 Recommended Adolescent Immunization Schedule Footnotes\*

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

## 1. Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap).

(Minimum age: 10 years for Boostrix and 11 years for Adacel)

- 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.
- Tdap vaccine should be substituted for a single dose of Td in the catchup series for children aged 7 through 10 years. Refer to the catch-up schedule if additional doses of tetanus and diphtheria toxoid-containing vaccine are needed.
- Tdap vaccine can be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.

## 2. Human papillomavirus vaccine (HPV). (HPV4 [Gardasil] and HPV2 [Cervarix]).

(Minimum age: 9 years)

- Either HPV4 or HPV2 is recommended in a 3-dose series for females aged 11 or 12 years. HPV4 is recommended in a 3-dose series for males aged 11 or 12 years.
- The vaccine series can be started beginning at age 9 years.
- 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).
- See MMWR 2010;59:626–32.

## 3. Meningococcal conjugate vaccine, quadrivalent (MCV4). (Minimum age: 2 years)

**Proof of vaccination is required for individuals living in on-campus student housing at Maryland institutions of higher learning (COMAR 10.06.05)**

- Administer MCV4 at age 11 through 12 years with a booster dose at age 16 years.
- Administer MCV4 at age 13 through 18 years if patient is 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 after the preceding dose.
- If the first dose is administered at age 16 years or older, a booster dose is not needed.
- Administer 2 primary doses at least 8 weeks apart to previously unvaccinated persons with persistent complement component deficiency or anatomic/functional asplenia, and 1 dose every 5 years thereafter.
- Adolescents aged 11 through 18 years with human immunodeficiency virus (HIV) infection should receive a 2-dose primary series of MCV4, at least 8 weeks apart.
- See MMWR 2011;60:72–76.

## 4. Influenza vaccines (trivalent inactivated influenza vaccine [TIV] and live, attenuated influenza vaccine [LAIV]).

- For most healthy, nonpregnant persons, either LAIV or TIV may be used, except LAIV should not be used for some persons, including those with asthma or any other underlying medical conditions that predispose them to influenza complications. For all other contraindications to use of LAIV, see MMWR 2010;59(No.RR-8).
- Administer 1 dose to persons aged 9 years and older.
- For children aged 6 months through 8 years:
  - For the 2012–13 season, follow dosing guidelines in the 2012 ACIP influenza vaccine recommendations.

## 5. Pneumococcal vaccines (pneumococcal conjugate vaccine [PCV] and pneumococcal polysaccharide vaccine [PPSV]).

- A single dose of PCV may be administered to children aged 6 through 18 years who have anatomic/functional asplenia, HIV infection or other immunocompromising condition, cochlear implant, or cerebral spinal fluid leak. See MMWR 2010:59 (No. RR-11).
- Administer PPSV at least 8 weeks after the last dose of PCV to children aged 2 years or older with certain underlying medical conditions, including a cochlear implant. A single revaccination should be administered after 5 years to children with anatomic/functional asplenia or an immunocompromising condition.

## 6. Hepatitis A vaccine (HepA).

- HepA vaccine is recommended for children 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 virus infection is desired
- Administer 2 doses at least 6 months apart to unvaccinated persons.

## 7. Hepatitis B vaccine (HepB).

- 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.

## 8. Inactivated poliovirus vaccine (IPV).

- The final dose in the series should be administered 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.

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

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

## 10. Varicella vaccine.

- For persons without evidence of immunity (see MMWR 2007;56[No. RR-4], administer 2 doses if not previously vaccinated or the second dose if only 1 dose has been administered.
- For persons aged 7 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.
- For persons aged 13 years and older, the minimum interval between doses is 4 weeks.



# Maryland Department of Health and Mental Hygiene

## 2012 Recommended Adolescent Immunization Schedule

| Age ►                                       | 7 - 10 Years                      | 11-12 Years          | 13 –18 Years         |
|---|-----------------------------------|----------------------|----------------------|
| Vaccine ▼                                   |                                   |                      |                      |
| Tetanus, Diphtheria, Pertussis <sup>1</sup> | <b>Tdap</b><br>(if indicated)     | <b>Tdap</b>          | <b>Tdap</b>          |
| Human Papillomavirus <sup>2</sup>           | See footnote <sup>2</sup>         | <b>HPV (3 Doses)</b> | <b>HPV (3 Doses)</b> |
| Meningococcal <sup>3</sup>                  | <b>MCV4</b>                       | <b>MCV4</b>          | <b>MCV4</b>          |
| Influenza <sup>4</sup>                      | <b>Influenza ( Yearly)</b>        |                      |                      |
| Pneumococcal <sup>5</sup>                   | <b>Pneumococcal</b>               |                      |                      |
| Hepatitis A <sup>6</sup>                    | <b>Complete Hep A Series</b>      |                      |                      |
| Hepatitis B <sup>7</sup>                    | <b>Complete Hep B Series</b>      |                      |                      |
| Inactivated Polio <sup>8</sup>              | <b>Complete Inactivated Polio</b> |                      |                      |
| Measles, Mumps, Rubella <sup>9</sup>        | <b>Complete MMR Series</b>        |                      |                      |
| Varicella <sup>10</sup>                     | <b>Complete Varicella Series</b>  |                      |                      |
| Please see reverse side for footnotes       |                                   |                      |                      |

Do not restart any series when there is proof of prior vaccination, just complete series by administering missing doses.

Recommended ages for all Adolescents

Catch-Up Vaccination

Certain High-Risk Groups

This schedule includes recommendations in effect as of December 23, 2011. The use of a combination vaccine generally is preferred over separate injections of its equivalent component vaccines. 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).

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