O\footnote{CDC Summary © Oregon Health Authority. The 2015 Child and Adolescent Immunization Schedules. OREGON HEALTH AUTHORITY. Vol 64, No 5. April 9, 2015. www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html}n January 26, CDC’s Advisory Committee on Immunization Practices (ACIP) released its 2015 recommended schedules for Birth-to-18-years-of-age and “Catch-up” immunizations. This issue of the CD \footnote{CDC Summary © Oregon Health Authority. The 2015 Child and Adolescent Immunization Schedules. OREGON HEALTH AUTHORITY. Vol 64, No 5. April 9, 2015. www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html}Summary presents the new tables, along with their footnotes, and highlights changes in recommendations since last year.

**ROUTINE SCHEDULE:**

- **Influenza:** In its recommendation for annual vaccination against influenza, the schedule now distinguishes among two groups of children 2–18 years of age, who may receive either inactivated influenza vaccine (IIV) or live, attenuated influenza vaccine (LAIV): 2–8 years old (who may need either 1 or 2 doses, depending upon receipt of vaccine in prior seasons); and 9–18 years old (who need but 1 dose).

Antiviral medications are contraindicated for 48 hours prior to LAIV vaccination. Contraindications for IIV have been clarified (see footnote 8).

- **Measles:** MMR vaccine is recommended for children 6–11 months of age before they embark on international travel. At this young age, the vaccine may protect the child from measles while abroad, but does not obviate the need for two doses given at the usually recommended time (at least 12 months of age, and separated by at least 4 weeks) (footnote 9).

- **Meningococcal conjugate:** The vaccination recommendations for persons with high-risk conditions and other persons at increased risk of disease are now listed by specific meningococcal conjugate vaccine. Recommendations for travelers are unchanged (see footnote 13).

N.b., the vaccines referred to here are the serogroup A, C, Y, W-135 quadrivalent meningococcal vaccines; ACIP recommendations for the new serogroup B vaccines have yet to be published, but see CD \footnote{CDC Summary © Oregon Health Authority. The 2015 Child and Adolescent Immunization Schedules. OREGON HEALTH AUTHORITY. Vol 64, No 5. April 9, 2015. www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html}Summary on Meningococcus Serogroup B (3/24/2015).

- **No changes** were made to the Hepatitis A or B, Rotavirus, Polio, Varicella, or HPV vaccine recommendations.

**CATCH-UP SCHEDULE:**

- **Haemophilus influenzae type b (Hib):** The recommendations emphasize that catch up with the third and final dose of Hib vaccine on a schedule of 0, 1 to 2 months, and 6 months starting as soon as feasible. See Table 2.

- **Influenza:** 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 second dose. The final (third or fourth) dose in the HepB vaccine series should be administered 24 weeks after the birth dose.

- **Meningococcal conjugate:** Administration of a total of 4 doses of HepB vaccine is permitted when a combination vaccine containing HepB is administered after the birth dose.

- **Pneumococcal:** Contraindications for the new serogroup B vaccines were made to the Hepatitis A or B, Rotavirus, Polio, Varicella, or HPV vaccine recommendations.

- **Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine:** 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. The third dose of DTaP need not be repeated if it was administered at least 4 weeks after the second dose. The fifth dose of DTaP is not necessary if the fourth dose was administered at age ≥4 years.

- **Rotavirus (RV) vaccines:** Administer a 3-dose series of RV vaccine to all infants at ages 2, 4, and 6 months. The fourth dose may be administered at age 12 months, provided at least 6 months have elapsed since the third dose. However, the fourth dose of DTaP need not be repeated if it was administered at least 4 months after the third dose of DTaP.

- **Tetanus and diphtheria toxoids and acellular pertussis (TdP) vaccine:** Administer 1 dose of Tdap vaccine to all adolescents aged 11–12 years.
4. Tdap continued

- If administered inadvertently to a child

5. Haemophilus influenzae type b (Hib) conjugate vaccine

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 12–15 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 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 12–15 months. An exception is Hibrix vaccine. Hibrix should only be used for the booster (final) dose in children aged 12 months–4 years who have received at least 1 prior dose of Hib-containing vaccine.

- For recommendations on the use of MenHibrix in patients at increased risk for meningococcal disease, please refer to the meningococcal vaccine footnotes and also to MMWR February 28, 2014 / 63(RR01);1–13, available at www.cdc.gov/mmwr/pdf/rr/rr6301.pdf

Catch-up vaccination:

- If the first dose was administered at age 7–11 months, administer the second dose at least 4 weeks later and a third (and final) dose at age 12–15 months or 8 weeks after second dose, whichever is later.

- If first dose is administered before the first birthday and second dose administered at <15 months, a third (and final) dose should be given 8 weeks later.

- For unvaccinated children aged ≥15 months, administer only 1 dose.

- For other catch-up guidance, see Table 2.

5. Haemophilus influenzae type b (Hib) conjugate vaccine

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 12–15 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 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 12–15 months. An exception is Hibrix vaccine. Hibrix should only be used for the booster (final) dose in children aged 12 months–4 years who have received at least 1 prior dose of Hib-containing vaccine.

- For recommendations on the use of MenHibrix in patients at increased risk for meningococcal disease, please refer to the meningococcal vaccine footnotes and also to MMWR February 28, 2014 / 63(RR01);1–13, available at www.cdc.gov/mmwr/pdf/rr/rr6301.pdf

Catch-up vaccination:

- If dose 1 was administered at ages 12–14 months, administer a second (final) dose at least 8 weeks after dose 1, regardless of Hib vaccine used in the primary series.

- If both doses were PRP-OMP (PedvaxHIB or COMVAX), and were administered before the first birthday, the third (and final) dose should be administered at age 12–15 months and at least 8 weeks after the second dose.

- If the first dose was administered at age 7–11 months, administer the second dose at least 4 weeks later and a third (and final) dose at age 12–15 months or 8 weeks after second dose, whichever is later.

- If first dose is administered before the first birthday and second dose administered at <15 months, a third (and final) dose should be given 8 weeks later.

- For unvaccinated children aged ≥15 months, administer only 1 dose.

- For other catch-up guidance, see Table 2.

Vaccination of persons with high-risk conditions:

- Children aged 12–59 months who are at increased risk for Hib disease, including chemotherapy recipients and 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 <12 months of age, should receive 2 additional doses of Hib vaccine 8 weeks after the most recent dose. If the first dose was administered at age 7–11 months, a third (and final) dose should be given 8 weeks later.

- For patients <5 years of age undergoing chemotherapy or radiation treatment who received a Hib vaccine dose(s) within 14 days of 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 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 of age. However, 1 dose of Hib vaccine should be administered to unimmunized* persons aged ≥5 years who have anatomic or functional asplenia (including sickle cell disease) and unvaccinated persons 5–18 years of age with human immunodeficiency virus (HIV) infection has been recommended.

- Patients who have not received a primary series and booster dose or at least 1 dose of Hib vaccine after 14 months of age are considered unimmunized.

6. Pneumococcal vaccines.

Routine vaccination with PCV13:

- Administer a 4-dose series of PCV13 vaccine at ages 2, 4, and 6 months and at age 12–15 months.

- For children aged 14–59 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 24–59 months who are not completely vaccinated for their age.

- For other catch-up guidance, see Table 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 2–5 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; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin's disease; solid organ transplantation; or congenital immunodeficiency:

  1. Administer 1 dose of PCV13 if any incomplete schedule of 3 doses of PCV7 (PCV7 and/or PCV13) were received previously.

  2. Administer 2 doses of PCV13 at least 8 weeks apart if unvaccinated or any incomplete schedule <3 doses of PCV7 (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 PCV7 (PCV7 or PCV13) is 8 weeks.

  5. For children with no history of PPSV23 vaccination, administer PPSV23 at least 8 weeks after the last dose of PCV13.

  6. For children aged 6–18 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's disease; generalized malignancy; solid organ transplantation; or multiple myeloma:

    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 PPSV23 at least 8 weeks after the most recent dose of PCV13.

    3. If PPVS23 has been received previously but PCV13 has not, administer 1 dose of PCV13 at least 8 weeks after the most recent dose of PPSV23.

  7. For children aged 6–18 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 and 1 dose of PCV13.

  8. For children aged 6–18 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's disease; generalized malignancy; solid organ transplantation; or multiple myeloma.

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

Routine vaccination:
- Administer a 4-dose series of IPV at ages 2, 4, 6–18 months, and 4–6 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 of imminent exposure to circulating poliovirus (i.e., travel to a polio-endemic region or during an outbreak).

- If ≥4 doses are administered age <4 years, an additional dose should be administered at age 4–6 years and at least 6 months after the previous dose.

- If ≥4 doses are administered age ≥4 years, either LAIV or IPV may be used.

- 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.

- For other catch-up guidance, see Table 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 2–49 years, either LAIV or IPV may be used. However, LAIV should NOT be administered to some persons, including 1) persons who have experienced severe allergic reactions to LAIV, any of its components, or to a previous dose of any other influenza vaccine; 2) children 2–17 years receiving aspirin or aspirin-containing products; 3) persons who are allergic to eggs; 4) pregnant women; 5) immunosuppressed persons; 6) children 2–4 years of age with asthma or who had wheezing in the past 12 months; or 7) persons who have taken influenza antiviral medications in the previous 48 hours. For all other contraindications and precautions to use of LAIV, see MMWR, see MMWR August 15, 2014 / 63(32):691-697 (40 pages) available at www.cdc.gov/mmwr/pdf/wk/mm6332.pdf.

For children aged 6 months–8 years:
- For the 2014-15 season, administer 2 doses (separated by at least 4 weeks) to children who are receiving influenza vaccine for the first time. Some children in this age group who have been vaccinated previously will also need 2 doses. For additional guidance, follow dosing guidelines in the 2014-15 ACIP influenza vaccine recommendations, MMWR August 15, 2014 / 63(32):691-697 [40 pages] available at www.cdc.gov/mmwr/pdf/wk/mm6332.pdf.

For the 2015-16 season, follow dosing guidelines in the 2015 ACIP influenza vaccine recommendations.

For children aged ≥9 years
- 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 12–15 months and 4–6 years. The second dose may be administered age <4 years, provided at least 4 weeks have elapsed since the first dose.

- Administer 1 dose of MMR vaccine to infants aged 6–11 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 12–15 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 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 12–15 months and 4–6 years. The second dose may be administered 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 7–18 years without evidence of immunity (see MMWR 2007 / 56 [No. RR-4], available at www.cdc.gov/mmwr/pdf/rr/rr5604.pdf) have 2 doses of varicella vaccine. For children aged 7–12 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, 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 12–23 months; separate the 2 doses by 6 to 18 months.

- Children who have received 1 dose of HepA vaccine at age <24 months should receive a second dose 6 to 18 months after the first dose.

- For any person aged ≥2 years, 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 2 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, 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 11–12 years. Either HPV4 or HPV2 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 13–18 years if not previously vaccinated.

- Use recommended routine dosing intervals (see Routine vaccination above) for vaccine series catch-up.

13. Meningococcal conjugate vaccines. (Minimum age: 6 weeks for Hib-MenCY [MenHibrix], 9 months for MenACWY-D [Menactra], 2 months for MenACWY-CRM [Menvio])

Routine vaccination:
- Administer a single dose of Menactra or Menevo vaccine at age 11–12 years, with a booster dose at age 16 years.

- Adolescents aged 11–18 years with human immunodeficiency virus (HIV) infection should receive a 2-dose primary series of Menactra or Menevo with at least 8 weeks between doses.

- For children aged 2 months–18 years with high-risk conditions, see below.

Catch-up vaccination:
- Administer Menactra or Menevo vaccine at age 13–18 years if not previously vaccinated.

- If the first dose is administered at age 13–15 years, a booster dose should be administered at age 16–18 years with a minimum interval of at least 8 weeks between doses.

- If the first dose is administered at age ≥16, a booster dose is not needed.

- For other catch-up guidance, see Table 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): 4. Menevo
  - Children who initiate vaccination at 8 weeks through 6 months: Administer doses at 2, 4, 6, and 12 months of age.
  - Unvaccinated children 7–23 months: Administer 2 doses, with the second dose at least 12 weeks after the first dose AND after the first birthday.
  - Children ≥24 months who have not received a complete series: Administer 2 primary doses at least 8 weeks apart.

  5. MenHibrix
  - Children 6 weeks–18 months: Administer doses at 2, 4, 6, and 12–15 months of age.
# Table 1

**Recommended Immunization Schedule for Persons Aged 0 Through 18 Years**

**United States, 2015**

*(For those who fall behind or start late, see the catch-up schedule [Table 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 schedule. To determine minimum intervals between doses, see the catch-up schedule (Table 2). School entry and adolescent vaccine age groups are shaded.

<table>
<thead>
<tr>
<th>Vaccines</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>
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<th>7-10 yrs</th>
<th>11-12 yrs</th>
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<td>Rotavirus (rRV) - RV-1 (2-dose series); RV-5 (3-dose series)</td>
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<td>Pneumococcal conjugate (PCV13)</td>
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<td>Influenza (IIV, LAIV) 2 doses for some: see footnote 8</td>
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<td>Annual vaccination (LAIV or IIV) 1 dose only</td>
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<td>Human papillomavirus (HPV: females only; HPV4: males and females)</td>
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<td>Meningococcal (Hib-MenCY ≥6 weeks; MenACWY-D ≥9 mos; MenACWY-CRM ≥ 2 mos)</td>
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**Recommended ages of all children**

<table>
<thead>
<tr>
<th>Recommended ages for catch-up</th>
<th>Recommended ages for certain high-risk groups</th>
<th>Recommended ages during which catch-up is encouraged and for certain high-risk groups</th>
<th>Not routinely recommended</th>
</tr>
</thead>
</table>

This schedule includes recommendations in effect as of January 1, 2015. 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 www.cdc.gov/vaccines/recs/acip-list.htm.

Clinically significant adverse events that follow vaccination should be reported to the Vaccine Adverse Event Reporting System (VAERS) online (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 (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 (www.cdc.gov/vaccines/acip/index.html), the American Academy of Pediatrics (www.aap.org), the American Academy of Family Physicians (www.aafp.org), and the American College of Obstetricians and Gynecologists (www.acog.org).

NOTE: The above recommendations must be read along with the footnotes of this schedule.
### Table 2: Catch-up Immunization Schedule, Ages 4 Months Through 18 Years starting late or more than one month behind—United States, 2015

#### CHILDREN AGED 4 MONTHS THROUGH 6 YEARS

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Min. Age for Dose 1</th>
<th>Dose 1 to Dose 2</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 2 to Dose 3</th>
<th>Dose 3 to Dose 4</th>
<th>Dose 4 to Dose 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</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>
<td></td>
</tr>
<tr>
<td>Rotavirus</td>
<td>6 wks</td>
<td>4 weeks</td>
<td>4 weeks*</td>
<td>4 weeks</td>
<td>6 months</td>
<td>6 months</td>
</tr>
<tr>
<td>Diptheria, tetanus, and</td>
<td>6 wks</td>
<td>4 weeks</td>
<td>4 weeks*</td>
<td>4 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae type b</td>
<td>6 wks</td>
<td>4 weeks if first dose was administered before the 1st birthday.</td>
<td>4 weeks if first dose was administered at age 12–14 months.</td>
<td>4 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus</td>
<td>9 yrs</td>
<td>4 weeks</td>
<td>4 weeks if first dose was administered at age ≥15 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal</td>
<td>6 wks</td>
<td>4 weeks</td>
<td>4 weeks if first dose was administered before the 1st birthday.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inactivated poliovirus</td>
<td>6 wks</td>
<td>4 weeks</td>
<td>4 weeks if first dose was administered before the 1st birthday.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meningococcal</td>
<td>6 wks</td>
<td>4 weeks</td>
<td>4 weeks if first dose was administered before the 1st birthday.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella</td>
<td>12 mos</td>
<td>4 weeks</td>
<td>4 weeks if current age is &lt;12 months and previous dose given at ≤7 months old.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td>12 mos</td>
<td>6 months</td>
<td>4 weeks if current age is &lt;12 months and previous dose given at ≤7 months old.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>12 mos</td>
<td>6 months</td>
<td>4 weeks if current age is &lt;12 months and previous dose given at ≤7 months old.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### CHILDREN AND ADOLESCENTS AGED 7 THROUGH 18 YEARS

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Min. Age for Dose 1</th>
<th>Dose 1 to Dose 2</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 2 to Dose 3</th>
<th>Dose 3 to Dose 4</th>
<th>Dose 4 to Dose 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetanus, diphtheria; tetanus, diphtheria, pertussis</td>
<td>7 yrs</td>
<td>4 weeks</td>
<td>4 weeks if first dose of DTaP/DT was administered before the 1st birthday.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus</td>
<td>7 yrs</td>
<td>4 weeks</td>
<td>4 weeks if first dose of DTaP/DT was administered before the 1st birthday.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>NA</td>
<td>4 weeks</td>
<td>8 weeks and at least 16 weeks after first dose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inactivated poliovirus</td>
<td>NA</td>
<td>4 weeks</td>
<td>4 weeks*</td>
<td>4 weeks</td>
<td>6 months</td>
<td>6 months</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella</td>
<td>NA</td>
<td>4 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td>NA</td>
<td>3 months if &lt;13 years of age</td>
<td>4 weeks if ≥13 years of age</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NA= Not applicable

The above table 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 Table 1 and the footnotes that follow.
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2014–2015 Flu Season Update

The 2014–2015 influenza season is drawing to a close. This season was the busiest one on record, with >750 hospitalized, lab-confirmed cases reported in the Portland tri-county area. Sixty-eight percent of those were aged ≥65 years, and most (97%) flu-positive specimens tested at the Oregon State Public Health Lab were confirmed as influenza A(H3) virus. H3 viruses typically cause more severe illness in the elderly, but this season was particularly severe with CDC reporting a hospitalization rate of 284/100,000 persons ≥65 years of age — the highest recorded since such record-keeping began in 2005.

Part of the reason for the increased hospitalization rate is likely that the seasonal flu vaccine was poorly matched to the predominant circulating flu strain, thereby reducing the protection offered by the vaccine. The predominant strain this season (known as influenza A/Switzerland/9715293/2013) was an “antigenically drifted” version of influenza A/H3N2, meaning that minor changes in the proteins on the surface of the virus rendered it sufficiently different from the virus used in the vaccine that antibodies induced by the latter bound poorly to the former.

CDC data show that the flu peaked in the U.S. this season during December 14, 2014–January 3, 2015. In Oregon, the peak of flu season followed a few weeks later during the first 3 weeks (January 4–24) of 2015. To date, no influenza-associated pediatric deaths have been reported in Oregon for the 2014–2015 season, but 107 such deaths have been reported thus far in the rest of the U.S.

Though the weekly flu case count is decreasing as we head into spring, providers are encouraged to keep flu in their differential diagnosis of respiratory illness. Influenza B has been responsible for an increasing proportion of flu illnesses; fortunately, most circulating influenza B viruses have been close antigenic relatives of the virus used to create this year’s flu vaccine.

FOR MORE INFORMATION

• Oregon’s Flu Bites: http://bit.ly/flubites
• CDC’s website: www.cdc.gov/flu/