The Childhood Immunization Schedule

- The purpose of the recommended immunization schedule is to protect infants and children by providing immunity early in life, before they are exposed to potentially life-threatening diseases.
- Each vaccine is tested during the licensing process to be sure that it is safe and effective for children to receive at the recommended ages.
- Vaccines do not overload the immune system. Every day, a healthy baby's immune system successfully fights off millions of antigens—the parts of germs that cause the body's immune system to go to work. Vaccines contain only a tiny fraction of the antigens that babies encounter in their environment every day.
- Children do not receive any known benefits from following schedules that delay vaccines. We do know that delaying vaccines puts children at known risk of becoming ill with vaccine-preventable diseases.
- The Centers for Disease Control and Prevention (CDC) publishes a catch-up schedule designed to quickly get children back on schedule if they fall behind.
- The recommended and catch-up schedules can be found at www.cdc.gov/vaccines/recs/schedules/

| questions and answers |

Who recommends vaccines and what is considered in the recommendation process?

The Centers for Disease Control and Prevention (CDC) sets the U.S. childhood immunization schedule based on recommendations from the Advisory Committee on Immunization Practices (ACIP)—a group of medical and public health experts. This schedule also is approved by the American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP). To develop comprehensive recommendations for each vaccine, ACIP works throughout the year, reviewing available data on new and existing vaccines.

The information ACIP reviews for each vaccine always includes—

- The safety and efficacy of the vaccine when given at specific ages—only vaccines licensed by the Food and Drug Administration (FDA) are recommended, and vaccine makers must conduct rigorous tests to show that a vaccine is safe and effective at specific ages.
- The severity of the disease—vaccines recommended for children prevent diseases that can be serious for them, potentially causing long-term health problems or death.
- How many children get the disease if there is no vaccine—vaccines that do not provide benefit to many children may not be recommended.
- The differences in how well a vaccine works for children of different ages—the ability of vaccines to help the body produce immunity can vary depending on the age when the vaccine is given.

Why are there so many vaccines for children before they turn 2 years old?

Before 1985, the recommended immunization schedule included only seven vaccines. The good news is that today, we can protect children younger than 2 years of age from 14 potentially serious diseases with vaccines.

Every dose of a vaccine is important because they all protect against infectious diseases that are threats today. These diseases can be especially serious for infants and very young children. Parents may not have heard of some of today's vaccines or the serious diseases they prevent. For example, Haemophilus influenzae type b (Hib) vaccine prevents a serious bacterial infection that was a leading cause of mental retardation before the vaccine began to be used. Pneumococcal vaccine prevents today's leading cause of bacterial meningitis (infection of the fluid around the brain and spinal cord).

"As a pediatrician, parent, and grandparent, I have seen the success of vaccines and the terrible toll of the diseases they prevent. When parents ask me about the vaccination schedule, I tell them that I believe following the schedule is the best thing to do for their baby or young child. I explain that getting the vaccines at the recommended ages means the best possible chance that their baby will be immune to diseases before they are most likely to be exposed. I tell them the vaccines have been tested at the recommended ages, so we know they're safe to get at those ages. Finally, I emphasize that we also know a great deal about the human immune system, and we know that a healthy baby's immune system can handle getting all vaccines when they are recommended."

Dr. Larry Pickering, American Academy of Pediatrics and Centers for Disease Control and Prevention, Advisory Committee on Immunization Practices

Editor of The Red Book: the standard of care for preventing, diagnosing, and treating childhood infectious diseases

For more information on vaccines, vaccine-preventable diseases, and vaccine safety:
http://www.cdc.gov/vaccines/conversations
Of course, besides the 14 vaccine-preventable diseases, there are serious diseases with no vaccines to prevent them. Health care professionals who treat seriously ill children are eager to offer even more potentially life-saving vaccines. The process of developing a vaccine is long and challenging, but the benefits can be enormous. For example, respiratory syncytial virus (RSV) causes around 100,000 infant hospitalizations each year in the United States. Scientists have been working for years to make a vaccine to prevent RSV. No safe and effective vaccine has been developed yet.

Parents who are concerned about the number of shots given at one time can reduce the number given at a visit by using the flexibility built into the current recommended immunization schedule. For example, the third dose of Hepatitis B vaccine can be given at either 6 to 18 months of age. Parents can work with their child’s health care professional to have their child receive this dose at any time during this recommended age range.

Why do vaccines for babies and young children require more than one dose?

Depending on the vaccine, more than one dose is needed to build high enough immunity to prevent disease, boost immunity that fades over time, make sure people who did not get immunity from a first dose are protected, or protect against germs that change over time, such as flu.

Are there some children who shouldn’t receive some vaccines?

Nearly all children can be safely vaccinated. There are some exceptions including children with allergies to something in a vaccine, like a small amount of chicken egg protein left from the manufacturing process for flu vaccine. Children with very serious egg allergies should not receive flu vaccine. Children with weakened immune systems due to an illness or a medical treatment, such as chemotherapy, may not be able to safely receive some vaccines.
Figure 1. Recommended immunization schedule for persons aged 0 through 18 years – 2013.
(For those who fall behind on 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>Vaccines</th>
<th>Births</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>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>5th dose</td>
<td>5th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Pneumococcal polysaccharide (PPS)</td>
<td>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Tetanus, diphtheria, and pertussis (Tdap)</td>
<td>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>5th dose</td>
<td>5th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Neisseria meningitides (MMR)</td>
<td>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Varicella (Var)</td>
<td>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Human papillomavirus (HPV2, females only; HPV1, males and females)</td>
<td>2 doses</td>
<td>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Meningococcal C* (MCV4-30, 11-valent, 2-valent)</td>
<td>2 doses</td>
<td>1 dose</td>
<td>2 dose</td>
<td>3 dose</td>
<td>3 dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>4th dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
</tbody>
</table>

---

**Range of recommended ages for all children**
- **Range of recommended ages for catch-up immunization**
- **Range of recommended ages for certain high-risk groups**
- **Range of recommended ages during which catch-up is encouraged and for certain high-risk groups**
- **Not routinely recommended**

This schedule includes recommendations in effect as of January 1, 2013. 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 [https://www.cdc.gov/vaccines/hcp/acip-recs/hcp-accip-index.html](https://www.cdc.gov/vaccines/hcp/acip-recs/hcp-accip-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](http://www.vaers.hhs.gov)) or by telephone (800-822-7970). 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](http://www.cdc.gov/vaccines)) or by telephone (800-CDC-INFO) or 800-232-4636.

This schedule is approved by the Advisory Committee on Immunization Practices ([http://www.cdc.gov/vaccines/acip/index.html](http://www.cdc.gov/vaccines/acip/index.html)), the American Academy of Pediatrics ([http://www.aap.org](http://www.aap.org)), and the American College of Obstetricians and Gynecologists ([http://www.acog.org](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, 2013**

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.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for Dose 1</th>
<th>Minimum Interval Between Doses</th>
<th>Persons aged 4 months through 6 years</th>
</tr>
</thead>
<tbody>
<tr>
<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>Hepatitis B</td>
<td>Birth</td>
<td>4 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td></td>
<td>4 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Diptheria, tetanus, pertussis</td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>4 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Haemophilus influenzae type b</td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Pneumococcal C</td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Inactivated polio</td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Meningococcal C</td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Measles, mumps, rubella</td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Varicella</td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Human papillomavirus</td>
<td>9 years</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>9 years</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>Birth</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Inactivated polio</td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Meningococcal C</td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>6 weeks</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Measles, mumps, rubella</td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td>Varicella</td>
<td>12 months</td>
<td></td>
<td>6 months</td>
</tr>
<tr>
<td></td>
<td>12 months</td>
<td></td>
<td>6 months</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, 2013

For further guidance on the use of vaccine mentioned below, see: http://www.cdc.gov/vaccines/schedules/hcp/ucd-apt-list.htm.

1. Hepatitis B (HepB) vaccine. (Minimum age 0 birth)

Routine vaccination:

At birth:
- Administer monovalent HepB vaccine to all newborns before hospital discharge.
- Fortuitous immunization for hepatitis B antigen-positive mothers: administer HepB dose 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 18 to 24 months (preferably the next visit at well-child care).

At 2 months: if HepB dose was not adminstered at birth, administer HepB vaccine to all infants regardless of birth weight. For infants weighing >2,500 grams, administer HBsAg in addition to HepB within 12 hours of birth. Determine mother’s HepB status as soon as possible and if the mother is HepB negative administer HepB to infants weighing 2.5 kg or more (the later age than 1 week).

Doses following the birth date:
- The second dose should be administered at age 1 or 2 months. Monovalent HepB vaccine should be used only for doses administered after age 6 weeks.
- Infants who did not receive HBV vaccine should receive 1 dose of a HepB-containing vaccine on a schedule of 0, 1, 2, 6 months, and 6 months after the first dose as feasible. See Table 2.
- The minimum interval between dose 1 and dose 2 is 4 to 6 weeks and between dose 2 and 3 is 3 to 5 weeks. The final dose (6th dose) in the HepB vaccine series should be administered no earlier than 12 weeks of age, and at least 18 weeks after the first dose.
- Administration of a total of 4 doses of HepB vaccine is recommended when a combination vaccine containing HepB is administered after the birth dose.

Catch-up vaccination:
- Unvaccinated infants should complete a 3-dose series.
- A 2-dose series is recommended for the booster (final) dose in adult formulation Recombivax HB licensed for use in children aged 11 through 15 years.
- For other catch-up issues, see Figure 2.

2. Rotavirus (RV) vaccine. (Minimum age 6 weeks for both RV1 [Rotarix] and RV2 [RotaTeq]).

Routine vaccination:
- Administer a series of RV1 vaccine to all infants as follows:
  - RV1 is titrated: administer a 2-dose series at 2 and 4 months of age.
  - RV2E is included: administer a 3-dose series at 2, 4, and 6 months of age.
  - If any dose in series RV1 or RV2E is vaccine is not used for any dose in the series, a total of 1 dose RV1 vaccine should be administered.

Catch-up vaccination:
- The maximum age for the first dose is the series is 12 weeks, 6 days.
- Vaccination should begin no earlier than 11 weeks 5 days of age.
- The maximum age for the dose series is 8 months, 6 days.
- RV1-Victoria is not authorized for the first and second dose, a second dose is not catch-up vaccination.
- For other catch-up issues, see Figure 2.

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

Routine vaccination:
- Administer a series of DTaP vaccine at ages 2, 4, 6-15 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 first (boosted) dose of DTaP vaccine is not necessary if the fourth dose was administered at 18 months or later.
- For other catch-up issues, 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 one dose of Tdap vaccine to all adolescents aged 11 through 12 years.
- Tdap can be administered regardless of the interval since the last tetanus and diphtheria toxoids (Td) dose.
- Administer one dose of Tdap vaccine to pregnant adolescents during each pregnancy (preferred) or at least 4 to 6 weeks gestation regardless of the number of years prior to Td vaccination.

Catch-up vaccination:
- Adolescents aged 11 through 18 years who are not fully immunized with the childhood DTP vaccine series should receive Tdap vaccine as a single dose at ages 11 through 12 years before entering high school.
- Adolescents aged 15 through 18 years who have not received Tdap vaccine should receive a single dose of Tdap vaccine.
- For other catch-up issues, see Figure 2.

5. Haemophilus influenzae type b (Hib) conjugate vaccine. (Minimum age 6 weeks).

Routine vaccination:
- Administer a Hib vaccine primary series and a booster dose to all infants. The primary series doses should be administered at 2, 4, and 6 months of age, however, PRP-OMP (Pedvax HIB or Comvax) is administered at 2 and 4 months of age only, a dose at age 6 months is not indicated. One booster dose should be administered at age 12 through 15 months.
- If the first dose was administered at age 12 through 15 months, vaccination is not indicated.
- For other catch-up issues, see Figure 2.

6. Pneumococcal conjugate vaccine (PCV). (Minimum age 6-11 months).

Routine vaccination:
- Administer a series of PCV13 vaccine at ages 2, 4, 6-15 months, with a booster at age 12 through 15 months.
- For children aged 4 through 11 months who have received an age-appropriate series of 7-valent pneumococcal conjugate vaccine (PCV7) or PCV13, administer a single supplemental dose of 13-valent PCV13 (PCV13).

Catch-up vaccination:
- Administer 1 dose of PCV13 to all healthy children age 24 through 59 months who are not completely vaccinated for their age.

For other catch-up issues, see Figure 2.

Catch-up vaccination:
- Vaccination of persons with high-risk conditions:
  - For children aged 24 through 71 months with certain underlying medical conditions (see footnotes 6c). Administer 1 dose of PCV13 if 3 doses of PCV13 were received previously or administer 2 doses of PCV13 at 6 weeks apart if fewer than 3 doses of PCV13 were received previously.
  - A single dose of PCV13 may be administered to previously unvaccinated children aged 6 through 18 years who have anatomic or functional asplenia (including sickle cell disease), functional or anatomic cardiac shunting, or history of meningococcal disease on or immunocompromising condition.

Specific conditions for which PCV13 is indicated in children aged 2 years and older for which use of PCV13 is indicated in children aged 2 through 17 years:
- Immune-compromised children with chronic heart disease (particularly cyanotic congenital heart disease), chronic neutropenia, HIV infection, or immunodeficiency conditions such as chronic granulomatous disease.
- Immunocompetent children with chronic heart disease (particularly cyanotic congenital heart disease), chronic neutropenia, HIV infection, or immunodeficiency conditions such as chronic granulomatous disease.
- Children who have had recent diagnosis of HIV infection/chronic granulomatous disease, lymphomas, and certain immunodeficiencies, including Aspergillosis, bronchiectasis, and Kawasaki disease.
- For other catch-up issues, see Figure 2.


Routine vaccination:
- Administer IPV at ages 2, 4, 6-15 months, with a booster dose at age 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 last previous dose.

Catch-up vaccination:
- In the healthy child aged 24 through 59 months and minimum interval is only recommended if the person is at risk for infection exposure to circulating polioviruses (e.g., travel to a polio-endemic region or during an outbreak).
- If IPV is titrated: administer one dose of IPV vaccine at age 12 through 15 months, an additional dose should be administered at age 18 through 24 months.
- A single dose of IPV vaccine is recommended for children aged 4 through 6 years.
- A single dose of IPV vaccine is recommended for the first dose of the series, a total of 4 doses should be administered, regardless of the child’s current age.
- If any dose in series IPV is vaccine is not used for any dose in the series, a total of 1 dose IPV vaccine should be administered.
- For other catch-up issues, see Figure 2.

8. Haemophilus influenzae type b (Hib) conjugate vaccine (Hib). (Minimum age 6 weeks).

Routine vaccination:
- Administer a Hib vaccine primary series and a booster dose to all infants. The primary series doses should be administered at 2, 4, and 6 months of age, however, PRP-OMP (Pedvax HIB or Comvax) is administered at 2 and 4 months of age only, the dose at age 6 months is not indicated. One booster dose should be administered at age 12 through 15 months.
- If the first dose was administered at age 12 through 15 months, vaccination is not indicated.
- For other catch-up issues, see Figure 2.

Additional information:
- For additional information and precautions to use of vaccine and additional information regarding vaccine contraindication, vaccine-related adverse events and vaccine-preventable diseases, see: http://www.cdc.gov/vaccines/hcp/ucd-apt-list.htm.

- Information on travel vaccine requirements and recommendations is available at: http://www.cdc.gov/travel.


- For additional information on human papillomavirus (HPV) vaccines, see: http://www.cdc.gov/vaccines/hcp/ucd-apt-list.htm.

- For information on hepatitis B (HepB) vaccine, see: http://www.cdc.gov/vaccines/hcp/ucd-apt-list.htm.

- For additional information on human immunodeficiency virus (HIV) infection, see: http://www.cdc.gov/hiv.

- For additional information on meningococcal disease, see: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6037a1.htm.