4 Haemophilus influenzae type b (Hib) vaccine (minimum age: 6 weeks)

Routine vaccination
- ActHib, Hibermix, or Pentacel: 4-dose series at 2, 4, 6, and 12–15 months.
- PedvaxHib: 3-dose series at 2, 4, and 12–15 months.

Catch-up vaccination
- 1st dose at 7–11 months: Give 2nd dose at least 4 weeks later and 3rd (final) dose at 12–15 months or 8 weeks after 2nd dose (whichever is later).
- 1st dose at 12–14 months: Give 2nd (final) dose at least 8 weeks after 1st dose.
- 1st dose before 12 months and 2nd dose before age 15 months: Give 3rd (final) dose 8 weeks after 2nd dose.
- 2 doses of PedvaxHib before age 12 months: Give 3rd (final) dose at 12–59 months and at least 8 weeks after 2nd dose.
- Unvaccinated at 15–59 months: 1 dose.
- For other catch-up guidance, see Figure 2.

Special situations
- Chemotherapy or radiation treatment
  - 12–59 months
    - Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
    - 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.
- Anatomic or functional asplenia (including sickle cell disease)
  - 12–59 months
    - Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
    - 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.
- Immunoglobulin deficiency, early component complement deficiency
  - 12–59 months
    - Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
    - 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.
- Unimmunized persons 5 years or older
  - Give 1 dose.
- Elective splenectomy
  - Unimmunized persons 15 months or older
    - Give 1 dose (preferably at least 14 days before procedure).
- HIV infection
  - 12–59 months
    - Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
    - 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.
- Immunoglobulin deficiency, early component complement deficiency
  - 12–59 months
    - Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
    - 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

5 Pneumococcal vaccines (minimum age: 6 weeks [PCV13], 2 years [PPSV23])

Routine vaccination with PCV13
- 4-dose series at 2, 4, 6, and 12–15 months.

Catch-up vaccination with PCV13
- 1 dose for healthy children ages 24–59 months with any incomplete PCV13 schedule
- For other catch-up guidance, see Figure 2.

Special situations – High-risk conditions
- Administer PCV13 doses before PPSV23 if possible
  - Chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma treated with high-dose, oral, corticosteroids); diabetes mellitus
    - Age 2–5 years
      - Any incomplete* schedules with:
        - 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose)
        - <3 PCV13 doses: 2 doses of PCV13, 8 weeks after the most recent dose and given 8 weeks apart
        - No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose)
    - Age 6–18 years
      - No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).
  - Cerebrospinal fluid leak; cochlear implant
    - Age 2–5 years
      - Any incomplete* schedules with:
        - 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose)
        - <3 PCV13 doses: 2 doses of PCV13, 8 weeks after the most recent dose and 8 weeks apart
        - No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose)
    - Age 6–18 years
      - No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).

6 Inactivated poliovirus vaccine (IPV) (minimum age: 6 weeks)

Routine vaccination
- 4-dose series at ages 2, 4, 6–18 months, and 4–6 years. Administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.

Catch-up vaccination
- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- If 4 or more doses were given before the 4th birthday, give 1 more dose at age 4–6 years and at least 6 months after the previous dose.
- A 4th dose is not necessary if the 3rd dose was given on or after the 4th birthday and at least 6 months after the previous dose.
- IPV is not routinely recommended for U.S. residents 18 years and older.
- For other catch-up guidance, see Figure 2.

7 Influenza vaccines (minimum age: 6 months)

Routine vaccination
- Administer an age-appropriate formulation and dose of influenza vaccine annually.
  - Children 6 months–8 years who did not receive at least 2 doses of influenza vaccine before July 1, 2017 should receive 2 doses separated by at least 4 weeks.
  - Persons 9 years and older: 1 dose
- Live attenuated influenza vaccine (LAIV) is not recommended for the 2017–18 season.
- For additional guidance, see the 2017–18 ACIP influenza vaccine recommendations (MMWR August 25, 2017;66(3):1–20. www.cdc.gov/mmwr/volumes/66/wr/mm6601a1.htm?s_cid=mm6601a1_w).
- Only trivalent OPV (TOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as “OPV” see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.

8 Measles, mumps, and rubella (MMR) vaccine (minimum age: 12 months for routine vaccination)

Routine vaccination
- 2-dose series at 12–15 months and 4–6 years.
- The 2nd dose may be given as early as 4 weeks after the 1st dose.

Catch-up vaccination
- Unvaccinated children and adolescents: 2 doses at least 4 weeks apart.

International travel
- Infants 6–11 months: 1 dose before departure. Revaccinate with 2 doses at 12–15 months (12 months for children in high-risk areas) and 2nd dose as early as 4 weeks later.
- Unvaccinated children 12 months and older: 2 doses at least 4 weeks apart before departure.

Mumps outbreak
- Persons ≥12 months who previously received ≥2 doses of mumps-containing vaccine and are identified by public health authorities to be at increased risk during a mumps outbreak should receive a dose of mumps-virus containing vaccine.

9 Varicella (VAR) vaccine (minimum age: 12 months)

Routine vaccination
- 2-dose series: 12–15 months and 4–6 years.
- The 2nd dose may be given as early as 3 months after the 1st dose (a dose given after a 4-week interval may be counted).

continued