

Pediatric Vaccine Products Reference Guide

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Everything we do affirms our dedication to forge a reliable, secure pharmaceutical supply chain in the pursuit of our mission of **Helping Healthcare Care®**.



PATIENT SAFETY • PRODUCT EFFICACY • FAIR PRICING



Pediatric Vaccine Products

Product	Manufacturer	Size	NDC ‡	Code*	VIPc	340B
DTaP						
DAPTACEL®	Sanofi Pasteur	10 SDV/bx	49281-0286-10	90700	Yes	No
INFANRIX®	GSK	0.5 mL SDV 10-pk	58160-0810-11	90700	TBD	Yes
INFANRIX®	GSK	0.5 mL PFS 10-pk	58160-0810-52	90700	TBD	Yes
DTaP, Polio						
KINRIX®	GSK	0.5 mL SDV 10-pk	58160-0812-11	90696	TBD	Yes
KINRIX®	GSK	0.5 mL PFS 10-pk	58160-0812-52	90696	TBD	Yes
DTaP, Hepatitis B, Polio						
PEDIARIX®	GSK	0.5 mL PFS 10-pk	58160-0811-52	90723	TBD	Yes
DTaP, Polio, Haemophilus Influenzae Type B						
Pentacel®	Sanofi Pasteur	1 SDV 5-pk	49281-0510-05	90698	No	No
Haemophilus Influenzae Type B (Hib)						
ActHIB®	Sanofi Pasteur	10 mcg w/diluent	49281-0545-05	90648	No	No
HIBERIX®	GSK	0.5 mL SDV 10-pk	58160-0818-11	90648	TBD	Yes
PedvaxHIB®	Merck‡	0.5 mL SDV 10-pk	00006-4897-00	90647	No	No
Hepatitis A						
HAVRIX®	GSK	720 EL.U./0.5 mL SDV 10-pk	58160-0825-11	90633	TBD	Yes
HAVRIX®	GSK	720 EL.U./0.5 mL PFS 10-pk	58160-0825-52	90633	TBD	Yes
VAQTA®	Merck‡	25 U/0.5 mL SDV 10-pk	00006-4831-41	90633	Yes	No
Hepatitis B						
ENGERIX-B®	GSK	10 mcg/0.5 mL SDV 10-pk	58160-0820-11	90744	TBD	Yes
ENGERIX-B®	GSK	10 mcg/0.5 mL PFS 10-pk	58160-0820-52	90744	TBD	Yes
RECOMBIVAX HB®	Merck‡	5 mcg/0.5 mL 10-pk	00006-4981-00	90744	Yes	No
Human Papillomavirus						
GARDASIL® 9	Merck‡	0.5 mL PFS 10-pk	00006-4119-03	90651	Yes	No
Japanese Encephalitis						
IXIARO®	Valneva	0.5 mL PFS	42515-0002-01	90738	Yes	No
Measles, Mumps, Rubella						
M-M-R® II	Merck‡	0.5 mL SDV 10-pk	00006-4681-00	90707	Yes	No
Measles, Mumps, Rubella, Varicella						
ProQuad®	Merck‡	0.5 mL SDV 10-pk	00006-4171-00	90710	No	No
Meningococcal						
BEXSERO®	GSK	0.5 mL PFS	58160-0976-06	90620	TBD	Yes
BEXSERO®	GSK	0.5 mL PFS 10-pk	58160-0976-20	90620	TBD	Yes
Menactra®	Sanofi Pasteur	1 SDV 5-pk	49281-0589-05	90734	Yes	No
MENVEO® Lyophilized	GSK	0.5 mL SDV 10-pk	58160-0958-01	90734	TBD	Yes
TRUMENBA®	Pfizer	0.5 mL PFS 5-pk	00005-0100-05	90621	No	No
TRUMENBA®	Pfizer	0.5 mL PFS 10-pk	00005-0100-10	90621	No	No

‡Have questions about Merck vaccines, including reimbursement support? Call the Merck Vaccine Customer Center at (866) 675-8899 M-F.

*All codes should be verified between the provider and the payer. | VIPc - Verified Inventory Program-Consignment (VIPc™) | 340B - Public Health Services 340B Pricing Available.

Emergency Ordering 24/7 | (800) 843-7477 | FFFenterprises.com | FAX (800) 418-4333 | biosupply.fffenterprises.com

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Product	Manufacturer	Size	NDC ‡	Code*	VIPc	340B
Pneumococcal						
PREVNAR 13®	Pfizer	0.5 mL PFS 10-pk	00005-1971-02	90670	Yes	No
Polio						
IPOL®	Sanofi Pasteur	5 mL MDV	49281-0860-10	90713	No	No
Rabies						
Imovax® Rabies	Sanofi Pasteur	1 SDV w/diluent	49281-0250-51	90675	Yes	No
RabAvert®	GSK	1.0 mL single dose kit	58160-0964-12	90675	TBD	Yes
Rotavirus						
ROTARIX®	GSK	1 mL SDV 10-pk	58160-854-52	90681	TBD	Yes
RotaTeq®	Merck‡	2 mL 10-pk	00006-4047-41	90680	Yes	No
RotaTeq®	Merck‡	2 mL 25-pk	00006-4047-20	90680	Yes	No
Tetanus, Diphtheria, Pertussis						
Adacel® (Tdap)	Sanofi Pasteur	5 PFS/bx	49281-0400-15	90715	Yes	No
Adacel® (Tdap)	Sanofi Pasteur	10 SDV/bx	49281-0400-10	90715	Yes	No
BOOSTRIX®	GSK	0.5 mL SDV 10-pk	58160-0842-11	90715	TBD	Yes
BOOSTRIX®	GSK	0.5 mL PFS	58160-0842-34	90715	TBD	Yes
BOOSTRIX®	GSK	0.5 mL PFS 10-pk	58160-0842-52	90715	TBD	Yes
Tetanus, Diphtheria						
Diphtheria and Tetanus Toxoids Adsorbed	Sanofi Pasteur	10 SDV PF Peds	49281-0225-10	90714	Yes	No
TENIVAC®	Sanofi Pasteur	10 PFS/bx	49281-0215-15	90714	Yes	No
Tetanus and Diphtheria Toxoids Adsorbed	Grifols	0.5 mL vial 10-pk	13533-0131-01	90714	No	No
Tuberculosis Testing						
TUBERSOL®†	Sanofi Pasteur	1 mL vial 10 test	49281-0752-21	86580	Yes	No
TUBERSOL®†	Sanofi Pasteur	5 mL vial 50 test	49281-0752-22	86580	Yes	No
Typhoid						
Typhim Vi®	Sanofi Pasteur	0.5 mL MDV	49281-0790-20	90691	Yes	No
Typhim Vi®	Sanofi Pasteur	0.5 mL PFS	49281-0790-51	90691	Yes	No
Vivotif®	PaxVax	4 capsule blister pack	69401-0000-01	90690	Yes	No
Varicella						
VARIVAX®	Merck‡	0.5 mL SDV 10-pk	00006-4827-00	90716	No	No

†TUBERSOL® is used for intradermal tuberculin testing in humans. It is not a vaccine.

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Influenza - Quadrivalent						
Flucelvax®	Seqirus	0.5 mL PFS 10-bx	70461-0318-03	90674	No	No
Flucelvax®	Seqirus	5 mL MDV	70461-0418-10	90756	No	No
Afluria®	Seqirus	0.5 mL PFS 10-bx	33332-0318-01	90686	No	No
Afluria®	Seqirus	5 mL MDV	33332-0418-10	90688	No	No
Fluzone® Pediatric	Sanofi Pasteur	0.25 mL PFS 10-bx	49281-0518-25	90685/90687	No	No
Fluzone®	Sanofi Pasteur	0.5 mL PFS 10-bx	49281-0418-50	90686	No	No
Fluzone®	Sanofi Pasteur	0.5 mL SDV 10-bx	49281-0418-10	90686	No	No
Fluzone®	Sanofi Pasteur	5 mL MDV	49281-0629-15	90688	No	No
FLULAVAL®	GSK	0.5 mL PFS 10-bx	19515-0909-52	90686	No	Yes
FLULAVAL®	GSK	5 mL MDV	19515-0900-11	90688	No	Yes
FLUARIX®	GSK	0.5 mL PFS 10-bx	58160-0898-52	90686	No	Yes
FluMist®	MedImmune	0.2 mL spray 10-bx	66019-0305-10	90672	No	No

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on **FLU VACCINES** for the
2019-2020 season?

Then take advantage of our NEW inclusive **MyFluVaccine Loyalty Program** and enroll for the 2019-2020 season when you go to book your flu vaccine orders for the 2018-2019 season through MyFluVaccine.com.

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- No minimum purchase
- Hassle-free
- Guaranteed booking for the products you need



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Pediatric Immunization Schedule

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19-23 mos	2-3 yrs	4-6 yrs	7-10 yrs	11-12 yrs	13-15 yrs	16 yrs	17-18 yrs
HepB (Hepatitis B)	1 st dose	2 nd dose					3 rd dose										
(RV) RV1: 2-dose series; RV5: 3-dose series (Rotavirus ¹)			1 st dose	2 nd dose	See footnote 2												
DTaP: <7 yrs (Diphtheria, tetanus, & Acellular Pertussis ²)			1 st dose	2 nd dose	3 rd dose		4 th dose					5 th dose					
Hib (Haemophilus influenzae Type B ³)			1 st dose	2 nd dose	See footnote 4		3 rd or 4 th dose See footnote 4										
PCV13 (Pneumococcal Conjugate ³)			1 st dose	2 nd dose	3 rd dose		4 th dose										
IPV: <18 yrs (Inactivated poliovirus ⁴)			1 st dose	2 nd dose			3 rd dose					4 th dose					
Influenza ⁷ (IIV)							Annual vaccination (IIV) 1 or 2 doses							Annual vaccination (IIV) 1 dose only			
M/MR (Measles, Mumps, Rubella ⁸)					See footnote 8		1 st dose					2 nd dose					
VAR (Varicella ⁹)							1 st dose					2 nd dose					
HepA (Hepatitis A ¹⁰)																	
MenACWY-D >9 mos; MenACWY-CRMV zZ mos (Meningococcal ¹¹)							2 dose series See footnote 10										
Tdap: >7 yrs (Tetanus, Diphtheria, & Acellular Pertussis ¹²)							See footnote 11							1 st dose			2 nd dose
HPV (Human papillomavirus ¹³)														Tdap			
Meningococcal B ¹²														See footnote 14			
PPSV23 (Pneumococcal polysaccharide ¹)																	

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 for non-high-risk groups that may receive vaccine, subject to individual clinical decision making.
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Per the Centers for Disease Control and Prevention, the above recommendations must be read along with the footnotes of this schedule.

Footnotes — Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2018

For further guidance on the use of the vaccines mentioned below, see: 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 information on contraindications and precautions for the use of a vaccine, consult the *General Best Practice Guidelines for Immunization* and relevant ACIP statements, at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥ 4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as “through.”
- Vaccine doses administered ≤ 4 days before the minimum age or 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 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 Table 3-1, *Recommended and minimum ages and intervals between vaccine doses*, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccine requirements and recommendations is available at wwwnc.cdc.gov/travel/.
- For vaccination of persons with immunodeficiencies, see Table 8-1, *Vaccination of persons with primary and secondary immunodeficiencies*, in *General Best Practice Guidelines for Immunization*, at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html; and Immunization in Special Clinical Circumstances. (In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. *Red Book: 2015 report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2015:68-107).
- The National Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury claims. All routine child and adolescent vaccines are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information; see www.hrsa.gov/vaccinecompensation/index.html.

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

Birth Dose (Monovalent HepB vaccine only):

- **Mother is HBsAg-Negative:** 1 dose within 24 hours of birth for medically stable infants $\geq 2,000$ grams. Infants $< 2,000$ grams administer 1 dose at chronological age 1 month or hospital discharge.
 - **Mother is HBsAg-Positive:**
 - o Give **HepB vaccine** and **0.5 mL of HBIG** (at separate anatomic sites) within 12 hours of birth, regardless of birth weight.
 - o Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.
 - **Mother’s HBsAg status is unknown:**
 - o Give **HepB vaccine** within 12 hours of birth, regardless of birth weight.
 - o For infants $< 2,000$ grams, give **0.5 mL of HBIG** in addition to HepB vaccine within 12 hours of birth.
 - o Determine mother’s HBsAg status as soon as possible. If mother is HBsAg-positive, give **0.5 mL of HBIG** to infants $\geq 2,000$ grams as soon as possible, but no later than 7 days of age.
- Routine Series:**
- A complete series is 3 doses at 0, 1–2, and 6–18 months. (Monovalent HepB vaccine should be used for doses given before age 6 weeks.)

- Infants who did not receive a birth dose should begin the series as soon as feasible (see Figure 2).
- Administration of **4 doses** is permitted when a combination vaccine containing HepB is used after the birth dose.
- **Minimum age** for the final (3rd or 4th) dose: 24 weeks.

- **Minimum Intervals:** Dose 1 to Dose 2: 4 weeks / Dose 2 to Dose 3: 8 weeks / Dose 1 to Dose 3: 16 weeks. (When 4 doses are given, substitute “Dose 4” for “Dose 3” in these calculations.)

Catch-up vaccination:

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, and 6 months.
- Adolescents 11–15 years of age may use an alternative 2-dose schedule, with at least 4 months between doses (adult formulation **Recombivax HB** only).
- For other catch-up guidance, see Figure 2.

2. Rotavirus vaccines. (minimum age: 6 weeks)

Routine vaccination:

Rotarix: 2-dose series at 2 and 4 months.

RotaTeq: 3-dose series at 2, 4, and 6 months.

If any dose in the series is either RotaTeq or unknown, default to 3-dose series.

Catch-up vaccination:

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

3. Diphtheria, tetanus, and acellular pertussis (DTaP) vaccine. (minimum age: 6 weeks [4 years for Kinrix or Quadrate])

Routine vaccination:

- 5-dose series at 2, 4, 6, and 15–18 months, and 4–6 years.
 - o **Prospectively:** A 4th dose may be given as early as age 12 months if at least 6 months have elapsed since the 3rd dose.
 - o **Retrospectively:** A 4th dose that was inadvertently given as early as 12 months may be counted if at least 4 months have elapsed since the 3rd dose.

Catch-up vaccination:

- The 5th dose is not necessary if the 4th dose was administered at 4 years or older.
- For other catch-up guidance, see Figure 2.

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

4. Haemophilus influenzae type b (Hib) vaccine.

(minimum age: 6 weeks)

Routine vaccination:

- **ActHIB, Hiberix, 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 15 months:** Give 3rd (final) dose 8 weeks after 2nd dose.
- **2 doses of PedvaxHIB before 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
 - o Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart
 - o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

Doses given within 14 days of starting therapy or during therapy should be repeated at least 3 months after therapy completion.
- **Hematopoietic stem cell transplant (HSCT)**
- 3-dose series with doses 4 weeks apart starting 6 to 12 months after successful transplant (regardless of Hib vaccination history).

- **Anatomic or functional asplenia (including sickle cell disease)**

12–59 months

- o Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
- o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

Unimmunized* persons 5 years or older

- o Give 1 dose
- **Elective splenectomy**
Unimmunized* persons 15 months or older
 - o Give 1 dose (preferably at least 14 days before procedure).

- **HIV infection**
12–59 months

- o Unvaccinated or only 1 dose before 12 months: Give 2 doses 8 weeks apart.
- o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

Unimmunized* persons 5–18 years

- o Give 1 dose
- **Immunoglobulin deficiency, early component complement deficiency**
12–59 months

- o Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.

- o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

**Unimmunized = Less than routine series (through 14 months) OR no doses (14 months or older)*

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 aged 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:
 - o 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose).
 - o <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).

- 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:
 - o 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose).
 - o <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 either PCV13 or PPSV23: 1 dose of PCV13, 1 dose of PPSV23 at least 8 weeks later.
- Any PCV13 but no PPSV23: 1 dose of PPSV23 at least 8 weeks after the most recent dose of PCV13
- PPSV23 but no PCV13: 1 dose of PCV13 at least 8 weeks after the most recent dose of PPSV23.

Sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiency; HIV infection; chronic renal failure; nephrotic syndrome; malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and other diseases associated with treatment with immunosuppressive drugs or radiation therapy; solid organ transplantation; multiple myeloma:

Age 2–5 years:

- Any incomplete* schedules with:
 - o 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose).
 - o <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) and a 2nd dose of PPSV23 5 years later.

Age 6–18 years:

- No history of either PCV13 or PPSV23: 1 dose of PCV13, 2 doses of PPSV23 (1st dose of PPSV23 administered 8 weeks after PCV13 and 2nd dose of PPSV23 administered at least 5 years after the 1st dose of PPSV23).
- Any PCV13 but no PPSV23: 2 doses of PPSV23 (1st dose of PPSV23 to be given 8 weeks after the most recent dose of PCV13 and 2nd dose of PPSV23 administered at least 5 years after the 1st dose of PPSV23).

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

- PPSV23 but no PCV13: 1 dose of PCV13 at least 8 weeks after the most recent PPSV23 dose and a 2nd dose of PPSV23 to be given 5 years after the 1st dose of PPSV23 and at least 8 weeks after a dose of PCV13.

Chronic liver disease, alcoholism:

- **Age 6–18 years:**
 - No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).

*Incomplete schedules are any schedules where PCV13 doses have not been completed according to ACIP recommended catch-up schedules. The total number and timing of doses for complete PCV13 series are dictated by the age at first vaccination. See Tables 8 and 9 in the ACIP pneumococcal vaccine recommendations (www.cdc.gov/mmwr/pdf/rr/rr5911.pdf) for complete schedule details.

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.

Series Containing Oral Polio Vaccine (OPV), either mixed OPV-IPV or OPV-only series:

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_cid=mm6601a6_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.

- 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) not recommended for the 2017–18 season.
- For additional guidance, see the 2017–18 ACIP influenza vaccine recommendations (*MMWR* August 25, 2017;66(2):1–20: www.cdc.gov/mmwr/volumes/66/rr/pdfs/rr6602.pdf).
- (For the 2018–19 season, see the 2018–19 ACIP influenza vaccine recommendations.)

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).

Catch-up vaccination:

- Ensure persons 7–18 years without evidence of immunity (see *MMWR* 2007;56[No. RR-4], at www.cdc.gov/mmwr/pdf/rr/rr5604.pdf) have 2 doses of varicella vaccine:
 - **Ages 7–12:** routine interval 3 months (minimum interval: 4 weeks).
 - **Ages 13 and older:** minimum interval 4 weeks.

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

Routine vaccination:

- 2 doses, separated by 6–18 months, between the 1st and 2nd birthdays. (A series begun before the 2nd birthday should be completed even if the child turns 2 before the second dose is given.)

Catch-up vaccination:

- Anyone 2 years of age or older may receive HepA vaccine if desired. Minimum interval between doses is 6 months.

Special populations:

- Previously unvaccinated persons who should be vaccinated:
 - Persons traveling to or working in countries with high or intermediate endemicity
 - Men who have sex with men
 - Users of injection and non-injection drugs
 - Persons who work with hepatitis A virus in a research laboratory or with non-human primates
 - Persons with clotting-factor disorders
 - Persons with chronic liver disease
 - 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 (administer the 1st dose as soon as the adoption is planned—ideally at least 2 weeks before the adoptee’s arrival).

11. Serogroup A, C, W, Y meningococcal vaccines. (Minimum age: 2 months [Menveo], 9 months [Menactra]).

Routine:

- 2-dose series: 11–12 years and 16 years.

Catch-Up:

- Age 13–15 years: 1 dose now and booster at age 16–18 years. Minimum interval 8 weeks.
- Age 16–18 years: 1 dose.

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

Special populations and situations:

Anatomic or functional asplenia, sickle cell disease, HIV infection, persistent complement component deficiency (including eculizumab use):

- **Menveo**
 - o 1st dose at 8 weeks: 4-dose series at 2, 4, 6, and 12 months.
 - o 1st dose at 7–23 months: 2 doses (2nd dose at least 12 weeks after the 1st dose and after the 1st birthday).
 - o 1st dose at 24 months or older: 2 doses at least 8 weeks apart.

- **Menactra**

- o Persistent complement component deficiency:
 - 9–23 months: 2 doses at least 12 weeks apart
 - 24 months or older: 2 doses at least 8 weeks apart
- o Anatomic or functional asplenia, sickle cell disease, or HIV infection:
 - 24 months or older: 2 doses at least 8 weeks apart.

— **Menactra** must be administered at least 4 weeks after completion of PCV13 series.

Children who travel to or live in countries where meningococcal disease is hyperendemic or epidemic, including countries in the African meningitis belt or during the Hajj, or exposure to an outbreak attributable to a vaccine serogroup:

- Children <24 months of age:
 - o **Menveo (2–23 months):**
 - 1st dose at 8 weeks: 4-dose series at 2, 4, 6, and 12 months.
 - 1st dose at 7–23 months: 2 doses (2nd dose at least 12 weeks after the 1st dose and after the 1st birthday).
 - o **Menactra (9–23 months):**
 - 2 doses (2nd dose at least 12 weeks after the 1st dose. 2nd dose may be administered as early as 8 weeks after the 1st dose in travelers).
- Children 2 years or older: 1 dose of **Menveo** or **Menactra**.

Note: **Menactra** should be given either before or at the same time as DTaP. For MenACWY booster dose recommendations for groups listed under “Special populations and situations” above, and additional meningococcal vaccination information, see meningococcal *MMWR* publications at: www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html.

12. Serogroup B meningococcal vaccines (minimum age: 10 years [Bexsero, Trumenba]).

Clinical discretion: Adolescents not at increased risk for meningococcal B infection who want MenB vaccine.

MenB vaccines may be given at clinical discretion to adolescents 16–23 years (preferred age 16–18 years) who are not at increased risk.

- **Bexsero:** 2 doses at least 1 month apart.
- **Trumenba:** 2 doses at least 6 months apart. If the 2nd dose is given earlier than 6 months, give a 3rd dose at least 4 months after the 2nd.

Special populations and situations:

Anatomic or functional asplenia, sickle cell disease, persistent complement component deficiency (including eculizumab use), serogroup B meningococcal disease outbreak

- **Bexsero:** 2-dose series at least 1 month apart.
- **Trumenba:** 3-dose series at 0, 1–2, and 6 months.

Note: **Bexsero** and **Trumenba** are not interchangeable.

For additional meningococcal vaccination information, see meningococcal *MMWR* publications at: www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html.

13. Tetanus, diphtheria, and acellular pertussis (Tdap) vaccine. (minimum age: 11 years for routine vaccinations, 7 years for catch-up vaccination)

Routine vaccination:

- **Adolescents 11–12 years of age:** 1 dose.
- **Pregnant adolescents:** 1 dose during each pregnancy (preferably during the early part of gestational weeks 27–36).
- Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

Catch-up vaccination:

- **Adolescents 13–18 who have not received Tdap:** 1 dose, followed by a Td booster every 10 years.
- **Persons aged 7–18 years not fully immunized with DTaP:** 1 dose of Tdap as part of the catch-up series (preferably the first dose). If additional doses are needed, use Td.

- **Children 7–10 years** who receive Tdap inadvertently or as part of the catch-up series may receive the routine Tdap dose at 11–12 years.
- **DTaP inadvertently given after the 7th birthday:**

- o **Child 7–10:** DTaP may count as part of catch-up series. Routine Tdap dose at 11–12 may be given.
- o **Adolescent 11–18:** Count dose of DTaP as the adolescent Tdap booster.
- For other catch-up guidance, see Figure 2.

14. Human papillomavirus (HPV) vaccine (minimum age: 9 years)

Routine and catch-up vaccination:

- Routine vaccination for all adolescents at 11–12 years (can start at age 9) and through age 18 if not previously adequately vaccinated. Number of doses dependent on age at initial vaccination:
 - o **Age 9–14 years at initiation:** 2-dose series at 0 and 6–12 months. Minimum interval: 5 months (repeat a dose given too soon at least 12 weeks after the invalid dose and at least 5 months after the 1st dose).
 - o **Age 15 years or older at initiation:** 3-dose series at 0, 1–2 months, and 6 months. Minimum intervals: 4 weeks between 1st and 2nd dose; 12 weeks between 2nd and 3rd dose; 5 months between 1st and 3rd dose (repeat dose(s) given too soon at or after the minimum interval since the most recent dose).
- Persons who have completed a valid series with any HPV vaccine do not need any additional doses.

Special situations:

- **History of sexual abuse or assault:** Begin series at age 9 years.
 - **Immunocompromised* (including HIV) aged 9–26 years:** 3-dose series at 0, 1–2 months, and 6 months.
 - **Pregnancy:** Vaccination not recommended, but there is no evidence the vaccine is harmful. No intervention is needed for women who inadvertently received a dose of HPV vaccine while pregnant. Delay remaining doses until after pregnancy. Pregnancy testing not needed before vaccination.
- *See *MMWR*, December 16, 2016;65(49):1405–1408, at www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6549a5.pdf.

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