Indiana Department of Health

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Governor

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State Health Commissioner

Statewide Protocol for the Administration of Vaccines by Pharmacists

A. Introduction

This protocol is pursuant to Indiana Code 16-19-4-11 which authorizes the state health commissioner or a designated public health authority who is a licensed prescriber to issue a statewide protocol allowing pharmacists or pharmacist interns to administer or dispense vaccines as recommended by the latest federal Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) immunization recommendations. The protocol outlined below is designed to reduce the morbidity and mortality of vaccine preventable disease by creating a statewide vaccination protocol to allow pharmacists to access the need for, educate patients on, administer, monitor for, and manage adverse effects related to, and document the administration of vaccines.

B. Authorization

Subject to the requirements of this Protocol, eligible providers meeting the qualifications specified in Section C below and applicable law and regulation may:

- determine the immunization needs in accordance with recommendations by the ACIP of the CDC;
- screen all patients for contraindications and precautions for vaccine(s) needed using an appropriate screening questionnaire (see Appendix A-C as examples) and vaccine-specific screening as set forth in other Appendices as stipulated in this protocol;
- administer vaccines according to directions of this protocol; and
- administer epinephrine and/or diphenhydramine in response to an adverse reaction following vaccination as delineated in this protocol.

C. Qualifications

- A pharmacist or pharmacist intern seeking authorization to administer vaccines pursuant to this protocol shall meet the qualifications noted in 856 IAC 4-1-1.
- Pharmacist students and pharmacist interns shall be referred to as pharmacist interns in this protocol.

D. Limitations on Pharmacy-based Immunization

- Any vaccine authorized pursuant to this protocol shall not be administered to any persons under the age of eleven (11) years, except as authorized through Executive Order 21-29, COVID-19 vaccines for persons aged five (5) to ten (10).
- Pursuant to 856 IAC 4-1-3, the pharmacist or pharmacist intern is prohibited from delegating the administration of the vaccine to another person.

E. Protocol, Facility, and Equipment

- Pursuant to 856 IAC 4-1-2, pharmacists and pharmacist interns who administer vaccines under this protocol shall maintain a current copy of this protocol to be available for inspection by the individual receiving the vaccination.
- Pursuant to IC 25-26-13-31.2, the name, license number, and contact information of the state health commissioner or designated public health authority whom authorized this protocol shall be posted at the location where the vaccine is administered.

F. Informed Consent

Pursuant to IC 25-26-13-31.2, Before administering a vaccine to an individual according to this protocol, the pharmacist must receive the consent of one (1) of the following:

- If the individual to whom the vaccine is to be administered is at least five (5) years of age but less than eighteen (18) years of age, the parent or legal guardian of the individual.
- If the individual to whom the vaccine is to be administered is at least eighteen (18) years of age but has a legal guardian, the legal guardian of the individual.
- If the individual to whom the vaccine is to be administered is at least eighteen (18) years of age but has no legal guardian, the individual.

A parent or legal guardian who is required to give consent under this subdivision must be present at the time of vaccination or must provide prior written or verbal consent for the administration of the vaccine.

Pursuant to 856 IAC 4-1-7, the pharmacist intern shall identify themselves to the patient as a pharmacist intern or pharmacist student and receive consent from the individual before being allowed to administer a vaccine.

G. Pharmacy-based Vaccination Record

Pursuant to 856 IAC 4-1-2,

- A vaccination record (see Appendix D and Appendix E as examples) shall be created for the patient;
- a copy of the patient's vaccination record and notification of vaccination to the patient's primary care provider shall be kept for seven (7) years in accordance with IC 16-39-7-1;

- the vaccination record shall contain the following information as recommended by the ACIP General Best Practice Guidelines for Immunization:
    - Patient's name
    - Patient's date of birth
    - Date the vaccine was administered
    - Vaccine administration route/site
    - Vaccine manufacturer
    - Vaccine lot number
    - Edition date of vaccine immunization schedule (VIS) distributed
    - Date of VIS was distributed to the patient
    - Name and title of pharmacist or pharmacist intern who administered the vaccine.
    - Address of location vaccine was administered

H. Reporting Requirements

- Pursuant to 856 IAC 4-1-2, the state health commissioner or a designated public health authority approving this protocol shall be notified within fourteen (14) days after administration of a vaccine. A copy of the notification shall be kept in accordance with the statues and rules of the Indiana board of pharmacy.
- Pursuant to 856 IAC 4-1-2, a pharmacist or designee shall electronically report the vaccination of each patient to an immunization data registry maintained by the state department of health under IC 16-38-5.
    - The following patients shall be excluded from immunization data registry reporting requirements:
        - a written immunization data exception form has been completed and filed in accordance with IC 16-38-5-2; or
        - the patient is a resident of or receiving services from a facility licensed under IC 16-28.
    - Pursuant to IC 16-38-5-2, the minimum vaccination data that must be provided are the following:
        - Patient identification number
        - Patient first and last name
        - Patient date of birth
        - Patient address
        - Patient race
        - Patient gender
        - Vaccine for Children program eligibility, if the patient is eligible for the Vaccine for Children program

- Dose at the administration level under the Vaccination for children program, if the patient is eligible for the Vaccine for Children program
- Vaccination presentation or vaccination code using approved Immunization Information System (IIS) code type
- Immunization Date administered
- Lot number of the administered vaccine

The State department may expand or modify the list of minimum data that must be provided under this section based on Centers for Disease Control Immunization Information System (IIS) minimum field requirements.

- Pursuant to 856 IAC 4-1-4, the pharmacist or pharmacist intern's supervising pharmacist shall report vaccination-related adverse events to the patient's primary care physician and state health commissioner or a designated public health authority who approved this protocol within seventy-two (72) hours of the pharmacist's knowledge of the adverse event.
- Pursuant to 856 IAC 4-1-4, the pharmacist or pharmacist intern's supervising pharmacist shall report to the Vaccine Adverse Events Reporting Systems, the cooperative program for vaccine safety of the Centers for Disease Control and Prevention and the Food and Drug Administration.
- Pursuant to 856 IAC 4-1-4, the qualifying pharmacist is responsible for ensuring that records of the reporting of vaccination-related adverse events is maintained by the pharmacy.

I. Management of Adverse Events

- Per ACIP General Best Practice Guidelines for Immunization, the patient who is administered a vaccine should be monitored for adverse effects for at least fifteen (15) minutes in the general vicinity of the administering pharmacist.
- In the event of an adverse reaction, the administering pharmacist is to follow the procedures for the management of the reaction. The procedures for managing adverse reactions are set forth in Appendix F and Appendix G.

J. Vaccines

- Pharmacists or pharmacist interns who administer vaccines under this protocol shall be authorized to administer any vaccine that is recommended by ACIP in the absence of contraindication to the vaccine (see Appendix H). This includes any FDA authorized COVID-19 vaccine.

This protocol shall be reviewed annually by the state department of health and revised as needed. This protocol shall remain valid for the duration of the standing order. Appendixes A-L shall be updated as necessary.

Last Updated November 3, 2021

Appendix Table of Contents

In the event of a conflict between information provided in the package inserts and ACIP guidelines, providers administering vaccines pursuant to this protocol should adhere to ACIP guidelines.

Appendix A: Children and Teenagers Vaccination Screening Form

This form is available at Screening Checklist for Contraindications to vaccines for Children and Teens.

Screening Checklist for Contraindications to Vaccines for Children and Teens

PATIENT NAME_____

DATE OF BIRTH____/____/____
month day year

For parents/guardians: The following questions will help us determine which vaccines your child may be given today. If you answer "yes" to any question, it does not necessarily mean your child should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is the child sick today?	☐	☐	☐
2. Does the child have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Has the child had a serious reaction to a vaccine in the past?	☐	☐	☐
4. Does the child have a long-term health problem with lung, heart, kidney or metabolic disease (e.g., diabetes), asthma, a blood disorder, no spleen, complement component deficiency, a cochlear implant, or a spinal fluid leak? Is he/she on long-term aspirin therapy?	☐	☐	☐
5. If the child to be vaccinated is 2 through 4 years of age, has a healthcare provider told you that the child had wheezing or asthma in the past 12 months?	☐	☐	☐
6. If your child is a baby, have you ever been told he or she has had intussusception?	☐	☐	☐
7. Has the child, a sibling, or a parent had a seizure; has the child had brain or other nervous system problems?	☐	☐	☐
8. Does the child have cancer, leukemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐
9. Does the child have a parent, brother, or sister with an immune system problem?	☐	☐	☐
10. In the past 3 months, has the child taken medications that affect the immune system such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or had radiation treatments?	☐	☐	☐
11. In the past year, has the child received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐
12. Is the child/teen pregnant or is there a chance she could become pregnant during the next month?	☐	☐	☐
13. Has the child received vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY_____ DATE_____

FORM REVIEWED BY_____ DATE_____

Did you bring your immunization record card with you? yes ☐ no ☐

It is important to have a personal record of your child's vaccinations. If you don't have one, ask the child's healthcare provider to give you one with all your child's vaccinations on it. Keep it in a safe place and bring it with you every time you seek medical care for your child. Your child will need this document to enter day care or school, for employment, or for international travel.

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www.immunize.org/catg.d/p4060.pdf • Item #P4060 (6/20)

Appendix B: HPV, MenACWY, MenB, and Tdap Vaccination Screening Form

This form is available at Screening Checklist for Contraindications to HPV, MenACWY, MenB, and Tdap.

Screening Checklist for Contraindications to HPV, MenACWY, MenB, and Tdap Vaccines for Teens

YOUR NAME_____

DATE OF BIRTH____ /____ /____
month day year

For parents/guardians: The following questions will help us determine if human papillomavirus (HPV), meningococcal conjugate (MenACWY), meningococcal serogroup B (MenB), and tetanus, diphtheria, and acellular pertussis (Tdap) vaccines may be given to your teen today. If you answer "yes" to any question, it does not necessarily mean your teen should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is your teen sick today?	☐	☐	☐
2. Does your teen have allergies to a vaccine component or to latex?	☐	☐	☐
3. Has your teen had a serious reaction to a vaccine in the past?	☐	☐	☐
4. Has your teen had brain or other nervous system problems?	☐	☐	☐
5. For females: Is your teen pregnant?	☐	☐	☐

FORM COMPLETED BY_____ DATE_____

FORM REVIEWED BY_____ DATE_____

Did you bring your teen's immunization record card with you? yes ☐ no ☐

It is important to have a personal record of your teen's vaccinations. If you don't have one, ask your healthcare provider to give you one with all of your teen's vaccinations on it. Keep it in a safe place and be sure your teen carries it every time he/she seeks medical care. Your teen will likely need this document to enter school or college, for employment, or for international travel.

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Appendix C: Adult Vaccination Screening Form

This form is available at [Screening Checklist for Contraindications to Vaccines for Adults.]

Screening Checklist for Contraindications to Vaccines for Adults

PATIENT NAME_____

DATE OF BIRTH____/____/____
month day year

For patients: The following questions will help us determine which vaccines you may be given today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Are you sick today?	☐	☐	☐
2. Do you have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Have you ever had a serious reaction after receiving a vaccination?	☐	☐	☐
4. Do you have a long-term health problem with heart, lung, kidney, or metabolic disease (e.g., diabetes), asthma, a blood disorder, no spleen, complement component deficiency, a cochlear implant, or a spinal fluid leak? Are you on long-term aspirin therapy?	☐	☐	☐
5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐
6. Do you have a parent, brother, or sister with an immune system problem?	☐	☐	☐
7. In the past 3 months, have you taken medications that affect your immune system, such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments?	☐	☐	☐
8. Have you had a seizure or a brain or other nervous system problem?	☐	☐	☐
9. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐
10. For women: Are you pregnant or is there a chance you could become pregnant during the next month?	☐	☐	☐
11. Have you received any vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY_____ DATE_____

FORM REVIEWED BY_____ DATE_____

Did you bring your immunization record card with you? yes ☐ no ☐

It is important for you to have a personal record of your vaccinations. If you don't have a personal record, ask your healthcare provider to give you one. Keep this record in a safe place and bring it with you every time you seek medical care. Make sure your healthcare provider records all your vaccinations on it.

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Appendix D: Children and Teen Vaccination Record Form

This form is available at Vaccine Administration Record for Children and Teens.

Vaccine Administration Record for Children and Teens

Before administering any vaccines, give copies of all pertinent Vaccine Information Statements (VISs) to the child's parent or legal representative and make sure he/she understands the risks and benefits of the vaccine(s). Always provide or update the patient's personal record card.

Patient name_____

Birthdate_____Chart number_____

PRACTICE NAME AND ADDRESS

Vaccine	Type of Vaccine[1]	Date vaccine given (mo/day/yr)	Funding Source (F,S,P)[2]	Site[3]	Vaccine		Vaccine Information Statement (VIS)		Vaccinator[4] (signature or initials and title)
					Lot #	Mfr.	Date on VIS[5]	Date given[6]	
Hepatitis B[8] (e.g., HepB, Hib-HepB, DTaP-HepB-IPV) Give IM.[7]									
Diphtheria, Tetanus, Pertussis[8] (e.g., DTaP, DTaP/Hib, DTaP-HepB-IPV, DT, DTaP-IPV/Hib, DTaP-IPV, Tdap, Td) Give IM.[7]									
***Haemophilus influenzae* type b[8]** (e.g., Hib, Hib-HepB, DTaP-IPV/Hib, DTaP/Hib, Hib-MenCY) Give IM.[7]									
Polio[8] (e.g., IPV, DTaP-HepB-IPV, DTaP-IPV/Hib, DTaP-IPV) Give IPV Subcut or IM.[7] Give all others IM.[7]									
Pneumococcal (e.g., PCV7, PCV13, conjugate; PPSV23, polysaccharide) Give PCV IM.[7] Give PPSV Subcut or IM.[7]									
Rotavirus (RV1, RV5) Give orally (po).									

▶ See page 2 to record measles-mumps-rubella, varicella, hepatitis A, meningococcal, HPV, influenza, and other vaccines (e.g., travel vaccines).

How to Complete this Record

1. Record the generic abbreviation (e.g., Tdap) or the trade name for each vaccine (see table at right).
2. Record the funding source of the vaccine given as either F (federal), S (state), or P (private).
3. Record the site where vaccine was administered as either RA (right arm), LA (left arm), RT (right thigh), LT (left thigh), or NAS (intranasal).
4. Record the publication date of each VIS as well as the date the VIS is given to the patient.
5. To meet the space constraints of this form and federal requirements for documentation, a healthcare setting may want to keep a reference list of vaccinators that includes their initials and titles.
6. For combination vaccines, fill in a row for each antigen in the combination.
7. IM is the abbreviation for intramuscular; Subcut is the abbreviation for subcutaneous.

Abbreviation	Trade Name and Manufacturer
DTaP	Daptacel (Sanofi Pasteur); Infanrix (GlaxoSmithKline [GSK]); Tripedia (Sanofi Pasteur)
DT (pediatric)	Generic (Sanofi Pasteur)
DTaP-HepB-IPV	Pediarix (GSK)
DTaP-IPV/Hib	Pentacel (Sanofi Pasteur)
DTaP-IPV	Kinrix (GSK); Quadracel (Sanofi Pasteur)
HepB	Engerix-B (GSK); Recombivax HB (Merck)
HepA-HepB	Twinrix (GSK); can be given to teens age 18 and older
Hib	ActHIB (Sanofi Pasteur); Hiberix (GSK); PedvaxHIB (Merck)
Hib-MenCY	MenHibrix (GSK)
IPV	Ipol (Sanofi Pasteur)
PCV13	Prevnar 13 (Pfizer)
PPSV23	Pneumovax 23 (Merck)
RV1	Rotarix (GSK)
RV5	RotaTeq (Merck)
Tdap	Adacel (Sanofi Pasteur); Boostrix (GSK)
Td	Decavac, Tenivac (Sanofi Pasteur); Generic (MA Biological Labs)

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Appendix E: Adult Vaccination Record Form

This form is available at Vaccine Administration Record for Adults.

Vaccine Administration Record for Adults

Before administering any vaccines, give the patient copies of all pertinent Vaccine Information Statements (VISs) and make sure he/she understands the risks and benefits of the vaccine(s). Always provide or update the patient's personal record card.

Patient name_____

Birthdate_____ Chart number_____

PRACTICE NAME AND ADDRESS

Vaccine	Type of Vaccine[1]	Date vaccine given (mo/day/yr)	Funding Source (F,S,P)[2]	Route[3] and Site[3]	Vaccine		Vaccine Information Statement (VIS)		Vaccinator[4] (signature or initials and title)
					Lot #	Mfr.	Date on VIS[4]	Date given[4]	
Tetanus, Diphtheria, Pertussis (e.g., Tdap, Td) Give IM.[3]									
Hepatitis A (e.g., HepA, HepA-HepB[6]) Give IM.[3]									
Hepatitis B[5] (e.g., Engerix-B, Recombivax HB, Heplisav-B, HepA-HepB[6]) Give IM.[3]									
Human papillomavirus (HPV2[6], HPV4[6], HPV9) Give IM.[3]									
Measles, Mumps, Rubella (MMR) Give Subcut.[3]									
Varicella (chickenpox,VAR) Give Subcut.[3]									
Meningococcal ACWY (e.g., MenACWY, MPSV4[6]) Give MenACWY IM.[3]									
Meningococcal B (e.g., MenB) Give MenB IM.[3]									

[6]HPV2, HPV4, and MPSV4 vaccines are no longer available in the U.S., but should be included in patient records for historical purposes.

▶ See page 2 to record influenza, pneumococcal, zoster, Hib, and other vaccines (e.g., travel vaccines).

How to Complete this Record

1. With the exception of hepatitis B vaccines, record the generic abbreviation (e.g., Tdap) or the trade name for each vaccine; for hepatitis B vaccines, record the trade name (see table at right).
2. Record the funding source of the vaccine given as either F (federal), S (state), or P (private).
3. Record the route by which the vaccine was given as either intramuscular (IM), subcutaneous (Subcut [SC]), intradermal (ID), intranasal (NAS), or oral (PO) and also the site where it was administered as either RA (right arm), LA (left arm), RT (right thigh), or LT (left thigh).
4. Record the publication date of each VIS as well as the date the VIS is given to the patient.
5. To meet the space constraints of this form and federal requirements for documentation, a healthcare setting may want to keep a reference list of vaccinators that includes their initials and titles.
6. For combination vaccines, fill in a row for each antigen in the combination.

Abbreviation	Trade Name and Manufacturer
Tdap	Adacel (Sanofi Pasteur); Boostrix (GlaxoSmithKline [GSK])
Td	Decavac, Tenivac (Sanofi Pasteur); generic Td (MA Biological Labs)
HepA	Havrix (GSK); Vaqta (Merck)
For hepatitis B, see footnote #5.	Engerix-B (GSK); Recombivax HB (Merck); Heplisav-B (Dynavax)
HepA-HepB	Twinrix (GSK)
HPV2[6]	Cervarix (GSK)
HPV4[6], HPV9	Gardasil, Gardasil 9 (Merck)
MMR	MMRII (Merck)
VAR	Varivax (Merck)
MenACWY	Menactra (Sanofi Pasteur); Menveo (GSK)
MPSV4[6]	Menomune (Sanofi Pasteur)
MenB	Bexsero (GSK); Trumenba (Pfizer)

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Appendix F: Management of Vaccination-related Adverse Reactions in Children

This form is available at Medical Management of Vaccine Reaction in Children and Teens.

Medical Management of Vaccine Reactions in Children and Teens in a Community Setting

The table below describes steps to take if an adverse reaction occurs following vaccination.

Administering any medication, including vaccines, has the potential to cause an adverse reaction. To minimize the likelihood of an adverse event, screen patients for vaccine contraindications and precautions prior to vaccination (see "Screening Checklist for Contraindications to Vaccines for Children and Teens" at www.immunize.org/catg.d/p4060.pdf). When adverse reactions do occur, they can vary from minor (e.g., soreness, itching) to the rare and serious (e.g., anaphylaxis). Be prepared.

Vaccine providers should know how to recognize allergic reactions, including anaphylaxis. Have a plan in place and supplies available to provide appropriate medical care should such an event occur.

REACTION	SIGNS AND SYMPTOMS	MANAGEMENT
Localized	Soreness, redness, itching, or swelling at the injection site	Apply a cold compress to the injection site. Consider giving an analgesic (pain reliever) or antipruritic (anti-itch) medication.
	Slight bleeding	Apply pressure and an adhesive compress over the injection site.
	Continuous bleeding	Place thick layer of gauze pads over site and maintain direct and firm pressure; raise the bleeding injection site (e.g., arm) above the level of the patient's heart.
Psychological fright and syncope (fainting)	Fright before injection is given	Have patient sit or lie down for the vaccination.
	Paleness, sweating, coldness of the hands and feet, nausea, light-headedness, dizziness, weakness, or visual disturbances	Have patient lie flat. Loosen any tight clothing and maintain open airway. Apply cool, damp cloth to patient's face and neck. Keep them under close observation until full recovery.
	Fall, without loss of consciousness	Examine the patient to determine if injury is present before attempting to move the patient. Place patient flat on back with feet elevated.
	Loss of consciousness	Check to determine if injury is present before attempting to move the patient. Place patient flat on back with feet elevated. Call 911 if patient does not recover immediately.
Anaphylaxis	**Skin and mucosal symptoms** such as generalized hives, itching, or flushing; swelling of lips, face, throat, or eyes. **Respiratory symptoms** such as nasal congestion, change in voice, sensation of throat closing, stridor, shortness of breath, wheeze, or cough. **Gastrointestinal symptoms** such as nausea, vomiting, diarrhea, cramping abdominal pain. **Cardiovascular symptoms** such as collapse, dizziness, tachycardia, hypotension.	See the emergency medical protocol on the next page for detailed steps to follow in treating anaphylaxis.

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Appendix G: Management of Vaccination-related Adverse Reactions in Adults

This form is available at [Medical Management of Vaccine Reactions in Adult Patients](#).

Medical Management of Vaccine Reactions in Adults in a Community Setting

The table below describes steps to take if an adverse reaction occurs following vaccination.

Administering any medication, including vaccines, has the potential to cause an adverse reaction. To minimize the likelihood of an adverse event, screen patients for vaccine contraindications and precautions prior to vaccination (see "Screening Checklist for Contraindications to Vaccines for Adults" at www.immunize.org/catg.d/p4065.pdf). When adverse reactions do occur, they can vary from minor (e.g., soreness, itching) to the rare and serious (e.g., anaphylaxis). Be prepared.

Vaccine providers should know how to recognize allergic reactions, including anaphylaxis. Have a plan in place and supplies available to provide appropriate medical care should such an event occur.

REACTION	SIGNS AND SYMPTOMS	MANAGEMENT
Localized	Soreness, redness, itching, or swelling at the injection site	Apply a cold compress to the injection site. Consider giving an analgesic (pain reliever) or antipruritic (anti-itch) medication.
	Slight bleeding	Apply pressure and an adhesive compress over the injection site.
	Continuous bleeding	Place thick layer of gauze pads over site and maintain direct and firm pressure; raise the bleeding injection site (e.g., arm) above the level of the patient's heart.
Psychological fright, presyncope, and syncope (fainting)	Fright before injection is given	Have patient sit or lie down for the vaccination.
	Patient feels "faint" (e.g., light-headed, dizzy, weak, nauseated, or has visual disturbance)	Have patient lie flat. Loosen any tight clothing and maintain open airway. Apply cool, damp cloth to patient's face and neck. Keep them under close observation until full recovery.
	Fall, without loss of consciousness	Examine the patient to determine if injury is present before attempting to move the patient. Place patient flat on back with feet elevated.
	Loss of consciousness	Check to determine if injury is present before attempting to move the patient. Place patient flat on back with feet elevated. Call 911 if patient does not recover immediately.
Anaphylaxis	**Skin and mucosal symptoms** such as generalized hives, itching, or flushing; swelling of lips, face, throat, or eyes. **Respiratory symptoms** such as nasal congestion, change in voice, sensation of throat closing, stridor, shortness of breath, wheeze, or cough. **Gastrointestinal symptoms** such as nausea, vomiting, diarrhea, cramping abdominal pain. **Cardiovascular symptoms** such as collapse, dizziness, tachycardia, hypotension.	See the emergency medical protocol on the next page for detailed steps to follow in treating anaphylaxis.

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Appendix H: Vaccine Specific Information

The following information was obtained from current ACIP guidelines, CDC Travelers' Health, and CDC's U.S Vaccine Names:

Immunization	Name/ Strength	Patient Population	Dose	Route of Administration	Injection Site	Contraindications	Precautions
Diphtheria and tetanus toxoids (DT)	DT	6 months-6 years	0.5 mL	IM	Deltoid	1. Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	2. GBS <6 weeks after previous dose of tetanus-toxoid–containing vaccine 3. History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid—containing or tetanus-toxoid–containing vaccine; defer immunization until at least 10 years have elapsed since the last tetanus-toxoid-containing vaccine 4. Moderate or severe acute illness with or without fever
Tetanus and diphtheria toxoids (Td)	Tenivac®	≥7 years					
tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap)	Adacel® Boostrix®	10-64 years	0.5 mL	IM	Deltoid	5. Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 6. Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP, DTaP, or Tdap	7. GBS <6 weeks after a previous dose of tetanus-toxoid–containing vaccine 8. Progressive or unstable neurological disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized

								9.	History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid—containing or tetanus-toxoid–containing vaccine; defer immunization until at least 10 years have elapsed since the last tetanus-toxoid–containing vaccine
								10.	Moderate or severe acute illness with or without fever
Diphtheria and tetanus toxoids and acellular pertussis (DTaP)	Daptacel® Infanrix®	6 weeks-6 years	0.5 mL	IM	Deltoid	11.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	13.	Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy; defer DTaP until neurologic status clarified and stabilized
						12.	Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP or DTaP	14.	Temperature of ≥105˚F (≥40.5˚C) within 48 hours after immunization with a previous dose of DTP or DTaP
								15.	Collapse or shock-like state (i.e., hypotonic hyporesponsive episode) within 48 hours after receiving a previous dose of DTP/DTaP
								16.	Seizure ≤3 days after receiving a previous dose of DTP/DTaP
								17.	Persistent, inconsolable crying

							lasting ≥3 hours within 48 hours after receiving a previous dose of DTP/DTaP 18. GBS <6 weeks after previous dose of tetanus-toxoid–containing vaccine 19. History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid–containing or tetanus-toxoid–containing vaccine; defer immunization until at least 10 years have elapsed
Haemophilus influenzae type b (Hib)	ActHIB® Hiberix® PedvaxHIB®	Unimmunized: 1 dose	0.5 mL	IM	Deltoid	20. Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 21. Age <6 weeks	22. Moderate or severe acute illness with or without fever
Hepatitis A (HepA)	Harvix® Vaqta®	≤18 years	0.5 mL	IM	Deltoid	23. Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	24. Moderate or severe acute illness with or without fever
		≥19 years	1.0 mL				
Hepatitis B (HepB)	Recombivax HB®; Engerix-B®	≤19 years	0.5 mL(a)	IM	Deltoid	25. Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 26. Hypersensitivity to yeast	27. Moderate or severe acute illness with or without fever
	Heplisav-B	≥18 years	0.5 mL	IM	Deltoid	28. Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 29. Hypersensitivity to yeast	30. Moderate or severe acute illness with or without fever
	Recombivax HB®; Engerix-B®	≥20 years	1.0 mL	IM	Deltoid	31. Severe allergic reaction (e.g., anaphylaxis) after	33. Moderate or severe acute illness with or without fever

						a previous dose or to a vaccine component 32. Hypersensitivity to yeast	
HepA-HepB	Twinrix®	≥18 years	1.0 mL	IM	Deltoid	34. Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 35. Hypersensitivity to yeast	36. Moderate or severe acute illness with or without fever
Trivalent inactivated influenza vaccine (IIV3)	Afluria®	≥5 years	0.5 mL	IM	Deltoid	37. Severe allergic reaction (e.g., anaphylaxis) after previous dose of influenza vaccine or to vaccine component.	38. GBS <6 weeks after a previous dose of influenza vaccine 39. Moderate or severe acute illness with or without fever 40. Egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness, recurrent emesis; or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting and under the supervision of a health care provider who is able to recognize and manage severe allergic conditions).
	Fluvirin®	≥4 years					
	Fluzone®	≥6 months					
Quadrivalent inactivated influenza vaccine (IIV4)	Afluria®	≥5 years	0.5 mL	IM	Deltoid	41. Severe allergic reaction (e.g., anaphylaxis) after previous dose of influenza vaccine or to vaccine component.	42. GBS <6 weeks after a previous dose of influenza vaccine 43. Moderate or severe acute illness with or without fever Egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness,
	Fluarix®	≥3 years					
	FluLaval®	≥6 months					
	Fluzone®	≥6 months					

								recurrent emesis; or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting and under the supervision of a health care provider who is able to recognize and manage severe allergic conditions).
Trivalent inactivated influenza vaccine (IIV3)	Fluad® Fluzone High-Dose®	≥65 years	0.5 mL	IM	Deltoid	44.	Severe allergic reaction (e.g., anaphylaxis) after previous dose of influenza vaccine or to vaccine component.	45. GBS <6 weeks after a previous dose of influenza vaccine 46. Moderate or severe acute illness with or without fever 47. Egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness, recurrent emesis; or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting and under the supervision of a health care provider who is able to recognize and manage severe allergic conditions).
Trivalent cell culture based inactivated influenza vaccine (ccIIV3)	Flucelvax®	≥4 years	0.5 mL	IM	Deltoid	48.	Severe allergic reaction (e.g., anaphylaxis) after previous dose of influenza vaccine or to vaccine component.	49. GBS <6 weeks after a previous dose of influenza vaccine 50. The tip caps of the pre-filled syringes may contain natural rubber latex which may cause allergic

									reactions in latex-sensitive individuals.
Quadrivalent cell culture based inactivated influenza vaccine (ccIIV4)	Flucelvax Quadrivalent®	≥4 years	0.5 mL	IM	Deltoid	51.	Severe allergic reaction (e.g., anaphylaxis) after previous dose of influenza vaccine or to vaccine component.	52. 53.	GBS <6 weeks after a previous dose of influenza vaccine The tip caps of the pre-filled syringes may contain natural rubber latex which may cause allergic reactions in latex-sensitive individuals.
Recombinant Influenza vaccine (RIV)	Flubok® (trivalent and quadrivalent available)	≥18 years with egg allergy	0.5 mL	IM	Deltoid	54.	Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine	55. 56.	GBS <6 weeks after a previous dose of influenza vaccine Moderate or severe acute illness with or without fever
Inactivated influenza vaccine (IIV), Intradermal	Fluzone Intradermal®	18-64 years	0.1 mL	ID	Deltoid	57.	Severe allergic reaction (e.g., anaphylaxis) after previous dose of influenza vaccine or to vaccine component.	58. 59. 60.	GBS <6 weeks after a previous dose of influenza vaccine Moderate or severe acute illness with or without fever Egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness, recurrent emesis; or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting and under the supervision of a health care provider who is able to recognize and manage severe allergic conditions).

Measles, mumps, and rubella (MMR)[b][c]	M-M-R® II	≥12 months	0.5 mL	Subcut	Fatty tissue over triceps	61. 62. 63. 64. 65.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Pregnancy Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy[d] or patients with HIV infection who are severely immunocompromised) Family history of altered immunocompetence	66. 67. 68. 69.	Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) History of thrombocytopenia or thrombocytopenic purpura Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing[f] Moderate or severe acute illness with or without fever
Quadrivalent meningococcal conjugate vaccine (MenACWY)	Menveo® Menactra®	2 months-55 years 9 months-55 years	0.5 mL	IM	Deltoid	70.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	71.	Moderate or severe acute illness with or without fever
Quadrivalent meningococcal polysaccharide vaccine (MPSV4)	Menomune®	≥2 years	0.5 mL	Subcut	Fatty tissue over triceps	72.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	73.	Moderate or severe acute illness with or without fever
Meningococcal Serogroup B (MenB)	Bexsero® Trumenba®	10-25 years	0.5 mL	IM	Deltoid	74.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	75.	Moderate or severe acute illness with or without fever
Pneumococcal conjugate (PCV13)	Prevnar 13®	≥6 weeks	0.5 mL	IM	Deltoid	76.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose of PCV13 or any diphtheria-toxoid–containing vaccine or to a component of a vaccine (PCV13 or any	77.	Moderate or severe acute illness with or without fever

							diphtheria-toxoid–containing vaccine)		
Pneumococcal polysaccharide (PPSV23)	Pneumovax 23®	≥2 years	0.5 mL	IM or Subcut	Deltoid or fatty tissue over triceps	78.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	79.	Moderate or severe acute illness with or without fever
Human papillomavirus (HPV)	Gardasil® 9 Gardasil®	9-26 years	0.5 mL	IM	Deltoid	80.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	81. 82.	Pregnancy Moderate or severe acute illness with or without fever
	Cervarix®	Females 9-25 years							
Inactivated poliovirus (IPV)	Ipol®	≥6 weeks	0.5 mL	IM or Subcut	Deltoid or fatty tissue over triceps	83.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	84. 85.	Pregnancy Moderate or severe acute illness with or without fever
Varicella (Var)[b][c]	Varivax®	≥12 months	0.5 mL	Subcut	Fatty tissue over triceps	86. 87. 88. 89.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy[d] or patients with HIV infection who are severely immunocompromised)[c] Pregnancy Family history of altered immunocompetence	90. 91. 92.	Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) Moderate or severe acute illness with or without fever Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before immunization (avoid use of these antiviral drugs for 14 days after immunization)
Zoster Vaccine Live	Zostavax®	≥50 years	0.65 mL	Subcut	Fatty tissue over triceps	93. 94.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Known severe immunodeficiency (e.g.,	97. 98.	Moderate or severe acute illness with or without fever Receipt of specific antiviral drugs (acyclovir, famciclovir,

						95.	from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy[d] or patients with HIV infection who are severely immunocompromised)[c]		or valacyclovir) 24 hours before immunization (avoid use of these antiviral drugs for 14 days after immunization)
						96.	Pregnancy		
Zoster Vaccine Recombinant, adjuvanted	Shingrix®	≥50 years	0.5 mL then additional dose 2-6 months later	IM	Deltoid	99.	History of severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine or after a previous dose of SHINGRIX	100.	Prior to administration, the healthcare provider should review the immunization history for possible vaccine sensitivity and previous immunization-related adverse reactions. Appropriate medical treatment and supervision must be available to manage possible anaphylactic reactions following administration of SHINGRIX
Japanese encephalitis	Ixiaro	≥2 months	0.5 mL	Subcut	Fatty tissue over triceps	101.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component.	102.	Hypersensitivity to protamine sulfate
	JE-Vax	≥3 years	1 mL	Subcut	Fatty tissue over triceps	103.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	104.	Generalized urticaria or angioedema may occur up to 17 days after administration
		1-3 years	0.5 mL					105.	Observe for 30 minutes after administration
Rabies	Imovax® Rabies	All ages	1 mL	IM	Deltoid	106.	Severe allergic reaction (e.g., anaphylaxis) after	107.	Immunosuppression can lead to

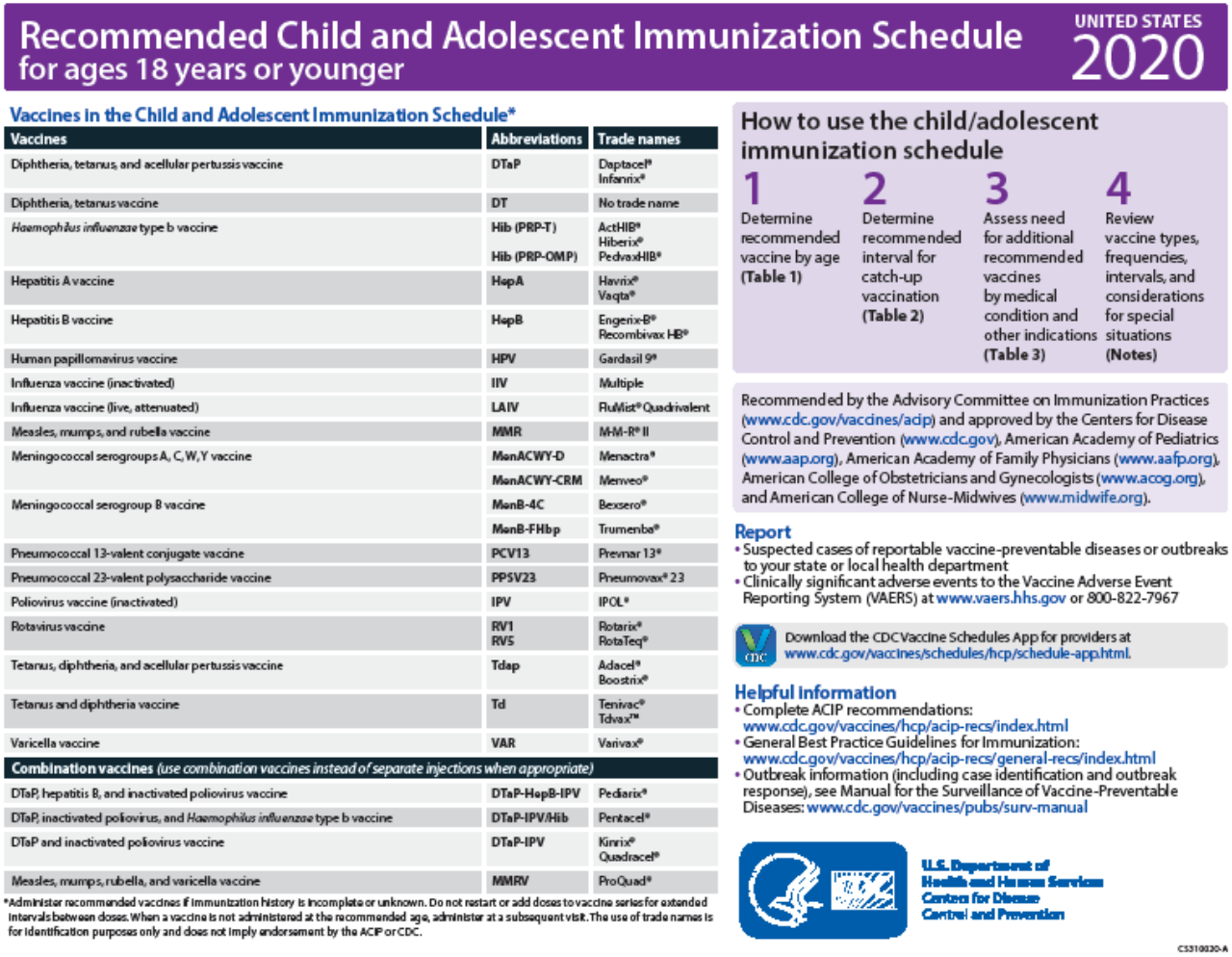
	RabAvert						a previous dose or to a vaccine component		decreased efficacy for both pre- and post-exposure
Typhoid	Typhim Vi®	≥2 years	0.5 mL	IM	Deltoid	108.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	109.	Moderate or severe acute illness with or without fever
	Vivotif®	≥6 years	1 capsule on alternative days for 4 doses	Oral	N/A	110. 111. 112. 113.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy[(d)] or patients with HIV infection who are severely immunocompromised)[(c)] Pregnancy	114. 115. 116.	Avoid use until 3 days after last dose of antimicrobial agent May shed in the stool Moderate or severe acute illness with or without fever
Yellow Fever	YF-Vax®	≥9 months	0.5 mL	Subcut	Fatty tissue over triceps	117. 118. 119. 120.	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy(d) or patients with HIV infection who are severely immunocompromised)[(c)] Pregnancy	121. 122.	Individuals ≥60 years are at an increased risk of developing yellow fever associated viscerotropic disease which may cause non-specific multi-organ failure ≥60 years and immunosuppression are risk factors for post-vaccinal encephalitis

Cholera	Vaxchora®	18-64 years	100 mL	Oral	N/A	123.	Severe allergic reaction (e.g., anaphylaxis) to any ingredient of VAXCHORA or to a previous dose of any cholera vaccine	124. 125. 126. 127.	The safety and effectiveness of VAXCHORA have not been established in immunocompromised persons. VAXCHORA may be shed in the stool of recipients for at least 7 days. There is a potential for transmission of the vaccine strain to non-vaccinated close contacts (e.g., household contacts, child birth) Avoid administering to patients who have received oral or parenteral antibiotics in the preceding 14 days Separate from Vivotif by ≥8 hours due to potential interference

1. Persons aged 11-15 years may be administered Recombivax HB (Merck), 1.0 mL (adult formulation) on a 2-dose schedule.
2. HIV-infected children may receive varicella vaccine if CD4+ T-lymphocyte count is ≥15% and should receive MMR vaccine if they are aged ≥12 months and do not have evidence of current severe immunosuppression (i.e., individuals aged ≤5 years must have CD4+T lymphocyte [CD4] percentages ≥15% for ≥6 months; and individuals aged >5 years must have CD4+percentages ≥15% and CD4+≥200 lymphocytes/mm3 for ≥6 months) or other current evidence of measles, rubella, and mumps immunity. In cases when only CD4+cell counts or only CD4+percentages are available for those older than age 5 years, the assessment of severe immunosuppression can be based on the CD4+values (count or percentage) that are available. In cases when CD4+percentages are not available for those aged ≤5 years, the assessment of severe immunosuppression can be based on age-specific CD4+counts at the time CD4+counts were measured; i.e., absence of severe immunosuppression is defined as ≥6 months above age-specific CD4+count criteria: CD4+count >750 lymphocytes/mm3 while aged ≤12 months and CD4+count ≥500 lymphocytes/mm3 while aged 1 through 5 years.
3. MMR and varicella-containing vaccines can be administered on the same day. If not administered on the same day, these vaccines should be separated by at least 28 days.
4. A substantially immunosuppressive steroid dose is considered to be ≥2 weeks of daily receipt of 20 mg or 2 mg/kg body weight of prednisone or equivalent.
5. If active tuberculosis is suspected, MMR should be delayed. Measles immunization might suppress tuberculin reactivity temporarily. Measles-containing vaccine can be administered on the same day as tuberculin skin or IGRA testing. If testing cannot be performed until after the day of MMR immunization, the test should be postponed for ≥4 weeks after the immunization. If an urgent need exists to skin test or IGRA, do so with the understanding that reactivity might be reduced by the vaccine.

Appendix I: CDC Immunization Schedule for Children and Adolescents Aged 18 Years or Younger

The following chart and additional information can be found at [CDC Children and Adolescents Immunization Schedule](#).



Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger

UNITED STATES 2020

Vaccines in the Child and Adolescent Immunization Schedule*

Vaccines	Abbreviations	Trade names
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel® Infanrix®
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilus influenzae type b vaccine	Hib (PRP-T) Hib (PRP-OMP)	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis B vaccine	HepB	Engerix-B® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV	Multiple
Influenza vaccine (live, attenuated)	LAIV	FluMist® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	MMR-R® II
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM	Menactra® Menveo®
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero® Trumenba®
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13®
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax® 23
Poliovirus vaccine (inactivated)	IPV	IPOL®
Rotavirus vaccine	RV1 RV5	Rotarix® RotaTeq®
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Tetanus and diphtheria vaccine	Td	Tenivac® Tdvax™
Varicella vaccine	VAR	Varivax®
Combination vaccines *(use combination vaccines instead of separate injections when appropriate)*		
DTaP, hepatitis B, and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix®
DTaP, inactivated poliovirus, and *Haemophilus influenzae* type b vaccine	DTaP-IPV/Hib	Pentacel®
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Kinrix® Quadracel®
Measles, mumps, rubella, and varicella vaccine	MMRV	ProQuad®

*Administer recommended vaccines if immunization history is incomplete or unknown. Do not restart or add doses to vaccine series for extended intervals between doses. When a vaccine is not administered at the recommended age, administer at a subsequent visit. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

How to use the child/adolescent immunization schedule

1 Determine recommended vaccine by age **(Table 1)**

2 Determine recommended interval for catch-up vaccination **(Table 2)**

3 Assess need for additional recommended vaccines by medical condition and other indications **(Table 3)**

4 Review vaccine types, frequencies, intervals, and considerations for special situations **(Notes)**

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American Academy of Pediatrics (www.aap.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), and American College of Nurse-Midwives (www.midwife.org).

Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to your state or local health department
- Clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or 800-822-7967

Download the CDC Vaccine Schedules App for providers at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html.

Helpful Information

- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Outbreak information (including case identification and outbreak response), see Manual for the Surveillance of Vaccine-Preventable Diseases: www.cdc.gov/vaccines/pubs/surv-manual

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS310020-A

Appendix J: CDC Catch-Up Immunization Schedule

The following chart and additional information can be found at [CDC Children and Adolescents Immunization Schedule]

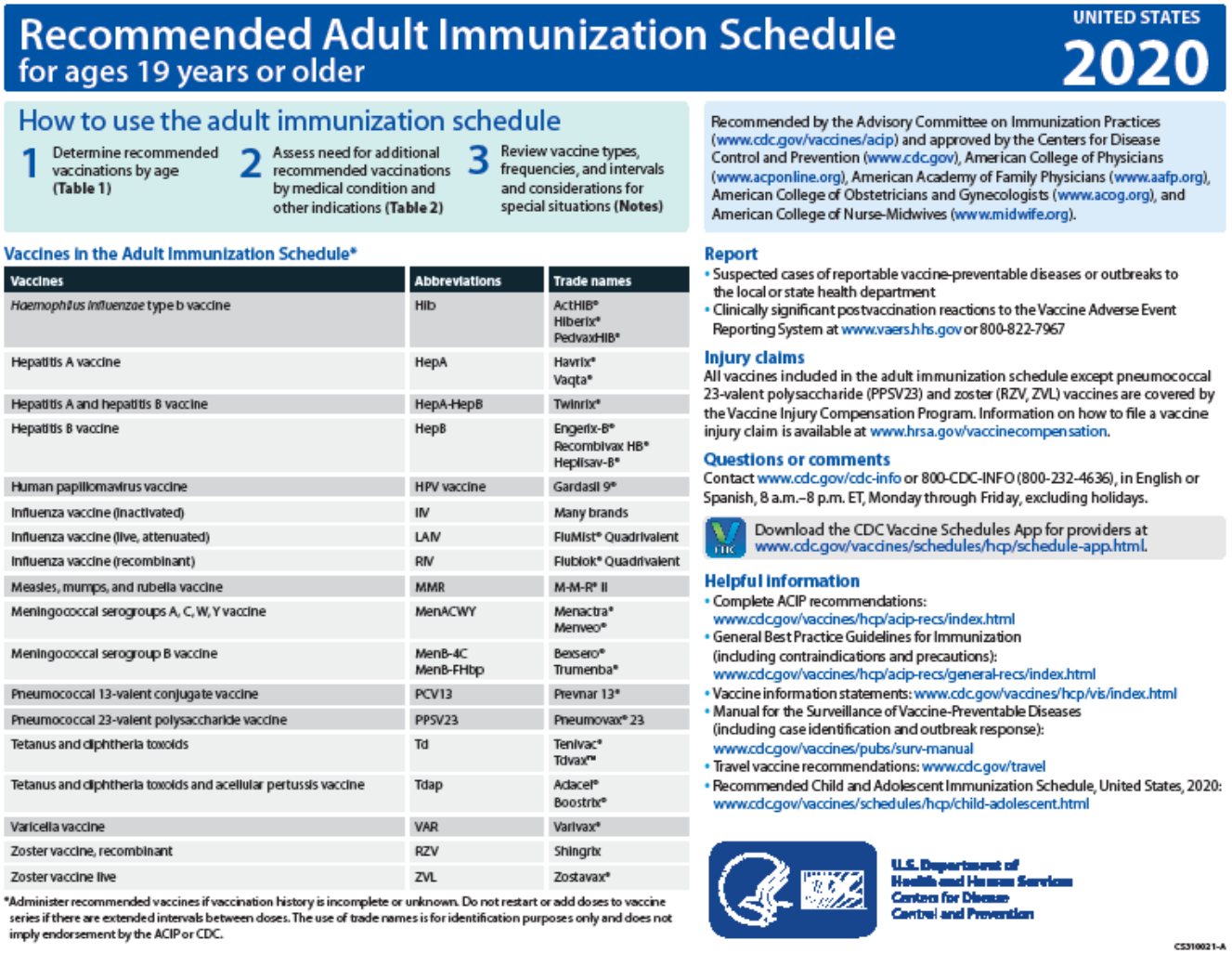
Table 2 Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who are More than 1 month Behind, United States, 2020

The table 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 Table 1 and the notes that follow.**

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Children age 4 months through 6 years					
Hepatitis B	Birth	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose.** Minimum age for the final dose is 24 weeks.		
Rotavirus	6 weeks Maximum age for first dose is 14 weeks, 6 days	**4 weeks**	**4 weeks** Maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and acellular pertussis	6 weeks	**4 weeks**	**4 weeks**	**6 months**	**6 months**
Haemophilus influenzae type b	6 weeks	**No further doses needed** if first dose was administered at age 15 months or older. **4 weeks** If first dose was administered before the 1st birthday. **8 weeks (as final dose)** If first dose was administered at age 12 through 14 months.	**No further doses needed** if previous dose was administered at age 15 months or older. **4 weeks** If current age is younger than 12 months ***and*** first dose was administered at younger than age 7 months ***and*** at least 1 previous dose was PRP-T (ActHib, Pentacel, Hiberix) or unknown. **8 weeks *and* age 12 through 59 months (as final dose)** If current age is younger than 12 months ***and*** first dose was administered at age 7 through 11 months; OR If current age is 12 through 59 months ***and*** first dose was administered before the 1st birthday ***and*** second dose administered at younger than 15 months; OR If both doses were PRP-OMP (PedvaxHIB, Comvax) ***and*** were administered before the 1st birthday.	**8 weeks (as final dose)** This dose only necessary for children age 12 through 59 months who received 3 doses before the 1st birthday.	
Pneumococcal conjugate	6 weeks	**No further doses needed** for healthy children if first dose was administered at age 24 months or older. **4 weeks** If first dose was administered before the 1st birthday. **8 weeks (as final dose for healthy children)** If first dose was administered at the 1st birthday or after.	**No further doses needed** for healthy children if previous dose administered at age 24 months or older. **4 weeks** If current age is younger than 12 months and previous dose was administered at <7 months old. **8 weeks (as final dose for healthy children)** If previous dose was administered between 7–11 months (wait until at least 12 months old); OR If current age is 12 months or older and at least 1 dose was given before age 12 months.	**8 weeks (as final dose)** This dose only necessary for children age 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
Inactivated poliovirus	6 weeks	**4 weeks**	**4 weeks** if current age is < 4 years. **6 months (as final dose)** if current age is 4 years or older.	**6 months** (minimum age 4 years for final dose).	
Measles, mumps, rubella	12 months	**4 weeks**			
Varicella	12 months	**3 months**			
Hepatitis A	12 months	**6 months**			
Meningococcal ACWY	2 months MenACWY-CRM 9 months MenACWY-D	**8 weeks**	See Notes	See Notes	
Children and adolescents age 7 through 18 years					
Meningococcal ACWY	Not applicable (N/A)	**8 weeks**			
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis	7 years	**4 weeks**	**4 weeks** If first dose of DTaP/DT was administered before the 1st birthday. **6 months (as final dose)** If first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday.	**6 months** if first dose of DTaP/DT was administered before the 1st birthday.	
Human papillomavirus	9 years	**Routine dosing intervals are recommended.**			
Hepatitis A	N/A	**6 months**			
Hepatitis B	N/A	**4 weeks**	**8 weeks *and* at least 16 weeks after first dose.**		
Inactivated poliovirus	N/A	**4 weeks**	**6 months** A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella	N/A	**4 weeks**			
Varicella	N/A	**3 months** if younger than age 13 years. **4 weeks** if age 13 years or older.			

Appendix K: CDC Immunization Schedule for Adults Aged 19 years or Older

The following chart and additional information can be found at [CDC Adult Immunization Schedule]



Recommended Adult Immunization Schedule
for ages 19 years or older

UNITED STATES
2020

How to use the adult immunization schedule

1. Determine recommended vaccinations by age **(Table 1)**
2. Assess need for additional recommended vaccinations by medical condition and other indications **(Table 2)**
3. Review vaccine types, frequencies, and intervals and considerations for special situations **(Notes)**

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American College of Physicians (www.acponline.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), and American College of Nurse-Midwives (www.midwife.org).

Vaccines in the Adult Immunization Schedule*

Vaccines	Abbreviations	Trade names
Haemophilus influenzae type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Recombivax HB® Heplisav-B®
Human papillomavirus vaccine	HPV vaccine	Gardasil 9®
Influenza vaccine (inactivated)	IIV	Many brands
Influenza vaccine (live, attenuated)	LAIV	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV	Flublok® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R® II
Meningococcal serogroups A, C, W, Y vaccine	MenACWY	Menactra® Menveo®
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero® Trumenba®
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13®
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax® 23
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Varicella vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix
Zoster vaccine live	ZVL	Zostavax®

*Administer recommended vaccines if vaccination history is incomplete or unknown. Do not restart or add doses to vaccine series if there are extended intervals between doses. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Report
- Suspected cases of reportable vaccine-preventable diseases or outbreaks to the local or state health department
- Clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or 800-822-7967

Injury claims
All vaccines included in the adult immunization schedule except pneumococcal 23-valent polysaccharide (PPSV23) and zoster (RZV, ZVL) vaccines are covered by the Vaccine Injury Compensation Program. Information on how to file a vaccine injury claim is available at www.hrsa.gov/vaccinecompensation.

Questions or comments
Contact www.cdc.gov/cdc-info or 800-CDC-INFO (800-232-4636), in English or Spanish, 8 a.m.–8 p.m. ET, Monday through Friday, excluding holidays.

Download the CDC Vaccine Schedules App for providers at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html.

Helpful information
- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): www.cdc.gov/vaccines/pubs/surv-manual
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2020: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html

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Centers for Disease Control and Prevention

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Appendix L: Travel Vaccination Resource

Eligible providers shall use the CDC Travelers' Health resource for individuals seeking immunization for international travel.