

Recommended Adult Immunization Schedule United States - 2016

The 2016 Adult Immunization Schedule was approved by the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), the American College of Obstetricians and Gynecologists (ACOG), and the American College of Nurse-Midwives (ACNM). On February 4, 2016, the adult immunization schedule and a summary of changes from 2015 were published in *Annals of Internal Medicine*, and the availability of the schedule was announced in *Morbidity and Mortality Weekly Report (MMWR)* on February 4,

All clinically significant postvaccination reactions should be reported to the Adverse Event Reporting System (VAERS). Reporting forms and information on VAERS report are available at www.vaers.hhs.gov or by telephoning 1-800-338-2345.

Additional details regarding ACIP recommendations for each vaccine in the schedule can be found at [www.cdc.gov/vaccines/hcp/](http://www.cdc.gov/vaccines/hcp/acip/)

American Academy of Family Physicians
www.aafp.org/

American College of Physicians (ACP)
www.acponline.org/

American College of Obstetricians and Gynecologists (ACOG)
www.acog.org/

American College of Nurse-Midwives (ACNM)
www.midwife.org/



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

Changes – 2017

- Change title
- Include CDC resource URLs previously listed in Footnote 1. Additional information
- Add general information from Figures 1 and 2
- Include list of acronyms for vaccines

Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

In February 2017, *Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017*, became effective upon recommendation by the Advisory Committee on Immunization Practices (ACIP) and subsequent approval by the Centers for Disease Control and Prevention (CDC). The 2017 adult immunization schedule was also reviewed and approved by the following professional medical organizations:

- American College of Physicians (www.acponline.org)
- American Academy of Family Physicians (www.aafp.org)
- American College of Obstetricians and Gynecologists (www.acog.org)
- American College of Nurse-Midwives (www.midwife.org)

CDC announced the availability of the 2017 adult immunization schedule at www.cdc.gov/vaccines/schedules/hcp/index.html in the *Morbidity and Mortality Weekly Report (MMWR)*¹, and published it in its entirety in the *Annals of Internal Medicine*².

The adult immunization schedule describes the recommended age groups and indications for which currently licensed vaccines are recommended for routine administration for adults aged 19 years or older. It consists of:

- Figure 1. Recommended immunization schedule for adults aged 19 years or older by age group
- Figure 2. Recommended immunization schedule for adults aged 19 years or older by medical condition and other indications
- Footnotes that accompany each vaccine that contain important general information and considerations for special populations
- Table. Contraindications and precautions for vaccines routinely recommended for adults aged 19 years or older

Details on recommended vaccines and complete ACIP statements are available at www.cdc.gov/vaccines/hcp/acip-recs/index.html

Additional CDC resources include:

- A summary of information on vaccination recommendations, vaccination of persons with immunodeficiencies, preventing and managing adverse reactions, vaccination contraindications and precautions, and other information can be found in *General Recommendations on Immunization* at www.cdc.gov/mmwr/preview/mmwrhtml/rr6002a1.htm.
- Information and resources regarding vaccination of pregnant women are available at www.cdc.gov/vaccines/adults/rec-vac/pregnant.html.
- Information on travel vaccine requirements and recommendations is available at wwwnc.cdc.gov/travel/destinations/list.
- *CDC Vaccine Schedules App* for clinicians and other immunization providers to download is available at: www.cdc.gov/vaccines/schedules/hcp/schedule-app.html.
- *Recommended Immunization Schedule for Children Aged 18 Years or Younger* is available at www.cdc.gov/vaccines/schedules/hcp/index.html.

When indicated, administer routinely recommended vaccines to adults whose vaccination

history is incomplete or unknown. For vaccines routinely recommended for adults, a vaccine series does not need to be restarted regardless of the time that has elapsed between doses. Adults with immune deficiencies or immunocompromising conditions should generally avoid live vaccines, e.g., measles, mumps, and rubella vaccine. Inactivated vaccines, e.g., pneumococcal or inactivated influenza vaccines, are generally acceptable. Combination vaccines may be used when any component of the combination is indicated and when the other components of the combination vaccine are not contraindicated. The use of trade names in the adult immunization schedule is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Report suspected cases of reportable vaccine-preventable diseases to the local or state health department.

Report all clinically significant post-vaccination reactions to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or by telephone, 800-822-7967. All vaccines included in the 2017 adult immunization schedule are covered by the Vaccine Injury Compensation Program except zoster and 23-valent pneumococcal polysaccharide vaccines. Information on how to file a vaccine injury claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382.

Submit questions and comments regarding the 2017 adult immunization schedule to CDC through www.cdc.gov/cdc-info or by telephone, 800-CDC-INFO (800-232-4636), in English and Spanish, 8:00am–8:00pm ET, Monday–Friday, excluding holidays.

Where appropriate, the following acronyms are used for vaccines routinely recommended for adults:

Hib	<i>Haemophilus influenzae</i> type b conjugate vaccine
HPV	human papillomavirus vaccine
IIV	inactivated influenza vaccine
LAIV	live attenuated influenza vaccine
MenACWY	serogroup A, C, W, and Y meningococcal conjugate vaccine
MenB	serogroup B meningococcal vaccine
MMR	measles, mumps, and rubella vaccine
MPSV4	serogroup A, C, W, and Y meningococcal polysaccharide vaccine
PCV13	13-valent pneumococcal conjugate vaccine
PPSV23	23-valent pneumococcal polysaccharide vaccine
RIV	recombinant influenza vaccine
Td	tetanus and diphtheria toxoids, adsorbed
Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine, adsorbed

¹ MMWR Morb Mortal Wkly Rep 2017;66:XX–XX. Available at www.cdc.gov/mmwr/volumes/65/wr/mm6504a5.htm [replace with new url for 2017].

² Ann Intern Med 2017;165(X):XXX–XXX. Available at annals.org/article.aspx?articleID=2484895 [replace with new url for 2017].



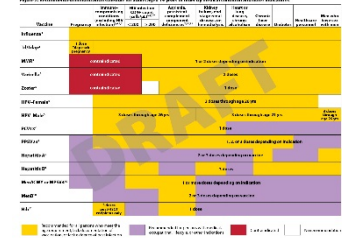
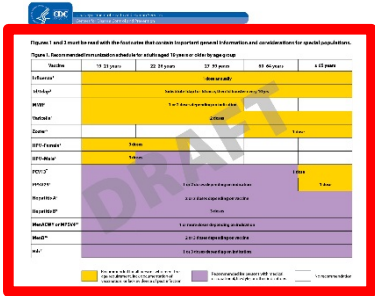
Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

Introduction

The purpose of this document is to provide a recommended immunization schedule for adults aged 19 years or older, United States, 2017. This schedule is based on the most current evidence available and is intended to guide healthcare providers and patients in making decisions about immunization. The schedule is organized by age group and includes recommendations for routine and catch-up immunizations. The schedule is based on the most current evidence available and is intended to guide healthcare providers and patients in making decisions about immunization. The schedule is organized by age group and includes recommendations for routine and catch-up immunizations.

Abbreviations

DTaP: Diphtheria, tetanus, and acellular pertussis vaccine
 IPV: Inactivated poliovirus vaccine
 Hib: Haemophilus influenzae type b polysaccharide conjugate vaccine
 MMR: Measles, mumps, and rubella vaccine
 MMR2: Second dose of measles, mumps, and rubella vaccine
 Hib/Pol: Hib polysaccharide conjugate vaccine and inactivated poliovirus vaccine
 Tdap: Tetanus, diphtheria, and acellular pertussis vaccine
 HepA: Hepatitis A vaccine
 HepB: Hepatitis B vaccine
 HepB/HPV: Hepatitis B vaccine and human papillomavirus vaccine
 HPV: Human papillomavirus vaccine
 Zoster: Zoster vaccine
 Shingrix: Zoster vaccine, recombinant
 Shingrix/Pol: Zoster vaccine, recombinant and inactivated poliovirus vaccine
 PCV13: Pneumococcal polysaccharide conjugate vaccine
 PCV15: Pneumococcal polysaccharide conjugate vaccine
 PCV20: Pneumococcal polysaccharide conjugate vaccine
 Hib/PCV: Hib polysaccharide conjugate vaccine and pneumococcal polysaccharide conjugate vaccine
 Hib/PCV/Pol: Hib polysaccharide conjugate vaccine, pneumococcal polysaccharide conjugate vaccine, and inactivated poliovirus vaccine
 Hib/PCV/Pol/HPV: Hib polysaccharide conjugate vaccine, pneumococcal polysaccharide conjugate vaccine, inactivated poliovirus vaccine, and human papillomavirus vaccine
 Hib/PCV/Pol/HPV/Zoster: Hib polysaccharide conjugate vaccine, pneumococcal polysaccharide conjugate vaccine, inactivated poliovirus vaccine, human papillomavirus vaccine, and zoster vaccine



Persons Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

Introduction

The purpose of this document is to provide a recommended immunization schedule for adults aged 19 years or older, United States, 2017. This schedule is based on the most current evidence available and is intended to guide healthcare providers and patients in making decisions about immunization. The schedule is organized by age group and includes recommendations for routine and catch-up immunizations. The schedule is based on the most current evidence available and is intended to guide healthcare providers and patients in making decisions about immunization. The schedule is organized by age group and includes recommendations for routine and catch-up immunizations.

Abbreviations

DTaP: Diphtheria, tetanus, and acellular pertussis vaccine
 IPV: Inactivated poliovirus vaccine
 Hib: Haemophilus influenzae type b polysaccharide conjugate vaccine
 MMR: Measles, mumps, and rubella vaccine
 MMR2: Second dose of measles, mumps, and rubella vaccine
 Hib/Pol: Hib polysaccharide conjugate vaccine and inactivated poliovirus vaccine
 Tdap: Tetanus, diphtheria, and acellular pertussis vaccine
 HepA: Hepatitis A vaccine
 HepB: Hepatitis B vaccine
 HepB/HPV: Hepatitis B vaccine and human papillomavirus vaccine
 HPV: Human papillomavirus vaccine
 Zoster: Zoster vaccine
 Shingrix: Zoster vaccine, recombinant
 Shingrix/Pol: Zoster vaccine, recombinant and inactivated poliovirus vaccine
 PCV13: Pneumococcal polysaccharide conjugate vaccine
 PCV15: Pneumococcal polysaccharide conjugate vaccine
 PCV20: Pneumococcal polysaccharide conjugate vaccine
 Hib/PCV: Hib polysaccharide conjugate vaccine and pneumococcal polysaccharide conjugate vaccine
 Hib/PCV/Pol: Hib polysaccharide conjugate vaccine, pneumococcal polysaccharide conjugate vaccine, and inactivated poliovirus vaccine
 Hib/PCV/Pol/HPV: Hib polysaccharide conjugate vaccine, pneumococcal polysaccharide conjugate vaccine, inactivated poliovirus vaccine, and human papillomavirus vaccine
 Hib/PCV/Pol/HPV/Zoster: Hib polysaccharide conjugate vaccine, pneumococcal polysaccharide conjugate vaccine, inactivated poliovirus vaccine, human papillomavirus vaccine, and zoster vaccine

Table 1. Recommended immunization schedule for adults aged 19 years or older, United States, 2017

Age Group	Vaccine	Timing	Notes
19-29 years	MMR	1, 2	1st dose at 19-24 years, 2nd dose at 25-34 years
	Hib	1, 2	1st dose at 19-24 years, 2nd dose at 25-34 years
30-39 years	Tdap	1	1st dose at 30-39 years
	HepA	1	1st dose at 30-39 years
40-49 years	HepB	1, 2, 3	1st dose at 40-49 years, 2nd dose at 49-59 years, 3rd dose at 59-69 years
	HPV	1, 2, 3	1st dose at 40-49 years, 2nd dose at 49-59 years, 3rd dose at 59-69 years
50-64 years	Zoster	1	1st dose at 50-64 years
	PCV	1	1st dose at 50-64 years
65-69 years	Zoster	1	1st dose at 65-69 years
	PCV	1	1st dose at 65-69 years
70 years and older	Zoster	1	1st dose at 70 years and older
	PCV	1	1st dose at 70 years and older

Figure 1. Recommendation by Age Group

Recommended Adult Immunization Schedule—United States - 2016

Revise title and note

Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

Figure 1. Recommended immunization schedule for adults aged 19 years or older, by vaccine and age group¹

VACCINE ▼	AGE GROUP ►	19-21 years	22-26 years	27-49 years	50-59 years	60-64 years	≥ 65 years
Influenza		1 dose annually					
Tetanus, diphtheria, pertussis (Td/Tdap) ^{2,3}		Substitute Tdap for Td once, then Td booster every 10 yrs					
Varicella ^{2,4}		2 doses					
Human papillomavirus (HPV) Female ⁵		3 doses					
Human papillomavirus (HPV) Male ⁵		3 doses					
Zoster ⁶		Lump live vaccines (MMR, varicella, zoster)				1 dose	
Measles, mumps, rubella (MMR) ⁷		1 or 2 doses depending on indication				Use blocks instead of bars for indications	
Pneumococcal 13-valent conjugate (PCV13) ⁸		1 dose					
Pneumococcal 23-valent polysaccharide (PPSV23) ⁸		1 or 2 doses depending on indication					1 dose
Hepatitis A ⁹		2 or 3 doses depending on vaccine					
Hepatitis B ^{9,10}		3 doses					
Meningococcal 4-valent conjugate (MenACWY) or polysaccharide (MPSV4) ¹¹		1 or more doses depending on indication					
Meningococcal B (MenB) ¹¹		2 or 3 doses depending on vaccine					
<i>Haemophilus influenzae</i> type b (Hib) ¹²		1 or 3 doses depending on indication					

¹Covered by the Vaccine Injury Compensation Program

- Recommended for all persons who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection; zoster vaccine is recommended regardless of past episode of zoster
- Recommended for persons with a risk factor (medical, occupational, lifestyle, or other indication)
- No recommendation

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Significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at www.vaers.hhs.gov or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20003; telephone, 202-337-6449.

Remove clause on zoster vaccination in legend

Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 8:00 a.m. - 8:00 p.m. Eastern Time, Monday - Friday, excluding holidays.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.


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The recommendations in this schedule were approved by the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), the American College of Obstetricians and Gynecologists (ACOG) and the American College of Nurse-Midwives (ACNM).

Figures 1 and 2 must be read with the footnotes that contain important general information and considerations for special populations.

Figure 1. Recommended immunization schedule for adults aged 19 years or older by age group, United States, 2017

Vaccine	19–21 years	22–26 years	27–59 years	60–64 years	≥ 65 years
Influenza ¹	1 dose annually				
Td/Tdap ²	Substitute Tdap for Td once, then Td booster every 10 yrs				
MMR ³	1 or 2 doses depending on indication				
Varicella ⁴	2 doses				
Zoster ⁵				1 dose	
HPV–Female ⁶	3 doses				
HPV–Male ⁶	3 doses				
PCV13 ⁷				1 dose	
PPSV23 ⁷	1 or 2 doses depending on indication				1 dose
Hepatitis A ⁸	2 or 3 doses depending on vaccine				
Hepatitis B ⁹	3 doses				
MenACWY or MPSV4 ¹⁰	1 or more doses depending on indication				
MenB ¹⁰	2 or 3 doses depending on vaccine				
Hib ¹¹	1 or 3 doses depending on indication				

 Recommended for all persons who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection

 Recommended for persons with medical, occupational, lifestyle, or other indications

 No recommendation

Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

Immunization is a key strategy for preventing infectious diseases. The Advisory Committee on Immunization Practices (ACIP) recommends that all adults aged 19 years or older be up to date with the following immunizations:

Core Immunizations: These are recommended for all adults aged 19 years or older. They include:

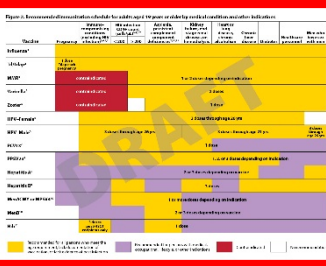
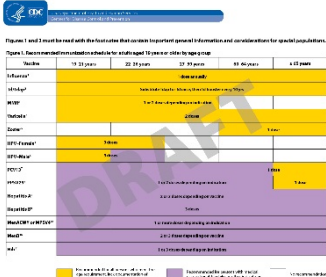
- Tdap (tetanus, diphtheria, and pertussis):** One dose, with a booster every 10 years.
- MMR (measles, mumps, and rubella):** Two doses, with the second dose given at least 4 weeks after the first.
- MMRV (measles, mumps, rubella, and varicella):** One dose, which can be given instead of the first MMR dose.
- MMRV2 (measles, mumps, rubella, and varicella):** One dose, which can be given instead of the second MMR dose.
- Polio (inactivated poliovirus vaccine [IPV]):** One dose, if the person has never received any polio vaccine.
- Shingles (zoster vaccine):** One dose, for adults aged 60 years or older.
- Hepatitis B (HBV):** Three doses, for adults aged 19 years or older who are at risk of infection.
- Hepatitis A (HAV):** Two doses, for adults aged 19 years or older who are at risk of infection.

Conditional Immunizations: These are recommended for adults aged 19 years or older who are at increased risk of infection. They include:

- MMR2 (measles, mumps, and rubella):** One dose, for adults aged 19 years or older who have not received a second dose of MMR.
- MMRV2 (measles, mumps, rubella, and varicella):** One dose, for adults aged 19 years or older who have not received a second dose of MMR.
- Polio (IPV):** One dose, for adults aged 19 years or older who have never received any polio vaccine.
- Shingles (zoster vaccine):** One dose, for adults aged 50 years or older.
- Hepatitis B (HBV):** Three doses, for adults aged 19 years or older who are at risk of infection.
- Hepatitis A (HAV):** Two doses, for adults aged 19 years or older who are at risk of infection.

Special Circumstances: These are recommended for adults aged 19 years or older who are in specific settings. They include:

- MMR2 (measles, mumps, and rubella):** One dose, for adults aged 19 years or older who are in long-term care facilities.
- MMRV2 (measles, mumps, rubella, and varicella):** One dose, for adults aged 19 years or older who are in long-term care facilities.
- Polio (IPV):** One dose, for adults aged 19 years or older who are in long-term care facilities.
- Shingles (zoster vaccine):** One dose, for adults aged 50 years or older who are in long-term care facilities.
- Hepatitis B (HBV):** Three doses, for adults aged 19 years or older who are in long-term care facilities.
- Hepatitis A (HAV):** Two doses, for adults aged 19 years or older who are in long-term care facilities.



Persons Declined Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

Persons who decline immunization are those who do not receive the recommended immunizations. The reasons for declining immunization are:

- Medical contraindications:** These are medical conditions that prevent a person from receiving a vaccine. Examples include severe allergic reactions to vaccine components, immunosuppression, and pregnancy.
- Personal beliefs and practices:** These are personal or cultural beliefs that prevent a person from receiving a vaccine. Examples include religious objections and concerns about vaccine safety.
- Access barriers:** These are barriers that prevent a person from receiving a vaccine. Examples include lack of insurance, lack of transportation, and lack of information.
- Other reasons:** These are other reasons that prevent a person from receiving a vaccine. Examples include being too busy, not knowing where to go, and not wanting to pay for the vaccine.

The reasons for declining immunization vary by vaccine and age group. For example, medical contraindications are the most common reason for declining immunization for adults aged 19 years or older who are at high risk of infection. Personal beliefs and practices are the most common reason for declining immunization for adults aged 19 years or older who are at low risk of infection.

Table 1. Persons aged 19 years or older who declined immunization schedule for adults aged 19 years or older, United States, 2017.

Vaccine	Medical contraindications	Personal beliefs and practices	Access barriers	Other reasons
Tdap	15%	10%	5%	70%
MMR	10%	20%	5%	65%
MMRV	10%	15%	5%	70%
MMRV2	5%	15%	5%	75%
Polio (IPV)	5%	10%	5%	80%
Shingles (zoster vaccine)	5%	10%	5%	80%
Hepatitis B (HBV)	10%	10%	5%	75%
Hepatitis A (HAV)	5%	10%	5%	80%

Figure 2. Recommendation by Risk

Figure 2. Vaccines that might be indicated for adults aged 19 years or older based on medical and other indications¹

VACCINE ▼	INDICATION ►	Pregnancy	Immuno-compromising conditions (excluding HIV infection) ^{4,6,7,8,11}	CD4+ count (cells/ μ L) ^{4,6,7,8,11}	HIV infection	Men who have sex with men (MSM)	Kidney failure, end-stage renal disease, on hemodialysis	Heart disease, chronic lung disease, chronic alcoholism	Update content footnotes	Asplenia and persistent complement component deficiencies ^{8,11,12}	Chronic liver disease	Diabetes	Healthcare personnel
Influenza ^{a,2}				< 200	≥ 200								
				1 dose annually									
Tetanus, diphtheria, pertussis (Td/Tdap) ³		1 dose Tdap each pregnancy		Substitute Tdap for Td once, then Td booster every 10 yrs									
Varicella ⁴			Contraindicated	2 doses									
Human papillomavirus (HPV) Female ⁵				3 doses through age 26 yrs			3 doses through age 26 yrs						
Human papillomavirus (HPV) Male ⁵				3 doses through age 26 yrs			3 doses through age 21 yrs						
Zoster ⁶			Contraindicated	1 dose									
Measles, mumps, rubella (MMR) ⁷			Contraindicated	1 or 2 doses depending on indication									
Pneumococcal 13-valent conjugate (PCV13) ^{7,8}							1 dose						
Pneumococcal polysaccharide (PPSV23) ⁸				1, 2, or 3 doses depending on indication									
Hepatitis A ⁹				2 or 3 doses depending on vaccine									
Hepatitis B ¹⁰				3 doses									
Meningococcal 4-valent conjugate (MenACWY) or polysaccharide (MPSV4) ¹¹				1 or more doses depending on indication									
Meningococcal B (MenB) ¹¹				2 or 3 doses depending on vaccine									
Haemophilus influenzae type b (Hib) ^{a,12}				3 doses post-HSCT recipients only	1 dose								

^aCovered by the Vaccine Injury Compensation Program

Recommended for all persons who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection; zoster vaccine is recommended regardless of past episode of zoster

Recommended for persons with a risk factor (medical, occupational, lifestyle, or other indication)

No recommendation

Contraindicated

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Remove clause on zoster vaccination in legend

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly recommended for adults aged ≥ 19 years, as of February 2016. For all vaccines being recommended on the Adult Immunization Schedule: a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/hcp/acip-recs/index.html). Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.



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

Figure 2. Recommended immunization schedule for adults aged 19 years or older by medical condition and other indications, United States, 2017

Vaccine	Pregnancy ¹⁻⁶	Immuno-compromising conditions (excluding HIV infection) ^{3-7,11}	HIV infection CD4+ count (cells/ μ L) ^{3,7,9-11}		Asplenia, persistent complement component deficiencies ^{7,10,11}	Kidney failure, end-stage renal disease, on hemodialysis ^{7,9}	Heart or lung disease, chronic alcoholism ⁷	Chronic liver disease ⁷⁻⁹	Diabetes ^{7,9}	Healthcare personnel ^{3,4,9}	Men who have sex with men ^{6,8,9}	
			< 200	\geq 200								
Influenza ¹												1 dose annually
Td/Tdap ²	1 dose Tdap each pregnancy											Substitute Tdap for Td once, then Td booster every 10 yrs
MMR ³		contraindicated										1 or 2 doses depending on indication
Varicella ⁴		contraindicated										2 doses
Zoster ⁵		contraindicated										1 dose
HPV–Female ⁶												3 doses through age 26 yrs
HPV–Male ⁶			3 doses through age 26 yrs									3 doses through age 21 yrs
PCV13 ⁷												1 dose
PPSV23 ⁷												1, 2, or 3 doses depending on indication
Hepatitis A ⁸												2 or 3 doses depending on vaccine
Hepatitis B ⁹												3 doses
MenACWY or MPSV4 ¹⁰												1 or more doses depending on indication
MenB ¹⁰												2 or 3 doses depending on vaccine
Hib ¹¹			3 doses post-HSCT recipients only									1 dose

Recommended for all persons who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection
 Recommended for persons with medical, occupational, lifestyle, or other indications
 Contraindicated
 No recommendation

TABLE. Contraindications and precautions to commonly used vaccines in adults^{1,2}

Vaccine	Contraindications	Precautions
Influenza, inactivated (IIV) ³	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine or to a vaccine component, including egg protein 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination Adults with egg allergy of any severity may receive IIV; adults with history of allergy to eggs may receive IIV with additional safety measures⁴
Influenza, recombinant (RIV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after previous dose of RIV or to a vaccine component. RIV does not contain any egg protein⁵ 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination
Influenza, live attenuated (LAIV) ^{3,6}	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine, or to a previous dose of any influenza vaccine In addition, ACP recommends that LAIV not be used in the following populations: <ul style="list-style-type: none"> pregnant women immunosuppressed adults adults with egg allergy of any severity adults who have taken influenza antiviral medications (amantadine, zanamivir, or oseltamivir) within the previous use of these antiviral drugs for 14 days after vaccination 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination Asthma in persons aged 5 years and older Other chronic medical conditions, e.g., other chronic lung diseases, chronic cardiovascular disease (excluding isolated hypertension), diabetes, chronic renal or hepatic disease, hematologic disease, neurologic disease, and psychiatric disorders
Tetanus, diphtheria, pertussis (Tdap); tetanus, diphtheria (Td)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any tetanus-containing vaccine component For pertussis-containing vaccines: encephalopathy (e.g., collapse of consciousness or prolonged seizures) not attributable to identifiable cause within 7 days of administration of a previous Tdap, diphtheria and tetanus toxoids, and pertussis (DTaP) or tetanus toxoids and acellular pertussis (Tdap) vaccine 	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any tetanus-containing vaccine component
Varicella ⁷	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any varicella-containing vaccine component Known severe immunodeficiency (e.g., from hematologic malignancy, receipt of chemotherapy, congenital immunodeficiency, immunosuppressive therapy,⁸ or patients with human immunodeficiency virus [HIV] infection who are severely immunocompromised) Pregnancy 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Human papillomavirus (HPV)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any HPV vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Zoster ⁹	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) to a vaccine component Known severe immunodeficiency (e.g., from hematologic malignancy, receipt of chemotherapy, or long-term immunosuppressive therapy), or patients with HIV infection who are severely immunocompromised Pregnancy 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Measles, mumps, rubella (MMR) ¹⁰	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any MMR vaccine component Known severe immunodeficiency (e.g., from hematologic malignancy, receipt of chemotherapy, congenital immunodeficiency, immunosuppressive therapy,⁸ or patients with human immunodeficiency virus [HIV] infection who are severely immunocompromised) Pregnancy 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Pneumococcal conjugate (PCV13)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any pneumococcal vaccine component, including to any vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Pneumococcal polysaccharide (PPSV23)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any pneumococcal vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Hepatitis A	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any hepatitis A vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Hepatitis B	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any hepatitis B vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Meningococcal conjugate (MenACWY); meningococcal polysaccharide (MPSV4)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Meningococcal serogroup B (MenB)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever
Neisseria meningitidis type B (MenB)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever

Changes – 2017

- Add general information
- Use acronyms in table (list acronyms at bottom of page)
- Consolidate contraindications and precautions applicable to all routinely recommended vaccines
- List additional contraindications and precautions for applicable vaccines
- Revise precaution for IIV in egg allergy per June 2016 update
- List LAIV as not recommended per June 2016 update

1. Vaccine package inserts and the full ACP recommendations for these vaccines should be consulted for additional information on vaccine-related contraindications and precautions and for more information on vaccine excipients. Events or conditions listed as precautions should be reviewed carefully. Benefits of and risks for administering a specific vaccine to a person under these circumstances should be considered. If the risk from the vaccine is believed to outweigh the benefits, the vaccine should not be administered. If the benefit of vaccination is believed to outweigh the risk, the vaccine should be administered. A contraindication is a condition in a recipient that increases the chance of a serious adverse reaction. Therefore, a vaccine should not be administered when a contraindication is present.

2. For more information on use of influenza vaccines among persons with egg allergies and a complete list of conditions that CDC considers to be reasons to avoid receiving LAIV, see CDC, Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP) – United States, 2015–16 Influenza Season. *MMWR* 2015;64(30):818–25.

3. LAIV, MMR, varicella, or zoster vaccines can be administered on the same day. If not administered on the same day, the vaccines should be separated by at least 28 days.

4. Immunosuppressive status is considered to be >2 weeks of daily receipt of 20 mg of prednisone or the equivalent. Vaccination should be deferred for at least 1 month after discontinuation of such therapy. Providers should consult ACP recommendations for complete information on the use of specific live vaccines among persons on immune-suppressing medications or with immune suppression because of other reasons.

5. Vaccine should be deferred for the appropriate interval if replacement immune globulin products are being administered. See CDC, General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60(9):RR-2. Available at www.cdc.gov/vaccines/pubs/mmwr/index.html.

6. Measles vaccination might suppress tuberculin reactivity temporarily. Measles-containing vaccine may be administered on the same day as tuberculin skin testing. If testing cannot be performed until after the day of MMR vaccination, the test should be postponed for at least 4 weeks after the vaccination. If an urgent need exists to skin test, do so with the understanding that reactivity might be reduced by the vaccine.

⁷ Adapted from CDC, Table 6. Contraindications and precautions to commonly used vaccines. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2011;60(9):RR-2:40–41 and from Hamborsky J, Kroger A, Wolfe S, eds. *Epidemiology and prevention of vaccine-preventable diseases*, 13th ed. Washington, DC: Public Health Foundation, 2015. Available at www.cdc.gov/vaccines/pubs/book/index.html.

⁸ Regarding latex allergy, consult the package insert for any vaccine administered.



Table 6. Contraindications and precautions for vaccines routinely recommended for adults aged 19 years or older*

The Advisory Committee on Immunization Practices (ACIP)-recommended vaccines and package inserts for these vaccines provide additional information on vaccine-related contraindications and precautions. Contraindications are conditions that increase chances of a serious adverse reaction in vaccine recipients and the vaccine should not be administered when a contraindication is present. Precautions should be reviewed for potential risks and benefits for vaccine recipient. For a person with a severe allergy, e.g., anaphylaxis, to latex, vaccines supplied in vials or syringes that contain natural rubber latex should not be administered unless the benefit of vaccination clearly outweighs the risk for a potential allergic reaction. For latex allergies other than anaphylaxis, vaccines supplied in vials or syringes that contain dry, natural rubber or natural rubber latex may be administered.

Contraindications and precautions for vaccines routinely recommended for adults

Vaccine	Contraindications	Precautions
All routinely recommended vaccines for adults	• Severe, e.g., anaphylaxis, reaction after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever

Additional contraindications and precautions for vaccines routinely recommended for adults

Vaccine	Additional Contraindications	Additional Precautions
IIV ¹		<ul style="list-style-type: none"> • History of Guillain-Barré Syndrome within 6 weeks after previous influenza vaccination • Egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness, or recurrent emesis; or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting and supervised by a healthcare provider who can recognize and manage severe allergic conditions)
RIV ¹		<ul style="list-style-type: none"> • History of Guillain-Barré Syndrome within 6 weeks after previous influenza vaccination
LAIV ¹	• LAIV should not be used during 2016–2017 influenza season	• LAIV should not be used during 2016–2017 influenza season
Tdap/Td	<ul style="list-style-type: none"> • For pertussis-containing vaccines: encephalopathy, e.g., coma, decreased level of consciousness, or prolonged seizures, not attributable to another identifiable cause within 7 days of administration of a previous dose of a vaccine containing tetanus or diphtheria toxoid or acellular pertussis 	<ul style="list-style-type: none"> • Guillain-Barré Syndrome within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Arthus-type hypersensitivity reactions after a previous dose of tetanus or diphtheria toxoid-containing vaccine. Defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine • For pertussis-containing vaccine, progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy (until a treatment regimen has been established and the condition has stabilized)
MMR ²	<ul style="list-style-type: none"> • Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy³, human immunodeficiency virus (HIV) infection with severe immunocompromise • Pregnancy 	<ul style="list-style-type: none"> • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)⁴ • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing⁵
Varicella ²	<ul style="list-style-type: none"> • Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy³, HIV infection with severe immunocompromise • Pregnancy 	<ul style="list-style-type: none"> • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)⁴ • Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
Zoster ²	<ul style="list-style-type: none"> • Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy³, HIV infection with severe immunocompromise • Pregnancy 	<ul style="list-style-type: none"> • Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
HPV		• Pregnancy
PCV13	• Severe allergic reaction to any vaccine containing diphtheria toxoid	

1. For more information on use of influenza vaccines among persons with egg allergy, see CDC. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices—United States, 2016–17 influenza season. MMWR 2016;65(RR-5):1–54. Available at www.cdc.gov/mmwr/volumes/65/rr/r6505a1.htm.
 2. MMR may be administered together with varicella or zoster vaccine on the same day. If not administered on the same day, separate live vaccines by at least 28 days.
 3. Immunosuppressive steroid dose is considered to be daily receipt of 20 mg or more prednisone or equivalent for two or more weeks. Vaccination should be deferred for at least 1 month after discontinuation of immunosuppressive steroid therapy. Providers should consult ACIP recommendations for complete information on the use of specific live vaccines among persons on immune-suppressing medications or with immune suppression because of other reasons.
 4. Vaccine should be deferred for the appropriate interval if replacement immune globulin products are being administered. See CDC. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2011;60(No. RR-2). Available at www.cdc.gov/mmwr/preview/mmwrhtml/rr6002a1.htm.
 5. Measles vaccination may temporarily suppress tuberculin reactivity. Measles-containing vaccine may be administered on the same day as tuberculin skin testing, or should be postponed for at least 4 weeks after vaccination.
- * Adapted from CDC. Table 6. Contraindications and precautions to commonly used vaccines. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices. MMWR 2011;60(No. RR-2):40–41 and from Hamborsky J, Kroger A, Wolfe S, eds. Appendix A. Epidemiology and prevention of vaccine preventable diseases. 13th ed. Washington, DC: Public Health Foundation, 2015. Available at www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Acronyms for vaccines

Hib	<i>Haemophilus influenzae</i> type b conjugate vaccine	MenB	serogroup B meningococcal vaccine	PPSV23	23-valent pneumococcal polysaccharide vaccine
HPV	human papillomavirus vaccine	MMR	measles, mumps, and rubella vaccine	RIV	recombinant influenza vaccine
IIV	inactivated influenza vaccine	MPSV4	serogroup A, C, W, and Y meningococcal polysaccharide vaccine	Td	tetanus and diphtheria toxoids, adsorbed
LAIV	live attenuated influenza vaccine	PCV13	13-valent pneumococcal conjugate vaccine	Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine, adsorbed
MenACWY	serogroup A, C, W, and Y meningococcal conjugate vaccine				

Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

1. Introduction
 The purpose of this schedule is to provide a comprehensive list of recommended immunizations for adults aged 19 years or older in the United States. The schedule is based on the most current evidence and is intended to be used as a guide for clinical decision-making. It is not intended to be used as a substitute for professional judgment or as a basis for legal action.

2. General Principles
 The following principles should be used to guide the selection of immunizations for individual patients:
 a. The schedule is based on the most current evidence and is intended to be used as a guide for clinical decision-making.
 b. The schedule is intended to be used as a guide for clinical decision-making and is not intended to be used as a substitute for professional judgment or as a basis for legal action.
 c. The schedule is intended to be used as a guide for clinical decision-making and is not intended to be used as a substitute for professional judgment or as a basis for legal action.



Figure 1 and **2** must be read with the footnotes that contain important general information and considerations for special populations.

Figure 1: Recommended immunization schedule for adults aged 19 years or older by age group

Vaccine	19-29 years	30-39 years	40-49 years	50-64 years	≥ 65 years
Influenza	Annual	Annual	Annual	Annual	Annual
Tdap	1 dose	1 dose	1 dose	1 dose	1 dose
MM2	1 dose	1 dose	1 dose	1 dose	1 dose
MM1	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA + HepB	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA + HepB	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA + HepB + HepC	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA + HepB + HepC	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA + HepB + HepC + Shingles	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA + HepB + HepC + Shingles	1 dose	1 dose	1 dose	1 dose	1 dose

Figure 2: Recommended immunization schedule for adults aged 19 years or older by immunization indication

Vaccine	19-29 years	30-39 years	40-49 years	50-64 years	≥ 65 years
Influenza	Annual	Annual	Annual	Annual	Annual
Tdap	1 dose	1 dose	1 dose	1 dose	1 dose
MM2	1 dose	1 dose	1 dose	1 dose	1 dose
MM1	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA + HepB	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA + HepB	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA + HepB + HepC	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA + HepB + HepC	1 dose	1 dose	1 dose	1 dose	1 dose
MM1 + IPV + Hib + HepA + HepB + HepC + Shingles	1 dose	1 dose	1 dose	1 dose	1 dose
MM2 + IPV + Hib + HepA + HepB + HepC + Shingles	1 dose	1 dose	1 dose	1 dose	1 dose

Footnote: Recommended immunization schedule for adults aged 19 years or older, United States, 2017

1. General Information
 This schedule is based on the most current evidence and is intended to be used as a guide for clinical decision-making. It is not intended to be used as a substitute for professional judgment or as a basis for legal action.

2. Definitions
 The following definitions apply to the schedule:
 a. **19-29 years:** Adults aged 19 years through 29 years.
 b. **30-39 years:** Adults aged 30 years through 39 years.
 c. **40-49 years:** Adults aged 40 years through 49 years.
 d. **50-64 years:** Adults aged 50 years through 64 years.
 e. **≥ 65 years:** Adults aged 65 years and older.

3. Immunization Indications
 The following immunization indications are included in the schedule:
 a. **Influenza:** Annual influenza vaccination for all adults aged 19 years or older.
 b. **Tdap:** One dose of tetanus, diphtheria, and pertussis (Tdap) vaccine for all adults aged 19 years or older.
 c. **MM2:** One dose of measles, mumps, and rubella (MM2) vaccine for all adults aged 19 years or older.
 d. **MM1:** One dose of measles, mumps, and rubella (MM1) vaccine for all adults aged 19 years or older.
 e. **MM1 + IPV:** One dose of measles, mumps, rubella, and inactivated poliovirus (MM1 + IPV) vaccine for all adults aged 19 years or older.
 f. **MM2 + IPV:** One dose of measles, mumps, rubella, and inactivated poliovirus (MM2 + IPV) vaccine for all adults aged 19 years or older.
 g. **MM1 + IPV + Hib:** One dose of measles, mumps, rubella, inactivated poliovirus, and Haemophilus influenzae type b (Hib) vaccine for all adults aged 19 years or older.
 h. **MM2 + IPV + Hib:** One dose of measles, mumps, rubella, inactivated poliovirus, and Haemophilus influenzae type b (Hib) vaccine for all adults aged 19 years or older.
 i. **MM1 + IPV + Hib + HepA:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), and hepatitis A (HepA) vaccine for all adults aged 19 years or older.
 j. **MM2 + IPV + Hib + HepA:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), and hepatitis A (HepA) vaccine for all adults aged 19 years or older.
 k. **MM1 + IPV + Hib + HepA + HepB:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), hepatitis A (HepA), and hepatitis B (HepB) vaccine for all adults aged 19 years or older.
 l. **MM2 + IPV + Hib + HepA + HepB:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), hepatitis A (HepA), and hepatitis B (HepB) vaccine for all adults aged 19 years or older.
 m. **MM1 + IPV + Hib + HepA + HepB + HepC:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), hepatitis A (HepA), hepatitis B (HepB), and hepatitis C (HepC) vaccine for all adults aged 19 years or older.
 n. **MM2 + IPV + Hib + HepA + HepB + HepC:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), hepatitis A (HepA), hepatitis B (HepB), and hepatitis C (HepC) vaccine for all adults aged 19 years or older.
 o. **MM1 + IPV + Hib + HepA + HepB + HepC + Shingles:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), hepatitis A (HepA), hepatitis B (HepB), hepatitis C (HepC), and shingles vaccine for all adults aged 19 years or older.
 p. **MM2 + IPV + Hib + HepA + HepB + HepC + Shingles:** One dose of measles, mumps, rubella, inactivated poliovirus, Haemophilus influenzae type b (Hib), hepatitis A (HepA), hepatitis B (HepB), hepatitis C (HepC), and shingles vaccine for all adults aged 19 years or older.

Footnotes

Footnote Revisions

- Footnotes limited to vaccines
 - Footnote on *General information* moved to cover page
 - Footnote on *Immunocompromising conditions* removed, applicable information added to specific vaccination sections
- Standardize structure
 - General information – Routine recommendations
 - Special populations – Recommendations for groups identified in *Figure 2. Recommended immunization for... medical condition and other indications*
- Standardize content
 - Consistent sentence structure, flow of information, use of mathematical symbols and acronyms
 - Trade names included for identification purposes only (hepatitis B and meningococcal vaccines)

Footnote 1. Influenza Vaccination

- General information
 - All persons aged 6 months or older...
 - Adults aged 65 years or older may receive high-dose IIV or adjuvanted IIV
 - ~~Healthcare personnel who care for severely immunocompromised persons... should receive IIV or RIV; [those] who receive LAIV should avoid providing care for severely immunocompromised...~~
 - LAIV should not be used during the 2016–2017 influenza season
- Special populations
 - Adults with a history of egg allergy who have only hives after exposure to egg should receive age-appropriate IIV or RIV
 - Adults with history of egg allergy other than hives may receive age-appropriate IIV or RIV. IIV should be administered in... medical setting and supervised by a healthcare provider...
 - Pregnant women and women who might become pregnant in the upcoming influenza season should receive IIV

Footnote 2. Td/Tdap Vaccination

- General information
 - Adults who have not received Tdap or for whom pertussis vaccination status is unknown should receive 1 dose of Tdap followed by a Td booster dose every 10 years
- Special populations
 - Pregnant women should receive 1 dose of Tdap during each pregnancy, preferably during gestational weeks 27–36, regardless of her prior history of receiving Tdap

ACIP guidance for use (Oct 2016) - *Currently available data suggest that vaccinating earlier in the 27-36 weeks will maximize passive antibody transfer to the infant*

Pregnant women should receive 1 dose of Tdap during each pregnancy, preferably **early** during gestational weeks 27–36, regardless of her prior history of receiving Tdap.

Footnote 4. Varicella Vaccination

- General information
 - Adults without evidence of immunity to varicella should receive...
- Special populations
 - Pregnant women should be assessed for evidence of varicella immunity... Birth before 1980 is not considered evidence of immunity
 - Healthcare institutions should assess and ensure that all healthcare personnel have evidence of immunity to varicella. Birth before 1980 is not considered evidence of immunity...
 - Adults with a malignant condition, including those affecting the bone marrow or lymphatic system, or systemic immunosuppressive therapy should not receive varicella vaccine
 - Adults with HIV infection and CD4+ count ≥ 200 may be considered for a 2-dose series of varicella vaccine... CD4+ count < 200 should not receive varicella vaccine

Footnote 5. Zoster Vaccination

- General information
 - Adults aged 60 years or older should receive 1 dose of zoster vaccine, regardless of whether they had a prior episode of herpes zoster
 - ~~Although... licensed by the U.S. Food and Drug Administration for... persons aged ≥ 50 years... ACIP recommends... begin at age 60 years~~
- Special populations
 - Adults aged 60 years or older with chronic medical conditions may be vaccinated unless they have a medical contraindication...
 - Adults with a malignant condition affecting the bone marrow or lymphatic system or who receive systemic immunosuppressive therapy should not receive zoster vaccine
 - Adults with HIV infection and CD4+ count ≥ 200 have no zoster vaccine recommendation because there is a lack of evidence available for or against zoster vaccination... CD4+ count < 200 should not receive zoster vaccine

Footnote 6. HPV Vaccination

■ General information

- Adult females through age 26 years and adult males through age 21 years who have not received any HPV should receive a 3-dose series of HPV at 0, 1-2 and 6 months. Males aged 22 through 26 years may be vaccinated
- Adult females through age 26 years and adult males through age 21 years (and males aged 22 through 26 years) who initiated HPV series before age 15 years and received 2 doses at least 5 months apart are considered adequately vaccinated and do not need an additional dose of HPV
- Adult females and males... who initiated HPV series before age 15 years and received 1 dose or 2 doses at least 5 months apart are not... adequately vaccinated... and should receive 1 additional dose of HPV
- Note: HPV is routinely recommended... at age 11 or 12 years. For adults who initiated but did not complete HPV series, consider their age at first HPV vaccination and other factors to determine... adequately vaccinated

■ Special populations

- MSM through age 26 years, if not previously vaccinated, should...
- Adults through age 26 years with immunocompromising conditions (described below), including HIV, should receive...
- Pregnant women are not recommended to receive HPV...

Footnote 9. Hepatitis B Vaccination

- General information
 - Adults who seek protection from HBV infection may receive a 3-dose series of... hepatitis B vaccine at 0, 1, and 6 months
- Special populations
 - Adults with chronic liver disease, **hepatitis C virus infection**, HIV infection, age <60 years with diabetes... should receive...
 - Adult patients receiving hemodialysis ~~or with other immunocompromising conditions~~ should receive a 3-dose series of 40 mcg/mL Recombivax HB at 0, 1, and 6 months or a 4-dose series of 40 mcg/mL Engerix-B at 0, 1, 2, and 6 months

Footnote 10. Meningococcal Vaccination

ACIP Recommendation (Oct 2016)

- For persons at increased risk and for use during outbreaks, 3 doses of MenB-FHbp should be administered at 0, 1–2, and 6 months
 - For healthy adolescents who are not at increased risk for meningococcal disease, 2 doses of MenB-FHbp should be administered at 0 and 6 months
 - If second dose is given at an interval less than 6 months, a third dose should be given at least 6 months after the first dose
-
- Special populations
 - Adults with... asplenia or... complement component deficiencies should receive... MenACWY... and either a 2-dose series of MenB-4C at least 1 month apart or a 3-dose series of MenB-FHbp administered at 0, 1–2, and 6 months
 - Adults with HIV infection... should receive a 2-dose primary series of MenACWY at least 2 months apart... Revaccinate with MenACWY every 5 years... MenB for adults with HIV infection is not routinely indicated...
 - Microbiologists... should receive... MenACWY... and either a 2-dose series of MenB-4C... or a 3-dose series of MenB-FHbp...
 - Adults at risk because of... outbreak... should receive... either a 2-dose series of MenB-4C... or a 3-dose series of MenB-FHbp... if the outbreak is attributable to serogroup B
 - Young adults aged 16 through 23 years may be vaccinated with either a 2-dose series of MenB-4C at least 1 month apart or 2-dose series MenB-FHbp at 0 and 6 months...

Footnotes. Recommended immunization schedule for adults aged 19 years or older, United States, 2017

1. Influenza vaccination

General information

- All persons aged 6 months or older who do not have a contraindication should receive annual influenza vaccination with an age-appropriate formulation of inactivated influenza vaccine (IIV) or recombinant influenza vaccine (RIV).
- Adults aged 65 years or older may receive high-dose IIV or adjuvanted IIV.
- Adults aged 18 through 64 years may receive intradermal IIV.
- Adults aged 18 years or older may receive RIV.
- Note: Live attenuated influenza vaccine (LAIV) should not be used during the 2016–2017 influenza season. A list of currently available influenza vaccines is available at www.cdc.gov/flu/protect/vaccine/vaccines.htm.

Special populations

- Adults with a history of egg allergy who have only hives after exposure to egg should receive age-appropriate IIV or RIV.
- Adults with a history of egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness, or recurrent emesis, or who required epinephrine or another emergency medical intervention, may receive age-appropriate IIV or RIV. IIV should be administered in an inpatient or outpatient medical setting and supervised by a healthcare provider who can recognize and manage severe allergic conditions.
- Pregnant women and women who might become pregnant in the upcoming influenza season should receive IIV.

2. Tetanus, diphtheria, and acellular pertussis vaccination

General information

- Adult men and nonpregnant women who have not received tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap) or for whom pertussis vaccination status is unknown should receive 1 dose of Tdap followed by a tetanus and diphtheria toxoids (Td) booster every 10 years. Tdap should be administered regardless of when a tetanus or diphtheria toxoid-containing vaccine was last received.
- Adults with an unknown or incomplete history of a 3-dose primary series with tetanus and diphtheria toxoid-containing vaccines should complete the primary series that includes 1 dose of Tdap. Unvaccinated adults should receive the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second dose.
- Note: Information on the use of Td or Tdap as tetanus prophylaxis in wound management is available at www.cdc.gov/mmwr/preview/mmwrhtml/mm5517a1.htm (Table 14).

Special populations

- Pregnant women should receive 1 dose of Tdap during each pregnancy, preferably during gestational weeks 27–36, regardless of her prior history of receiving Tdap.

3. Measles, mumps, and rubella vaccination

General information

- Adults born in 1957 or later without acceptable evidence of immunity to measles, mumps, or rubella (defined below) should receive 1 dose of measles, mumps, and rubella vaccine (MMR) unless they have a medical contraindication to the vaccine, e.g., pregnancy or severe immunodeficiency.
- Note: Acceptable evidence of immunity to measles, mumps, or rubella in adults is: born before 1957, documentation of receipt of MMR, or laboratory evidence of immunity or disease. Documentation of healthcare provider-diagnosed disease without laboratory confirmation is not acceptable evidence of immunity.

Special populations

- Pregnant women who do not have evidence of immunity to rubella

should receive 1 dose of MMR upon completion or termination of pregnancy and before discharge from the healthcare facility; non-pregnant women of childbearing age without evidence of rubella immunity should receive 1 dose of MMR.

- Adults with primary or acquired immunodeficiency including malignant condition affecting the bone marrow or lymphatic system, systemic immunosuppressive therapy, or cellular immunodeficiency should not receive MMR.
- Adults with human immunodeficiency virus (HIV) infection and CD4+ T-lymphocyte count ≥ 200 cells/ μ l for at least 6 months who do not have evidence of measles, mumps, or rubella immunity should receive 2 doses of MMR at least 28 days apart. Adults with HIV infection and CD4+ T-lymphocyte count < 200 cells/ μ l should not receive MMR.
- Adults who work in healthcare facilities should receive 2 doses of MMR at least 28 days apart: healthcare personnel born before 1957 who are unvaccinated or lack laboratory evidence of measles, mumps, or rubella immunity, or laboratory confirmation of disease should be considered for vaccination with 2 doses of MMR at least 28 days apart for measles or mumps, or 1 dose of MMR for rubella.
- Adults who are students in postsecondary educational institutions or plan to travel internationally should receive 2 doses of MMR at least 28 days apart.
- Adults who received inactivated (killed) measles vaccine or measles vaccine of unknown type during years 1963–1967 should be revaccinated with 1 or 2 doses of MMR.
- Adults who were vaccinated before 1979 with either inactivated mumps vaccine or mumps vaccine of unknown type who are at high risk for mumps infection, e.g., work in a healthcare facility, should be considered for revaccination with 2 doses of MMR at least 28 days apart.

4. Varicella vaccination

General information

- Adults without acceptable evidence of immunity to varicella (defined below) should receive 2 doses of single-antigen varicella vaccine 4–8 weeks apart, or a second dose if they have received only 1 dose.
- Adults without acceptable evidence of immunity to varicella for whom vaccination should be emphasized are: adults who have close contact with persons at high risk for serious complications, e.g., healthcare personnel and household contacts of immunocompromised persons; adults who live or work in an environment in which transmission of varicella zoster virus is likely, e.g., teachers, childcare workers, and residents and staff in institutional settings; adults who live or work in environments in which transmission has been reported, e.g., college students, residents and staff members of correctional institutions, and military personnel; non-pregnant women of childbearing age; adolescents and adults living in households with children; and international travelers.
- Note: Acceptable evidence of immunity to varicella in adults are: U.S.-born before 1980 (for pregnant women and healthcare personnel, U.S.-born before 1980 is not considered evidence of immunity); documentation of 2 doses of varicella vaccine at least 4 weeks apart; history of varicella or zoster diagnosis, or verification of varicella or zoster disease by a healthcare provider; or laboratory evidence of immunity or disease.

Special populations

- Pregnant women should be assessed for evidence of varicella immunity. Pregnant women who do not have evidence of immunity should receive the first dose of varicella vaccine upon completion or termination of pregnancy and before discharge from the healthcare facility, and the second dose 4–8 weeks after the first dose.
- Healthcare institutions should assess and ensure that all healthcare personnel have evidence of immunity to varicella.
- Adults with a malignant condition, including those affecting

the bone marrow or lymphatic system, or who receive systemic immunosuppressive therapy should not receive varicella vaccine.

- Adults with human immunodeficiency virus (HIV) infection and CD4+ T-lymphocyte count ≥ 200 cells/ μ l may receive a 2-dose series of varicella vaccine 3 months apart. Adults with HIV infection and CD4+ T-lymphocyte count < 200 cells/ μ l should not receive varicella vaccine.

5. Zoster vaccination

General information

- Adults aged 60 years or older should receive 1 dose of zoster vaccine, regardless of whether they had a prior episode of herpes zoster.

Special populations

- Adults aged 60 years or older with chronic medical conditions may be vaccinated unless they have a medical contraindication, e.g., pregnancy or severe immunodeficiency.
- Adults with a malignant condition affecting the bone marrow or lymphatic system or who receive systemic immunosuppressive therapy should not receive zoster vaccine.
- Adults with human immunodeficiency virus (HIV) infection and CD4+ T-lymphocyte count ≥ 200 cells/ μ l have no zoster vaccination recommendation because there is a lack of evidence available for or against zoster vaccination. Adults with HIV infection and CD4+ T-lymphocyte count < 200 cells/ μ l should not receive zoster vaccine.

6. Human papillomavirus vaccination

General information

- Adult females through age 26 years and adult males through age 21 years who have not received any human papillomavirus vaccine (HPV) should receive a 3-dose series of HPV at 0, 1–2 and 6 months. Males aged 22 through 26 years may be vaccinated.
- Adult females through age 26 years and adult males through age 21 years (and males aged 22 through 26 years) who initiated HPV series before age 15 years and received 2 doses at least 5 months apart are considered adequately vaccinated and do not need an additional dose.
- Adult females through age 26 years and adult males through age 21 years (and males aged 22 through 26 years) who initiated HPV series before age 15 years and received only 1 dose, or 2 doses less than 5 months apart, are not considered adequately vaccinated and should receive 1 additional dose.
- Note: HPV is routinely recommended for children at age 11 or 12 years. For adults who initiated but did not complete HPV series, consider their age at first HPV vaccination (described above) and other factors (described below) to determine if they have been adequately vaccinated.

Special populations

- Men who have sex with men through age 26 years should be vaccinated if not previously vaccinated.
- Adult females and males through age 26 years with immunocompromising conditions (described below), including those with human immunodeficiency virus (HIV) infection, should receive a 3-dose series of HPV at 0, 1–2, and 6 months.
- Pregnant women are not recommended to receive HPV, although there is no evidence that the vaccine poses harm. If a woman is found to be pregnant after initiating HPV series, delay the remaining doses until after the pregnancy. No other intervention is needed. Pregnancy testing is not recommended before administering HPV.
- Note: Immunocompromising conditions for which a 3-dose series of HPV is indicated are those with primary or secondary immunocompromising conditions that might reduce cell-mediated or humoral immunity, e.g., B-lymphocyte antibody deficiencies, complete or partial T-lymphocyte defects, HIV infection, malignant neoplasm, transplantation, autoimmune disease, and immunosuppressive therapy.

7. Pneumococcal vaccination

General information

- Adults who are immunocompetent and aged 65 years or older should receive 13-valent pneumococcal conjugate vaccine (PCV13) followed by 23-valent pneumococcal polysaccharide vaccine (PPSV23) at least 1 year after PCV13.
- Note 1: When both PCV13 and PPSV23 are indicated, PCV13 should be administered first; PCV13 and PPSV23 should not be administered during the same visit. If PPSV23 has previously been administered, PCV13 should be administered at least 1 year after PPSV23. When two or more doses of PPSV23 are indicated, the interval between PPSV23 doses should be at least 5 years. Supplemental information on pneumococcal vaccine timing for adults aged 65 years or older and adults aged 19 years or older who are at a higher risk for pneumococcal disease (described below) is available at www.cdc.gov/vaccines/vpd-vac/pneumo/downloads/adult-vax-clinician-aid.pdf.
- Note 2: No additional doses of PPSV23 are indicated for adults who received PPSV23 at age 65 years or older. When indicated, PCV13 and PPSV23 should be administered to adults whose pneumococcal vaccination history is incomplete or unknown.

Special populations

- Adults aged 19 through 64 years with chronic heart disease including congestive heart failure and cardiomyopathies (excluding hypertension); chronic lung disease including chronic obstructive lung disease, emphysema, and asthma; chronic liver disease including cirrhosis; alcoholism; or diabetes mellitus; or who smoke cigarettes should receive PPSV23. At age 65 years or older, these adults should receive PCV13 and another dose of PPSV23 at least 1 year after PCV13 and at least 5 years after the most recent dose of PPSV23.
- Adults aged 19 years or older with immunocompromising conditions (described in Note 1 below) or anatomical or functional asplenia (described in Note 2 below) should receive PCV13 and a dose of PPSV23 at least 8 weeks after PCV13, followed by a second dose of PPSV23 at least 5 years after the first dose of PPSV23. If the most recent dose of PPSV23 was administered before age 65 years, at age 65 years or older, administer another dose of PPSV23 at least 8 weeks after PCV13 and at least 5 years after the most recent dose of PPSV23.
- Adults aged 19 years or older with cerebrospinal fluid leaks or cochlear implants should receive PCV13 followed by PPSV23 at least 8 weeks after PCV13. If the most recent dose of PPSV23 was administered before age 65 years, at age 65 years or older, administer another dose of PPSV23 at least 8 weeks after PCV13 and at least 5 years after the most recent dose of PPSV23.
- Note 1: Immunocompromising conditions that are indications for pneumococcal vaccination are: congenital or acquired immunodeficiency (including B- or T-lymphocyte deficiency, complement deficiencies, and phagocytic disorders excluding chronic granulomatous disease; human immunodeficiency virus [HIV] infection; chronic renal failure and nephrotic syndrome; leukemia, lymphoma, Hodgkin disease, generalized malignancy, and multiple myeloma; solid organ transplant; and iatrogenic immunosuppression including long-term systemic corticosteroid and radiation therapy).
- Note 2: Anatomical or functional asplenia that are indications for pneumococcal vaccination are: sickle cell disease and other hemoglobinopathies, congenital or acquired asplenia, splenic dysfunction, and splenectomy.
- Note 3: Pneumococcal vaccines should be given at least 2 weeks before immunosuppressive therapy or an elective splenectomy, and as soon as possible to adults who are diagnosed with HIV infection.

8. Hepatitis A vaccination

General information

- Adults who seek protection from hepatitis A virus infection may receive single-antigen HAV vaccine formulations in a 2-dose series

at either 0 and 6–12 months (Havrix) or 0 and 6–18 months (Vaqta). Adults may also receive a combined hepatitis A and hepatitis B vaccine (Twinrix) as a 3-dose series at 0, 1, and 6 months.

Special populations

- Adults with any of the following indications should receive hepatitis A vaccination: have chronic liver disease, receive drug injection concentrates, men who have sex with men, use injection or non-injection illicit drug use, or work with hepatitis A virus-infected primates or in a hepatitis A research laboratory setting.
- Adults who travel in countries with high or intermediate endemicity of hepatitis A, or 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 of hepatitis A should receive hepatitis A vaccination.

9. Hepatitis B vaccination

General information

- Adults who seek protection from hepatitis B virus infection may receive a complete series of single-antigen hepatitis B vaccine (Engerix-B, Recombivax HB) at 0, 1, and 6 months. Adults may also receive a combined hepatitis A and hepatitis B vaccine (Twinrix) at 0, 1, and 6 months.

Special populations

- Adults with chronic liver disease; hepatitis C infection; human immunodeficiency virus (HIV) infection; aged younger than 60 years with diabetes; and aged 60 years or older with diabetes, at the discretion of the treating clinician, should receive hepatitis B vaccination.
- Adults with end-stage renal disease including those on predialysis care, hemodialysis, peritoneal dialysis, and home dialysis should receive hepatitis B vaccination. Adults receiving hemodialysis should receive a 3-dose series of 40 mcg/mL Recombivax HB at 0, 1, and 6 months or a 4-dose series of 40 mcg/mL Engerix-B at 0, 1, 2, and 6 months.
- Adults with the following risks for infection by sexual exposure should receive hepatitis B vaccination: sex partners of hepatitis B surface antigen (HBsAg)-positive persons; sexually active adults who are not in a long-term, mutually monogamous relationship; adults seeking evaluation or treatment for a sexually transmitted disease (STD); and men who have sex with men (MSM).
- Adults with the following risks for infection by percutaneous or mucosal exposure to blood should receive hepatitis B vaccination: current or recent injection drug use, household contacts of HBsAg-positive persons, residents and staff of facilities for developmentally disabled persons, residents of correctional facilities, and healthcare and public safety workers with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids.
- Adults who travel internationally to regions with high or intermediate levels of endemic hepatitis B should receive hepatitis B vaccination.
- Adults in the following settings should receive hepatitis B vaccination: STD treatment facilities, healthcare settings providing services to MSM, HIV testing and treatment facilities, facilities providing drug abuse treatment and prevention services, healthcare settings targeting services to adults who use injection drugs, institutions and nonresidential day care facilities for developmentally disabled persons, correctional facilities, and chronic hemodialysis facilities and end-stage renal disease programs.

10. Meningococcal vaccination

Special populations

- Adults with anatomical or functional asplenia or persistent complement component deficiencies should receive a 2-dose primary series of serogroup A, C, W, and Y meningococcal conjugate vaccine (MenACWY) at least 2 months apart and revaccinate every 5 years.

This should also receive a series of serogroup B meningococcal vaccine (MenB) either a 2-dose series of MenB-4C vaccine (Bexsero) at least 1 month apart or a 3-dose series of MenB-FHbp (Trumenba) at 0, 1–2, and 6 months.

- Adults with human immunodeficiency virus (HIV) infection who have not been previously vaccinated should receive a 2-dose primary series of MenACWY at least 2 months apart and revaccinate every 5 years. Those who previously received 1 dose of MenACWY should receive a second dose at least 8 weeks after the first dose. MenB for adults with HIV infection is not routinely indicated because meningococcal disease in this population is caused primarily by serogroups C, W, and Y.
- Microbiologists who are routinely exposed to isolates of *Neisseria meningitidis* should receive 1 dose of MenACWY and revaccinate with MenACWY every 5 years if the risk for infection remains, and either a 2-dose series of MenB-4C at 0 and 6 months or a 3-dose series of MenB-FHbp at 0, 1–2, and 6 months if the outbreak is attributable to serogroup B.
- Adults at risk because of a meningococcal disease outbreak should receive 1 dose of MenACWY if the outbreak is attributable to serogroup A, C, W, or Y, or either a 2-dose series of MenB-4C at 0 and 6 months or a 3-dose series of MenB-FHbp at 0, 1–2, and 6 months if the outbreak is attributable to serogroup B.
- Adults who travel to or live in countries with hyperendemic or epidemic meningococcal disease should receive 1 dose of MenACWY and revaccinate every 5 years if the increased risk for infection remains. Men B is not routinely indicated because meningococcal disease in these countries is generally not caused by serogroup B.
- Military recruits should receive 1 dose of MenACWY and revaccinate every 5 years if the increased risk for infection remains.
- First-year college students aged 21 years or younger who live in residence halls should receive 1 dose of MenACWY if they have not received MenACWY at age 16 years or older.
- Young adults aged 16 through 23 years (preferred age range is 16 through 18 years) may receive either a 2-dose series of MenB-4C at least 1 month apart or a 2-dose series of MenB-FHbp at least 2 and 6 months for short-term protection against most strains of serogroup B meningococcal disease.
- Note 1: MenB-4C and MenB-FHbp are not interchangeable, i.e., the same MenB must be used for all doses to complete the series. There is no recommendation for MenB revaccination at this time. MenB may be administered at the same time as MenACWY but at a different anatomic site, if feasible.
- Note 2: Meningococcal polysaccharide serogroup A, C, W, and Y vaccine (MPSV4) is the only meningococcal vaccine approved for adults aged 56 years or older. For adults who have received MenACWY previously or anticipate to receive multiple doses of serogroup A, C, W, and Y meningococcal vaccine, MenACWY is preferred. For serogroup A, C, W, and Y meningococcal vaccine-naïve adults aged 56 years or older who anticipate needing only a single dose of serogroup A, C, W, and Y meningococcal vaccine, MPSV4 is preferred.

11. *Haemophilus influenzae* type b vaccination

Special populations

- Adults who have anatomical or functional asplenia or sickle cell disease, or are undergoing elective splenectomy should receive 1 dose of *Haemophilus influenzae* type b conjugate vaccine (Hib) if they have not previously received Hib. Hib should be administered at least 14 days before splenectomy.
- Adults who received a hematopoietic stem cell transplant (HSCT) should receive 3 doses of Hib in at least 4 week intervals 6–12 months after a successful transplant regardless of their Hib history.
- Note: Hib is not routinely recommended for adults with human immunodeficiency virus infection because their risk for *Haemophilus influenzae* type b infection is low.

Next Steps

Next Steps: 2017 Adult Immunization Schedule

- Revise based on ACIP comments and suggestions
- Submit for approval by CDC Director
- Obtain approval from partner professional organizations
 - American College of Physicians
 - American Academy of Family Physicians
 - American College of Obstetricians and Gynecologists
 - American College of Nurse-Midwives
- Submit for CDC clearance for *MMWR* announcement and publication in *Annals of Internal Medicine* in February 2017
- Coordinate announcement by other partner organizations

Adult Immunization Schedule Evaluation Project, FY 2017

- Task 1. Conduct in-depth interviews of healthcare providers who use adult immunization schedule
 - Describe how adult immunization schedule is used
 - Identify healthcare provider perceptions on readability and usability
 - Conduct needs assessment
- Task 2. Revise adult immunization schedule
 - Standardize definitions in adult immunization schedule
 - Improve graphics and text
 - Develop job aids
- Task 3. Test and revise immunization schedule, job aids, and other documents and tools
 - Conduct online testing to evaluate utility and acceptability
 - Improve implementation of ACIP recommendations on immunizing adults

Discussion and Vote

Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017

1. Introduction The Advisory Committee on Immunization Practices (ACIP) is pleased to announce the recommended immunization schedule for adults aged 19 years or older, United States, 2017. This schedule is based on the most current evidence available and is intended to provide a comprehensive overview of the recommended immunization schedule for adults aged 19 years or older, United States, 2017. The schedule is based on the most current evidence available and is intended to provide a comprehensive overview of the recommended immunization schedule for adults aged 19 years or older, United States, 2017.

2. Schedule The recommended immunization schedule for adults aged 19 years or older, United States, 2017 is as follows:

- 19-24 years:** Tdap, Hepatitis B, Hepatitis A, Polio, Pertussis, Meningococcal, and Influenza.
- 25-64 years:** Hepatitis B, Hepatitis A, Polio, Pertussis, Meningococcal, and Influenza.
- 65 years and older:** Hepatitis B, Hepatitis A, Polio, Pertussis, Meningococcal, and Influenza.

3. Notes The recommended immunization schedule for adults aged 19 years or older, United States, 2017 is based on the most current evidence available and is intended to provide a comprehensive overview of the recommended immunization schedule for adults aged 19 years or older, United States, 2017.



Figures 1 and 2 must be read with the footnotes that contain important general information and considerations for special populations.

Figure 1. Recommended immunization schedule for adults aged 19 years or older by age group

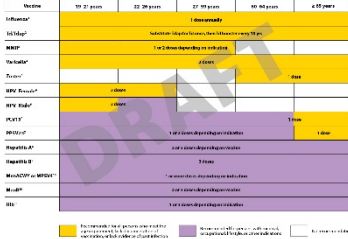
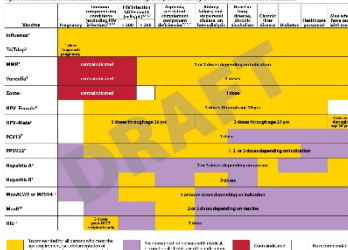


Figure 2. Recommended immunization schedule for adults aged 19 years or older by gender, condition, and other conditions



Footnote: Recommended immunization schedule for adults aged 19 years or older, United States, 2017

1. General information The recommended immunization schedule for adults aged 19 years or older, United States, 2017 is based on the most current evidence available and is intended to provide a comprehensive overview of the recommended immunization schedule for adults aged 19 years or older, United States, 2017.

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- 65 years and older:** Hepatitis B, Hepatitis A, Polio, Pertussis, Meningococcal, and Influenza.

3. Notes The recommended immunization schedule for adults aged 19 years or older, United States, 2017 is based on the most current evidence available and is intended to provide a comprehensive overview of the recommended immunization schedule for adults aged 19 years or older, United States, 2017.

Footnote: General information for vaccine routinely recommended for adults aged 19 years or older

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- 65 years and older:** Hepatitis B, Hepatitis A, Polio, Pertussis, Meningococcal, and Influenza.

3. Notes The recommended immunization schedule for adults aged 19 years or older, United States, 2017 is based on the most current evidence available and is intended to provide a comprehensive overview of the recommended immunization schedule for adults aged 19 years or older, United States, 2017.

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

