

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
<p>Influenza Inactivated Influenza vaccine (IIV*) <i>Give IM</i></p> <p>* includes recombinant influenza vaccine (RIV)</p> <hr/> <p>Live attenuated influenza vaccine (LAIV) <i>Give NAS (intranasally)</i></p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> Vaccination is recommended for all adults. Adults age 18 through 64yrs may be given any intramuscular IIV product (Fluzone, Fluvirin, Afluria, Flucelvax, Fluarix, FluLaval), or RIV3/RIV4 (FluBlok). Adults age 18 through 64yrs may be given intramuscular IIV (Afluria) with a needle and syringe or using a jet injector (Stratis). Adults age 65yrs and older may be given any standard-dose IIV referenced in the second bullet above, Flud, or high-dose IIV (Fluzone High-Dose), or RIV3/RIV4. <p>Note: Healthcare personnel who care for severely immunocompromised persons (i.e., those who require care in a protective environment) should receive IIV rather than LAIV. For information on other contraindications and precautions to LAIV, see far right column.</p>	<ul style="list-style-type: none"> Give 1 dose every year in the fall or winter. Begin vaccination services as soon as vaccine is available and continue until the supply is depleted. Continue to give vaccine to unvaccinated adults throughout the influenza season (including when influenza activity is present in the community) and at other times when the risk of influenza exists. If 2 or more of the following live virus vaccines are to be given – LAIV, MMR, Var, ZVL, and/or yellow fever – they should be given on the same day. If they are not given on the same day, space them by at least 28d (30d for yellow fever). May use as post-exposure prophylaxis if given within 3d of exposure. Other guidance: Adults with functional or anatomic asplenia, complement deficiency, cochlear implant, or CSF leak should not receive LAIV. 	<p>Contraindications</p> <ul style="list-style-type: none"> History of severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine (except egg) or after a previous dose of any influenza vaccine. For LAIV only: pregnancy; immunosuppression; receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, oseltamivir, or peramivir) within the previous 48hrs. Avoid use of these antiviral drugs for 14d after vaccination. <p>NOTE: People with egg allergy of any severity can receive any recommended and age-appropriate influenza vaccine (i.e., any IIV, RIV, or LAIV) that is otherwise appropriate for their health status. People having had a previous severe reaction to eggs involving symptoms other than hives should be administered vaccine in a medical setting (e.g., a health department or physician office) and should be supervised by a healthcare provider who is able to recognize and manage severe allergic conditions.</p> <p>Precautions</p> <ul style="list-style-type: none"> Moderate or severe acute illness with or without fever. History of Guillain-Barré syndrome (GBS) within 6wks following previous influenza vaccination. For LAIV only: Chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurologic, hematologic or metabolic (including diabetes) disorders; immunosuppression (including that caused by medications or HIV).
<p>Td, Tdap (Tetanus, diphtheria, pertussis) <i>Give IM</i></p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> All people who lack written documentation of a primary series consisting of at least 3 doses of tetanus- and diphtheria-toxoid-containing vaccine. A booster dose of Td or Tdap may be needed for wound management, so consult ACIP recommendations.¹ <p>For Tdap only</p> <ul style="list-style-type: none"> Adults who have not already received Tdap or whose Tdap history is not known. Healthcare personnel of all ages. Give Tdap to pregnant women during each pregnancy (preferred during the early part of gestational weeks 27 through 36), regardless of the interval since prior Td or Tdap. 	<ul style="list-style-type: none"> For people who are unvaccinated or behind, complete the primary Td series (3 doses with an interval of 1–2m between dose #1 and #2, and an interval of 6–12m between dose #2 and #3); substitute a one-time dose of Tdap for one of the doses in the series, preferably the first. Give Td booster every 10yrs after the primary series has been completed. Tdap should be given regardless of interval since previous Td. 	<p>Contraindications</p> <ul style="list-style-type: none"> Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. For Tdap only, history of encephalopathy not attributable to an identifiable cause, within 7d following DTP/DTPaP, or Tdap. <p>Precautions</p> <ul style="list-style-type: none"> Moderate or severe acute illness with or without fever. History of Guillain-Barré syndrome within 6wks following previous dose of tetanus-toxoid-containing vaccine. History of Arthus-type reaction following a prior dose of tetanus- or diphtheria-toxoid-containing vaccine (including MenACWY); defer vaccination until at least 10yrs have elapsed since the last tetanus toxoid-containing vaccine. For pertussis-containing vaccines only, progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized.

This document was adapted from the vaccine recommendations of the Advisory Committee on Immunization Practices (ACIP) and also *Best Practices Guidance of the ACIP*. To view the full vaccine recommendations, visit CDC’s website at www.cdc.gov/vaccines/hcp/ACIP-recs/index.html or, for the complete guidance document, visit www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html

This table is revised periodically. Visit IAC’s website at www.immunize.org/ adultrules to make sure you have the most current version.

For the purposes of calculating intervals between doses, 4 weeks = 28 days. Intervals of 4 months or greater are determined by calendar months.
A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses.

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
<p>MMR (Measles, mumps, rubella) <i>Give Subcut</i></p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • People born in 1957 or later (especially those born outside the U.S.) should receive at least 1 dose of MMR if they have no laboratory evidence of immunity to each of the 3 diseases or documentation of a dose given on or after the first birthday. • People in high-risk groups, such as healthcare personnel (paid, unpaid, or volunteer), students entering college and other post-high school educational institutions, and international travelers, should receive a total of 2 doses. • People born before 1957 are usually considered immune, but evidence of immunity (serology or documented history of 2 doses of MMR) should be considered for healthcare personnel. • Women of childbearing age who do not have acceptable evidence of rubella immunity or vaccination. 	<ul style="list-style-type: none"> • Give 1 or 2 doses (see criteria in 1st and 2nd bullets in box to left). • If dose #2 is recommended, give it no sooner than 4wks after dose #1. • If woman of childbearing-age is found to be rubella susceptible and is not pregnant, give 1 dose of MMR; if she is pregnant, the dose should be given postpartum. This includes women who have already received 1 or 2 doses of rubella-containing vaccine. • If 2 or more of the following live virus vaccines are to be given – MMR, LAIV, Var, ZVL, and/or yellow fever – they should be given on the same day. If they are not given on the same day, space them by at least 28d (30d for yellow fever). May use as post-exposure prophylaxis if given within 3d of exposure. 	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy; people with human immunodeficiency virus (HIV) infection who are severely immunocompromised. <p>NOTE: HIV infection is NOT a contraindication to MMR for those who are not severely immunocompromised (see ACIP recommendations at www.cdc.gov/mmwr/pdf/rr/rr6204.pdf).¹</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever. • If blood, plasma, and/or immune globulin were given in past 11m, see ACIP’s <i>Best Practices Guidance</i>² regarding time to wait before vaccinating. History of thrombocytopenia or thrombocytopenic purpura. • Need for tuberculin skin testing (TST) or interferon-gamma release assay (IGRA) testing. NOTE: If TST or IGRA and MMR are both needed but not given on same day, delay TST or IGRA for at least 4wks after MMR. • For MMRV only: Family history of seizures
<p>Varicella (chickenpox) (Var) <i>Give Subcut</i></p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • All adults without evidence of immunity. <p>NOTE: Evidence of immunity is defined as written documentation of 2 doses of varicella vaccine; a history of varicella disease or herpes zoster (shingles) based on healthcare-provider diagnosis; laboratory evidence of immunity or confirmation of disease; and/or birth in the U.S. before 1980, with the exceptions that follow.</p> <ul style="list-style-type: none"> – Healthcare personnel (HCP) born in the U.S. before 1980 who do not meet any of the criteria above should be tested or given the 2-dose vaccine series. If testing indicates they are not immune, give the 1st dose of varicella vaccine immediately. Give the 2nd dose 4–8 wks later. – Pregnant women born in the U.S. before 1980 who do not meet any of the criteria above should either 1) be tested for susceptibility during pregnancy and if found susceptible, given the 1st dose of varicella vaccine postpartum before hospital discharge, or 2) not be tested for susceptibility and given the 1st dose of varicella vaccine post-partum before hospital discharge. Give the 2nd dose 4–8wks later. 	<ul style="list-style-type: none"> • Give 2 doses. • Dose #2 is given 4–8wks after dose #1. • If dose #2 is delayed, do not start over. Just give dose #2. • If 2 or more of the following live virus vaccines are to be given – MMR, LAIV, Var, ZVL, and/or yellow fever – they should be given on the same day. If they are not given on the same day, space them by at least 28d (30d for yellow fever). • May use as postexposure prophylaxis if given within 5d of exposure. 	<p>Contraindications</p> <ul style="list-style-type: none"> • Previous severe allergic reaction (e.g., anaphylaxis) anaphylactic reaction to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • People on long-term immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte counts are greater than or equal to 200 cells/μL.³). • People with isolated B-lymphocyte deficiency may receive varicella vaccine. <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP’s <i>Best Practices Guidance</i>² regarding time to wait before vaccinating. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination. • Use of aspirin or aspirin-containing products. • For MMRV only: Family history of seizures

Summary of Recommendations for Adult Immunization (Age 19 years and older)

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
<p>Hepatitis A (HepA; Havrix, Vaqta)</p> <p><i>Give IM</i></p> <p>Brands may be used interchangeably.</p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> All adults who want to be protected from hepatitis A virus (HAV) infection. People who travel or work anywhere EXCEPT the U.S., most, but not all of Western Europe, New Zealand, Australia, Canada, and Japan. People with chronic liver disease; injecting and non-injecting drug users; men who have sex with men; people who are homeless; people who receive clotting-factor concentrates; people who work with HAV in lab settings; food handlers when health authorities or private employers determine vaccination to be appropriate. People who anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60d following the adoptee’s arrival in the U.S. Postexposure: adults age 40yrs or younger with recent (within 2wks) exposure to HAV, give HepA. Vaccine may be used in conjunction with IG at the provider’s discretion. 	<ul style="list-style-type: none"> Give 2 doses, spaced 6–18m apart (depending on brand). If dose #2 is delayed, do not repeat dose #1. Just give dose #2. <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <p>For Twinrix (hepatitis A and B combination vaccine [GSK]) for patients age 18yrs and older only: give 3 doses on a 0, 1, 6m schedule. There must be at least 4wks between doses #1 and #2, and at least 5m between doses #2 and #3.</p> <p>An alternative schedule can also be used at 0, 7d, 21–30d, and a booster at 12m.</p> </div>	<p>Contraindication Previous severe allergic reaction (e.g. anaphylaxis) to this vaccine or to any of its components.</p> <p>Precautions Moderate or severe acute illness with or without fever.</p>
<p>Hepatitis B (Engerix-B, Recombivax HB; Heplisav-B)</p> <p><i>Give IM</i></p> <p>Brands may be used interchangeably; however, a 2-dose series may only be comprised of 2 doses of Heplisav-B</p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> All adults who want to be protected from hepatitis B virus infection. Household contacts and sex partners of HBsAg-positive people; injecting drug users; sexually active people not in a long-term, mutually monogamous relationship; men who have sex with men; people with HIV; people seeking STD evaluation or treatment; hemodialysis patients and those with renal disease that may result in dialysis; diabetics younger than age 60yrs (diabetics age 60yrs and older may be vaccinated at the clinician’s discretion¹; healthcare personnel and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities; certain international travelers; and people with chronic liver disease. Adults with chronic liver disease include, but are not limited to, those with hepatitis C virus infection, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, and an alanine aminotransferase (ALT) or aspartate aminotransferase (AST) level greater than twice the upper limit of normal. <p>NOTE: Provide serologic screening for immigrants from endemic areas. If patient is chronically infected, assure appropriate disease management. For sex partners and household contacts of HBsAg-positive people, provide serologic screening and administer initial dose of HepB vaccine at same visit.</p>	<ul style="list-style-type: none"> For Heplisav-B, give 2 doses 1m apart. For Engerix-B and Recombivax HB, give 3 doses on a 0, 1, 6m schedule. <ul style="list-style-type: none"> Alternative timing options for vaccination include 0, 2, 4m; 0, 1, 4m; and 0, 1, 2, 12m (Engerix brand only). There must be at least 4wks between doses #1 and #2, and at least 8wks between doses #2 and #3. Overall, there must be at least 16wks between doses #1 and #3. For adults on hemodialysis or with other immunocompromising conditions, give either 1 dose of 40 µg/mL Recombivax HB at 0, 1, 6m, 2 doses of 20 µg/mL Engerix-B given simultaneously at 0, 1, 2, 6m, or 2 doses Heplisav-B 1m apart. Schedule for those who have fallen behind: If the series is delayed between doses, DO NOT start the series over. Continue from where the schedule was interrupted. 	<p>Contraindication Previous severe allergic reaction (e.g. anaphylaxis) to this vaccine or to any of its components.</p> <p>Precaution Moderate or severe acute illness with or without fever.</p>
<p>Hib (<i>Haemophilus influenzae</i> type b)</p> <p><i>Give IM</i></p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> Not routinely recommended for healthy adults. Those adults at highest risk of serious Hib disease include people who 1) have anatomic or functional asplenia, 2) are undergoing an elective splenectomy, or 3) are recipients of hematopoietic stem cell transplant (HSCT). 	<ul style="list-style-type: none"> Give 1 dose of any Hib conjugate vaccine to adults in categories 1 or 2 (see 2nd bullet in column to left) if no history of previous Hib vaccine. For HSCT patients, regardless of Hib vaccination history, give 3 doses, at least 4wks apart, beginning 6–12m after transplant. 	<p>Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components.</p> <p>Precautions Moderate or severe acute illness with or without fever.</p>

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
<p>Zoster (shingles) (RZV: Shingrix; ZVL: Zostavax) For RZV, give IM For ZVL, give Subcut</p>	<ul style="list-style-type: none"> • People age 50yrs and older. <p>NOTE: Do not test people age 50yrs or older for varicella immunity prior to zoster vaccination. Persons born in the U.S. prior to 1980 can be presumed to be immune to varicella for the purpose of zoster vaccination, regardless of their recollection of having had chickenpox.</p>	<ul style="list-style-type: none"> • Give 2 doses of RZV, separated by 2–6m, regardless of previous history of herpes zoster (shingles) or chickenpox. • If previously vaccinated with ZVL, give 2 doses of RZV at least 2m after ZVL. • A 1-time dose of ZVL may be given to previously unvaccinated immunocompetent adults age 60y and older; however, RZV is preferred. • If 2 or more of the following live virus vaccines are to be given – LAIV, MMR, Var, ZVL, and/or yellow fever – they should be given on the same day. If they are not, space them by at least 28d (30d for yellow fever). 	<p>Contraindications</p> <ul style="list-style-type: none"> • For both RZV and ZVL, previous severe allergic reaction (e.g., anaphylaxis) to any component of zoster vaccine. <p>For ZVL only:</p> <ul style="list-style-type: none"> • Primary cellular or acquired immunodeficiency. • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination. • Pregnancy. <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever. • For RZV only, consider delaying vaccination in pregnant or lactating women.
<p>Human papillomavirus (HPV) Give IM</p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • For unvaccinated or partially vaccinated females through age 26yrs: Complete a 3-dose series of HPV. • For unvaccinated or partially vaccinated males through age 21yrs: Complete a 3-dose series of HPV. • For unvaccinated or partially vaccinated males age 22 through 26yrs: Complete a 3-dose series of HPV for those who 1) have sex with men or 2) are immunocompromised as a result of infection (including HIV), disease, or medications, or 3) want to be protected from HPV. • Other guidance: Pregnancy is neither a contraindication nor a precaution to HPV vaccine. 	<ul style="list-style-type: none"> • Give 3 doses on a 0, 1–2, 6m schedule. Use HPV for both women and men. • There must be at least 4wks between doses #1 and #2 and at least 12wks between doses #2 and #3. Overall, there must be at least 5mos between doses #1 and #3. • If the type of HPV vaccine previously given is not known or not available, any available HPV vaccine should be used to complete the series. 	<p>Contraindication</p> <p>Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever.
<p>Adult females through age 26yrs and adult males through age 21yrs (and males age 22 through 26yrs who receive HPV vaccine) who initiated the HPV vaccination series before age 15yrs and received 2 doses at least 5m apart are considered adequately vaccinated and do not need an additional dose of HPV vaccine.</p>			
<p>Inactivated Polio (IPV) Give IM or Subcut</p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • Not routinely recommended for U.S. residents age 18yrs and older. <p>NOTE: Adults living in the U.S. who never received or completed a primary series of polio vaccine need not be vaccinated unless they intend to travel to areas where exposure to wild-type virus is likely. Adults with documented prior vaccination can receive 1 booster dose if traveling to polio endemic areas or to areas where the risk of exposure is high.</p>	<p>For unique situations, schedules, and dosing information, see ACIP inactivated polio vaccine recommendations on pages 829–830 at www.cdc.gov/mmwr/PDF/wk/mm5830.pdf.</p>	<p>Contraindication</p> <p>Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components.</p> <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever. • Pregnancy.

Summary of Recommendations for Adult Immunization (Age 19 years and older)

Vaccine name and route	People for whom vaccination is recommended	Schedule for vaccination administration (any vaccine can be given with another unless otherwise noted)	Contraindications and precautions (mild illness is not a contraindication)
<p>Pneumococcal conjugate (PCV13; Prevnar13) <i>Give IM</i></p> <hr/> <p>Pneumococcal polysaccharide (PPSV23; Pneumovax 23) <i>Give IM or Subcut</i></p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” www.immunize.org/catg.d/p2010.pdf.</p> <p>All people age 65yrs or older should receive</p> <ul style="list-style-type: none"> • 1-time dose of PCV13 (if previously unvaccinated) and 1 dose of PPSV23, separated by 1 yr; if possible, give PCV13 first. <p>People younger than age 65yrs should receive</p> <ul style="list-style-type: none"> • 1-time dose of PCV13 and 1st dose of PPSV23 if they have functional or anatomic asplenia, immunocompromising condition (see below), CSF leak, or are a candidate for or recipient of a cochlear implant, • 2nd dose of PPSV23 if at highest risk of serious pneumococcal infection, including those who <ul style="list-style-type: none"> – Have anatomic or functional asplenia, including sickle cell disease. – Have an immunocompromising condition, including HIV infection, leukemia, lymphoma, Hodgkin’s disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome. – Are receiving immunosuppressive chemotherapy (including high-dose corticosteroids). – Have received an organ or bone marrow transplant. • PPSV23 only (not PCV13) if younger than 65 yrs and they have chronic cardiac or pulmonary disease (including asthma), chronic liver disease, alcoholism, diabetes, smoke cigarettes, or live in special environments or social settings (including American Indian/Alaska Natives age 50 through 64yrs if recommended by local public health authorities). 	<ul style="list-style-type: none"> • When recommended (see column at left), give PCV13 and/or PPSV23 if unvaccinated or if previous vaccination history is unknown. • For healthy people age 65yrs and older, give PCV13 first followed by PPSV23 in 1yr. • When both PCV13 and PPSV23 are indicated, give PCV13 first followed by PPSV23 in 1yr. If previously vaccinated with PPSV23, give PCV13 at least 12m after PPSV23. For people at highest risk of serious pneumococcal infection, if not previously vaccinated with PPSV23, give PCV13 first, followed by PPSV23 in 8wks. • Give another dose of PPSV23 to people <ul style="list-style-type: none"> – Age 65 yrs and older if 1st dose was given prior to age 65yrs and 5yrs have elapsed since previous dose of PPSV23. – Age 19–64yrs who are at highest risk of pneumococcal infection or rapid antibody loss (see 3rd bullet in the box to left for listing of people at highest risk) and 5yrs have elapsed since dose #1. 	<p>Contraindication</p> <p>Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine, including (for PCV13) to any diphtheria toxoid-containing vaccine, or to any of its components.</p> <p>Precaution</p> <p>Moderate or severe acute illness with or without fever.</p>
<p>Meningococcal conjugate (MenACWY; Menactra, Menveo) <i>Give IM</i></p>	<p>For people through age 18yrs, consult “Summary of Recommendations for Child/Teen Immunization” at www.immunize.org/catg.d/p2010.pdf.</p> <ul style="list-style-type: none"> • People with anatomic or functional asplenia, HIV infection, or persistent complement component deficiency. • People who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the “meningitis belt” of Sub-Saharan Africa). • Microbiologists routinely exposed to isolates of <i>N. meningitidis</i>. • First-year college students through age 21yrs who live in residence halls and who have not been previously vaccinated or who received their first dose prior to age 16yrs.; see the 5th bullet in the box to the right for details. 	<ul style="list-style-type: none"> • Give 2 initial doses of MenACWY separated by 2m to adults with risk factors listed in 1st bullet in column to left. • Give 1 initial dose of MenACWY to all other adults with risk factors (see 2nd–4th bullets in column to left). • Give booster doses of MenACWY every 5yrs to adults with continuing risk (see the 1st–3rd bullets in column to left). • For first-year college students age 19–21yrs living in residence halls, give 1 initial dose of MenACWY if unvaccinated. Give dose #2 if most recent dose was given when younger than 16yrs. 	<p>Contraindication</p> <p>Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components.</p> <p>Precaution</p> <p>Moderate or severe acute illness with or without fever.</p>
<p>Meningococcal serogroup B (MenB; Bexsero, Trumenba) <i>Give IM</i></p>	<ul style="list-style-type: none"> • People with anatomic or functional asplenia or persistent complement component deficiency. • Microbiologists routinely exposed to isolates of <i>N. meningitidis</i>. • People identified as at increased risk because of a serogroup B meningococcal disease outbreak. • Young adults through age 23yrs may be vaccinated routinely. 	<ul style="list-style-type: none"> • Give 2 doses of either MenB vaccine: Bexsero, spaced 1m apart; Trumenba, spaced 6m apart. MenB products are not interchangeable. • For people with risk (see 1st–3rd bullets in column to left), give either 2 doses of Bexsero, 1m apart, or 3 doses of Trumenba on a 0, 1–2, and 6m schedule. • MenB vaccine may be given concomitantly with MenACWY vaccine. 	

Vaccinations for Adults

You're never too old to get vaccinated!

Getting vaccinated is a lifelong, life-protecting job. Don't leave your healthcare provider's office without making sure you've had all the vaccinations you need.

Vaccine	Do you need it?
Hepatitis A (HepA)	Maybe. You need this vaccine if you have a specific risk factor for hepatitis A* or simply want to be protected from this disease. The vaccine is usually given in 2 doses, 6–12 months apart.
Hepatitis B (HepB)	Maybe. You need this vaccine if you have a specific risk factor for hepatitis B* or simply want to be protected from this disease. The vaccine is given in 2 or 3 doses, depending on the brand.
Hib (<i>Haemophilus influenzae</i> type b)	Maybe. Some adults with certain high-risk conditions, for example, lack of a functioning spleen, need vaccination with Hib. Talk to your healthcare provider to find out if you need this vaccine.
Human papillomavirus (HPV)	Yes! You need this vaccine if you are a woman age 26 or younger or a man age 21 or younger. Men age 22 through 26 with a risk condition* also need vaccination. All other men age 22 through 26 who want to be protected from HPV may receive it too. The vaccine is usually given in 3 doses over a 6-month period.
Influenza	Yes! You need a dose every fall (or winter) for your protection and for the protection of others around you.
Measles, mumps, rubella (MMR)	Maybe. You need at least 1 dose of MMR vaccine if you were born in 1957 or later. You may also need a second dose.*
Meningococcal ACWY (MenACWY)	Maybe. You may need MenACWY vaccine if you have one of several health conditions,* for example, if you don't have a functioning spleen. You need MenACWY if you are age 21 or younger and a first-year college student living in a residence hall and you either have never been vaccinated or were vaccinated before age 16.
Meningococcal B (MenB)	Maybe. You should consider MenB vaccine if you are age 23 or younger (even if you don't have a high-risk medical condition). You need MenB if you have one of several health conditions,* for example, if you do not have a functioning spleen.
Pneumococcal (Pneumovax 23, PPSV23; Prevnar 13, PCV13)	Yes! If you are age 65 (or older), you need both pneumococcal vaccines, Prevnar (if you haven't had it before) and Pneumovax. Get Prevnar first and then get Pneumovax 1 year later. If you are younger than age 65 and have a certain high-risk condition (for example, asthma, heart, lung, or kidney disease, immunosuppression, or you lack a functioning spleen or are a smoker),* you need 1 or both vaccines. Talk to your healthcare provider to find out when you need them.*
Tetanus, diphtheria, whooping cough (pertussis) (Tdap, Td)	Yes! If you have not received a dose of Tdap during your lifetime, you need to get a Tdap shot now (the adult whooping cough vaccine). And all women need to get a dose during each pregnancy. After that, you need a Td booster dose every 10 years. Consult your healthcare provider if you haven't had at least 3 tetanus and diphtheria toxoid-containing shots sometime in your life or if you have a deep or dirty wound.
Varicella (Chickenpox)	Maybe. If you've never had chickenpox, never were vaccinated, or were vaccinated but received only 1 dose, talk to your healthcare provider to find out if you need this vaccine.*
Zoster (shingles)	Yes! If you are age 50 or older, you should get the 2-dose series of the Shingrix brand of shingles vaccine, even if you already were vaccinated with Zostavax.

* Consult your healthcare provider to determine your level of risk for infection and your need for this vaccine.

Are you planning to travel outside the United States? Visit the Centers for Disease Control and Prevention's (CDC) website at wwwnc.cdc.gov/travel/destinations/list for travel information, or consult a travel clinic.

Before you vaccinate adults, consider their “H-A-L-O”!

What is H-A-L-O? As shown below, it’s an easy-to-use chart that can help you make an *initial* decision about vaccinating a patient based on four factors – the patient’s **Health condition, Age, Lifestyle, and Occupation**. In some situations, though, you can vaccinate a patient without considering these factors. For example, all adults need a dose of Tdap as well as annual vaccination against influenza, and any adult who wants protection against hepatitis A or hepatitis B can be vaccinated. Note that not all patients who mention one or more **H-A-L-O** factors will need to be vaccinated. Before you

make a *definitive* decision about vaccinating your patient, it’s important that you refer to the more detailed information found in the Immunization Action Coalition’s “Summary of Recommendations for Adult Immunization,” located at www.immunize.org/catg.d/p2011.pdf or the complete vaccine recommendations of the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/hcp/acip-recs/index.html.

How do I use H-A-L-O?
Though some H-A-L-O factors can be easily determined (e.g., age, pregnancy), you will need to ask your patient about the presence or absence of others. Once you determine which of the factors apply, scan down each column of the chart to see at a glance which vaccinations are possibly indicated.

H-A-L-O checklist of factors that indicate a possible need for adult vaccination

Vaccine	H Health Factors								A Age Factors	L Lifestyle Factors						O Occupational or other factors					
	Pregnant	Certain chronic diseases	Immunosuppressed (including HIV)	History of STD	Asplenia	Cochlear implant candidate/recipient	Organ transplant (for stem cell transplant, see ACIP’s General Recommendations on Immunization)	CSF leaks	Alcoholism	Born outside the U.S.	Men who have sex with men	Not in a long-term, mutually monogamous relationship	User of injecting or non-injecting drugs	International traveler	Close contact of international adoptee	Cigarette smoker	College students	Healthcare worker	Certain lab workers	People who live or work in an area of an outbreak	Adults in institutional settings (e.g., chronic care, correctional)
HepA		✓							Anyone of any age who wants to be protected		✓		✓	✓	✓			✓	✓		
HepB		✓	✓	✓					Anyone of any age who wants to be protected	✓	✓	✓	✓	✓			✓				✓
Hib		✓			✓																
HPV (females)									Through 26 yrs												
HPV (males)			✓						Routine through age 21; for age 22–26: risk groups and others who want to be protected		✓										
IPV													✓					✓			
Influenza	Annual vaccination is recommended for all adults.....▶																				
Meningococcal ACWY		✓	✓		✓								✓			✓		✓	✓	✓	
Meningococcal B		✓			✓				Any adult age 22–26 yrs who wants to be protected									✓	✓	✓	
MMR			?						Routine 1 dose if born after 1956; 2nd dose for some				✓			✓	✓		✓		
PCV13		✓	✓		✓	✓	✓	✓	65 yrs and older (if not previously vaccinated)												
PPSV23		✓	✓		✓	✓	✓	✓	65 yrs and older						✓						
Tdap	A single dose is recommended for all adults; pregnant women should receive Tdap during each pregnancy.....▶																				
Varicella	Completion of a 2-dose series is recommended for non-pregnant adults through age 59 years who do not have evidence of immunity to varicella.....▶																				
Zoster									50 yrs and older												

? = Vaccination may be indicated depending on degree of immunosuppression

Which Vaccines Do I Need Today?

Vaccines are an important part of helping you stay healthy. Which of these recommended vaccines do you need? Check the boxes that apply to you, and then talk this over with your healthcare provider.

Influenza (“flu”) vaccine

- I have not had my flu vaccine yet this season (*early fall through late spring*).

Pneumococcal polysaccharide vaccine – Pneumovax 23 [PPSV23]

I am **age 65 or older** and:

- I have never received any Pneumovax 23 vaccine (or I don’t remember if I have).
- I received 1 or 2 doses of Pneumovax 23 vaccine before I turned 65, and it’s now been more than 5 years since I received my last dose.

I am **younger than age 65** and:

- I have never received any Pneumovax 23 vaccine AND at least one of the following applies to me:
- I smoke cigarettes and I am age 19 years or older.
 - I have a chronic disease of the heart, lung (including asthma, if I am age 19 years or older), liver, or kidneys, or I have sickle cell disease.
 - I have diabetes or alcoholism.
 - I have a weakened immune system due to cancer, Hodgkin’s disease, leukemia, lymphoma, multiple myeloma, kidney failure, HIV/AIDS *or* receiving radiation therapy *or* taking a medicine that affects my immune system and I have not had 2 doses.
- I have had an organ or bone marrow transplant and I have not had 2 doses.
- I have had my spleen removed *or* have had a cochlear (inner ear) implant *or* have been told by a healthcare provider that I have leaking spinal fluid and I have not had 2 doses.

Pneumococcal conjugate vaccines [Pneumovax 13 [PCV13]

I am **age 65 or older** and:

- I have never received Pneumovax 13 vaccine (or I don’t remember if I have)

I am **younger than age 65** and:

- I have never received any Pneumovax 13 vaccine AND at least one of the following applies to me:
- I have a weakened immune system due to cancer, Hodgkin’s disease, leukemia, lymphoma, multiple myeloma, kidney failure, HIV/AIDS *or* receiving radiation therapy *or* taking a medicine that affects my immune system.
- I have had an organ or bone marrow transplant.
- I have had my spleen removed *or* have had a cochlear (inner ear) implant *or* have been told by a healthcare provider that I have leaking spinal fluid.

Tetanus, diphtheria, and pertussis (“whooping cough”)-containing vaccine (e.g., DTP, DTaP, Tdap, or Td)

- I have never received Tdap vaccine (or I don’t remember if I have.)
- I have not received at least 3 tetanus- and diphtheria-containing shots.
- I have received at least 3 tetanus- and diphtheria-containing shots in my lifetime, but I think it’s been more than 10 years since I received the last one.
- I am pregnant (and I am in the second or third trimester of my pregnancy) and have not had a dose of Tdap vaccine during this pregnancy.

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Measles, mumps, rubella (MMR) vaccine

- I am a woman thinking about a future pregnancy and don't know if I'm immune to rubella.
- I am a healthcare worker. I have received 1 MMR (or I don't remember if I have received more than 1), and I do not have a lab-confirmed report showing that I am immune to measles, mumps, and/or rubella.

I **was born in 1957 or later** and:

- I have never received MMR vaccine (or I don't remember if I have).
- I have received only 1 MMR and
 - I am entering college or another type of school after high school.
 - I am planning on traveling outside the U.S.¹

Varicella ("chickenpox") vaccine

- I was born before 1980 *and* I am a healthcare worker or foreign-born and I don't remember if I've ever had chickenpox disease.
- I was born in 1980 or later *and* I have never had chickenpox disease or received the vaccine (or I don't remember if I have).
- I have received one dose of varicella vaccine, but I'm not sure if I have received more than one dose.

Human papillomavirus (HPV) vaccination

I **have not completed a series** of HPV shots and

- I am a woman age 26 or younger.

I am a man

- age 21 or younger.
- age 22 through 26 and at least one of the following applies to me:
 - I want to be protected from HPV.
 - I have a weakened immune system due to infection (including HIV), disease, or medications.
 - I have sex with men.
- I am now older than age 26 and have not completed the HPV vaccine series I began when I was age 26 or younger.

Hepatitis A vaccine

- I want to be vaccinated to avoid getting hepatitis A and spreading it to others.
- I might have been exposed to hepatitis A virus within the past 2 weeks.
- I received 1 dose of hepatitis A vaccine in the past, but I have not received the second dose (or I don't remember if I have).
- I have not received hepatitis A vaccine in the past (or I don't remember if I have) and at least one of the following applies to me:

<ul style="list-style-type: none"> ▪ I travel (or plan to travel) in countries where hepatitis A is common.^{1, 2} ▪ I have (or will have) contact with a child within 60 days of the child's adoption from a country where hepatitis A is common.² ▪ I am a man who has sex with men. ▪ I use street drugs. 	<ul style="list-style-type: none"> ▪ I am homeless ▪ I have chronic liver disease. ▪ I have a blood clotting factor disorder. ▪ I work with hepatitis A virus in a research laboratory or with primates infected with hepatitis A virus.
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Hepatitis B vaccine

- I want to be vaccinated to avoid getting hepatitis B and spreading it to others.
- I am age 18 or younger and I have not begun or completed the series of hepatitis B shots (or I don't remember if I have).
- I have received at least one dose of hepatitis B in the past, but I have not completed the series of hepatitis B shots (or I don't remember if I have).
- I have not received or completed the series of hepatitis B shots (or I don't remember if I have) and at least one of the following applies to me:
 - I am sexually active and I am not in a long-term, mutually monogamous relationship.
 - I am a man who has sex with men.
 - I am an immigrant (or my parents are immigrants) from an area of the world where hepatitis B is common^{3,4} (so I need testing and may need vaccination.)
 - I live with or have sex with a person infected with hepatitis B.
 - I have been diagnosed with a sexually transmitted disease ("STD").
 - I have been diagnosed with HIV.
 - I inject street drugs.
 - I have chronic liver disease.
 - I am or will be on kidney dialysis.
 - I am younger than age 60 years and have diabetes and/or receive assisted glucose monitoring.
 - I am a healthcare or public safety worker who is exposed to blood or other body fluids.
 - I provide direct services to people with developmental disabilities.
 - I am planning on traveling outside the U.S.^{1,3}

Meningococcal ("meningitis") type A, C, W, Y vaccine (MenACWY)

- I am age 18 or younger and have never received any meningococcal vaccines (or I don't remember if I have).
- I am age 21 or younger *and*
 - I have not had a meningococcal shot (MenACWY) since before my 16th birthday *and* I am (or will be) a college student living in a residence hall.
 - I have not had a meningococcal shot (MenACWY) in the past 5 years and I am entering college.
- I have sickle cell disease.
- My spleen isn't working or has been removed.
- I have a persistent complement component deficiency or I am being treated with eculizumab (brand name Soliris).
- I have HIV infection.
- I have a risk of exposure due to an outbreak caused by serogroup A, C, W, or Y.
- I am a microbiologist who is routinely exposed to isolates of *Neisseria meningitidis*.
- I was vaccinated more than 5 years ago *and* I continue to be at risk due to travel,¹ illness, or occupation.

Meningococcal ("meningitis") type B vaccine (MenB)

- I am age 16–23 with no specific risk factor and would like to be protected from this disease.
- I am age 10 years or older and
 - I have a risk of exposure due to an outbreak caused by serogroup B.
 - I have sickle cell disease.
 - My spleen isn't working or has been removed.
 - I have a persistent complement component deficiency or I am being treated with eculizumab (brand name Soliris).

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Zoster (“shingles”) vaccine

- I am age 50 or older and have never received a shingles vaccine (or I don’t know if I have).
- I previously received the 1-dose Zostavax vaccine and now would like the 2-dose Shingrix vaccine.
- I previously received only 1 dose of the Shingrix vaccine and now need the second dose.

***Haemophilus influenzae* type b (“Hib”) vaccine**

- My spleen has been removed, or I am scheduled to have it removed (“splenectomy”).
- I have received a stem cell transplant.

Travel vaccines

- I am planning on traveling outside the U.S.^{1,2,3} (Discuss this with your provider.)

FOOTNOTES

1. Call your local travel clinic to find out if additional vaccines are recommended.
2. Countries where hepatitis A is common include all countries other than the U.S., Canada, Japan, Australia, New Zealand, and some (but not all) in Western Europe.
3. Areas with high rates of hepatitis B include Africa, China, Korea, Southeast Asia including Indonesia and the Philippines, South and Western Pacific Islands, interior Amazon Basin, certain parts of the Caribbean (i.e., Haiti and the Dominican Republic), and the Middle East except Israel. Areas with moderate rates include South Central and Southwest Asia, Israel, Japan, Eastern and Southern Europe, Russia, and most of Central and South America.
4. Most adults from moderate- or high-risk areas of the world do not know their hepatitis B status. All patients from these areas need hepatitis B blood tests to determine if they have been previously infected. The first hepatitis B shot can be given during the same visit as the blood tests but only after the blood is drawn.

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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Technical content reviewed by the Centers for Disease Control and Prevention

Suggested Medications for Managing Anaphylaxis in a Community Immunization Clinic Setting

FIRST-LINE medication

Epinephrine 1.0 mg/mL aqueous solution (1:1000 dilution) in prefilled autoinjector or prefilled syringe (0.3 mg), prepackaged syringes, vials, or ampules. At least three epinephrine doses should be available onsite.

OPTIONAL medications: H₁ antihistamines

These relieve itching and hives only; they DO NOT relieve upper or lower airway obstruction, hypotension, or shock.

Diphenhydramine (e.g., Benadryl) oral, 12.5 mg/5 mL liquid, 25 or 50 mg tablets

Additional emergency supplies you may need

- Syringes (1 and 3 cc) and needles (22 and 25 g, 1", 1½", and 2") if needed for epinephrine
- Alcohol wipes
- Tourniquet
Applied on the extremity above the injection site to slow systemic absorption of antigen and anaphylactic mediators
- Stethoscope
- Blood pressure measuring device with adult-sized and extra-large cuffs
- Tongue depressors
- Light with extra batteries (for examination of the mouth and throat)
- A timing device, such as wristwatch, for checking pulse
- Cell phone or access to onsite phone

For remote areas without EMS support

- Adult airways (various sizes)
- Adult-sized pocket mask with one-way valve
- Oxygen (if available)

REFERENCES

* American Academy of Pediatrics. *Red Book: 2018–2021*, 31st ed (p. 66).

Campbell RL, Kelso JM. Anaphylaxis: Emergency treatment. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. November 2018.

Kroger AT, Duchin J, Vazquez M. General Best Practice Guidelines for Immunization. Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html.

Emergency medical protocol for management of anaphylactic reactions in adults in a community setting

- 1 If itching and swelling are confined to the injection site where the vaccination was given, observe patient closely for the development of generalized symptoms.
- 2 If symptoms are generalized, activate the emergency medical system (EMS; e.g., call 911) and notify the patient’s physician. This should be done by a second person, while the primary healthcare professional assesses the airway, breathing, circulation, and level of consciousness of the patient. Vital signs should be monitored continuously.
- 3 **DRUG DOSING INFORMATION: The first-line and most important therapy in anaphylaxis is epinephrine. There are NO absolute contraindications to epinephrine in the setting of anaphylaxis.**
 - a **First-line treatment: EPINEPHRINE is the first-line treatment for anaphylaxis, and there is no known equivalent substitute.** Use epinephrine in a 1.0 mg/mL aqueous solution (1:1000 dilution). Administer a 0.3 mg dose IM using a premeasured or prefilled syringe or an autoinjector in the mid-outer thigh. If using another epinephrine formulation, the recommended dose is 0.01 mg/kg, ranging for adults from 0.3 mg to maximum dose of 0.5 mg. Administer IM, preferably in the mid-outer thigh. Epinephrine dose may be repeated 2 additional times every 5–15 minutes (or sooner as needed) while waiting for EMS to arrive.
 - b **Optional treatment: H₁ ANTIHISTAMINES** relieve itching and urticaria (hives). These medications DO NOT relieve upper or lower airway obstruction, hypotension, or shock. Consider giving diphenhydramine (e.g., Benadryl) for relief of itching and hives. Administer orally 1–2 mg/kg every 4–6 hours, up to a maximum single dose of 100 mg.*
- 4 Monitor the patient closely until EMS arrives. Perform cardiopulmonary resuscitation (CPR), if necessary, and maintain airway. Keep patient in recumbent position (flat on back) unless he or she is having breathing difficulty. If breathing is difficult, patient’s head may be elevated, provided blood pressure is adequate to prevent loss of consciousness. If blood pressure is low, elevate legs. Monitor blood pressure and pulse every 5 minutes.
- 5 Record the patient’s reaction (e.g., hives, anaphylaxis) to the vaccine, all vital signs, medications administered to the patient, including the time, dosage, response, and the name of the medical personnel who administered the medication, and other relevant clinical information.
- 6 Notify the patient’s primary care physician.
- 7 Report the incident to the Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov.

These standing orders for the medical management of vaccine reactions in adult patients shall remain in effect for patients of the

_____ until rescinded or until _____

NAME OF CLINIC DATE

MEDICAL DIRECTOR’S SIGNATURE DATE OF SIGNING

Q&A SHINGLES: WHAT YOU SHOULD KNOW

Volume 3
Winter 2017

Shingles is a painful disease caused by a reawakening of the same virus that causes chickenpox. Two doses of the shingles vaccine known as Shingrix® are recommended for adults aged 50 and older.

Q. What is shingles?

A. Shingles is a disease caused by the same virus that causes chickenpox; it's actually a reawakening of an old chickenpox infection. Shingles most often occurs in elderly people and people of any age with weakened immune systems. Common symptoms of shingles include a rash, usually in a band-like pattern on one side of the body; and severe pain. Sometimes the pain can last for months or years.

Q. How common is shingles?

A. Every year in the United States, shingles affects approximately 1 million people. About one of every three people in the United States will get shingles during their lifetime. Approximately half of those who live to be 85 years old will have one or more encounters with shingles.

Q. How do you get shingles?

A. People don't catch shingles from other people. Only people who have had chickenpox can get shingles. Shingles occurs when the chickenpox virus, which can live silently in the nervous system for decades, reawakens. This can be caused by a weakening of the immune system, most commonly from advancing age, but also from other causes such as the AIDS virus, or from immune-suppressive drugs used to treat cancers. Most often, cases of shingles occur among adults who are otherwise healthy.

Q. How can you avoid shingles?

A. Once a person has had chickenpox, he can get shingles. The only way to prevent it is with the shingles vaccine.

Q. Is shingles dangerous?

A. Yes. Although people almost never die from shingles, they can be severely hurt by it. Perhaps the most common complication is persistent, long-lived, debilitating pain. The pain can be so severe that it leads to sleeplessness, depression, weight loss, poor eating, and interference with basic daily activities such as dressing, bathing and eating. The pain of shingles, one of the most severe types of pain an adult can suffer, is unrelenting and, unfortunately, largely untreatable. Shingles can also affect the nerves around the eye area in approximately 15 of every 100 people with the disease, occasionally causing reduced vision or even blindness. In people with weakened immune systems, the chickenpox virus that causes shingles can at the same time cause hepatitis, pneumonia and encephalitis (infection of the brain). Scarring and concurrent bacterial infections can also occur at the site of the rash.

Q. Is shingles contagious?

A. Yes. Although people with shingles cannot give someone else shingles, they can pass the chickenpox virus to others through direct contact with the rash. So if, for example, the grandchildren of someone with shingles have not yet had chickenpox or the chickenpox vaccine, they could become infected with the virus and develop chickenpox. If the rash has yet to develop or has crusted, it is not likely to be contagious. Also, the risk of spreading is reduced if the rash is covered by dressings or clothing.

continued >

Q&A SHINGLES: WHAT YOU SHOULD KNOW

Q. How is the shingles vaccine made?

A. The Shingrix shingles vaccine is made by isolating a protein, called glycoprotein E, from the surface of the virus and mixing it with two adjuvants, QS21 and monophosphoryl lipid A, to enhance the immune response. QS21 is a soap-based molecule isolated from the bark of the *Quillaja saponaria* tree.

Monophosphoryl lipid A is a detoxified form of lipopolysaccharide, which is found on the surface of common bacteria.

A second version of shingles vaccine, known as Zostavax[®], has been available since 2006. This vaccine is a more concentrated version of the chickenpox vaccine that children currently receive. Like the children's chickenpox vaccine, Zostavax is a live, weakened form of the chickenpox virus. The shingles vaccine contains about 14 times more of the weakened chickenpox virus than is in the chickenpox vaccine. This amount of virus is needed to induce a protective response in people who have already had chickenpox. Due to the differences in the quantities of virus in Zostavax compared with the chickenpox vaccine, they cannot be used interchangeably.

Q. Does the shingles vaccine work?

A. Yes. Both vaccines work. Shingrix protected almost 100 percent of people from getting the shingles rash and about 90 percent from the long-lasting pain associated with shingles. Zostavax protected more than half of the recipients from getting the shingles rash and about two-thirds from getting long-lasting shingles pain. Because of the dramatic difference between these two vaccines, the committee of experts that advises the Centers for Disease Control and Prevention (CDC) recommended a preference for Shingrix vaccine.

Q. Who should get the shingles vaccine?

A. People who are 50 years of age and older should get two doses of the shingles vaccine known as Shingrix.

Q. Is the shingles vaccine safe?

A. Yes. Common side effects for both versions include redness, pain, and swelling at the injection site. Those who get Shingrix also sometimes experience tiredness, fever, headache, body aches, pain or shivering. Those who get Zostavax sometimes develop a rash or itching at the injection site.

Q. Should I get the shingles vaccine if I had shingles in the past?

A. Yes. Experiencing an episode of shingles in the past doesn't prevent someone from getting shingles again.

Q. Should I get Shingrix if I had Zostavax vaccine in the past?

A. Yes. Because Shingrix protects more people from shingles, it is recommended that even if you had Zostavax, you should still get Shingrix.

Q. Do I need to stay away from my infant grandchild after getting the shingles vaccine?

A. No, generally not. However, if a rash develops after getting the Zostavax vaccine, the child should be kept from coming into contact with the blisters.

Q. Where can I get the shingles vaccine?

A. First, check with your primary care provider. If it's not available at your provider's office, check with your pharmacist as many pharmacies carry adult vaccines.

Q. Will my insurance company pay for the shingles vaccine?

A. Because insurance plans differ widely, you should call your insurance company and find out whether your plan covers the vaccine. You should also consult your healthcare provider or the pharmacy where you will get the vaccine as they may have additional fees not covered by your insurer.

This information is provided by the Vaccine Education Center at Children's Hospital of Philadelphia. The Center is an educational resource for parents and healthcare professionals and is composed of scientists, physicians, mothers and fathers who are devoted to the study and prevention of infectious diseases. The Vaccine Education Center is funded by endowed chairs from Children's Hospital of Philadelphia. The Center does not receive support from pharmaceutical companies. ©2017 Children's Hospital of Philadelphia. All Rights Reserved. 17028-11-17.

Refusal to Consent to Adult Vaccination: 19 Years and Older

This is a tool for provider practices to use for documentation in the patient's medical record. This is not an immunization waiver form. Contact your local health department for more information. Remember to document vaccine refusal in the Michigan Care Improvement Registry (MCIR).

Patient Name: _____ ID# or DOB: _____

My health care provider, _____, has advised me that I should receive the following vaccines:

	Recommended Vaccine	Declined	Reason for Refusal
	Hepatitis A: HepA		
	Hepatitis B: HepB		
	Human Papillomavirus: 9vHPV		
	Influenza		
	Measles/Mumps/Rubella: MMR		
	Meningococcal Conjugate: MenACWY		
	Meningococcal B: MenB		
	Pneumococcal Conjugate: PCV13		
	Pneumococcal Polysaccharide: PPSV23		
	Tetanus/diphtheria: Td		
	Tetanus/diphtheria/pertussis: Tdap		
	Varicella (chickenpox): Var		
	Recombinant Zoster Vaccine (Shingrix): RZV		
	Zoster Vaccine Live (Zostavax®): ZVL		
	Other:		

I have read the Centers for Disease Control and Prevention's (CDC) Vaccine Information Statement(s) explaining the vaccine(s) and the disease(s) they prevent. My health care provider has explained to me and I understand the following:

- The **purpose** of the recommended vaccine(s).
- The **risks** of disease and the **benefits and potential risks** of the recommended vaccine(s).
- The **possible consequence(s)** of not receiving the recommended vaccine(s) may include contracting the illness the vaccine is intended to prevent and spreading the disease to others.
- My health care provider, the American College of Obstetricians and Gynecologists, the American Academy of Family Physicians, the CDC, and the Michigan Department of Health and Human Services **strongly recommend** that the vaccine(s) be given.

My health care provider has answered all my questions.

I know that I may change my mind and accept vaccination in the future.

I accept sole responsibility for any consequences that result from not being vaccinated.

I acknowledge that I have read this document in its entirety and fully understand it.

Signature

Date

Witness

Date

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Do you have allergies to medications, food, a vaccine component, or latex?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Have you ever had a serious reaction after receiving a vaccination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do you have a parent, brother, or sister with an immune system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Have you had a seizure or a brain or other nervous system problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. For women: Are you pregnant or is there a chance you could become pregnant during the next month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Have you received any vaccinations in the past 4 weeks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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.

Information for Healthcare Professionals about the Screening Checklist for Contraindications to Vaccines for Adults

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the references in **Notes** below.

NOTE: For supporting documentation on the answers given below, go to the specific ACIP vaccine recommendation found at the following website: www.cdc.gov/vaccines/hcp/acip-recs/index.html

NOTE: For summary information on contraindications and precautions to vaccines, go to the ACIP's General Best Practice Guidelines for Immunization at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html

1. Are you sick today? [all vaccines]

There is no evidence that acute illness reduces vaccine efficacy or increases vaccine adverse events. However, as a precaution with moderate or severe acute illness, all vaccines should be delayed until the illness has improved. Mild illnesses (e.g., upper respiratory infections, diarrhea) are NOT contraindications to vaccination. Do not withhold vaccination if a person is taking antibiotics.

2. Do you have allergies to medications, food, a vaccine component, or latex? [all vaccines]

An anaphylactic reaction to latex is a contraindication to vaccines that contain latex as a component or as part of the packaging (e.g., vial stoppers, prefilled syringe plungers, prefilled syringe caps). If a person has anaphylaxis after eating gelatin, do not administer vaccines containing gelatin. A local reaction to a prior vaccine dose or vaccine component, including latex, is not a contraindication to a subsequent dose or vaccine containing that component. For information on vaccines supplied in vials or syringes containing latex, see www.cdc.gov/vaccines-pubs/pinkbook/downloads/appendices/B/latex-table.pdf; for an extensive list of vaccine components, see www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.

People with egg allergy of any severity can receive any IIV, RIV, or LAIV that is otherwise appropriate for the patient's age and health status. The safety of LAIV in egg allergic people has not been established. For people with a history of severe allergic reaction to egg involving any symptom other than hives (e.g., angioedema, respiratory distress), or who required epinephrine or another emergency medical intervention, the vaccine should be administered in a medical setting, such as a clinic, health department, or physician office. Vaccine administration should be supervised by a healthcare provider who is able to recognize and manage severe allergic conditions.

3. Have you ever had a serious reaction after receiving a vaccination? [all vaccines]

History of anaphylactic reaction (see question 2) to a previous dose of vaccine or vaccine component is a contraindication for subsequent doses. Under normal circumstances, vaccines are deferred when a precaution is present. However, situations may arise when the benefit outweighs the risk (e.g., during a community pertussis outbreak).

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? [MMR, VAR, LAIV]

A history of thrombocytopenia or thrombocytopenic purpura is a precaution to MMR vaccine. LAIV is not recommended for people with anatomic or functional asplenia, complement component deficiency, a cochlear implant, or CSF leak. These conditions, including asthma in adults, should be considered precautions for the use of LAIV. Aspirin use is a precaution to VAR.

5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem? [LAIV, MMR, VAR, ZVL]

Live virus vaccines (e.g., LAIV, MMR, VAR, ZVL) are usually contraindicated in immunocompromised people. However, there are exceptions. For example, MMR vaccine is recommended and VAR vaccine should be considered for adults with CD4+ T-lymphocyte counts of greater than or equal to 200 cells/ μ L. Immunosuppressed people should not receive LAIV.⁷

6. Do you have a parent, brother, or sister with an immune system problem? [MMR, VAR]

MMR or VAR vaccines should not be administered to persons who have a family history of congenital or hereditary immunodeficiency in first-degree relatives (i.e., parents and siblings), unless the immune competence of the potential vaccine recipient has been substantiated clinically or verified by a laboratory.

7. In the past 3 months, have you taken medications that affect your immune system, such as cortisone, prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments? [LAIV, MMR, VAR, ZVL]

Live virus vaccines (e.g., LAIV, MMR, VAR, ZVL) should be postponed until after chemotherapy or long-term high-dose steroid therapy has ended. For details and length of time to postpone, see references in **Notes** above. Some immune mediator and immune modulator drugs (especially the anti-tumor necrosis factor agents adalimumab, infliximab, etanercept, golimumab, and certolizumab pegol) may be immunosuppressive. A comprehensive list of immunosuppressive immune modulators is available in CDC Health Information for International Travel (the "Yellow Book") available at wwwnc.cdc.gov/travel/yellowbook/2018/advising-travelers-with-specific-needs/immunocompromised-travelers. The use of live virus vaccines should be avoided in persons taking these drugs. To find specific vaccination schedules for stem cell transplant (bone marrow transplant) patients, see references in **Notes** above. LAIV can be given only to healthy non-pregnant people ages 2 through 49 years.

8. Have you had a seizure or a brain or other nervous system problem? [influenza, Td/Tdap]

Tdap is contraindicated in people who have a history of encephalopathy within 7 days following DTP/DTaP. An unstable progressive neurologic problem is a precaution to the use of Tdap. For people with stable neurologic disorders (including seizures) unrelated to vaccination, or for people with a family history of seizure, vaccinate as usual. A history of Guillain-Barré syndrome (GBS) is a consideration with the following: 1) Td/Tdap: if GBS has occurred within 6 weeks of a tetanus-toxoid vaccine and decision is made to continue vaccination, give Tdap instead of Td if no history of prior Tdap; 2) Influenza vaccine (IIV/LAIV): if GBS has occurred within 6 weeks of a prior influenza vaccine, vaccinate with IIV if at increased risk for severe influenza complications.

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? [MMR, VAR]

Certain live virus vaccines (e.g., MMR, VAR) may need to be deferred, depending on several variables. Consult General Best Practice Guidelines for Immunization (referenced in **Notes** above) for current information on intervals between antiviral drugs, immune globulin or blood product administration and live virus vaccines.

10. For women: Are you pregnant or is there a chance you could become pregnant during the next month? [HPV, IPV, MMR, LAIV, VAR, ZVL]

Live virus vaccines (e.g., MMR, VAR, ZVL, LAIV) are contraindicated one month before and during pregnancy because of the theoretical risk of virus transmission to the fetus. Sexually active women in their childbearing years who receive live virus vaccines should be instructed to avoid pregnancy for one month following receipt of the vaccine. On theoretical grounds, IPV should not be given during pregnancy; however, it may be given if risk of exposure is imminent and immediate protection is needed (e.g., travel to endemic areas). IIV and Tdap are both recommended during pregnancy. Both vaccines may be given at any time during pregnancy but the preferred time for Tdap administration is at 27–36 weeks' gestation. HPV vaccine is not recommended during pregnancy.

11. Have you received any vaccinations in the past 4 weeks? [LAIV, MMR, VAR, yellow fever, ZVL]

People who were given either LAIV or an injectable live virus vaccine (e.g., MMR, VAR, ZVL, yellow fever) should wait 28 days before receiving another vaccination of this type (30 days for yellow fever). Inactivated vaccines may be given at any spacing interval if they are not administered simultaneously.

VACCINE ABBREVIATIONS

LAIV = Live attenuated influenza vaccine	RIV = Recombinant influenza vaccine
HPV = Human papillomavirus vaccine	Td/Tdap = Tetanus, diphtheria, (acellular pertussis) vaccine
IIV = Inactivated influenza vaccine	VAR = Varicella vaccine
IPV = Inactivated poliovirus vaccine	ZVL = Zoster vaccine live
MMR = Measles, mumps, and rubella vaccine	

Guide to Contraindications and Precautions to Commonly Used Vaccines in Adults^{1,*}

Vaccine	Contraindications ¹	Precautions ¹
Influenza, inactivated (IIV)²	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine (except egg) or to a previous dose of influenza vaccine² 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of Guillain-Barré Syndrome (GBS) within 6 weeks of 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 a medical setting, under the supervision of a healthcare provider who is able to recognize and manage severe allergic conditions)²
Influenza, recombinant (RIV)²	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine (except egg) or to a previous dose of influenza vaccine² 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever History of Guillain-Barré Syndrome (GBS) within 6 weeks of previous influenza vaccination
Influenza, live attenuated (LAIV)^{2,3,4}	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine (except egg), or to a previous dose of influenza vaccine Pregnancy Immunocompromised due to any cause (including immunosuppression caused by medications or by HIV infection) Close contacts and caregivers of severely immunosuppressed persons who required a protected environment) Receipt of influenza antivirals (amantadine, rimantadine, zanamivir, oseltamivir, or peramivir) within the previous 48 hours; avoid 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 GBS within 6 weeks of previous influenza vaccination Asthma in persons age 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 metabolic disorders)
Tetanus, diphtheria, pertussis (Tdap) Tetanus, diphtheria (Td)	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component 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"> Moderate or severe acute illness with or without fever GBS 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 Tdap only: progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy; defer until a treatment regimen has been established and the condition has stabilized
Measles, mumps, rubella (MMR)³	<ul style="list-style-type: none"> Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component Severe immunodeficiency (e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency, or long-term immunosuppressive therapy³), or persons with human immunodeficiency virus [HIV] infection who are severely immunocompromised Family history of congenital or hereditary immunodeficiency in first-degree relatives (e.g., parents and siblings), unless the immune competence of the potential vaccine recipient has been substantiated clinically or verified by a laboratory test Pregnancy 	<ul style="list-style-type: none"> Moderate or severe acute illness with or without fever Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)⁶ History of thrombocytopenia or thrombocytopenic purpura Need for tuberculin skin testing⁷ or interferon-gamma release assay (IGRA) testing For MMRV only: Family history of seizures

CONTINUED ON THE NEXT PAGE ►

Varicella (Var)³	<ul style="list-style-type: none"> • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • Severe immunodeficiency (e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency, or long-term immunosuppressive therapy⁵), or persons with human immunodeficiency virus [HIV] infection who are severely immunocompromised • Family history of congenital or hereditary immunodeficiency in first-degree relatives (e.g., parents and siblings), unless the immune competence of the potential vaccine recipient has been substantiated clinically or verified by a laboratory test • Pregnancy 	<ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)⁶ • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination; avoid use of these antiviral drugs for 14 days after vaccination • Use of aspirin or aspirin-containing products • For MMRV only: Family history of seizures
Human papillomavirus (HPV)⁸	<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
Recombinant zoster vaccine (RZV) Zoster vaccine live (ZVL)³	<ul style="list-style-type: none"> • Severe allergic reaction (e.g., anaphylaxis) to a vaccine component • For ZVL only: Severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, or long-term immunosuppressive therapy⁵), or persons with HIV infection who are severely immunocompromised • For ZVL only: Pregnancy 	<ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever • For ZVL only: Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination; avoid use of these antiviral drugs for 14 days after vaccination • For RZV only: Pregnancy and lactation
Pneumococcal: conjugate (PCV13), polysaccharide (PPSV23)	<ul style="list-style-type: none"> • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component (including, for PCV13, to any vaccine containing diphtheria toxoid) 	<ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever
Hepatitis A (HepA)	<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
Hepatitis B (HepB)	<ul style="list-style-type: none"> • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • Hypersensitivity to yeast 	<ul style="list-style-type: none"> • Moderate or severe acute illness with or without fever
Meningococcal (MenACWY; 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
Haemophilus influenzae type b (Hib)	<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

FOOTNOTES

1. The Advisory Committee on Immunization Practices (ACIP) recommendations and package inserts for vaccines provide information on contraindications and precautions related to vaccines. 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 to latex (e.g., anaphylaxis), 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.
2. For additional 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 (ACIP) – United States, . . ." Access links to influenza vaccine recommendations at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html.
3. Two or more live virus vaccines (i.e., LAIV, MMR, Var, ZVL) may be administered on the same day. If not administered on the same day, separate by at least 28 days.
4. LAIV is not recommended for people with functional or anatomic asplenia, complement component deficiency, cochlear implant, or CSF leak.
5. Immunosuppressive steroid dose is considered to be 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.
6. Vaccine should be deferred for the appropriate interval if replacement immune globulin products are being administered (see Table 3-5 "Best Practices Guidance of the Advisory Committee on Immunization Practices [ACIP]," available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html).
7. Measles vaccination may suppress tuberculin reactivity temporarily. Measles-containing vaccine (MCV) may be administered on the same day as tuberculin skin testing (TST) or interferon gamma release assay (IGRA), or should be postponed for at least 4 weeks after the vaccination. No data exist regarding the potential degree of TST suppression that might be associated with other live, attenuated virus vaccines (e.g., Var or yellow fever). However, in the absence of data, following guidelines for MCV when scheduling TST screening and administering other live, attenuated virus vaccines is prudent.
8. HPV vaccine is not recommended for use in pregnant women. If a woman is found to be pregnant after initiating the vaccination series, the remainder of the series should be delayed until completion of pregnancy. Pregnancy testing is not needed before vaccination.

* Adapted from "Table 4-1. Contraindications and Precautions to Commonly Used Vaccines" found in: CDC. "Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP)" available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html.