Summary of Recommendations for Child/Teen Immunization (Age birth through 18 years)

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Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)	
Hepatitis B (HepB) Give IM	 Vaccinate all children age 0 through 18 yrs. Vaccinate all newborns with monovalent vaccine prior to hospital discharge. Give dose #2 at age 1–2m and the final dose at age 6–18m (the last dose in the infant series should not be given earlier than age 24 wks). After the birth dose, the series may be completed using 2 doses of single-antigen vaccine (ages 1–2m, 6–18m) or up to 3 doses of Comvax (ages 2m, 4m, 12–15m) or with 3 doses of Pediarix (ages 2m, 4m, 6m), which may result in giving a total of 4 doses of hepatitis B vaccine. 	 Do not restart series, no matter how long since previous dose. 3-dose series can be started at any age. Minimum intervals between doses: 4 wks between #1 and #2, 8 wks between #2 and #3, and at least 16 wks between #1 and #3. 	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precautions • Moderate or severe acute illness. • For infants who weigh less than 2000 grams, see ACIP recommendations at www.cdc.gov/mmwr/PDF/rr/rr5416. pdf.	
	If mother is HBsAg-positive: Give the newborn HBIG and dose #1 within 12 hrs of birth; complete series by age 6m. If mother's HBsAg status is unknown: Give the newborn dose #1 within 12 hrs of birth. If low birth weight (less than 2000 grams), also give HBIG within 12hrs. For infants weighing 2000 grams or more whose mother is subsequently found to be HBsAg positive, give the infant HBIG ASAP (no later than age 7d) and follow HepB immunization schedule for infants born to HBsAg-positive mothers.	(HepB) (Engerix-B is not licensed for a 2-dose schedule.)		
DTaP, DT (Diphtheria, tetanus, acellular pertussis) Give IM	 Give to children at ages 2m, 4m, 6m, 15–18m, and 4–6 yrs. May give dose #1 as early as age 6 wks. May give #4 as early as age 12m if 6m have elapsed since #3. Do not give DTaP/DT to children age 7 yrs and older. If possible, use the same DTaP product for all doses. 	 Dose #2 and #3 may be given 4 wks after previous dose. Dose#4 may be given 6m after #3. If dose #4 is given before 4th birthday, wait at least 6m for #5 (age 4–6 yrs). If dose #4 is given after 4th birthday, #5 is not needed. 	 Contraindications Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. For all pertussis-containing vaccines: Encephalopathy not attributable to an identifiable cause, within 7d after DTP/DTaP/Tdap. Precautions Moderate or severe acute illness. History of arthus reaction following a prior dose of tetanus or diphtheria toxoid-containing vaccine; defer vaccination until at least 10 yrs have elapsed since the last tetanus toxoid-containing vaccine. Guillain-Barré syndrome (GBS) within 6 wks after previous dose of tetanus toxoid-containing vaccine. For DTaP only: Any of these events following a previous dose of DTP/DTaP: 1) temperature of 105°F (40.5°C) or higher within 48 hrs; 2) continuous crying for 3 hrs or more within 48 hrs; 3) collapse or shock-like state within 48 hrs; 4) seizure within 3d. For all pertussis-containing vaccines: Progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized. 	
Td, Tdap (Tetanus, diphtheria, acellular pertussis) Give IM	 For children and teens lacking previous Tdap: Give Tdap routinely at age 11–12 yrs and vaccinate older teens on a catch-up basis; then boost every 10 yrs with Td. Make special efforts to give Tdap to children and teens who are (1) in contact with infants younger than age 12m and, (2) health care workers with direct patient contact. Give Tdap to pregnant adolescents during each pregnancy (preferred during 27–36 weeks' gestation), regardless of interval since prior Td or Tdap. 	 DTaP and DT should not be used for children age 7 yrs and older; use Td and Tdap instead. Children as young as age 7 yrs and teens who are unvaccinated or behind schedule should complete a 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 Tdap for any dose in the series, preferably as dose #1. Tdap should be given regardless of interval since previous Td. 		

This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, visit CDC's website at www.cdc.gov/vaccines/hcp/ ACIP-recs/index.html or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip.

This table is revised periodically. Visit IAC's website at www.immunize. org/childrules 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	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Rotavirus (RV) Give orally	 Rotarix (RV1): give at ages 2m, 4m. RotaTeq (RV5): give at ages 2m, 4m, 6m. May give dose #1 as early as age 6 wks. Give final dose no later than age 8m-0d. 	 Do not begin series in infants older than age 14 wks 6 days. Intervals between doses may be as short as 4 wks. If prior vaccination included use of different or unknown brand(s), a total of 3 doses should be given. 	Contraindications Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. If allergy to latex, use RV5. History of intussusception. Diagnosis of severe combined immunodeficiency (SCID). Precautions Moderate or severe acute illness. Altered immunocompetence other than SCID. Chronic gastrointestinal disease. For RV1 only, spina bifida or bladder exstrophy.
Varicella (Var) (Chickenpox) Give Subcut	 Give dose #1 at age 12–15m. Give dose #2 at age 4–6 yrs. Dose #2 of Var or MMRV may be given earlier if at least 3m since dose #1. If the 2nd dose was given at least 4 wks after 1st dose, it can be accepted as valid. Give a 2nd dose to all older children/teens with history of only 1 dose. MMRV may be used in children age 12m through 12 yrs (see note below). NOTE: For the first dose of MMR and var either MMR and Var or MMRV may be used.		Contraindications Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Pregnancy or possibility of pregnancy within 4 wks. Children on high-dose 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 percentages are 15% or greater in children age 1 through 8 yrs or 200 cells/µL in children age 9 yrs and older) Precautions Moderate or severe acute illness. If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP's General Recommendations on Immunization¹ regarding time to wait before vaccinating. Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hrs before vaccination, if possible; delay resumption of these antiviral drugs for 14d after vaccination. For MMRV only, personal or family (i.e., sibling or parent) history of seizures. NOTE: For patients with humoral immunodeficiency or leukemia, see ACIP recommendations
MMR (Measles, mumps, rubella) Give Subcut	 caregiver expresses a preference for MM MMR and Var be used for the first doses Give dose #1 at age 12–15m. Give MMR at age 6–11m if traveling internationally; revaccinate with 2 doses of MMR at age 12–15m and at least 4 wks later. The dose given at younger than 12m does not count toward the 2-dose series. Give dose #2 at age 4–6 yrs. Dose #2 may be given earlier if at least 4 wks since dose #1. For MMRV: dose #2 may be given earlier if at least 3m since dose #1. Give a 2nd dose to all older children and teens with history of only 1 dose. MMRV may be used in children age 12m through 12 years (see note above). 	RV, CDC recommends that	Contraindications Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Pregnancy or possibility of pregnancy within 4 wks. Severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy, or severely symptomatic HIV). NOTE: HIV infection is NOT a contraindication to MMR for children who are not severely immunocompromised (see ACIP recommendations at www.cdc.gov/mmwr/pdf/rr/rr6204.pdf). Vaccination is recommended if indicated for 1) children age 12m through 5 yrs whose CD4+ T-lymphocyte percentage has been greater than 15% for at least 6m or 2) for children age 6 yrs and older whose CD4+ T-lymphocyte counts have been 200 cells/μL or greater for at least 6m. Precautions Moderate or severe acute illness. If blood, plasma, or immune globulin given in past 11m, see ACIP's General Recommendations on Immunization¹ regarding time to wait before vaccinating. History of thrombocytopenia or thrombocytopenic purpura. For MMRV only, personal or family (i.e., sibling or parent) history of seizures. Need for tuberculin skin testing (TST). If TST needed, give TST before or on same day as MMR, or give TST 4 wks following MMR.

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Pneumococcal conjugate (PCV13) Give IM	 Give at ages 2m, 4m, 6m, 12–15m (booster dose). Dose #1 may be given as early as age 6 wks. For age 24 through 59m and healthy: If unvaccinated or any incomplete schedule or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8 wks after the most recent dose. For high-risk** children ages 2 through 5 yrs: Give 2 doses at least 8 wks apart if they previously received fewer than 3 doses; give 1 dose at least 8 wks after the most recent dose if they previously received 3 doses. For high-risk** children: All recommended PCV13 doses should be given prior to PPSV vaccination. PCV13 is not routinely given to healthy children age 5 yrs and older. *** High-risk: For both PCV13 and PPSV, those with sickle cell disease; anatomic or functional asplenia; chronic cardiac, pulmonary, or renal disease; diabetes; cerebrospinal fluid leaks; HIV infection; immunosuppression; diseases associated with immunosuppressive and/or radiation therapy; solid organ transplantation; or who have or will have a cochlear implant and, for PPSV only, alcoholism 	 When children are behind on PCV13 schedule, minimum interval for doses given to children younger than age 12m is 4 wks; for doses given at 12m and older, it is 8 wks. For age 7 through 11m: If history of 0 doses, give 2 doses of PCV13, 4 wks apart, with a 3rd dose at age 12 –15m; if history of 1 or 2 doses, give 1 dose of PCV13 with a 2nd dose at age 12–15m at least 8 wks later. For age 12 through 23m: If unvaccinated or history of 1 dose before age 12m, give 2 doses of PCV13 8 wks apart; if history of 1 dose at or after age 12m or 2 or 3 doses before age 12m, give 1 dose of PCV13 at least 8 wks after most recent dose; if history of 4 doses of PCV7 or other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8 wks after the most recent dose. For age 2 through 5 yrs and at high risk**: If unvaccinated or any incomplete schedule of 1 or 2 doses, give 2 doses of PCV13, 1 at least 8 wks after the most recent dose and another dose at least 8 wks later; if any incomplete series of 3 doses, or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 supplemental dose of PCV13 at least 8 wks after the most recent PCV7 dose. For children ages 6 through 18 yrs with functional or anatomic asplenia (including sickle cell disease), HIV infection or other immunocompromising condition, cochlear implant, or CSF leak, give 1 dose of PCV13 if no previous history of PCV13. 	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to a PCV vaccine, to any of its components, or to any diphtheria toxoid-containing vaccine. Precaution Moderate or severe acute illness.
Pneumococcal polysaccharide (PPSV) Give IM or Subcut	 Give 1 dose at least 8 wks after final dose of PCV13 to high-risk** children age 2 yrs and older. For children who have sickle cell disease, functional or anatomic asplenia, HIV infection, or other immunocompromising condition, give a 2nd dose of PPSV 5 yrs after previous PPSV. (See ACIP pneumococcal recommendations at www.cdc.gov/mmwr/pdf/rr/rr5911.pdf.) 		Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precaution Moderate or severe acute illness.
Human papillomavirus (HPV) (HPV2, Cervarix) (HPV4, Gardasil) (HPV9, Gardasil 9) Give IM	 Give 3-dose series of either HPV2, HPV4, or HPV9 to girls at age 11–12 yrs on a 0, 1–2, 6m schedule. (May give as early as age 9 yrs.) Give 3-dose series of only HPV4 or HPV9 to boys age 11–12 yrs on a 0, 1–2, 6m schedule. (May give as early as age 9 yrs.) Give a 3-dose series of either HPV2, HPV4, or HPV9 to all older girls/women (through age 26 yrs) and 3-dose series of HPV4 or HPV9 to all older boys/men (through age 21 yrs) who were not previously vaccinated. 	Minimum intervals between doses: 4 wks between #1 and #2; 12 wks between #2 and #3. Overall, there must be at least 24 wks between doses #1 and #3. Any HPV vaccine may be used to complete a series started with a different vaccine, but only HPV4 or HPV9 should be used for males.	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precautions Moderate or severe acute illness. Pregnancy.

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Hepatitis A (HepA) Give IM	 Give 2 doses spaced 6–18m apart to all children at age 1 yr (12–23m). Vaccinate all previously unvaccinated children and adolescents age 2 yrs and older who Want to be protected from HAV infection and lack a specific risk factor. Live in areas where vaccination programs target older children. Travel anywhere except U.S., W. Europe, N. Zealand, Australia, Canada, or Japan. Have chronic liver disease, clotting factor disorder, or are adolescent males who have sex with other males. Use illicit drugs (injectable or non-injectable). Anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60 days following the adoptee's arrival in the U.S. 	 Minimum interval between doses is 6m. Children who are not fully vaccinated by age 2 yrs can be vaccinated at a subsequent visit. Administer 2 doses at least 6 months apart to previously unvaccinated persons who live in areas where vaccination programs target older children, or who are at increased risk for infection. Give 1 dose as postexposure prophylaxis to incompletely vaccinated children and teens age 12m and older who have recently (during the past 2 wks) been exposed to hepatitis A virus. 	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precautions • Moderate or severe acute illness.
Inactivated polio (IPV) Give Subcut or IM	 Give to children at ages 2m, 4m, 6–18m, 4–6 yrs. May give dose #1 as early as age 6 wks. Not routinely recommended for U.S. residents age 18 yrs and older (except certain travelers). For information on polio vaccination for international travelers, see wwwnc.cdc.gov/travel/diseases. 	 The final dose should be given on or after the 4th birthday and at least 6m from the previous dose. If dose #3 is given after 4th birthday, dose #4 is not needed if dose #3 is given at least 6m after dose #2. 	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precautions • Moderate or severe acute illness. • Pregnancy.
Influenza Inactivated influenza* vaccine (IIV) Give IM * includes recombinant influenza vaccine (RIV3) for teens ages 18 yrs and older Live attenuated influenza vaccine (LAIV) Give NAS (intranasally)	 Vaccinate all children and teens age 6m and older. LAIV may be given to healthy children ages 2 through 8 y people through age 49 yrs who lack a contraindication o Give 2 doses of age-appropriate vaccine, spaced 4 wks a who 1) are first-time vaccinees, or 2) have received only season (season runs July to June) For IIV, give 0.25 mL dose to children age 6–35m and 0. For teens age 18 years and older, intradermal vaccine (F If LAIV and either MMR, Var, and/or yellow fever vaccine them at least 28d apart. 	r precaution. part, to children age 6m through 8 yrs one lifetime dose previous to this current 5 mL dose if age 3 yrs and older. luzone Intradermal) may be used.	 Contraindications Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine, to any of its components, including egg protein. NOTE: People age 18 yrs and older with egg allergy of any severity can receive the recombinant influenza vaccine (RIV3) (Flublok). RIV3 does not contain any egg protein. For children/teens who experience only hives with exposure to eggs, give IIV with additional safety precautions (i.e., observe patients for 30 minutes after receipt of vaccine for signs of a reaction). For LAIV only: Age younger than 2 yrs; pregnancy; immunosuppression (including that caused by medications or HIV); for children and teens ages 6m through 18 yrs, current long-term aspirin therapy; for children age 2 through 4 yrs, wheezing or asthma within the past 12m, per health care provider statement. Receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48 hrs before vaccination. Avoid use of these antiviral drugs for 14d after vaccination. Precautions Moderate or severe acute illness. History of Guillain-Barré syndrome (GBS) within 6 wks of a previous influenza vaccination. For LAIV only: Chronic pulmonary (including asthma in children age 5 yrs and older), cardiovascular (except hypertension), renal, hepatic, neurological/

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Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another, unless otherwise noted)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hib (Haemophilus influenzae type b) Give IM	 ActHib (PRP-T): give at age 2m, 4m, 6m, 12–15m (booster dose). PedvaxHIB or Comvax (containing PRP-OMP): give at age 2m, 4m, 12–15m (booster dose). Dose #1 of Hib vaccine should not be given earlier than age 6 wks. Give final dose (booster dose) no earlier than age 12m and a minimum of 8 wks after the previous dose. Hib vaccines are interchangeable; however, if different brands of Hib vaccines are administered for dose #1 and dose #2, a total of 3 doses is necessary to complete the primary series in infants, followed by a booster after age 12m. For vaccination of children 12 through 59m who are immunocompromised (immunoglobulin deficiency, complement component deficiency, HIV infection, receipt of chemotherapy or radiation therapy for cancer) or asplenic: if previously received no doses or only 1 dose before age 12m, give 2 additional doses at least 8 wks apart; if previously received 2 or more doses before age 12m, give 1 additional dose. Hib is not routinely given to healthy children age 5 yrs and older. 1 dose of Hib vaccine should be administered to children age 5 years and older who have anatomic or functional asplenia (including sickle cell disease) and who have not received a primary series and booster dose or at least 1 dose of Hib vaccine after age 14m. 1 dose of Hib vaccine should be administered to unvaccinated persons 5 through 18 years of age with HIV infection. Hiberix is approved ONLY for the booster dose at age 12m through 4 yrs. 	All Hib vaccines: • If dose #1 was given at 12–14m, give booster in 8 wks. • Give only 1 dose to unvaccinated children ages 15–59m. ActHib: • Dose #2 and #3 may be given 4 wks after previous dose. • If dose #1 was given at age 7–11m, only 3 doses are needed; #2 is given at least 4 wks after #1, then final dose at age 12–15m (wait at least 8 wks after dose #2). PedvaxHIB and Comvax: • Dose #2 may be given 4 wks after #1. Recipients of hematopoietic stem cell transplant should receive 3 doses of Hib vaccine at least 4 wks apart beginning 6–12m after transplant, regardless of Hib vaccination history.	Contraindications Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Age younger than 6 wks. Precaution Moderate or severe acute illness.
Meningococcal conjugate, quadrivalent (MCV4) Menactra and Menveo Give IM MenHibrix (contains Hib vaccine) Give IM Meningococcal polysaccharide (MPSV4) Menomune Give Subcut	 Give a 2-dose series of MCV4 (Menactra or Menveo) with dose #1 routinely at age 11–12 yrs and dose #2 at age 16 yrs. Give MCV4 to all unvaccinated teens age 13 through 18 yrs. If vaccinated at age 13–15 yrs, give dose #2 at age 16 through 18 yrs with a minimum interval of at least 8 wks between doses. For college students, give 1 (initial) dose to unvaccinated first-year students age 19 through 21 yrs who live in residence halls; give dose #2 if most recent dose given when younger than age 16 yrs. Give MenHibrix or Menveo to children age 2–18m with persistent complement component deficiency or anatomic/functional asplenia; give at ages 2, 4, 6, 12–15m. For unvaccinated or partially vaccinated children age 7–23m with persistent complement component deficiency: 1) if age 7–23m and using Menveo, give a 2-dose series at least 3m apart with dose #2 given after age 12m or, 2) if age 9–23m and using Menactra, give a 2-dose series at least 3m apart. Give either brand of MCV4 to unvaccinated children age 24m and older with persistent complement component deficiency or anatomic or functional asplenia; give 2 doses, 2m apart. If Menactra is given, it must be separated by 4 wks from the final dose of PCV13. Give age-appropriate series of meningococcal conjugate vaccine (brand must be licensed for age of child) to 1) children age 2m and older at risk during a community outbreak attributable to a vaccine serogroup and 2) children age 2m and older travelling to or living in countries with hyperendemic or epidemic meningococcal disease. Prior receipt of MenHibrix is not sufficient for children travelling to the meningitis belt or the Hajj. 	 If previously vaccinated and risk of meningococcal disease persists, revaccinate with MCV4 in 3 yrs (if previous dose given when younger than age 7 yrs) or in 5 yrs (if previous dose given at age 7 yrs or older). Then, give additional booster doses every 5 yrs if risk continues. When administering MCV4 to children and teens with HIV infection, give 2 initial doses, separated by 8 wks. Minimum ages for MCV: 6 wks Men-Hibrix; 2m Menveo; 9m Menactra. See ACIP schedule footnotes for additional information on catch-up vaccination of high-risk persons and for MenHibrix. 	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precautions Moderate or severe acute illness.
Meningococcal serogroup B (MenB) Bexsero and Trumenba Give IM	 Teens age 16 through 18 years as a Category B (permissive) recommendation (to allow for individual clinical decision-making). Give MenB to children age 10 yrs and older with persistent complement component deficiencies, functional or anatomic asplenia, including sickle cell disease, or who are at risk during a community outbreak of serotype B. 	 Give 2 doses of Bexsero, 1m apart, or 3 doses of Trumenba, on a 0, 2, and 6m schedule. MenB vaccine may be given concomitantly with MCV4 vaccine. MenB brands are not interchangeable. 	