






A Pediatric Guide: Caring for Infants Born to Hepatitis B-Infected Mothers



Immunize and Test On Time

	AGE	Single-antigen hepatitis B vaccine (Engerix-B® or Recombivax HB®)	Combination hepatitis B vaccine (Pediarix®)
	Birth¹ (Within 12 hours)	Hepatitis B immune globulin (HBIG) AND Hepatitis B vaccine dose #1	Combination vaccine is not approved for the birth dose. See single-antigen guidance.
	1–2 Months²	Hepatitis B vaccine dose #2	Hepatitis B vaccine dose #2
	4 Months	No vaccine needed	Hepatitis B vaccine dose #3
	6 Months	Hepatitis B vaccine dose #3	Hepatitis B vaccine dose #4
	9–12 Months³	Postvaccination serologic testing Hepatitis B Surface Antigen (HBsAg) AND Hepatitis B Surface Antibody (anti-HBs)	Postvaccination serologic testing Hepatitis B Surface Antigen (HBsAg) AND Hepatitis B Surface Antibody (anti-HBs)

¹HBIG should be administered within 12 hours of birth; however it can be administered up to 7 days after birth if the mother's HBsAg laboratory result is unavailable at delivery.

²Low birth weight infants (less than 2,000 grams or 4.4 lbs.) should receive 4 doses of hepatitis B vaccine. The schedule is: HBIG & hepatitis B vaccine within 12 hours of birth, hepatitis B vaccine at 1 month, 2 months and 6 months of age. The Pediarix® schedule is HBIG & single-antigen hepatitis B vaccine within 12 hours of birth, followed by Pediarix® doses at 2, 4 and 6 months of age.

³Blood for the PVST should not be collected before 9 months of age AND must be drawn a minimum of 30 days after final hepatitis B vaccine dose, if infant is completing the hepatitis B series after the recommended intervals.

Postvaccination Serologic Testing (PVST) Laboratory Interpretations

Immune to HBV No additional HepB doses needed		Susceptible to HBV Additional HepB doses needed		Infected with HBV Report results to Public Health		
Test	HBsAg	anti-HBs	HBsAg	anti-HBs	HBsAg	anti-HBs
Result	Negative	Positive	Negative	Negative	Positive	Negative

Report all PVST results to the Georgia Perinatal Hepatitis B Prevention Program.

For more information or to locate your local health department's perinatal hepatitis B case manager, visit the Georgia Department of Public Health's Perinatal Hepatitis B Prevention Program website:
dph.georgia.gov/perinatal-hepatitis-b

Common Questions about Perinatal Hepatitis B

What is hepatitis B?

Hepatitis B is an infectious liver disease caused by the Hepatitis B Virus (HBV). HBV attacks the liver and can lead to cirrhosis, liver cancer and premature death.

How is hepatitis B transmitted?

HBV is transmitted through contact with infectious blood or body fluids. HBV can be transmitted from an infected mother to her newborn during delivery.

When is an infant at high-risk for hepatitis B?

Infants born to mothers who are hepatitis B surface antigen (HBsAg) positive are considered high-risk.

How can hepatitis B be prevented at birth?

Administering hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine (HepB) within 24 hours of birth is 85%-95% effective in preventing perinatal HBV infection.

Is there a specific immunization schedule that needs to be followed for HBV-exposed infants?

Yes. Hepatitis B immune globulin (HBIG) and HepB (birth dose) should be administered within 12 hours of birth. HepB dose two should be administered at 1-2 months of age and the third dose should be administered at 6 months of age. After the birth dose, infants receiving Pediarix® should receive doses at 2, 4 and 6 months of age.

What if my practice identifies a HBV-exposed newborn that did not receive HBIG before hospital discharge?

Administering HBIG within 12 hours of birth is recommended; however, it can be administered up to 7 days after birth. The infant should be referred urgently to the Mother/Baby department of the delivery hospital for immediate administration of HBIG. If more than 7 days have passed, it is too late to administer HBIG. However, ensure that the HepB birth dose was given, and strictly adhere to the recommended intervals for subsequent doses.

My patient was born to an HBV-infected mother and weighed less than 2,000 grams (4.4 lbs.) at birth. Why does this infant need 4 doses of HepB?

The immune response to HepB is less reliable in newborns weighing less than 2,000 grams. HBV-exposed infants must receive HBIG and HepB within 12 hours of birth. The HepB birth dose should not be counted as part of the series and the infant should receive three additional doses beginning at 1 month of age, followed by a third dose 1-2 months after the second and a fourth dose at 6 months of age. Infants receiving Pediarix® should receive HBIG and the single-antigen birth dose followed by Pediarix® doses at 2, 4 and 6 months of age.

What is postvaccination serologic testing (PVST) and why is it necessary?

Postvaccination serologic testing (PVST) is recommended for infants and children born to hepatitis B-infected mothers. Serologic testing confirms whether the child has developed immunity or has been infected with HBV. The PVST should include hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (anti-HBs) only. Testing should occur between 9 and 12 months of age.

Why must providers wait until the infant is 9 months of age to collect the PVST?

Labs collected before 9 months of age can provide inaccurate anti-HBs results by detecting the antibody from HBIG administered at birth and not actual response to the hepatitis B vaccine.

Also, for infants who receive HBIG at birth but still develop HBV infection, there can be a prolonged incubation period. Waiting until 9 months of age can maximize detection of late HBV infection.

Can collection of the PVST be delayed until the infant is older?

After primary immunization with HepB, anti-HBs concentrations decline rapidly within the first year. This decline may result in a negative/non-reactive anti-HBs result, making it difficult to determine if this child has waned immunity or vaccine failure and leading to unnecessary revaccination. For this reason, providers are encouraged to test at 9-12 months of age (or 1-2 months after the final dose of the HepB series, if doses were delayed).

What if my patient's HBsAg and anti-HBs results are negative after completing the HepB series?

The child should complete a second three-dose HepB series (0, 1-month & 6-month schedule) and be tested 1-2 months after completion. If immunity is still not present after six doses, counsel the child's parents or guardian on risk reduction strategies for vaccine non-responders.

What if my patient is infected with HBV?

Hepatitis B is a reportable condition in Georgia. Report the HBsAg-positive result to the Georgia Department of Public Health within 7 days of diagnosis. Refer the child to a pediatric specialist for further evaluation. The child's family and caretakers should be educated about avoiding blood exposure.

My HBV-exposed patient has other siblings that I care for in my practice. Do they need follow-up?

Yes. Household contacts including other siblings should be tested and vaccinated against HBV, if found to be susceptible.

What if the infant was adopted or the mother's HBsAg-status is unknown?

Verify the child's immunization history beginning at birth. Administer any missing HepB doses, followed by PVST at 9-12 months of age.

All immunizations must be reported to the Georgia Department of Public Health via the Georgia Registry of Immunization Transactions and Services (GRITS) system within 30 days of vaccine administration.



For more information, visit the Georgia Department of Public Health's Perinatal Hepatitis B Prevention Program website at dph.georgia.gov/perinatal-hepatitis-b



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) <i>Give IM</i>	<ul style="list-style-type: none"> Give HepB dose #1 within 24hrs of birth to all medically stable infants weighing ≥ 2000g and born to HBsAg-negative mothers. 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 24wks). After the birth dose, the series may be completed using 2 doses of single-antigen vaccine (ages 1–2m, 6–18m) or with 3 doses of Pediarix (ages 2m, 4m, 6m), which may result in giving a total of 4 doses of HepB vaccine. If mother is HBsAg-positive: Give HBIG and HepB dose #1 within 12hrs of birth; complete series by age 6m. If mother's HBsAg status is unknown: Give HepB dose #1 within 12 hrs of birth. If low birth weight (less than 2000g), also give HBIG within 12hrs. For infants weighing 2000g 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. Vaccinate all other children and teens who have not completed a series of HepB vaccine. 	<ul style="list-style-type: none"> Do not restart series, no matter how long since previous dose. 3-dose series can be started at any age. Minimum intervals between doses: 4wks between #1 and #2, 8wks between #2 and #3, and at least 16wks between #1 and #3 (and give dose #3 no earlier than age 24wks). <div> Special Notes on Hepatitis B Vaccine (HepB) Dosing of HepB: Monovalent vaccine brands are interchangeable. For people age 0 through 19yrs, give 0.5 mL of 3 doses of Engerix-B or Recombivax HB; unvaccinated people age 18yrs and older may also be given 2 doses of Heplisav-B spaced 4wks apart. Alternative dosing schedule for unvaccinated adolescents age 11 through 15yrs: Give 2 doses Recombivax HB 1.0 mL (adult formulation) spaced 4–6m apart. (Engerix-B is not licensed for a 2-dose schedule.) </div>	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components, including hypersensitivity to yeast. Precautions <ul style="list-style-type: none"> Moderate or severe acute illness, with or without fever. For infants who weigh less than 2000g, see ACIP recommendations at www.cdc.gov/mmwr/PDF/rr/rr5416.pdf.
DTaP, DT (Diphtheria, tetanus, acellular pertussis) <i>Give IM</i>	<ul style="list-style-type: none"> Give to children at ages 2m, 4m, 6m, 15–18m, and 4–6yrs. May give dose #1 as early as age 6wks. May give #4 as early as age 12m if 6m have elapsed since #3. Do not give DTaP/DT to children age 7yrs and older. If possible, use the same DTaP product for all doses. 	<ul style="list-style-type: none"> Dose #2 and #3 may be given 4wks 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 4–6yrs). If dose #4 is given after 4th birthday, #5 is not needed. 	Contraindications <ul style="list-style-type: none"> Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components, with or without fever. For all pertussis-containing vaccines: Encephalopathy not attributable to an identifiable cause, within 7d after DTP/DTaP/Tdap. Precautions <ul style="list-style-type: none"> Moderate or severe acute illness. History of Arthus 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. Guillain-Barré syndrome (GBS) within 6wks after previous dose of tetanus toxoid-containing vaccine. 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) <i>Give IM</i>	<ul style="list-style-type: none"> For children and teens lacking previous Tdap: Give Tdap routinely at age 11–12yrs and vaccinate older teens on a catch-up basis; then boost every 10yrs 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) healthcare workers with direct patient contact. Give Tdap to pregnant adolescents during each pregnancy (preferred during the early part of gestational weeks 27 through 36wks), regardless of interval since prior Td or Tdap. 	<ul style="list-style-type: none"> DTaP and DT should not be used for children age 7yrs and older; use Td and Tdap instead. Children as young as age 7yrs 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 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/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.

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

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) <i>Give orally</i>	<ul style="list-style-type: none"> • Rotarix (RV1): Give at ages 2m, 4m. • RotaTeq (RV5): Give at ages 2m, 4m, 6m. • May give dose #1 as early as age 6wks. • Give final dose no later than age 8m–0d. 	<ul style="list-style-type: none"> • Do not begin series in infants older than age 14wks 6d. • Intervals between doses may be as short as 4wks. • If prior vaccination included use of different or unknown brand(s), a total of 3 doses should be given. 	<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. If allergy to latex, use RV5. • History of intussusception. • Diagnosis of severe combined immunodeficiency (SCID). <p>Precautions</p> <ul style="list-style-type: none"> • Moderate or severe acute illness, with or without fever. • Altered immunocompetence other than SCID. • Chronic gastrointestinal disease. • For RV1 only, spina bifida or bladder exstrophy.
Hib (Haemophilus influenzae type b) <i>Give IM</i>	<ul style="list-style-type: none"> • ActHib (PRP-T), Hiberix, or Pentacel: Give at age 2m, 4m, 6m, 12–15m (booster dose). • PedvaxHIB (containing PRP-OMP): Give at age 2m, 4m, 12–15m (booster dose). • Dose #1 of Hib vaccine should not be given earlier than age 6wks. • Give final dose (booster dose) no earlier than age 12m and a minimum of 8wks 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 8wks apart; if previously received 2 or more doses before age 12m, give 1 additional dose. • Hib is not routinely given to healthy children age 5yrs and older. • 1 dose of Hib vaccine should be administered to children age 5yrs 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 18yrs of age with HIV infection. 	<p>All Hib vaccines:</p> <ul style="list-style-type: none"> • If dose #1 was given at 12–14m, give booster in 8wks. • Give only 1 dose to unvaccinated children ages 15–59m. <p>ActHib:</p> <ul style="list-style-type: none"> • Dose #2 and #3 may be given 4wks after previous dose. • If dose #1 was given at age 7–11m, only 3 doses are needed; #2 is given at least 4wks after #1, then final dose at age 12–15m (wait at least 8wks after dose #2). <p>PedvaxHIB:</p> <ul style="list-style-type: none"> • Dose #2 may be given 4wks after #1. <p>Recipients of hematopoietic stem cell transplant should receive 3 doses of Hib vaccine at least 4wks apart beginning 6–12m after transplant, regardless of Hib vaccination history.</p>	<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. • Age younger than 6wks. <p>Precaution</p> <p>Moderate or severe acute illness, with or without fever.</p>

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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)
Varicella (Var) (Chickenpox) <i>Give Subcut</i>	<ul style="list-style-type: none"> • Give dose #1 at age 12–15m. • Give dose #2 at age 4–6yrs. Dose #2 of Var or MMRV may be given earlier if at least 3m since dose #1. If dose #2 was given at least 4wks after dose #1, 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 12yrs (see note below). 	<ul style="list-style-type: none"> • If younger than age 13yrs, space dose #1 and #2 at least 3m apart. If age 13yrs or older, space at least 4wks apart. • May use as postexposure prophylaxis if given within 5d. • If Var and either LAIV, MMR, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart. (If yellow fever vaccine, space by 30d.) 	<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, or severely symptomatic HIV). • 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. • 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 8yrs or 200 cells/μL in children age 9yrs and older). <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>¹ 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, personal or family (i.e., sibling or parent) history of seizures. <p>NOTE: For patients with humoral immunodeficiency or leukemia, see ACIP recommendations at www.cdc.gov/mmwr/pdf/rr/rr5604.pdf.</p>
MMR (Measles, mumps, rubella) <i>Give Subcut</i>	<ul style="list-style-type: none"> • 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 4wks later. The dose given at younger than 12m does not count toward the 2-dose series. • Give dose #2 at age 4–6yrs. Dose #2 may be given earlier if at least 4wks 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 12yrs (see note above). 	<ul style="list-style-type: none"> • If MMR and either LAIV, Var, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart. (If yellow fever vaccine, space by 30d.) • When using MMR for both doses, minimum interval is 4wks. • When using MMRV for both doses, minimum interval is 3m. • May use as postexposure measles prophylaxis if given within 3d. 	<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, or severely symptomatic HIV). • 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. <p>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).</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 (IG or VZIG) were given in past 11m, see ACIP's <i>Best Practices Guidance</i>¹ 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) or interferon-gamma release assay (IGRA) testing. If TST or IGRA needed, give TST or IGRA before or on same day as MMR, or give TST or IGRA 4wks following MMR.

NOTE: For the first dose of MMR and varicella given at age 12–47m, either MMR and Var or MMRV may be used. Unless the parent or caregiver expresses a preference for MMRV, CDC recommends that MMR and Var be used for the first doses in this age group.

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

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) Prevnar 13 <i>Give IM</i>	<ul style="list-style-type: none"> Give at ages 2m, 4m, 6m, 12–15m (booster dose). Dose #1 may be given as early as age 6wks. For age 24 through 59m and healthy: If unvaccinated or any incomplete schedule of 3 doses of PCV 13 was received previously, 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 an incomplete schedule of 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 5yrs and older. <div> ** High-risk <i>For both PCV13 and PPSV23, 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.</i> <i>For PPSV23 only in children ages 6–18yrs, alcoholism and/or chronic liver disease.</i> </div>	<ul style="list-style-type: none"> When children are behind on PCV13 schedule, minimum interval for doses given to children younger than age 12m is 4wks; for doses given at 12m and older, it is 8wks. For age 7 through 11m: If history of 0 doses, give 2 doses of PCV13, 4wks 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 8wks later. For age 12 through 23m: If unvaccinated or history of 1 dose before age 12m, give 2 doses of PCV13 8wks 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 8wks after most recent dose. For age 2 through 5yrs and at high risk**: If unvaccinated or any incomplete schedule of 1 or 2 doses, give 2 doses of PCV13, 1 at least 8wks after the most recent dose and another dose at least 8wks later; if any incomplete series of 3 doses, give 1 supplemental dose of PCV13 at least 8wks after the most recent dose. For children ages 6 through 18yrs 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, with or without fever.
Pneumococcal polysaccharide (PPSV23) Pneumovax 23 <i>Give IM or Subcut</i>	<ul style="list-style-type: none"> Give 1 dose at least 8wks after final dose of PCV13 to high-risk** children age 2yrs 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, with or without fever.
Human papillomavirus (HPV) <i>Give IM</i>	<ul style="list-style-type: none"> Give a 2-dose series of HPV to girls and boys at age 11–12yrs on a 0, 6–12m schedule. (May give as early as age 9yrs.) Give a 3-dose series of HPV to girls and boys age 15yrs or older or who are immunocompromised or have autoimmune disease on a 0, 1–2, 6m schedule. (May give as early as age 9yrs.) Give a 3-dose series of HPV to all older girls/women (through age 26yrs) and boys/men (through age 21yrs) who were not previously vaccinated. Other guidance: Pregnancy is neither a contraindication nor a precaution to HPV vaccine. 	<ul style="list-style-type: none"> With the exception of immunocompromised persons, or persons with autoimmune disease, a 2-dose schedule may be followed for all persons initiating the HPV vaccine series before age 15yrs. A 3-dose schedule must be followed for all persons initiating the series at age 15yrs or older, as well as for immunocompromised persons or persons with autoimmune disease ages 9 through 26yrs. Minimum intervals between doses: 2-dose schedule: 5m; 3-dose schedule: 4wks between #1 and #2; 12wks between #2 and #3 and 5m between #1 and #3. 	Contraindication Previous severe allergic reaction (e.g., anaphylaxis) to this vaccine or to any of its components. Precautions <ul style="list-style-type: none"> Moderate or severe acute illness, with or without fever.

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

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 A (HepA) <i>Give IM</i>	<ul style="list-style-type: none"> • Give 2 doses spaced 6–18m apart to all children at age 1yr (12–23m). • Vaccinate all previously unvaccinated children and adolescents age 2yrs and older who <ul style="list-style-type: none"> – Want to be protected from HAV infection and lack a specific risk factor. – Live in areas where vaccination programs target older children. – Are homeless. – 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 60d following the adoptee's arrival in the U.S. • Give 1 dose to children age 6–11m who travel anywhere outside the U.S., most, but not all of Western Europe, New Zealand, Australia, Canada, or Japan. This dose does not count toward the routine 2-dose series given at age 1yr. 	<ul style="list-style-type: none"> • Minimum interval between doses is 6m. • Children who are not fully vaccinated by age 2yrs can be vaccinated at a subsequent visit. • Administer 2 doses at least 6m 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 2wks) been exposed to hepatitis A virus. For children younger than 12 months, use IG (0.1 mL/kg), rather than vaccine, for postexposure prophylaxis. 	<p>Contraindication 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.
Inactivated polio (IPV) <i>Give Subcut or IM</i>	<ul style="list-style-type: none"> • Give to children at ages 2m, 4m, 6–18m, 4–6yrs. • May give dose #1 as early as age 6wks. • Not routinely recommended for U.S. residents age 18yrs and older (except certain travelers). For information on polio vaccination for international travelers, see wwwnc.cdc.gov/travel/diseases. 	<ul style="list-style-type: none"> • 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. 	<p>Contraindication 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.
Influenza Inactivated influenza* vaccine (IIV) <i>Give IM</i> * includes recombinant influenza vaccine (RIV) for teens ages 18yrs and older Live attenuated influenza vaccine (LAIV) Give NAS (<i>intranasally</i>)	<ul style="list-style-type: none"> • Vaccinate all children and teens age 6m and older. • For children age 6m through 8yrs, give 2 doses of age-appropriate vaccine, spaced 4 wks apart, who 1) are first-time vaccinees, or 2) have received only one lifetime dose previous to this current season (season runs July to June) • For IIV in children age 6–35m: Give one of the following: Fluarix 0.5 mL dose, FluLaval 0.5 mL dose, or Fluzone 0.25 mL dose. • For IIV in children age 3yrs and older: Give 0.5 mL dose of any age-appropriate influenza vaccine. • For teens age 18yrs and older: recombinant influenza vaccine (RIV) may also be used. • Other guidance: Children 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 this vaccine (except egg) or after a previous dose of any influenza vaccine. • For LAIV only: Age younger than 2yrs; pregnancy; immunosuppression (including that caused by medications or HIV); for children and teens ages 6m through 18yrs, current aspirin or salicylate-containing medication; for children age 2 through 4yrs, wheezing or asthma within the past 12m, per healthcare provider statement. Receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, oseltamivir, or peramivir) 48hrs before vaccination. 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 of a previous influenza vaccination. • For children/teens who experience only hives with exposure to eggs, give any age-appropriate influenza vaccine. • For LAIV only: Chronic pulmonary (including asthma in children age 5yrs and older), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematologic or metabolic (including diabetes) disorders. 	

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

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)
Meningococcal conjugate, quadrivalent (MenACWY) Menactra and Menveo <i>Give IM</i>	<ul style="list-style-type: none"> • Give a 2-dose series of MenACWY with dose #1 at age 11–12yrs and dose #2 at age 16yrs. • If unvaccinated at 11–12yrs, give dose #1 at age 13 through 15yrs. Give dose #2 at 16 through 18yrs with a minimum interval of at least 8wks between doses. • If unvaccinated at 11 through 15yrs, give dose #1 at 16 through 18yrs. • For college students, give 1 (initial) dose to unvaccinated first-year students age 19 through 21yrs who live in a residence hall; give dose #2 if most recent dose given when younger than age 16yrs. • Give Menveo to children age 2–18m with persistent complement component deficiency, HIV infection, 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 MenACWY 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 4wks 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 traveling to or living in countries with hyperendemic or epidemic meningococcal disease. Prior receipt of MenHibrix is not sufficient for children traveling to the meningitis belt or the Hajj. 	<ul style="list-style-type: none"> • If previously vaccinated and risk of meningococcal disease persists, revaccinate with MenACWY in 3yrs (if previous dose given when younger than age 7yrs) or in 5 yrs (if previous dose given at age 7yrs or older). Then, give additional booster doses every 5 yrs if risk continues. • Minimum ages: 2m Menveo; 9m Menactra. • If using Menactra in a high-risk child, it should be given before or at the same visit as DTaP is administered. 	<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>
Meningococcal serogroup B (MenB) Bexsero and Trumenba <i>Give IM</i>	<ul style="list-style-type: none"> • Teens age 16 through 18yrs may be vaccinated routinely as a Category B recommendation (provider-patient discussion). Give 2 doses of either MenB vaccine: Bexsero, spaced 1m apart; Trumenba, spaced 6m apart. MenB brands are not interchangeable. • For children age 10yrs 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 either 2 doses of Bexsero, 1m apart, or 3 doses of Trumenba on a 0, 1–2, and 6m schedule. MenB brands are not interchangeable. • MenB vaccine may be given concomitantly with MenACWY vaccine. 		



The Childhood Immunization Schedule: Why Is It Like That?

Q1: Who decides what immunizations children need ?

A: Each year, top disease experts and doctors who care for children work together to decide what to recommend that will best protect U.S. children from diseases. The schedule is evaluated each year based on the most recent scientific data available. Changes are announced in January, if needed. The schedule is approved by the American Academy of Pediatrics, the Centers for Disease Control and Prevention, and the American Academy of Family Physicians.

Q2: How are the timing and spacing of the shots determined?

A: Each vaccine dose is scheduled using 2 factors. First, it is scheduled for the age when the body's immune system will work the best. Second, it is balanced with the need to provide protection to infants and children at the earliest possible age.

Q3: Why are there so many doses?

A: Researchers are always studying how well vaccines work. For many vaccines three or four doses are needed to fully protect your child. The doses need to be spaced out a certain amount to work the best.

Q4: Why is the schedule “one size fits all?” Aren’t there some children who shouldn’t receive some vaccines?

A: Your child's health and safety are very important to your child's doctor. The schedule is considered the ideal schedule for healthy children but there may be exceptions. For example, your child might not receive certain vaccines if she has allergies to an ingredient in the vaccine, or if she has a weakened immune system due to illness, a chronic condition, or another medical treatment. Sometimes a shot needs to be delayed for a short time, and sometimes not given at all.

Your pediatrician stays updated about new exceptions to the immunization schedule. This is one reason your child's complete medical history is taken at the pediatrician's office, and why it is important for your child's health care providers to be familiar with your child's medical history.

Q5: Why can't the shots be spread out over a longer period of time? There are 25 shots recommended in the first 15 months of life; why not spread these out over 2 or 3 years?

A: First, you would not want your child to go unprotected that long. Babies are hospitalized and die more often from some diseases, so it is important to vaccinate them as soon as it is safe. Second, the recommended schedule is designed to work best with a child's immune system at certain ages and at specific times. There is no research to show that a child would be equally protected against diseases with a very different schedule. Also, there is no

scientific reason why spreading out the shots would be safer. But we do know that any length of time without immunizations is a time without protection.

Q6: I've seen another schedule in a magazine that allows the shots to be spread out. It was developed by a pediatrician. Why can't I follow that schedule? My child would still get his immunizations in time for school.

A: There is no scientific basis for such a schedule. No one knows how well it would work to protect your child from diseases. And if many parents in any community decided to follow such a schedule, diseases will be able to spread much more quickly. Also, people who are too sick or too young to receive vaccines are placed at risk when they are around unvaccinated children.

For example, following one alternative schedule would leave children without full polio protection until age 4. Yet it would take only one case of polio to be brought into the U.S. for the disease to take hold again in this country. This schedule also delays the measles vaccine until age 3. We have already seen outbreaks of measles in some parts of the country because children were not immunized. This is a highly infectious disease that can cause serious harm--even death. The reason we recommend vaccines when we do is because young children are more vulnerable to these diseases.

Pediatricians want parents to have reliable, complete, and science-based information, so that they can make the best decision for their child about vaccination.

Q7: Isn't it possible that my child has natural immunity to one or more diseases? If he does, can't he skip the shot?

A: Tests that check for immunity to certain diseases do not work well in young children.

Q8: Isn't it overwhelming to a child's immune system to give so many shots in one visit?

A: Infants and children are exposed to many germs every day just by playing, eating, and breathing. Their immune systems fight those germs, also called antigens, to keep the body healthy. The amount of antigens that children fight every day (2,000-6,000) is much more than the antigens in any combination of vaccines on the current schedule (150 for the whole schedule). So children's immune systems are not overwhelmed by vaccines.

Q9: There are no shots given at 9 months, other than maybe flu vaccine or catch-up vaccines. Why not give some at that visit instead of at 6 months or 12 months?

A: Waiting until 9 months would leave the child unprotected from some diseases, but 9 months is too early for some of the 12-18 month vaccines. For example, it is too early for the live measles, mumps, rubella and varicella vaccines, since some infants might have a bit of protection left from their mother during the pregnancy, and that protection could make the vaccine less effective.

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.

CERTIFICATE OF IMMUNIZATION

Child's Name (Last name first)

Birthdate

(Optional) Parent/Guardian Name (Last name first)

Date of Expiration

(Next required immunization
or review of medical
exemption due.)☐ (Fill in X)**Complete For K through 6th Grade**Child must be ≥ 4 years and have met all
requirements for school attendance.☐ (Fill in X)**Complete For 7th Grade or higher**Fulfills requirements K through 6th grade
AND must have Tdap and MCV4 documented

Unless specifically exempted by law, Georgia law (O.C.G.A. § 20-2-771) requires a certificate on file for each child in attendance in any school or child care facility in Georgia with penalties for failure to comply. Detailed instructions for this form and immunization requirements by age are spelled out in policy guides 3231INS and 3231REQ distributed by the Georgia Immunization Office.

VACCINE	DATE			DATE			DATE			DATE			DATE			Total Doses	Diagnosed	Serology +	History	Med. Exemption
	MM	DD	YY	MM	DD	YY	MM	DD	YY	MM	DD	YY	MM	DD	YY					
Required Vaccines for School or Child Care Attendance																				
DTP,DTaP, DT,Td																	<input type="checkbox"/>			
Polio																				
Hepatitis B																				
Tdap																				
MCV4																				
HIB																				
(Under Age 5)																				
PCV																				
(Under Age 5)																				
Measles																				
Mumps																				
Rubella																				
Hepatitis A																				
(Born on/after 1/1/06)																				
Varicella																				
Recommended Vaccines (For Information Only)																				
Rotavirus																				
HPV (3 doses)																				
Influenza																				
Td Booster																				

Notes:

A licensed Georgia physician, **Advanced Practice Registered Nurse, Physician Assistant** or qualified employee of a local Board of Health or the State Immunization Office is responsible for the content of this certificate. All dates must include month, day and year. In cases of natural immunity or Medical Exemption, the 4 digit year of infection, test or exemption must be filled in the appropriate box(es). **The certificate is NOT valid without name and birthdate of the child, date of expiration OR "X" in Complete for School Attendance box, legible name and address of the physician, Advanced Practice Registered Nurse, Physician Assistant or health department, certified by signature and a date of issue.** A school or facility official is responsible for keeping a current valid certificate on file for each child in attendance. A certificate must be replaced within 30 days after expiration. **When a child leaves or transfers to another facility, the Certificate of Immunization should be given to a parent/guardian or sent to the new facility.**

Printed, Typed or
Stamped Name,
Address and
Telephone # of
Licensed
Physician
or Health Dept.

Certified by (Signature/Signature Stamp)

Date of Issue

Immunization prevents an estimated 2.5 million deaths each year. Unfortunately, one in five children worldwide, including 22 million infants, lack access to life-saving vaccines, often because their countries don't have the resources to purchase and deliver vaccines to their citizens. As a result, each year 1.5 million children still die of vaccine-preventable illnesses.

Advocates for global immunization programs are often asked about vaccine safety. Dispelling misconceptions and inaccurate reporting about vaccine safety is critical to ensuring that children across the globe have access to vaccines and are protected from vaccine-preventable illnesses.

Vaccine Safety Monitoring

- All medicines have side effects. However, vaccines are among the safest medical products available.
- Vaccines go through rigorous testing by global and national authorities. Years of testing, trials, and approval are required before vaccines become publicly available.¹
- Once a vaccine is licensed in a country, safety information continues to be collected and analyzed. The World Health Organization has established a Global Vaccine Safety Initiative to ensure that monitoring of vaccine safety takes place even in low-resource settings.
- The majority of vaccines' side effects are minor, such as temporary pain or redness at the vaccination site. Severe reactions to vaccines, such as allergic reactions, can occur. However, such reactions are extremely rare.
- Vaccines are one of the most cost-effective and successful public health interventions available. The past 30 years have seen global vaccination programs drastically reduce diseases like pertussis, diphtheria and Hib meningitis (an inflammation of the lining of the brain and spinal cord) across low- and medium-income countries. Wiping out vaccine-preventable diseases also reduces childhood disabilities, such as paralysis from polio, and deafness and blindness from rubella.
- Vaccine refusal is highest for diseases which have already been largely eliminated by vaccines; when people witness high rates of death from diseases, vaccine refusal is much lower.²

Vaccines and the Immune System

- Vaccines strengthen the immune system by delivering antigens, which train the immune system to respond quickly when the body encounters a germ to destroy that germ before it can cause disease.
- Studies have shown that it is safe for infants to receive multiple vaccines at once.³ In fact, children are exposed to more antigens daily by eating and breathing than are found in vaccines.
- Most vaccines are given early in life because this is when children are most vulnerable to diseases like pneumonia, measles, and polio. Based upon the local risk of vaccine-preventable illness, vaccine availability, and scientific studies of vaccine effectiveness and safety, each country decides how many vaccines should be given early in life.
- Early childhood vaccines restore the protection previously provided by the mother's immune system. Prior to birth, a developing baby receives antibodies from the mother, and these temporarily protect the newborn from many diseases. However, each month after birth the amount of antibodies from the mother decreases by half.



Autism

- The AAP is deeply concerned about the rising number of children with autism spectrum disorders and is committed to understanding, preventing and treating autism.
- Numerous reports have reviewed the medical and scientific evidence on vaccines, and the AAP joins the Centers for Disease Control and Prevention and the Institute of Medicine in concluding that childhood vaccines are generally safe, serious adverse events are rare, and there is no relationship between vaccines and autism.

Thimerosal

- Thimerosal, an ethyl mercury-containing compound, has been used as an additive to vaccines since the 1930s because it is effective in preventing bacterial and fungal growth, particularly in multi-dose vials used to package some vaccines. Vaccines that come in multi-dose vials require that each dose be drawn from the vial with a fresh needle. With each new needle, it is possible for microbes to get into the vial. Thimerosal prevents the growth of bacteria in the vial.
- Without preservatives, all vaccines would need to be packaged in single dose vials. Most vaccines in the United States are now supplied in single dose vials, but this significantly increases their costs, which would be prohibitive in resource poor countries.
- The form of mercury in vaccines is ethyl mercury, which does not build up in a person's body. The form of mercury in environmental pollution (and often found in fish) is a different compound, methyl mercury, which can accumulate in the bloodstream and takes some time to work its way out.
- The Global Advisory Committee on Vaccine Safety (GACVS) has stated that there is no evidence of toxicity in infants, children, or adults exposed to thimerosal in vaccines, a position supported by multiple studies.⁴

Supporting immunization helps Americans

One of the best ways to eliminate disease outbreaks and reintroduction of diseases in the United States is to make sure all children in the world have access to immunizations. Expanding access to vaccines strengthens our ability to fight disease globally, keeps our families healthy here at home, and improves economic stability around the world.

All children should be vaccinated as medically indicated. High vaccination rates lead to “herd immunity,” which helps to protect everyone in the community, including those who are too young to be vaccinated or who cannot be vaccinated due to weakened immune systems.

¹ Centers for Disease Control and Prevention (May 1, 2014). Vaccine testing and the approval process. Retrieved from <http://www.cdc.gov/vaccines/resdev/test-approve.htm>; and The College of Physicians of Philadelphia (July 31, 2014). Vaccine development, testing, and regulation. Retrieved from <http://www.historyofvaccines.org/content/articles/vaccine-development-testing-and-regulation>

² Omer, B., Orenstein, W., and Koplan, J (April 11, 2013). Perspective: Go big and go fast — Vaccine refusal and disease eradication. *New England Journal of Medicine*, Vol. 368 No. 15. Retrieved from <http://centerforvaccineethicsandpolicy.net/2013/04/13/perspective-go-big-and-go-fast-vaccine-refusal-and-disease-eradication/>

³ Offit, P., Quarles, J. Gerber, M., Hackett, C., Marcuse, E., Kollman, T., Gellin, B., and Landry, S (Jan. 1, 2002). Addressing parents' concerns: Do multiple vaccines overwhelm or weaken the infant's immune system? *Pediatrics*, Vol. 109 No. 1. Retrieved from <http://pediatrics.aappublications.org/content/109/1/124.full>

⁴ World Health Organization (July 2006). Statement on thiomersal. Retrieved from http://www.who.int/vaccine_safety/committee/topics/thiomersal/statement_jul2006/en/

Your Child's First Vaccines

What You Need to Know

Many Vaccine Information Statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

The vaccines covered on this statement are those most likely to be given during the same visits during infancy and early childhood. Other vaccines (including measles, mumps, and rubella; varicella; rotavirus; influenza; and hepatitis A) are also routinely recommended during the first five years of life.

Your child will get these vaccines today:

☐ DTaP ☐ Hib ☐ Hepatitis B ☐ Polio ☐ PCV13

(Provider: Check appropriate boxes.)

1 Why get vaccinated?

Vaccine-preventable diseases are much less common than they used to be, thanks to vaccination. But they have not gone away. Outbreaks of some of these diseases still occur across the United States. **When fewer babies get vaccinated, more babies get sick.**

7 childhood diseases that can be prevented by vaccines:

1. Diphtheria (the 'D' in DTaP vaccine)

- **Signs and symptoms** include a thick coating in the back of the throat that can make it hard to breathe.
- **Diphtheria can lead to** breathing problems, paralysis and heart failure.
 - About 15,000 people died each year in the U.S. from diphtheria before there was a vaccine.

2. Tetanus (the 'T' in DTaP vaccine; also known as Lockjaw)

- **Signs and symptoms** include painful tightening of the muscles, usually all over the body.
- **Tetanus can lead to** stiffness of the jaw that can make it difficult to open the mouth or swallow.
 - Tetanus kills about 1 person out of every 10 who get it.

3. Pertussis (the 'P' in DTaP vaccine, also known as Whooping Cough)

- **Signs and symptoms** include violent coughing spells that can make it hard for a baby to eat, drink, or breathe. These spells can last for several weeks.
- **Pertussis can lead to** pneumonia, seizures, brain damage, or death. Pertussis can be very dangerous in infants.
 - Most pertussis deaths are in babies younger than 3 months of age.

4. Hib (*Haemophilus influenzae* type b)

- **Signs and symptoms** can include fever, headache, stiff neck, cough, and shortness of breath. There might not be any signs or symptoms in mild cases.
- **Hib can lead to** meningitis (infection of the brain and spinal cord coverings); pneumonia; infections of the ears, sinuses, blood, joints, bones, and covering of the heart; brain damage; severe swelling of the throat, making it hard to breathe; and deafness.
 - Children younger than 5 years of age are at greatest risk for Hib disease.

5. Hepatitis B

- **Signs and symptoms** include tiredness, diarrhea and vomiting, jaundice (yellow skin or eyes), and pain in muscles, joints and stomach. But usually there are no signs or symptoms at all.
- **Hepatitis B can lead to** liver damage, and liver cancer. Some people develop chronic (long term) hepatitis B infection. These people might not look or feel sick, but they can infect others.
 - Hepatitis B can cause liver damage and cancer in 1 child out of 4 who are chronically infected.

6. Polio

- **Signs and symptoms** can include flu-like illness, or there may be no signs or symptoms at all.
- **Polio can lead to** permanent paralysis (can't move an arm or leg, or sometimes can't breathe) and death.
 - In the 1950s, polio paralyzed more than 15,000 people every year in the U.S.



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

7. Pneumococcal Disease

- **Signs and symptoms** include fever, chills, cough, and chest pain. In infants, symptoms can also include meningitis, seizures, and sometimes rash.
- **Pneumococcal disease can lead to** meningitis (infection of the brain and spinal cord coverings); infections of the ears, sinuses and blood; pneumonia; deafness; and brain damage.
 - About 1 out of 15 children who get pneumococcal meningitis will die from the infection.

Children usually catch these diseases from other children or adults, who might not even know they are infected. A mother infected with hepatitis B can infect her baby at birth. Tetanus enters the body through a cut or wound; it is not spread from person to person.

Vaccines that protect your baby from these seven diseases:

Vaccine	Number of doses	Recommended ages	Other information
DTaP (Diphtheria, Tetanus, Pertussis)	5	2 months, 4 months, 6 months, 15-18 months, 4-6 years	Some children get a vaccine called DT (Diphtheria & Tetanus) instead of DTaP.
Hepatitis B	3	Birth, 1-2 months, 6-18 months	
Polio	4	2 months, 4 months, 6-18 months, 4-6 years	An additional dose of polio vaccine may be recommended for travel to certain countries.
Hib (<i>Haemophilus influenzae</i> type b)	3 or 4	2 months, 4 months, (6 months), 12-15 months	There are several Hib vaccines. With one of them the 6-month dose is not needed.
Pneumococcal (PCV13)	4	2 months, 4 months, 6 months, 12-15 months	Older children with certain health conditions also need this vaccine.

Your healthcare provider might offer some of these vaccines as **combination vaccines**—several vaccines given in the same shot. Combination vaccines are as safe and effective as the individual vaccines, and can mean fewer shots for your baby.

2 Some children should not get certain vaccines

Most children can safely get all of these vaccines. But there are some exceptions:

- A child who has a mild cold or other illness on the day vaccinations are scheduled may be vaccinated. A child who is moderately or severely ill on the day of vaccinations might be asked to come back for them at a later date.
- Any child who had a life-threatening allergic reaction after getting a vaccine should not get another dose of that vaccine. ***Tell the person giving the vaccines if your child has ever had a severe reaction after any vaccination.***
- A child who has a severe (life-threatening) allergy to a substance should not get a vaccine that contains that substance. ***Tell the person giving your child the vaccines if your child has any severe allergies that you are aware of.***

Talk to your doctor before your child gets:

- **DTaP vaccine**, if your child ever had any of these reactions after a previous dose of DTaP:
 - A brain or nervous system disease within 7 days,
 - Non-stop crying for 3 hours or more,
 - A seizure or collapse,
 - A fever of over 105°F.
- **PCV13 vaccine**, if your child ever had a severe reaction after a dose of DTaP (or other vaccine containing diphtheria toxoid), or after a dose of PCV7, an earlier pneumococcal vaccine.

3 Risks of a Vaccine Reaction

With any medicine, including vaccines, there is a chance of side effects. These are usually mild and go away on their own. Most vaccine reactions are not serious: tenderness, redness, or swelling where the shot was given; or a mild fever. These happen soon after the shot is given and go away within a day or two. They happen with up to about half of vaccinations, depending on the vaccine.

Serious reactions are also possible but are rare.

Polio, Hepatitis B and Hib Vaccines have been associated only with mild reactions.

DTaP and Pneumococcal vaccines have also been associated with other problems:

DTaP Vaccine

- **Mild Problems:** Fussiness (up to 1 child in 3); tiredness or loss of appetite (up to 1 child in 10); vomiting (up to 1 child in 50); swelling of the entire arm or leg for 1-7 days (up to 1 child in 30)—usually after the 4th or 5th dose.
- **Moderate Problems:** Seizure (1 child in 14,000); non-stop crying for 3 hours or longer (up to 1 child in 1,000); fever over 105°F (1 child in 16,000).
- **Serious problems:** Long term seizures, coma, lowered consciousness, and permanent brain damage have been reported following DTaP vaccination. These reports are extremely rare.

Pneumococcal Vaccine

- **Mild Problems:** Drowsiness or temporary loss of appetite (about 1 child in 2 or 3); fussiness (about 8 children in 10).
- **Moderate Problems:** Fever over 102.2°F (about 1 child in 20).

After any vaccine:

Any medication can cause a severe allergic reaction. Such reactions from a vaccine are very rare, estimated at about 1 in a million doses, and would happen within a few minutes to a few hours after the vaccination.

As with any medicine, there is a very remote chance of a vaccine causing a serious injury or death.

The safety of vaccines is always being monitored. For more information, visit: www.cdc.gov/vaccinesafety/

4

What if there is a serious reaction?

What should I look for?

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or unusual behavior.

Signs of a severe allergic reaction can include hives, swelling of the face and throat, and difficulty breathing. In infants, signs of an allergic reaction might also include fever, sleepiness, and disinterest in eating. In older children signs might include a fast heartbeat, dizziness, and weakness. These would usually start a few minutes to a few hours after the vaccination.

What should I do?

- If you think it is a severe allergic reaction or other emergency that can't wait, call 9-1-1 or get the person to the nearest hospital. Otherwise, call your doctor.

Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor should file this report, or you can do it yourself through the VAERS web site at www.vaers.hhs.gov, or by calling **1-800-822-7967**.

VAERS does not give medical advice.

5

The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines.

Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling **1-800-338-2382** or visiting the VICP website at www.hrsa.gov/vaccinecompensation. There is a time limit to file a claim for compensation.

6

How can I learn more?

- Ask your healthcare provider. He or she can give you the vaccine package insert or suggest other sources of information.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
 - Call **1-800-232-4636 (1-800-CDC-INFO)**
 - Visit CDC's website at www.cdc.gov/vaccines or www.cdc.gov/hepatitis

Vaccine Information Statement Multi Pediatric Vaccines

11/05/2015

42 U.S.C. § 300aa-26

Office Use Only



After the Shots...

Your child may need extra love and care after getting vaccinated. Some vaccinations that protect children from serious diseases also can cause discomfort for a while. Here are answers to questions many parents have after their children have been vaccinated. If this sheet doesn't answer your questions, call your healthcare provider.

**Vaccinations may hurt a little...
but disease can hurt a lot!**

Call your healthcare provider right away if you answer "yes" to any of the following questions:

- ☐ Does your child have a temperature that your healthcare provider has told you to be concerned about?
- ☐ Is your child pale or limp?
- ☐ Has your child been crying for more than 3 hours and just won't quit?
- ☐ Is your child's body shaking, twitching, or jerking?
- ☐ Is your child very noticeably less active or responsive?

► Please see page 2 for information on the proper amount of medicine to give your child to reduce pain or fever.

What to do if your child has discomfort

I think my child has a fever. What should I do?

Check your child's temperature to find out if there is a fever. An easy way to do this is by taking a temperature in the armpit using an electronic thermometer (or by using the method of temperature-taking your healthcare provider recommends). If your child has a temperature that your healthcare provider has told you to be concerned about or if you have questions, call your healthcare provider.

Here are some things you can do to help reduce fever:

- Give your child plenty to drink.
- Dress your child lightly. Do not cover or wrap your child tightly.
- Give your child a fever- or pain-reducing medicine such as acetaminophen (e.g., Tylenol) or ibuprofen (e.g., Advil, Motrin). The dose you give your child should be based on your child's weight and your healthcare provider's instructions. See the dose chart on page 2. *Do not give aspirin.* Recheck your child's temperature after 1 hour. Call your healthcare provider if you have questions.

My child has been fussy since getting vaccinated. What should I do?

After vaccination, children may be fussy because of pain or fever. To reduce discomfort, you may want to give your child a medicine such as acetaminophen or ibuprofen. See the dose chart on page 2. *Do not give aspirin.* If your child is fussy for more than 24 hours, call your healthcare provider.

My child's leg or arm is swollen, hot, and red. What should I do?

- Apply a clean, cool, wet washcloth over the sore area for comfort.
- For pain, give a medicine such as acetaminophen or ibuprofen. See the dose chart on page 2. *Do not give aspirin.*
- If the redness or tenderness increases after 24 hours, call your healthcare provider.

My child seems really sick. Should I call my healthcare provider?

If you are worried **at all** about how your child looks or feels, call your healthcare provider!

HEALTHCARE PROVIDER: PLEASE FILL IN THE INFORMATION BELOW.

If your child's temperature is _____ °F or _____ °C or higher, or if you have questions, call your healthcare provider.

Healthcare provider phone number _____

Medicines and Doses to Reduce Pain and Fever

Choose the proper medicine, and measure the dose accurately.

1. Ask your healthcare provider or pharmacist which medicine is best for your child.
2. Give the dose based on your child's weight. If you don't know your child's weight, give the dose based on your child's age. Do not give more medicine than is recommended.
3. If you have questions about dosage amounts or any other concerns, call your healthcare provider.
4. **Always use a proper measuring device when giving acetaminophen liquid (e.g., Tylenol) or ibuprofen liquid (e.g., Advil, Motrin):**
 - Use the device enclosed in the package.
 - If you misplace the device, consult your healthcare provider or pharmacist for advice.

- **Meal-time spoons are not accurate measures.** Never use a meal-time spoon for giving medication.

Take these two steps to avoid causing a serious medication overdose in your child.

1. Don't give your child a larger amount of acetaminophen (e.g., Tylenol) or ibuprofen (e.g., Motrin, Advil) than is shown in the table below. Too much of any of these medicines can be extremely dangerous.
2. When you give your child acetaminophen or ibuprofen, don't also give them over-the-counter cough or cold medicines. This can cause a medication overdose because cough and cold medicines often contain acetaminophen or ibuprofen. In fact, to be safe, don't ever give over-the-counter cough and cold medicines to your child unless you talk to your child's healthcare provider first.



ACETAMINOPHEN (Tylenol or another brand): How much to give?

Give every 4 to 6 hours, as needed, no more than 5 times in 24 hours (unless directed to do otherwise by your healthcare provider).

Child's weight	Child's age	Infants' or children's liquid 160 mg in each 5 mL	Children's chewables – current product 160 mg in each tablet	Infants' drops 80 mg in each 0.8 mL	Children's chewables 80 mg in each 0.8 mL
6–11 lbs (2.7–5 kg)	0–3 mos	Advised dose* _____		OLD PRODUCT	OLD PRODUCT
12–17 lbs (5.5–7.7 kg)	4–11 mos	2.5 mL		Throw away this product. It is out of date and should not be used.	Throw away this product. It is out of date and should not be used.
18–23 lbs (8.2–10.5 kg)	12–23 mos	3.75 mL			
24–35 lbs (10.9–15.9 kg)	2–3 yrs	5 mL	1 tablet		
36–47 lbs (16.4–21.4 kg)	4–5 yrs	7.5 mL	1½ tablets		
48–59 lbs (21.8–26.8 kg)	6–8 yrs	10 mL	2 tablets		
60–71 lbs (27.3–32.3 kg)	9–10 yrs	12.5 mL	2½ tablets		
72–95 lbs (32.7–43.2 kg)	11 yrs	15 mL	3 tablets		

IBUPROFEN (Advil, Motrin, or another brand): How much to give?

Give every 6 to 8 hours, as needed, no more than 4 times in 24 hours (unless directed to do otherwise by your healthcare provider).

Child's weight	Child's age	Infants' drops 50 mg in each 1.25 mL 	Children's liquid 100 mg in each 5 mL 	Children's chewables or junior tablets 100 mg in each tablet	Children's chewables 50 mg in each tablet
less than 11 lbs (5 kg)	0–5 mos				OLD PRODUCT
12–17 lbs (5.5–7.7 kg)	6–11 mos	1.25 mL	Advised dose* _____		Throw away this product. It is out of date and should not be used.
18–23 lbs (8.2–10.5 kg)	12–23 mos	1.875 mL	Advised dose* _____		
24–35 lbs (10.9–15.9 kg)	2–3 yrs		5 mL	1 tablet	
36–47 lbs (16.4–21.4 kg)	4–5 yrs		7.5 mL	1½ tablets	
48–59 lbs (21.8–26.8 kg)	6–8 yrs		10 mL	2 tablets	
60–71 lbs (27.3–32.3 kg)	9–10 yrs		12.5 mL	2½ tablets	
72–95 lbs (32.7–43.2 kg)	11 yrs		15 mL	3 tablets	

* **HEALTHCARE PROVIDER:** Please fill in the advised dose.

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

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

Administering any medication, including vaccines, has the potential to cause an adverse reaction. To minimize the likelihood of an adverse event, screen patients for vaccine contraindications and precautions prior to vaccination (see “Screening Checklist for Contraindications to Vaccines for Children and Teens” at www.immunize.org/catg.d/p4060.pdf). When adverse reactions do

occur, they can vary from minor (e.g., soreness, itching) to the rare and serious (e.g., anaphylaxis). Be prepared.

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

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

CONTINUED ON NEXT PAGE ►

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 (various doses), prepackaged syringes, vials, or ampules. At least three epinephrine doses should be available on site, dosages as appropriate for patient population.

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
- ☐ **Hydroxyzine** (e.g., Atarax, Vistaril) oral, 10 mg/5 mL liquid, 10 mg or 25 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 multiple-sized cuffs depending on patient population
- ☐ 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

- ☐ Pediatric- and adult-sized airways (various sizes)
- ☐ Various-sized pocket masks with one-way valve
- ☐ Oxygen (if available)

REFERENCES

*American Academy of Pediatrics. *Red Book: 2018–2021 Report of the Committee on Infectious Diseases*. 31st edition, p. 64–67.

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 children and teens 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). See page 3 to determine correct dose to be used based on child's weight. If using an autoinjector or pre-filled syringe, administer a dose of 0.1 mg, 0.15 mg, or 0.3 mg IM (as appropriate for the patient's weight) into the anterolateral thigh. If using another epinephrine format, the recommended dose is 0.01 mg/kg per dose, up to a maximum single dose of 0.5 mg. Administer IM, preferably in the anterolateral thigh. Epinephrine dose may be repeated 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) or **hydroxyzine** (e.g., Atarax, Vistaril) for relief of itching or hives.
 - Administer **diphenhydramine** orally, standard dose of 1–2 mg/kg every 4–6 hours. Maximum single dose is 40 mg for children age <12 years; for children age ≥12 years, 100 mg. See dosing chart on page 3.*
 - Administer **hydroxyzine** orally; the standard dose is 0.5–1 mg/kg/dose, up to 50–100 mg maximum per day in children and adolescents. See dosing chart on page 3.
- 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.

CONTINUED ON NEXT PAGE ►

For your convenience, approximate dosages based on weight and age are provided in the following charts. Please confirm that you are administering the correct dose for your patient.

First-Line Treatment: Epinephrine				Epinephrine Dose		
Recommended dose is 0.01 mg/kg body weight up to 0.5 mg maximum dose. May be repeated every 5–15 minutes (or sooner) up to 3 times while waiting for EMS to arrive.		Age group	Range of weight (lb)	Range of weight (kg)*	1.0 mg/mL aqueous solution (1:1000 dilution); intramuscular. Minimum dose: 0.05 mL	Epinephrine autoinjector or prefilled syringe (0.1 mg, 0.15 mg, 0.3 mg)
	Infants and children	1–6 months	9–19 lb	4–8.5 kg	0.05 mL (or mg)	off label
		7–36 months	20–32 lb†	9–14.5 kg†	0.1 mL (or mg)	0.1 mg†
		37–59 months	33–39 lb	15–17.5 kg	0.15 mL (or mg)	0.15 mg/dose
		5–7 years	40–56 lb	18–25.5 kg	0.2–0.25 mL (or mg)	0.15 mg/dose
		8–10 years	57–76 lb	26–34.5 kg	0.25–0.3 mL (or mg)	0.15 mg or 0.3 mg/dose
	Teens	11–12 years	77–99 lb	35–45 kg	0.35–0.4 mL (or mg)	0.3 mg/dose
		13 years & older	100+ lb	46+ kg	0.5 mL (or mg) – max. dose	0.3 mg/dose

NOTE: If body weight is known, then dosing by weight is preferred. If weight is not known or not readily available, dosing by age is appropriate.

* Rounded weight at the 50th percentile for each age range

† 0.1 mg autoinjector is licensed for use in 7.5 to 14 kg infants and children

Optional Treatment: Diphenhydramine				Diphenhydramine dose calculations based on 1 mg/kg†	
► commonly known as Benadryl Recommended dose is 1–2 mg/kg body weight every 4–6 hrs†	Age group	Range of weight (lb)	Range of weight (kg)*	Liquid: 12.5 mg/5 mL Tablets: 25 mg or 50 mg	
	Infants and children	7–36 months	20–32 lb	9–14.5 kg	10–15 mg/dose †
		37–59 months	33–39 lb	15–17.5 kg	15–20 mg/dose †
		5–7 years	40–56 lb	18–25.5 kg	20–25 mg/dose †
		8–12 years	57–99 lb	26–45 kg	25–50 mg/dose †
	Teens	13 years & older	100+ lb	46+ kg	50 mg/dose (up to 50 mg or 100 mg single dose) †

NOTE: If body weight is known, then dosing by weight is preferred. If weight is not known or not readily available, dosing by age is appropriate.

* Rounded weight at the 50th percentile for each age range

† AAP. *Red Book: 2018–2021*, 31st ed. (p. 66). Diphenhydramine maximum single dose for children younger than age 12 years is 40 mg, for children age 12 years and older, 100 mg.

Optional Treatment: Hydroxyzine				Hydroxyzine dose calculations based on 0.5 mg/kg	
► commonly known as Atarax, Vistaril Recommended oral dose is 0.5–1 mg/kg body weight every 4–6 hrs†	Age group	Range of weight (lb)	Range of weight (kg)*	Liquid: 10 mg/5 mL Tablets: 10 mg or 25 mg	
	Infants and children	7–36 months	20–32 lb	9–14.5 kg	5–7.5 mg/dose
		37–59 months	33–39 lb	15–17.5 kg	7.5–10 mg/dose
		5–7 years	40–56 lb	18–25.5 kg	10–12.5 mg/dose
		8–10 years	57–76 lb	26–34.5 kg	12.5–15 mg/dose
	Teens	11–12 years	77–99 lb	35–45 kg	15–25 mg/dose
		13 years & older	100+ lb	46+ kg	25 mg/dose (50–100 mg, maximum per day)

NOTE: If body weight is known, then dosing by weight is preferred. If weight is not known or not readily available, dosing by age is appropriate.

* Rounded weight at the 50th percentile for each age range

This policy and procedure shall remain in effect for all patients of the

name of practice _____

NAME OF PRACTICE OR CLINIC

effective _____ until rescinded or until _____.

DATE

DATE

Medical Director

PRINT NAME

SIGNATURE

DATE

Vaccinations for Infants and Children, Age 0–10 Years

Getting your child vaccinated on time will help protect him or her against 15 vaccine-preventable diseases. Ask your child's healthcare provider if your child is up to date with all recommended vaccines.

Vaccine	Is your child up to date?
Chickenpox (varicella; Var)	Your child needs 2 doses of chickenpox vaccine. The first dose is given at 12–15 months and the second at 4–6 years.
Diphtheria, tetanus, and whooping cough (pertussis; DTaP)	Your child needs 5 doses of DTaP vaccine. The first dose is given at 2 months, the second at 4 months, the third at 6 months, the fourth at 15–18 months, and the fifth at 4–6 years.
<i>Haemophilus influenzae</i> type b (Hib)	Your child needs 3–4 doses of Hib vaccine, depending on the brand of vaccine. The first dose is given at 2 months, the second at 4 months, the third at 6 months (if needed), and the last at 12–15 months.
Hepatitis A (HepA)	Your child needs 2 doses of hepatitis A vaccine. The first dose is given at age 1 year and the second 6–12 months later.
Hepatitis B (HepB)	Your child needs 3–4 doses of hepatitis B vaccine, depending on the brand of vaccine. The first dose is given at birth, the second at 1–2 months, the third at 4 months (if needed), and the last at 6–18 months.
Influenza (Flu)	Everyone age 6 months and older needs influenza vaccination every fall or winter and for the rest of their lives. Some children younger than age 9 years need 2 doses. Ask your child's healthcare provider if your child needs more than 1 dose.
Measles, mumps, rubella (MMR)	Your child needs 2 doses of MMR vaccine. The first dose is given at 12–15 months and the second at 4–6 years.
Meningococcal (MenACWY [MCV4], MenB)	Infants and children age 0–10 years with certain health conditions (such as a non-functioning spleen) need one or both meningococcal vaccines. Talk with your healthcare provider to find out if your child needs meningococcal vaccination.
Pneumococcal (Pneumovax [conjugate vaccine, PCV], Prevnar [polysaccharide vaccine, PPSV])	Your child needs 4 doses of Prevnar (PCV). The first dose is given at 2 months, the second at 4 months, the third at 6 months, and the fourth at 12–15 months. Some children also need a dose of Pneumovax (PPSV). Ask your child's healthcare provider if your child needs this extra protection against pneumococcal disease.
Polio (IPV)	Your child needs 4 doses of polio vaccine (IPV). The first dose is given at 2 months, the second at 4 months, the third at 6–18 months, and the fourth at 4–6 years.
Rotavirus (RV)	Your child needs 2–3 doses of rotavirus vaccine (RV), depending on the brand of vaccine. The first dose is given at 2 months, the second at 4 months, and the third (if needed) at 6 months.

Will your child be traveling 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.

Meningococcal Vaccines–Routine Risk

MenACWY (MCV4) and MenB vaccines each protect against different serogroups. They may be given at the same visit.

For HIGH-RISK POPULATIONS (increased exposure to meningococcal disease, HIV infection, complement deficiencies or asplenia), see recommendations at EZIZ.org/assets/docs/IMM-1218.pdf

Routine	As needed to provide short-term protection against most strains of serogroup B meningococcal disease
<p>All 11-12 years^{1,2}</p> <p>MenACWY Menactra® or Menveo®</p>	<p>16-23 years (Preferred age is 16–18 years)</p> <div data-bbox="995 818 1608 959"> <p>1st dose</p> <p>MenB Bexsero®</p> <p>1 month</p> <p>2nd dose</p> <p>MenB Bexsero®</p> </div> <div data-bbox="1650 781 1944 956"> <p>Use the same brand of MenB vaccine for each dose in the series.</p> </div> <p>— OR —</p> <div data-bbox="995 1065 1608 1206"> <p>1st dose</p> <p>MenB Trumenba®</p> <p>6 months^{4,5}</p> <p>2nd dose^{4,5}</p> <p>MenB Trumenba®</p> </div>
<p>All 16 years^{2,3}</p> <p>Booster dose</p> <p>MenACWY Menactra® or Menveo®</p>	
<p>Catch-up for first-year college students 19–21 years of age if</p> <ul style="list-style-type: none"> No prior vaccination OR Received 1st dose when younger than 16 years <p>MenACWY Menactra® or Menveo®</p>	

Notes:

- HIV-infected persons are recommended to receive 2 MenACWY (MCV4) doses, 2 months apart as the primary series if not yet immunized before age 11-12 years.
- MenACWY (MCV4) vaccines protect against serogroups A, C, W-135, and Y.
- If the first dose of MenACWY (MCV4) is given at age 16 years, no booster dose is needed.
- A two-dose series is recommended for persons who are not at increased risk for meningococcal disease. A three-dose (0, 1-2, and 6 months) series is recommended for persons at increased risk, including during outbreaks of serogroup B disease: see EZIZ.org/assets/docs/IMM-1218.pdf.
- If the second dose was given at an interval of less than 6 months, a third dose should be given at least 6 months after the first dose.

For further details, see: www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html.

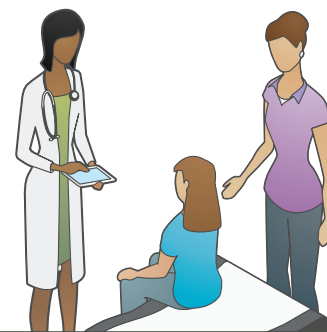


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Tips and Time-savers for Talking with Parents about HPV Vaccine

Recommend the HPV vaccine series the same way you recommend the other adolescent vaccines. For example, you can say “Your child needs these shots today,” and name all of the vaccines recommended for the child’s age.

Parents may be interested in vaccinating, yet still have questions. Taking the time to listen to parents’ questions helps you save time and give an effective response. CDC research shows these straightforward messages work with parents when discussing HPV vaccine—and are easy for you or your staff to deliver.



CDC RESEARCH SHOWS:

The “HPV vaccine is cancer prevention” message resonates strongly with parents. In addition, studies show that a strong recommendation from you is the single best predictor of vaccination.

TRY SAYING:

HPV vaccine is very important because it prevents cancer. I want your child to be protected from cancer. That’s why I’m recommending that your daughter/son receive the first dose of HPV vaccine today.

CDC RESEARCH SHOWS:

Disease prevalence is not understood, and parents are unclear about what the vaccine actually protects against.

TRY SAYING:

HPV can cause cancers of the cervix, vagina, and vulva in women, cancer of the penis in men, and cancers of the anus and the mouth or throat in both women and men. There are about 26,000 of these cancers each year—and most could be prevented with HPV vaccine. There are also many more precancerous conditions requiring treatment that can have lasting effects.

CDC RESEARCH SHOWS:

Parents want a concrete reason to understand the recommendation that 11–12 year olds receive HPV vaccine.

TRY SAYING:

We’re vaccinating today so your child will have the best protection possible long before the start of any kind of sexual activity. We vaccinate people well before they are exposed to an infection, as is the case with measles and the other recommended childhood vaccines. Similarly, we want to vaccinate children well before they get exposed to HPV.

CDC RESEARCH SHOWS:

Parents may be concerned that vaccinating may be perceived by the child as permission to have sex.

TRY SAYING:

Research has shown that getting the HPV vaccine does not make kids more likely to be sexually active or start having sex at a younger age.

CDC RESEARCH SHOWS:

Parents might believe their child won’t be exposed to HPV because they aren’t sexually active or may not be for a long time.

TRY SAYING:

HPV is so common that almost everyone will be infected at some point. It is estimated that 79 million Americans are currently infected with 14 million new HPV infections each year. Most people infected will never know. So even if your son/daughter waits until marriage to have sex, or only has one partner in the future, he/she could still be exposed if their partner has been exposed.

CDC RESEARCH SHOWS:

Emphasizing your personal belief in the importance of HPV vaccine helps parents feel secure in their decision.

TRY SAYING:

I strongly believe in the importance of this cancer-preventing vaccine, and I have given HPV vaccine to my son/daughter/grandchild/niece/nephew/friend’s children. Experts (like the American Academy of Pediatrics, cancer doctors, and the CDC) also agree that this vaccine is very important for your child.

CDC RESEARCH SHOWS:

Understanding that the side effects are minor and emphasizing the extensive research that vaccines must undergo can help parents feel reassured.

TRY SAYING:

HPV vaccine has been carefully studied by medical and scientific experts. HPV vaccine has been shown to be very effective and very safe. Like other shots, most side effects are mild, primarily pain or redness in the arm. This should go away quickly, and HPV vaccine has not been associated with any long-term side effects. Since 2006, about 57 million doses of HPV vaccine have been distributed in the U.S., and in the years of HPV vaccine safety studies and monitoring, no serious safety concerns have been identified.

CDC RESEARCH SHOWS:

Parents want to know that HPV vaccine is effective.

TRY SAYING:

In clinical trials of boys and girls, the vaccine was shown to be extremely effective. In addition, studies in the U.S. and other countries that have introduced HPV vaccine have shown a significant reduction in infections caused by the HPV types targeted by the vaccine.

CDC RESEARCH SHOWS:

Many parents do not know that the full vaccine series requires 3 shots. Your reminder will help them to complete the series.

TRY SAYING:

I want to make sure that your son/daughter receives all 3 shots of HPV vaccine to give them the best possible protection from cancer caused by HPV. Please make sure to make appointments on the way out, and put those appointments on your calendar before you leave the office today!



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



YOU ARE THE KEY TO
CANCER PREVENTION

www.cdc.gov/vaccines/teens | PreteenVaccines@cdc.gov



As a parent, you may have questions about vaccines for your preteen. Below is the information you need from pediatricians to be confident about your decision to vaccinate.

The American Academy of Pediatrics, the American Academy of Family Physicians and the Centers for Disease Control and Prevention recommend your preteen (ages 11-12) receive HPV, influenza, Meningococcal and Tdap vaccines. Your child has likely already received annual vaccinations against influenza, and several vaccinations against the diseases for which Tdap provides protection. HPV and Meningococcal are new vaccines for your child.

Meningococcal infection

“Meningococcal bacteria” is spread in saliva. It can cause life-threatening blood infection or meningitis (an infection of the spinal cord and fluid surrounding the brain). Children and young adults, particularly college freshmen who live in dormitories, are most often affected by meningococcal disease, but persons of any age can become infected. Meningococcal disease can lead to death, blindness, deafness, loss of limbs, or other long-term problems. Even with prompt treatment approximately 15% of those infected with meningitis will not survive..

About Meningococcal Conjugate Vaccine

- **Who should be vaccinated:** All preteens and teens who have not been vaccinated already
- **Routine schedule:** Vaccinate now (age 11-12), and then get booster at 16 years old (or older if the first dose is late)
- **Why get vaccinated:** This vaccine can prevent the types of meningitis that are most likely to strike teens in the US. There are some forms of meningitis that the meningococcal vaccine does not prevent (for example, from viruses), but it is effective at preventing a terrible form of meningitis.

Human papillomavirus (HPV) infection

HPV is spread by intimate skin-to-skin contact or intercourse. Exposure to this virus is very common. More than 50% of adults who have ever had sex are infected with HPV at some time in their lives. The CDC estimates that about 2 out of 3 adolescent girls have been infected with HPV, and 3 out of 4 new cases of HPV are found in persons ages 15 to 24 years.¹

HPV can cause genital warts, and cancers in the genital area, anus, mouth, and throat. It can also cause cervical cancer in females.

About HPV vaccine:

- **Who should be vaccinated:** All preteens and teens who have not been vaccinated already (The first dose is routinely given at 11-12 years of age, but may be given as early as age 9 years. It is also recommended for men up to 21 and women up to 26 years of age who did not receive it when they were younger.)
- **Routine schedule (3 doses):** Vaccinate now (age 11-12)
 - 2nd dose 1 to 2 months after the first dose
 - 3rd dose 6 months after the first dose
- **Why get vaccinated:** The vaccine can prevent the types of HPV infection that cause cancer, and has been shown to protect people from developing most of these cancers, which can be deadly. There are strains of HPV that the vaccine does not prevent, but those strains are not associated with cancer.

If you have more questions about these vaccines, please speak with your child's pediatrician.



¹ Human Papillomavirus. Pink Book. CDC. Available at: <http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/hpv.pdf>. Accessed April 9, 2013.



Common Concerns About All Pre-teen Vaccines

Do adolescent vaccines have serious side effects?

Pain: Pediatricians and parents do not like to cause pain to children of any age. Even though shots may hurt, getting a vaccine is not as bad as suffering from a serious disease such as meningitis or cancer. Talk with your pediatrician about ways to reduce pain during vaccination. Stroking the skin or applying pressure to the skin before the shot reduces the pain.² In some offices, medication to numb the skin may be available.³

Fainting: Your pediatrician may ask your child to sit for 15 minutes after getting a shot to prevent fainting (syncope). Staying seated for 15 minutes reduces the main risk from fainting-- getting hurt from falling.

Vaccination at sick visits: Families are busy and it is hard to find time to visit the pediatrician's office to get a shot. It is smart to get any vaccines that are due when your child is in the pediatrician's office. This reduces the chance that your child misses a vaccine or has to miss school, work, or other activities to receive vaccines.

Safety: All vaccines routinely recommended for pre-teens have been licensed by the Food and Drug Administration and found to be safe. The safety of each vaccine continues to be checked after it is licensed. Your pediatrician can provide you with a Vaccine Information Statement that explains the mild side effects that can occur after receiving shots.

Why is more than one dose of vaccine needed?

HPV vaccine: It is recommended that your child receive 3 doses of HPV vaccine at ages 11-12 for full protection. All 3 doses of the HPV vaccine are needed for the body to build up enough immunity to protect against infection in a lasting way. This is also true of many of the vaccines that babies get.

Meningococcal vaccine: One dose of meningococcal vaccine protects a person, but immunity may wane over time. A booster can "boost" immunity so that your child is still fully protected. Children should receive meningococcal vaccine as pre-teens to be fully protected for a few years and another dose at age 16 to boost immunity levels.

Tdap: Recently, there have been several outbreaks of pertussis (whooping cough) throughout the United States. This is, in part, because the effect of the childhood vaccine "wears off" over time.⁴ Now, one booster dose of pertussis vaccine (in Tdap) is recommended. In the future, the recommendation may be for regular boosters (as for tetanus shots). Studies are underway to determine exactly if and when boosters are needed.

What is the cost of these vaccines? I'm not sure if I can afford them or if my insurance will cover them.

Pediatricians realize that healthcare can be costly for families. The Affordable Care Act (ACA) requires insurance companies to cover the cost of all recommended vaccines, which include those for teens and pre-teens. However, if your insurance plan has been unchanged since March 23, 2010, it may not have to follow these new rules. To find out if your child's insurance plan will require you to pay part of the vaccination cost or meet your deductible before it will pay for vaccinations, ask the office staff at your child's pediatric office.

If your child does not have health insurance, has Medicaid or insurance that does not cover vaccines, or is American Indian or Alaskan Native, he/she qualifies to receive vaccines at no cost through the Vaccines for Children (VFC) Program. Most pediatricians provide VFC vaccines. If your pediatrician is not a VFC provider, your child should be able to receive vaccines at your local health department. Speak with your child's pediatrician to learn more about the VFC program or visit:

<http://www.cdc.gov/vaccines/programs/vfc/parents/qa-detailed.html>. To contact your VFC state, city or territory coordinator visit: <http://www.cdc.gov/vaccines/programs/vfc/contacts-state.html>.

² Taddio A, Ilersich AL, Ipp M, Kikuta A, Shah V. 2009. Physical Interventions and Injection Techniques for Reducing Injection Pain During Routine Childhood Immunization: Systematic Review of Randomized Controlled Trials. *Clinical Therapeutics*, 31, Supplement 2, S48-76.

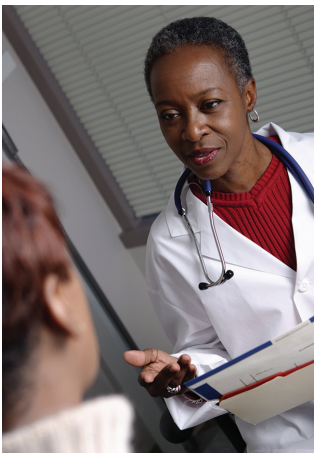
³ Reis EC, Holubkov R. Vapocoolant Spray Is Equally Effective as EMLA Cream in Reducing Immunization Pain in School-aged Children. 1997. *Pediatrics*, 100, 6, e5.

⁴ Tartof SY, Lewis M, Kenyon C, White K, Osborn A, Liko J, Zell E, Martin S, Messonnier NE, Clark TA, and Skoff TH. Waning Immunity to Pertussis Following 5 Doses of DTaP. 2013. *Pediatrics*, 131, 4, e1047-52.



Steps for Increasing HPV Vaccination in Practice

An Action Guide to Implement Evidence-based Strategies for Clinicians*

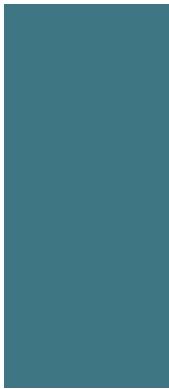


*Includes pediatricians, family physicians, general internists, obstetrician-gynecologists, nurse practitioners, physician assistants, nurses, medical assistants, and their office managers

HPV VACs

Vaccinate Adolescents against Cancers





Saving Lives through Cancer Prevention

Nearly all cases of cervical cancer are caused by infection with high-risk types of human papilloma virus (HPV). The virus also has been linked to cancers of the vagina, vulva, anus, penis, and throat. Each year, in the United States, an estimated 26,000 new cancers are caused by HPV.¹ In addition to cancers, each year there are 330,000 women who undergo treatment for new cases of pre-cancerous, high-grade cervical dysplasia.²

The HPV vaccine is cancer prevention. It prevents infection by virus types that cause the vast majority of these cancers and genital warts, but the vaccine works only if given well before an infection occurs. That's why, in part, the American Cancer Society recommends it at ages 11 to 12 years old. Vaccination at these younger ages also leads to a greater immune response.

Despite the power of HPV vaccination to prevent cervical cancer, only one-third of adolescent girls have completed the three-dose series.

The biggest predictor of HPV vaccination uptake is a strong recommendation from a health care provider. You have the power to make a lasting impact on HPV vaccination and help reduce the HPV-related cancer burden in your community. On the pages that follow you will find detailed steps, evidence-based strategies, and tools for your clinic to increase HPV vaccination.

Benefits to Your Health System Include:

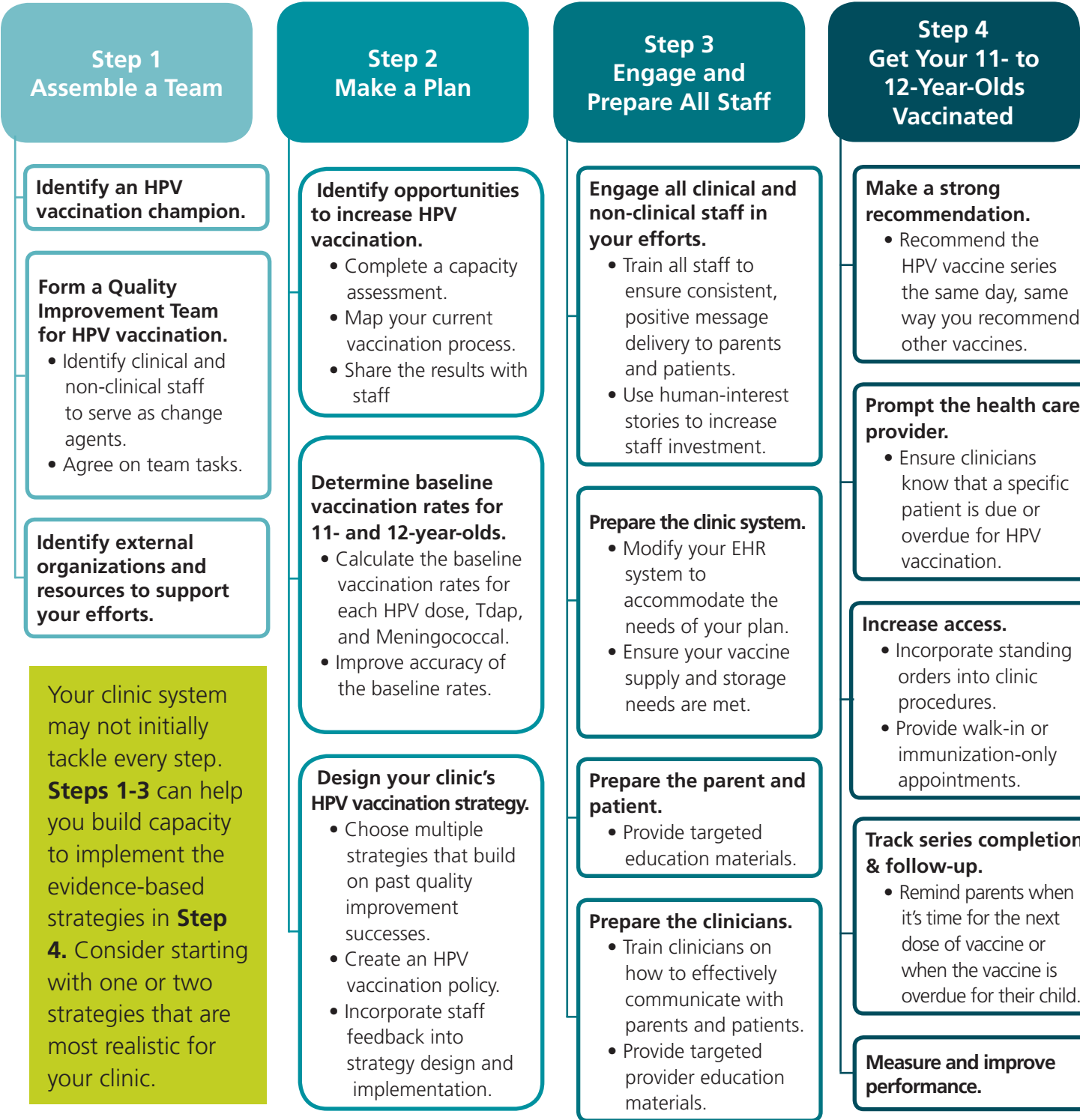
- More patients who come into your clinic and leave vaccinated
- Parents who are motivated to get their child vaccinated against cancer
- Interventions that are evidence-based and, when used consistently, can improve overall vaccination rates
- Cancer prevention integrated into existing systems of care

1. <http://www.cdc.gov/cancer/hpv/statistics/cases.htm>.

2. Schiffman M, Solomon D. Findings to date from the ASCUS-LSIL Triage Study (ALTS). *Arch Pathol Lab Med.* 2003;127:946–949.



Increasing HPV Vaccination: An Overview





Step 1: Assemble a Team

Identify an HPV Vaccination Champion

Having an HPV vaccination clinic champion who advocates for practice change is an important component to the initiation and sustainability of efforts to increase HPV rates. This individual serves in a leadership role for the program and on the quality improvement team. They should be enthusiastic about the work, have the authority to implement practice changes, and have scheduled administrative time to guide the initiative. To ensure full coordination, consider having multiple champions (i.e., one medical and one administrative or one champion in each clinic location).

Form a Quality Improvement Team for HPV Vaccination

A team-based approach to quality improvement is key for continued improvement. Members of a QI team focused on increasing HPV vaccination rates should represent different roles within the vaccination process. This group will be a driving force for practice change and continuous improvement. Successful QI teams:

- Meet regularly.
- Utilize the Model for Improvement and a PDSA (Plan-Do-Study-Act) Process.
- Review rates, and set benchmarks.
- Engage staff by regularly collecting feedback.
- Create and update office policies.

Identify External Organizations and Resources to Support Your Efforts

The American Cancer Society, in addition to many other organizations, is committed to increasing HPV vaccination rates and has developed tools and resources to support your clinic's efforts. Consider the following external organizations and resources:

- The HPV VACs (Vaccinate Adolescents against Cancers) Project is a Society program with staff across the country working with federally qualified health centers and state partners to increase HPV vaccination rates.
- AFIX (Assessment, Feedback, Incentives, and eXchange) is a quality improvement program created by the Centers for Disease Control and Prevention where state awardees work with Vaccines for Children providers to raise general immunization rates.
- American Academy of Pediatrics, American Pediatric Association, Centers for Disease Control and Prevention, National AHEC Organization, and National Association of County and City Health Officials have specific HPV vaccination programs and may have initiatives within your community.
- Depending on your clinic and community, it could be important to engage school nurses and others who might initiate the three-dose series, but need your clinic to finish the series.

Tools for Your Practice

The following **quality improvement** tools are available for downloading at <https://www.mysocietysource.org/sites/HPV/Pages/Step-1.aspx>

- **Child and Adolescent Immunization Office Champions Project**, American Academy of Family Physicians
- **Creating A Quality Improvement Team**, AHRQ
- **Quality Improvement Toolkit**, Minnesota Department of Health
- **Creating Capacity for Improvement in Primary Care**, AHRQ
- **How to Improve: The Model for Improvement**, Institute for Healthcare Improvement
- **Eliminating Missed Opportunities: One Performance Improvement At A Time**, Massachusetts League of Community Health Centers
- **Plan Do Study Act Cycle Template**, Centers for Medicaid and Medicaid Services
- **Plan Do Study Act Worksheet**, Institute for Healthcare Improvement
- **HPV VACs Flyer**, American Cancer Society
- **AFIX City/State/Territory Staff**, CDC
- **AHEC HPV Regional Project Coordinators**, National AHEC Organization
- **Chapters & Districts**, American Academy of Pediatrics
- **Guide to HPV Resources for Local Health Departments**, National Association of County and City Health Officials



Step 2: Make a Plan

A strategic plan is key for creating sustainable systems change. Once your plan is developed, document it and share it with everyone in your clinic.

Identify Opportunities to Increase HPV Vaccination

Assess your existing HPV vaccination policy and practices. A clear picture of existing systems allows you to identify strengths and the most impactful opportunities to increase rates.

Consider the following when conducting your assessment: Provider behaviors, electronic health record (EHR) system capabilities, patient flow, and staff capacity.

Determine Baseline Rates for Your 11- to 12-Year-Olds

Determining your baseline rates are critical to measuring practice improvement at the end of the implementation process. This requires a few steps:

1. Determine the best data sources: EHR, chart audit, and/or Immunization Information System (registry).
2. Determine the 12-month period for baseline.
3. Identify the patients who are 11 and 12 years old and active medical patients.
4. Identify the patients who have received vaccination for each HPV dose, Tdap, and Meningococcal.
5. Calculate your vaccination rates.

Take continuous steps to improve the accuracy of the clinic's baseline. Even after incorporating data from multiple sources, there will be patients who received HPV vaccine who are missing documentation. Establish a protocol for data entry and verification to ensure vaccination records are accurate.

Design Your Clinic's Vaccination Strategy

Leverage your clinic's strengths when choosing the best approach to increase HPV vaccination rates. To maximize the impact of your efforts, choose multiple evidence-based interventions that build on past quality improvement successes. Create a policy with a standard course of action for HPV vaccination. Consider including the following when creating or updating your HPV vaccination policy:

- Assess vaccination status and recommend HPV vaccination at every opportunity.
- Follow an agreed upon vaccination schedule.
- Start using a vaccine refusal form, and recommend HPV vaccination again at future visits.

Document the clinic's HPV vaccination policy, share it with all team members, incorporate a regular collection of staff feedback, and check on adherence to the policy.



Tools for Your Practice

The following **planning** tools are available for downloading at <https://www.mysocietysource.org/sites/HPV/Pages/Step-2.aspx>

- **Mapping and Redesigning Workflow**, AHRQ
- **The IHI Improvement Map**, Institute for Healthcare Improvement
- **Performance Management and Measurement**, HRSA
- **Analytic Guide for Assessing Immunization Coverage Using IIS**, American Immunization Registry Association
- **Adolescent Vaccination Schedule**, CDC
- **2015 Recommended Immunizations for Children from 7 Through 18 Years Old**, CDC
- **Vaccination Refusal Form**, Immunization Action Coalition
- **Refusal to Vaccinate Form**, American Academy of Pediatrics



Step 3: Engage and Prepare All Staff

Engage All Clinical and Non-Clinical Staff in Your Efforts

Train all staff to ensure consistent positive message delivery to parents and patients. Even if a staff member is not directly engaged in the process of recommending or administering the HPV vaccine, they can potentially impact the process by delivering misinformation to patients and parents. Understand the HPV vaccine administrative schedule, insurance, and VFC regulations that may create administrative barriers.

Provide human-interest stories in addition to statistics to increase staff investment. A connection to a survivor of an HPV-related cancer is a powerful tool to overcoming negative perceptions of the vaccine. In addition to survivors and caregivers, oncologists are resources for providing powerful messages.

Prepare the Clinic System

Modify your EHR system to ensure effective data collection and reporting. Your EHR system should track each dose of vaccine administered. When implementing new EHR functionality, training staff on how to enter and extract data is a key step. Regularly collecting feedback and sharing data with staff will prevent inaccurate data from being entered into the system.

Your efforts will increase the need for the vaccine and vaccine storage. Ensure you have adequate supply and storage for all HPV vaccine doses to prevent potential access barriers.

Prepare the Parent and Patient

Decide on the parent and patient educational materials that are best suited for your clinic setting. Consider the following:

- Create an official procedure for how these materials are distributed and displayed. Incorporate this procedure into your HPV vaccination policy.
- Determine the clinical and non-clinical staff who will distribute the materials and at which point in the patient's office visit they will be distributed.

Prepare the Clinicians

Provide clinician training through multiple formats. Consider the following when developing your training plan:

- Conduct on-site training opportunities to increase skills and team camaraderie.
- Incorporate clinic- and system-level data to make training content specific and relevant to your staff.
- Provide continuing medical education credits to motivate health care providers to complete training.
- Disseminate prerecorded webinars to add a flexible training option.

In addition to training sessions, you can prepare your clinicians by incorporating HPV vaccination into your daily team huddle to ensure that the patients who arrive in your clinic leave vaccinated. This huddle time can be used to ensure logistical needs are met and all staff members are aware of their role in the vaccination reminder, recommendation, and administration process.

Tools for Your Practice

The following **staff engagement** tools are available for downloading at <https://www.mysocietysource.org/sites/HPV/Pages/step-3.aspx>

- **You Are the Key to HPV Cancer Prevention CE**, CDC
- **Evidence-Based Strategies for Increasing HPV Vaccination Rates**, Massachusetts Department of Public Health
- **Shot by Shot Survivor Stories**, California Immunization Coalition
- **Someone You Love: The HPV Epidemic**, Lumiere Films
- **Measuring Use Stage 1 – How to Send Patient Reminders through Your EHR**, National Learning Consortium Resources
- **Print Materials for Preteen and Teens**, CDC
- **Immunization PSAs**, CDC
- **Adolescent Vaccination Messaging for Practice Hold Lines**, CDC
- **Communicating Safety and Efficacy of HPV Vaccine to Parents and Preadolescents CME/CE**, MedScape
- **Adolescent Immunizations: Strongly Recommending the HPV Vaccine**, American Academy of Pediatrics
- **HPV Champion Toolkit: Huddle Your Way to Better Immunization Rates**, American Academy of Pediatrics



Step 4: Get your 11- and 12-Year-Olds Vaccinated

Make a Strong Recommendation

A recommendation from a health care provider is the single most persuasive reason children get vaccinated. To increase the effectiveness of an HPV vaccine recommendation, consider the following:

- Recommend the HPV vaccine for all boys and girls at 11 and 12 years of age the same day, same way you recommend other vaccines.
- Try saying, *“Your child needs 3 vaccines today: HPV, Tdap, and meningococcal”* or *“Today your child should have 3 vaccines. They’re designed to protect him from the cancers caused by HPV and from meningitis, tetanus, diphtheria, and pertussis.”*

Prompt the Health Care Provider

Ensure clinicians know that a specific patient is due or overdue for HPV vaccination. Patient-specific prompts can come from your EHR, nursing staff, or both. Prompts can take many forms. Consider the following when developing your prompting system: EHR automatic popups, EHR visit task lists, highlighted text in EHR chart, sticky notes in chart, checklists, preprinted note in client’s chart, or a highlighted current procedural terminology code on a visit summary.

Increase Access

Assess for and administer the HPV vaccine at every opportunity. Consider the following types of encounters: well child visits, sick visits, sports physicals, and nurse-only visits. Incorporate standing orders into clinic procedures. Provide walk-in or immunization-only appointments.

Track Series Completion and Follow-Up

Schedule follow-up appointments for the next doses before the patient leaves your clinic. Remind parents when it’s time for the next doses of the vaccine or the vaccine is overdue for their child. Ensure your privacy statement includes: phone, mail, email, and text message as options for communication.

Measure and Improve Performance

A program measures its success by demonstrating an improvement from baseline rates. Some programs have found it helpful to provide monthly reports for the clinic system, clinic, and individual health care providers with vaccination rates. Systematically solicit feedback from staff, providers, and parents to refine and improve the impact of your efforts.



Tools for Your Practice

The following **strategy implementation tools** are available for downloading at <https://www.mysociety-source.org/sites/HPV/Pages/Step-4.aspx>

- **Tips and Time-savers for Talking with Parents about HPV Vaccine**, CDC
- **Recommending HPV Vaccine Successfully**, Medscape and CDC
- **Addressing Common Concerns**, American Academy of Pediatrics
- **Another Shot: Reframing the HPV Vaccine**, Minnesota Department of Health
- **Letter: Give a strong recommendation for HPV vaccine to increase uptake!**, Multiple Organizations
- **PDSA Cycle: Strong Recommendation**, American Academy of Pediatrics
- **PDSA Cycle: Provider Prompts**, American Academy of Pediatrics
- **Standing Orders for Administering Human Papillomavirus Vaccine to Children and Teens**, Immunization Action Coalition
- **PDSA Cycle: Standing Orders for HPV Vaccination**, American Academy of Pediatrics
- **Immunization Reminder and Recall Systems**, American Academy of Pediatrics
- **Reminder/Recall in Immunization Information Systems: A Mini-Guide**, American Immunization Registry Association (AIRA)
- **HPV Vaccination Report Card**, American Cancer Society



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Tools for Your Practice

Below is a list of general tools that focus on multiple topics that may be helpful in increasing HPV vaccination rates in your practice and are available for downloading at <https://www.mysocietysource.org/sites/HPV/Pages/Steps.aspx>

- **HPV Vaccination Resource Book for Area Health Education Centers**, National AHEC Organization
- **HPV Champion Toolkit**, American Academy of Pediatrics
- **The Community Guide: Increasing Appropriate Vaccination**, Community Preventative Services Task Force
- **Top Strategies for Increasing HPV Vaccination Coverage**, American Academy of Pediatrics
- **Five Key Steps To Improve HPV Vaccination Rates in Your Practice Infographic**, National Foundation for Infectious Diseases
- **Adolescent Immunizations: Office Strategies CME**, American Academy of Pediatrics
- **Framing the Conversation With Parents About the HPV Vaccine CME/CE**, Medscape
- **Immunization Training Guide**, American Academy of Pediatrics
- **President's Cancer Panel Report: Accelerating HPV Vaccine Update: Urgency for Action to Prevent Cancer**, National Cancer Institute