Volume 20 – Number 3

April 2010
(content current as of April 13)

NEEDLE TIPS

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What's Inside?

CDC's 2010–11 influenza recommendations are now simple and easy to remember — everyone, every year!

Dear Colleagues,

In February, the Advisory Committee on Immunization Practices (ACIP), which advises the Centers for Disease Control and Prevention (CDC) on vaccine guidance, made a landmark decision establishing a universal influenza vaccine recommendation, starting with the 2010–11 influenza season. This means that all people in the United States—excluding babies younger than age six months and people with certain medical conditions—are now recommended to receive influenza vaccine every year.

The new recommendation is simple, straightforward, and easy to communicate. It eliminates the complexities of the prior recommendations, which said people should be vaccinated if they fell into any of 15 different targeted groups (a lengthy list to commit to memory). Going forward, healthcare professionals will have a very easy time deciding which of their patients are recommended for influenza vaccine. And patients will eventually come to recognize that influenza vaccine is routinely recommended for them. Now, the message is simple: everyone, every year, unless specifically contraindicated.

Here at the Immunization Action Coalition, we welcome this change. We think it will erase any uncertainties healthcare professionals and their patients may have had about who should be vaccinated, and will lead to more people than ever protecting themselves, their families, and their communities by getting immunized.

Best regards,

Deborah L. Wexler, MD

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Ask the Experts

IAC extends thanks to our experts, William L. Atkinson, MD, MPH, and Andrew T. Kroger, MD, MPH, medical epidemiologists at the National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention (CDC).

Vaccine questions

On Oct. 17, 2009,* The Lancet *published a study that found that infants who received 3 doses of acetaminophen following immunization had reduced immune responses to certain vaccines. Based on these findings, should we stop recommending acetaminophen for fever or discomfort after infant immunization?

Evidence from this study discourages the prophylactic use of paracetamol (acetaminophen) prior to or immediately following vaccination. Acetaminophen can be used to treat pain or fever if it should occur following vaccination. In the upcoming 2010 *General Recommendations on Immunization,* CDC will remove all recommendations for prophylactic use of acetaminophen or other analgesics BEFORE or AT THE TIME OF vaccination. AAP has already removed such recommendations from the *Red Book.*

Why were U.S. healthcare providers recommended to temporarily suspend administering Rotarix rotavirus vaccine (RV1; GSK) in late March 2010?

GSK reported to FDA that an independent academic research team using a novel technique to look for viruses had discovered DNA components from porcine circovirus type 1 (PCV1) in Rotarix vaccine. GSK conducted additional studies and confirmed that DNA from PCV1 is present in the finished Rotarix vaccine (as well as in the cell bank and seed from which the vaccine is derived) and that it has been present since the early stages of the vaccine's development. FDA decided to suspend the vaccine's use while learning more about the situation and until further studies are done. PCV1 is not known to cause disease in people or animals. PCV1 was not found in RotaTeq rotavirus vaccine (RV5; Merck).

Was FDA's decision to temporarily stop the use of Rotarix vaccine based on safety concerns?

No. Based on what is currently known, the presence of PCV1 is not a safety issue. Rotarix has been extensively studied, both before and after its licensure, and has had an excellent safety record.

Do children who have received Rotarix vaccine need medical follow-up?

No. FDA does not believe medical follow-up is warranted for children who have been vaccinated with Rotarix. Extensive studies involving tens of thousands of vaccine recipients support the safety and effectiveness of this vaccine.

How should we complete the rotavirus vaccine series in infants who have already received 1 dose of Rotarix?

If you started an infant on Rotarix, complete the series by administering 2 doses of RotaTeq. RotaTeq is routinely given using a 3-dose schedule at ages 2, 4, and 6 months. It is important that you keep infants on schedule as they must complete the third and final dose by age 8 months, 0 days.

(continued on page 22)

Immunization questions?

- Call the CDC-INFO Contact Center at (800) 232-4636 or (800) CDC-INFO
- Email nipinfo@cdc.gov
- Call your state health dept. (phone numbers at www.immunize.org/coordinators)

Needle Tips

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Needle Tips is a publication of the Immunization Action Coalition (IAC) written for health professionals. Content is reviewed by the Centers for Disease Control and Prevention (CDC) for technical accuracy. This publication is supported in part by CDC Grant No. 5U38IP000290. The content is solely the responsibility of IAC and does not necessarily represent the official views of CDC. ISSN 1944-2017.

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***Needle Tips* is also supported in part by**
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IAC maintains strict editorial independence in its publications.

IAC's Image Library Brings You the Power of Photos

Photos are invaluable teaching tools for staff and patients — download them from www.immunize.org/photos

View and download hundreds of images related to vaccination and vaccine-preventable diseases from the Immunization Action Coalition's (IAC's) gallery of digital images. Use these images to educate patients and staff about the diseases that vaccines prevent. The majority of images in this section are free to download. Many have been graciously provided by healthcare professionals and scientists from around the world.

Vaccination Photographs

The IAC Image Library includes pictures of healthcare professionals vaccinating infants, children, teens, and adults. These images are ready to incorporate into newsletters, posters, and brochures.

Three generations watch vaccination

Images of 19 Vaccine-Preventable Diseases

IAC's library includes hundreds of vaccine-preventable disease images. The photos of clinical cases are invaluable teaching tools about infectious diseases of today and yesteryear. The micrographs of viruses, bacteria, and pathology specimens make the invisible visible. These images are organized by disease, making them easy for healthcare professionals, the media, and others to access, download, and use in lectures, articles, presentations, and in creating patient education materials.

Most Hib cases require hospitalization

This is a child with measles

Global Immunization Campaigns

The IAC Image Library also features slideshows of Global Immunization Campaigns, past and present. This section houses photo galleries and historic pictures showing how vaccination efforts are improving lives of people around the world. See first hand the effort to immunize the world's children against life-threatening diseases.

Rotavirus vaccine travels in Nicaragua

This section features a slideshow presentation from the Bill and Melinda Gates Foundation about the global rotavirus immunization program, as well as a photo essay by Tim Brookes and Omar A. Khan, MD, MHS, who share images from Pakistan, where they accompanied polio eradication team members in the field. View hundreds of historic images that document the smallpox eradication campaign from the Global Health Chronicles project.

This child's twin also has polio

Other Image Libraries

IAC provides links to CDC's Public Health Image Library, the American Academy of Pediatrics' collection of photographs of children affected by vaccine-preventable diseases, as well as the National Library of Medicine's images from the history of medicine.

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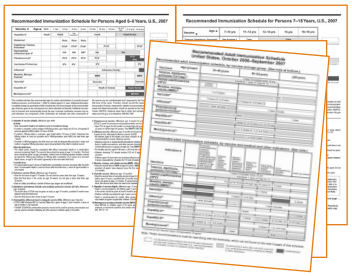
Visit the Immunization Action Coalition's website often! www.immunize.org

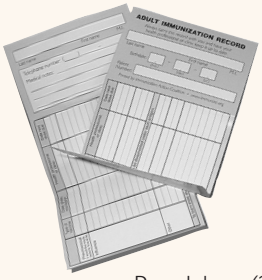
Laminated child and adult immunization schedules
Order one of each for every exam room



Here are the ACIP/AAP/AAFP-approved immunization schedule for people ages 0 through 18 years and the ACIP/AAFP/ACOG/ACP-approved schedule for adults. Both are laminated and washable for heavy-duty use, complete with essential footnotes, and printed in color for easy reading. The cost is $7.50 for each schedule and only $5.50 each for five or more copies.

To order, visit www.immunize.org/shop, or use the order form on page 23.
For 20 or more copies, contact us for discount pricing: admininfo@immunize.org

Immunization record cards available for all ages—
For children & teens, for adults, and for a lifetime!

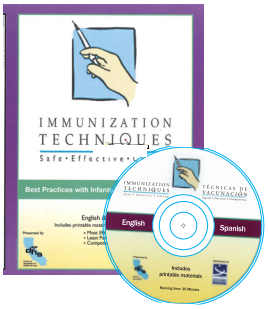


Now you can give any patient a permanent vaccination record card designed specifically for their age group: child & teen, adult, or lifetime. The three cards list all vaccines recommended for each age. The cards are printed on durable rip-, smudge-, and water-proof paper. Wallet-sized when folded, the cards are brightly colored to stand out. To view the cards or for more details, go to www.immunize.org/shop and click on the images.

Buy 1 box (250 cards) for $37.50 (first order of a 250-card box comes with a 30-day, money-back guarantee). Discounts for larger orders: 2 boxes $35 each; 3 boxes $32.50 each; 4 boxes $30 each

To order, visit www.immunize.org/shop, or use the order form on page 23.
To receive sample cards, contact us: admininfo@immunize.org

Immunization Techniques: Safe, Effective, Caring — DVD or VHS video (created by the State of California, Immunization Program, 2001)



This 35-minute DVD or VHS video presents practical information on administering intramuscular (IM) and subcutaneous (SC) vaccines to people of all ages. Includes discussion of anatomic sites, needle sizes, vaccines and routes of administration, and much more. Excellent for training new staff and refreshing experienced staff. Comes with presenter notes and a skills checklist. $10.50 for DVD or VHS video.

To order, visit www.immunize.org/shop,
or use the order form on page 23.

Vaccine Highlights

Recommendations, schedules, and more

Editor's note: The information in Vaccine Highlights is current as of April 13, 2010.

Vaccine safety news

On March 12, three Special Masters of the U.S. Court of Federal Claims ruled that thimerosal-containing vaccines do not cause autism. The rulings are part of the Omnibus Autism Proceeding created by the National Vaccine Injury Compensation Program to consolidate the large number of claims that vaccines induce autism. Another ruling last year from the same court declared that the measles-mumps-rubella vaccine, or MMR, in combination with thimerosal-containing vaccines, does not cause autism. To access the three rulings issued on March 12, 2010, go to www.uscfc.uscourts.gov/node/5026.

On Feb. 2, the editors of *The Lancet* published a retraction of the February 1998 paper titled "Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children." The paper, by Andrew Wakefield, MB, BS, FRCS, and 12 other authors, suggested a link between MMR vaccine and autism. To access *The Lancet's* retraction statement, go to http://press.thelancet.com/wakefieldretraction.pdf. To access background information on the sequence of events that led up to the retraction, go to http://briandeer.com/mmr/lancet-retraction.htm.

Influenza vaccine news

On Feb. 24, ACIP voted to expand the recommendations for annual influenza vaccination to include all people ages 6 months and older. The new recommendation is to take effect for the 2010–11 influenza season, at which time providers will find it easy to remember which of their patients to vaccinate—every person age 6 months and older.

On March 2, CDC posted the provisional influenza vaccination recommendations on its website at www.cdc.gov/vaccines/recs/provisional/downloads/flu-vac-mar-2010-508.pdf.

At a press briefing held March 29, U.S. Surgeon General Dr. Regina Benjamin and assistant U.S. Surgeon General Dr. Anne Schuchat reported that the Southeastern U.S. is seeing an increase in H1N1 influenza activity. Three states—Georgia, Alabama, and South Carolina—are reporting regional activity, with the Georgia Department of Community Health reporting an increase in influenza-related hospitalizations. Most hospitalizations have occurred in adults with underlying health conditions that put them at higher risk of severe influenza. Doctors Benjamin and Schuchat remind people that vaccination offers the best protection and that H1N1 vaccine is widely available throughout the United States. To access the transcript of the press briefing, go to www.cdc.gov/media/transcripts/2010/t100329.htm.

Pneumococcal conjugate news

On Feb. 24, FDA licensed PCV13 (Prevnar 13, Wyeth, Pharmaceuticals, a subsidiary of Pfizer) for active immunization to prevent invasive disease caused by *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F.

On March 12, CDC published ACIP's recommendations for use of PCV13. PCV13 will replace PCV7 in the immunization schedule. PCV13 is routinely recommended for all children ages 2–59 months and for children ages 60–71 months with underlying medical conditions that increase their risk for pneumococcal disease or complications. To access the complete ACIP recommendations for PCV13, go to www.cdc.gov/mmwr/PDF/wk/mm5909.pdf and see pages 258–261.

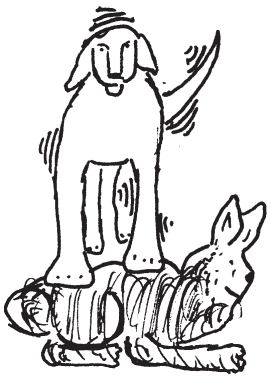
To access the package insert, go to www.fda.gov/downloads/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM201669.pdf.

Rotavirus vaccine news

On March 22, CDC's Health Alert Network issued a Health Advisory notifying healthcare providers about FDA's recommendation to temporarily suspend use of Rotarix rotavirus vaccine (GSK). Earlier, GSK reported to FDA that DNA from porcine circovirus type 1 (PCV1) is present in Rotarix. Because PCV1 is not known to cause disease in humans or animals, FDA does not believe medical follow-up is warranted for children who have been vaccinated with Rotarix. RotaTeq rotavirus vaccine (Merck) is available for rotavirus immunization during the temporary suspension. To read the complete Health Advisory, go to www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00311. To read a Q&A for clinicians on the temporary Rotarix suspension, go to www.cdc.gov/vaccines/vpd-vac/rotavirus/rotarix-providers.htm. For information from FDA, go to www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm205539.htm.

On March 22, the World Health Organization (WHO) issued a press release announcing that WHO does not recommend any change in the use of Rotarix vaccine. The press release said in part, "WHO concurs with the views of the FDA and European Medicines Agency (EMA) that the findings do not present a threat to public health. Moreover, rotaviruses are the most common cause of severe diarrhoeal disease in young children throughout the world, with an estimated 527,000 deaths among children under five years old, most of whom live in low-income countries. Therefore, WHO does not recommend any change to use of the vaccine . . . ." To access the complete press release, go to www.who.int/immunization/newsroom/news_rotavirus_vaccine_use/en.

What do you get when a cold puppy sits on a rabbit?



A chill dog on a bun.

Meningococcal vaccine news

On Feb. 19, FDA approved Menveo (Novartis) quadrivalent meningococcal conjugate vaccine for use in people ages 11 through 55 years to prevent invasive meningococcal disease caused by *Neisseria meningitidis* serogroups A, C, Y, and W-135. To access the package insert, go to www.fda.gov/downloads/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM201349.pdf.

On March 12, CDC published guidance for the use of Menveo, a single dose of which is indicated for all people ages 11–18 years and for people ages 11–55 years who are at increased risk for meningococcal disease. To read the guidance, go to www.cdc.gov/mmwr/preview/mmwrhtml/mm5909a5.htm.

Looking for free educational materials you can copy for patients and staff? Visit the Immunization Action Coalition's website at

www.immunize.org/printmaterials

HPV vaccine news

On March 30, CDC published two interim VISs—one for each of the two human papillomavirus (HPV) vaccines licensed for use in the United States. One VIS is intended for use when administering Gardasil (Merck) and the other when administering Cervarix (GSK). To access the VISs, go to www.immunize.org/vis.

MMR vaccine news

On March 11, CDC's Health Alert Network issued a Health Advisory notifying healthcare providers about an ongoing multi-state mumps outbreak. Hasidic (Jewish) populations in New York and New Jersey are primarily affected. The Health Advisory presents recommendations and resources for providers. To read the HAN advisory, go to www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00310.

Japanese encephalitis news

On March 12, CDC published ACIP recommendations for the use of Japanese encephalitis (JE) vaccine. JE vaccine is recommended for travelers who plan to spend a month or longer in endemic areas during the Japanese encephalitis virus (JEV) transmission season and for laboratory workers with a potential for exposure to infectious JEV. To read the complete recommendations, go to www.cdc.gov/mmwr/pdf/rr/rr5901.pdf.

On March 1, CDC published two VISs—one for each of the two Japanese encephalitis (JE) vaccines licensed for use in the United States. One VIS is intended for use when administering Ixiaro (Intercell Biomedical) and the other when administering JE-VAX (sanofi pasteur). JE-VAX is available only for children age 1 through 16 years. Ixiaro is indicated for people age 17 years and older. To access these VISs, go to www.immunize.org/vis.

Looking for just-published VISs or ACIP vaccine recommendations? Find official documents fast at

www.immunize.org/newreleases

Rabies vaccine news

On March 19, CDC published ACIP recommendations for the use of a reduced (4-dose) vaccination schedule for postexposure prophylaxis (PEP) to prevent human rabies in people previously unvaccinated. The prior recommendation was for a 5-dose series. The first dose of the 4-dose course should be administered as soon as possible after exposure (day 0), with additional doses administered on days 3, 7, and 14 after dose 1. Rabies vaccine is administered intramuscularly. To access the complete recommendations, go to www.cdc.gov/mmwr/pdf/rr/rr5902.pdf.

Anthrax vaccine news

On March 10, CDC issued a revised version of the VIS for anthrax vaccine. It incorporates the new recommendation for the 5-dose routine schedule. To access the VIS, go to www.immunize.org/vis.

Current VISs and dates

The use of most Vaccine Information Statements (VISs) is mandated by federal law. Listed below are the dates of the most current VISs. Check your stock of VISs against this list. If you have outdated VISs, print current ones from IAC's website at www.immunize.org/vis. You'll find VISs in more than 30 languages.

DTaP/DT/DTP.... 5/17/07	Meningococcal... 1/28/08
Hepatitis A..... 3/21/06	MMR 3/13/08
Hepatitis B 7/18/07	PCV 12/9/08
Hib 12/16/98	PPSV 10/6/09
HPV (Cervarix)... 3/30/10	Polio 1/1/00
HPV (Gardasil).... 3/30/10	Rabies 10/6/09
H1N1 (inactivated)... 10/2/09	Rotavirus..... 8/28/08
H1N1 (LAIV)..... 10/2/09	Shingles 10/6/09
Influenza (LAIV)...8/11/09	Td/Tdap 11/18/08
Influenza (TIV) 8/11/09	Typhoid 5/19/04
Japanese encephalitis	Varicella 3/13/08
Ixiaro.....3/1/10	Yellow fever 11/9/04
JE VAX.....3/1/10	

Multi-vaccine VIS.....9/18/08
(for 6 vaccines given to infants/children: DTaP, IPV, Hib, HepB, PCV, RV)

Honoring Healthcare Institutions with Stellar Influenza Vaccination Policies

IAC instituted its Honor Roll for Patient Safety to recognize forward-looking hospitals, professional societies, and government entities that have taken a stand for patient safety by strengthening mandatory influenza vaccination policies for healthcare workers. To date, more than 50 organizations have qualified.

To qualify, an organization must require influenza vaccination for employees, and its mandate must include serious measures to prevent transmission of influenza from unvaccinated workers to patients. Such measures might include a mask requirement, reassignment to non-patient-care duties, or dismissal of the employee.

Noted honorees include the Infectious Diseases Society of America, Children's Hospital of Philadelphia, Barnes Jewish Corporation Healthcare, and Johns Hopkins Health System.

To read about the policies of the organizations that are included, or to apply for the Honor Roll for Patient Safety, go to

www.immunize.org/laws/influenzahcw.asp

Summary of Recommendations for Childhood and Adolescent Immunization (Page 1 of 4)

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hepatitis B (HepB) *Give IM*	• Vaccinate all children age 0 through 18yrs. • Vaccinate all newborns with monovalent vaccine prior to hospital discharge. Give dose #2 at age 1–2m and the final dose at age 6–18m (the last dose in the infant series should not be given earlier than age 24wks). After the birth dose, the series may be completed using 2 doses of single-antigen vaccine or up to 3 doses of Comvax (ages 2m, 4m, 12–15m) or Pediarix (ages 2m, 4m, 6m), which may result in giving a total of 4 doses of hepatitis B vaccine. • **If mother is HBsAg-positive:** give the newborn HBIG + dose #1 within 12hrs of birth; complete series at age 6m or, if using Comvax, at age 12–15m. • **If mother's HBsAg status is unknown:** give the newborn dose #1 within 12hrs of birth. If mother is subsequently found to be HBsAg positive, give infant HBIG within 7d of birth and follow the schedule for infants born to HBsAg-positive mothers.	• 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 (e.g., 0-, 2-, 4m; 0-, 1-, 4m). **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 either Engerix-B or Recombivax HB. **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.) **For preterm infants:** Consult ACIP hepatitis B recommendations (*MMWR* 2005; 54 [RR-16]).*	**Contraindication** Previous anaphylaxis to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness.
DTaP, DT (Diphtheria, tetanus, acellular pertussis) *Give IM*	• Give to children at ages 2m, 4m, 6m, 15–18m, 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 and the child is unlikely to return at age 15–18m. • Do not give DTaP/DT to children age 7yrs and older. • If possible, use the same DTaP product for all doses.	• #2 and #3 may be given 4wks after previous dose. • #4 may be given 6m after #3. • If #4 is given before 4th birthday, wait at least 6m for #5 (age 4–6yrs). • If #4 is given after 4th birthday, #5 is not needed.	**Contraindications** • Previous anaphylaxis to this vaccine or to any of its components. • For DTaP/Tdap only: encephalopathy within 7d after DTP/DTaP. **Precautions** • Moderate or severe acute illness. • History of Arthus reaction following a prior dose of tetanus- and/or diphtheria-toxoid-containing vaccine, including MCV4. • Guillain-Barré syndrome (GBS) within 6wks after previous dose of tetanus-toxoid-containing vaccine. • For DTaP only: Any of these events following a previous dose of DTP/DTaP: 1) temperature of 105°F (40.5°C) or higher within 48hrs; 2) continuous crying for 3hrs or more within 48hrs; 3) collapse or shock-like state within 48hrs; 4) convulsion with or without fever within 3d. • For DTaP/Tdap only: Unstable neurologic disorder. • For Td in teens: Progressive neurologic disorder. **Note:** Tdap may be given to pregnant women at the provider's discretion.
Td, Tdap (Tetanus, diphtheria, acellular pertussis) *Give IM*	• Give 1-time Tdap dose to adolescents age 11–12yrs if 5yrs have elapsed since last dose DTaP; then boost every 10yrs with Td. • Give 1-time dose of Tdap to all adolescents who have not received previous Tdap. Special efforts should be made to give Tdap to people age 11yrs and older who are 1) in contact with infants younger than age 12m and 2) healthcare workers with direct patient contact. • In pregnancy, when indicated, give Td or Tdap in 2nd or 3rd trimester. If not administered during pregnancy, give Tdap in immediate postpartum period.	• If never vaccinated with tetanus- and diphtheria-containing vaccine: give Td dose #1 now, dose #2 4wks later, and dose #3 6m after #2, then give booster every 10yrs. A 1-time Tdap may be substituted for any dose in the series, preferably as dose #1. If previously received Td booster, an interval of 2yrs or less between Td and Tdap may be used.	
Polio (IPV) *Give SC or IM*	• 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).	• The final dose should be given on or after the 4th birthday and at least 6m from the previous dose. • If dose #3 is given after 4th birthday, dose #4 is not needed if dose #3 is given at least 6m after dose #2.	**Contraindication** Previous anaphylaxis to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.

*This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of the recommendations, call the CDC-INFO Contact Center at (800) 232-4636; visit CDC's website at www.cdc.gov/vaccines/pubs/ACIP-list.htm; or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip. This table is revised periodically. Visit IAC's website at www.immunize.org/childrules to make sure you have the most current version.

Technical content reviewed by the Centers for Disease Control and Prevention, April 2010.

www.immunize.org/catg.d/p2010.pdf • Item #P2010 (4/10)

Summary of Recommendations for Childhood and Adolescent Immunization

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Seasonal Influenza Trivalent inactivated influenza vaccine (TIV) *Give IM* Live attenuated influenza vaccine (LAIV) *Give intranasally*	• Vaccinate all children and teens age 6m through 18yrs. • LAIV may be given to healthy, non-pregnant people age 2–49yrs. • Give 2 doses to first-time vaccinees age 6m through 8yrs, spaced 4wks apart. • For TIV, give 0.25 mL dose to children age 6–35m and 0.5 mL dose if age 3yrs and older.		**Contraindications** • Previous anaphylaxis to this vaccine, to any of its components, or to eggs. • For LAIV only: age younger than 2yrs; pregnancy; chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematologic, or metabolic (including diabetes) disorders; immunosuppression (including that caused by medications or HIV); for children and teens ages 6m through 18yrs, current long-term aspirin therapy; for children age 2 through 4yrs, wheezing or asthma within the past 12m, per healthcare provider statement. **Precautions** • Moderate or severe acute illness. • History of Guillain-Barré syndrome (GBS) within 6wks of a previous influenza vaccination. • For LAIV only: - Close contact with an immunosuppressed person when the person requires protective isolation. - Receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48hrs before vaccination. Avoid use of these antiviral drugs for 14d after vaccination.
Varicella (Var) (Chickenpox) *Give SC*	• Give dose #1 at age 12–15m. • Give dose #2 at age 4–6yrs. Dose #2 may be given earlier if at least 3m since dose #1. • Give a 2nd dose to all older children and adolescents with history of only 1 dose. • MMRV may be used in children age 12m through 12yrs. • MMRV generally is preferred over separate injections of its separate components in children receiving their first dose at ages 4 through 12yrs or their second dose at any age through 12yrs.	• 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 MMR, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart.	**Contraindications** • Previous anaphylaxis to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Children on high-dose immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired cellular immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte percentages are either 15% or greater in children ages 1 through 8yrs or 200 cells/μL or greater in children age 9yrs and older). **Precautions** • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP statement *General Recommendations on Immunization** 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. • For MMRV only, personal or family (i.e., sibling or parent) history of seizures. **Note:** For patients with humoral immunodeficiency or leukemia, see ACIP recommendations*.
MMR (Measles, mumps, rubella) *Give SC*	• Give dose #1 at age 12–15m. • Give dose #2 at age 4–6yrs. Dose #2 may be given earlier if at least 4wks 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. • MMRV generally is preferred over separate injections of its separate components in children receiving their first dose at ages 4 though 12yrs or their second dose at any age through 12yrs.	• If MMR and either Var, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart. • When using MMR for both doses, minimum interval is 4wks. • When using MMRV for both doses, minimum interval is 3m. • Within 72hrs of measles exposure, give 1 dose of MMR as postexposure prophylaxis to susceptible healthy children age 12m and older.	**Contraindications** • Previous 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). Note: HIV infection is NOT a contraindication to MMR for children who are not severely immunocompromised (consult ACIP MMR recommendations [*MMWR* 1998;47 [RR-8] for details*). **Precautions** • Moderate or severe acute illness. • If blood, plasma, or immune globulin given in past 11m, see ACIP statement *General Recommendations on Immunization** 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. **Note:** MMR is not contraindicated if a TST (tuberculosis skin test) was recently applied. If TST and MMR are not given on same day, delay TST for at least 4wks after MMR.

Summary of Recommendations for Childhood and Adolescent Immunization

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Hib (*Haemophilus influenzae* type b) *Give IM*	• ActHib (PRP-T): give at age 2m, 4m, 6m, 12–15m (booster dose). • PedvaxHIB or Comvax (containing PRP-OMP): give at age 2m, 4m, 12–15m (booster dose). • Dose #1 of Hib vaccine should not be given earlier than age 6wks. • The last dose (booster dose) is given 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 are necessary to complete the primary series in infants. • Any Hib vaccine may be used for the booster dose. • Hib is not routinely given to children age 5yrs and older. • Hiberix is approved ONLY for the booster dose at age 15m through 4yrs.	**All Hib vaccines:** • If #1 was given at 12–14m, give booster in 8wks. • Give only 1 dose to unvaccinated children ages 15 through 59m. **ActHib:** • #2 and #3 may be given 4wks after previous dose. • If #1 was given at age 7–11m, only 3 doses are needed; #2 is given 4–8wks after #1, then boost at age 12–15m (wait at least 8wks after dose #2). **PedvaxHIB and Comvax:** • #2 may be given 4wks after dose #1.	**Contraindications** • Previous anaphylaxis to this vaccine or to any of its components. • Age younger than 6wks. **Precaution** Moderate or severe acute illness.
Pneumococcal conjugate (PCV13) *Give IM*	As soon as feasible, replace existing stock of PCV7 with PCV13. • Give at ages 2m, 4m, 6m, 12–15m. • Dose #1 may be given as early as age 6wks. • When children are behind on PCV schedule, minimum interval for doses given to children younger than age 12m is 4wks; for doses given at 12m and older is 8wks. • Give 1 dose to unvaccinated healthy children age 24–59m. • For high-risk** children ages 24–71m: Give 2 doses at least 8wks apart if they previously received fewer than 3 doses; give 1 dose at least 8wks after the most recent dose if they previously received 3 doses. • PCV13 is not routinely given to healthy children age 5yrs and older.	• For minimum intervals, see bullet #3 at left. • For age 7–11m: If history of 0 doses, give 2 doses 4wks apart, with a 3rd dose at age 12–15m; if history of 1 or 2 doses, give 1 dose with a 2nd dose at age 12–15m. • For age 12–23m: If unvaccinated or history of 1 dose before age 12m, give 2 doses 8wks apart; if history of 1 dose at or after age 12m or 2 or 3 doses before age 12m, give 1 dose at least 8wks after most recent dose. • For age 24–59m and healthy: If unvaccinated or any incomplete schedule or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 dose at least 8wks after the most recent dose. • For age 24–71m and at high risk**: If unvaccinated or any incomplete schedule of 1 or 2 doses, give 2 doses, 1 at least 8wks after the most recent dose and another dose at least 8wks later; if any incomplete series of 3 doses, or if 4 doses of PCV7 or any other age-appropriate complete PCV7 schedule, give 1 dose 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, consider giving 1 dose of PCV13 regardless of previous history of PCV7 or PPSV.	**Contraindication** Previous anaphylaxis to a PCV vaccine, to any of its components, or to any diphtheria toxoid-containing vaccine. **Precaution** Moderate or severe acute illness.
Pneumococcal polysaccharide (PPSV) *Give IM or SC*	****High-risk:** 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; or who have or will have a cochlear implant. • Give 1 dose at least 8wks after final dose of PCV to high-risk children age 2yrs and older. • For children who are immunocompromised or have sickle cell disease or functional or anatomic asplenia, give a 2nd dose of PPSV 5yrs after previous PPSV (consult ACIP PPSV recommendations at www.cdc.gov/vaccines/pubs/ACIP-list.htm*).		**Contraindication** Previous anaphylaxis to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness.

Summary of Recommendations for Childhood and Adolescent Immunization

Vaccine name and route	Schedule for routine vaccination and other guidelines (any vaccine can be given with another)	Schedule for catch-up vaccination and related issues	Contraindications and precautions (mild illness is not a contraindication)
Rotavirus (RV) *Give orally*	• Rotarix (RV1): give at age 2m, 4m. • RotaTeq (RV5): give at age 2m, 4m, 6m. • May give dose #1 as early as age 6wks. • Give final dose no later than age 8m 0 days.	• Do not begin series in infants older than age 15wks 0 days. • 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.	**Contraindication** Previous anaphylaxis to this vaccine or to any of its components. If allergy to latex, use RV5. **Precautions** • Moderate or severe acute illness. • Altered immunocompetence. • Moderate to severe acute gastroenteritis or chronic pre-existing gastrointestinal disease. • History of intussusception.
Hepatitis A (HepA) *Give IM*	• Give 2 doses spaced 6m apart to all children at age 1yr (12–23m). • Vaccinate all previously unvaccinated children and adolescents age 2yrs and older who - Want to be protected from HAV infection. - Live in areas where vaccination programs target older children. - Travel anywhere except U.S., W. Europe, N. Zealand, Australia, Canada, or Japan. - Have chronic liver disease, clotting factor disorder, or are adolescent males who have sex with other males. - Are users of illicit drugs (injectable or non-injectable). - Anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60 days following the adoptee's arrival in the U.S.	• Minimum interval between doses is 6m. • Children who are not fully vaccinated by age 2yrs can be vaccinated at subsequent visits. • Consider routine vaccination of children age 2yrs and older in areas with no existing program. • Give 1 dose as postexposure prophylaxis to incompletely vaccinated children age 12m and older who have recently (during the past 2wks) been exposed to hepatitis A virus.	**Contraindication** Previous anaphylaxis to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.
Meningococcal conjugate (MCV4) Menactra (ages 2–55yrs) Menveo (ages 11–55yrs) *Give IM* —— **Meningococcal polysaccharide** (MPSV4) *Give SC*	• Give 1-time dose of MCV4 to adolescents age 11 through 18yrs. • Vaccinate all college freshmen living in dorms who have not been vaccinated. • Vaccinate all children age 2yrs and older who have any of the following risk factors: - Anatomic or functional asplenia, or persistent complement component deficiency. - Travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of Sub-Saharan Africa). - Military recruits **Note:** Use MPSV4 ONLY if there is a permanent contraindication or precaution to MCV4.	If previously vaccinated with MPSV4 or MCV4 and risk of meningococcal disease persists, revaccinate with Menactra in 3yrs (if first dose given at age 2 through 6yrs) or revaccinate with either brand of MCV4 after 5yrs (if previous dose given at age 7yrs or older). If the only risk factor is living in a campus dormitory, there is no need to give a 2nd dose if previous dose was MCV4.	**Contraindication** Previous anaphylaxis to any any meningococcal vaccine or to any of its components, including diphtheria toxoid (for MCV4). **Precautions** • Moderate or severe acute illness. • For MCV4 only: history of Guillain-Barré syndrome (if not at extremely high risk for meningococcal disease). • In pregnancy, studies of vaccination with MPSV4 have not documented adverse effects so may use MPSV4 if indicated. No data are available on the safety of MCV4 during pregnancy.
Human papillomavirus HPV (HPV2, Cervarix) (HPV4, Gardasil) *Give IM*	• Give 3-dose series to girls at age 11–12yrs on a 0, 1–2, 6m schedule. (May be given as early as age 9yrs.) • Vaccinate all older girls and women (through age 26yrs) who were not previously vaccinated. • Consider giving HPV4 to males age 9 through 26yrs to reduce their likelihood of acquiring genital warts.	Minimum intervals between doses: 4wks between #1 and #2; 12 wks between #2 and #3. Overall, there must be at least 24wks between doses #1 and #3. If possible, use the same vaccine product for all doses.	**Contraindication** Previous anaphylaxis to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.

Summary of Recommendations for Adult Immunization

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
Seasonal Influenza Trivalent inactivated influenza vaccine (TIV) *Give IM* — Live attenuated influenza vaccine (LAIV) *Give intranasally*	• Beginning with the 2010–11 influenza season, vaccination is recommended for all adults. (This includes healthy adults ages 19–49yrs without risk factors.) • LAIV is only approved for healthy nonpregnant people age 2–49yrs. **Note:** LAIV may not be given to some adults; see contraindications and precautions listed in far right column.	• Give 1 dose every year in the fall or winter. • Begin vaccination services as soon as vaccine is available and continue until the supply is depleted. • Continue to give vaccine to unvaccinated adults throughout the influenza season (including when influenza activity is present in the community) and at other times when the risk of influenza exists. • If 2 or more of the following live virus vaccines are to be given—LAIV, MMR, Var, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d.	**Contraindications** • Previous anaphylactic reaction to this vaccine, to any of its components, or to eggs. • For LAIV only: pregnancy; chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, neurological/neuromuscular, hematologic, or metabolic (including diabetes) disorders; immunosuppression (including that caused by medications or HIV). **Precautions** • Moderate or severe acute illness. • History of Guillain-Barré syndrome (GBS) within 6wks following previous influenza vaccination. • For LAIV only: close contact with an immunosuppressed person when the person requires protective isolation. • For LAIV only: receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48hrs before vaccination. Avoid use of these antiviral drugs for 14d after vaccination.
Pneumococcal polysaccharide (PPSV) *Give IM or SC*	• People age 65yrs and older. • People younger than age 65yrs who have chronic illness or other risk factors, including chronic cardiac or pulmonary disease (including asthma), chronic liver disease, alcoholism, diabetes, CSF leaks, cigarette smoking, as well as people living in special environments or social settings (including American Indian/Alaska Natives age 50 through 64yrs if recommended by local public health authorities). • Those at highest risk of fatal pneumococcal infection, including people who - Have anatomic or functional asplenia, including sickle cell disease. - Have an immunocompromising condition, including HIV infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome. - Are receiving immunosuppressive chemotherapy (including corticosteroids). - Have received an organ or bone marrow transplant. - Are candidates for or recipients of cochlear implants.	• Give 1 dose if unvaccinated or if previous vaccination history is unknown. • Give a 1-time revaccination 5yrs or more after 1st dose to people - Age 65yrs and older if the 1st dose was given prior to age 65yrs - At highest risk of fatal pneumococcal infection or rapid antibody loss (see the 3rd bullet in the box to left for listings of people at highest risk).	**Contraindication** Previous anaphylactic reaction to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness.

*This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, call the CDC-INFO Contact Center at (800) 232-4636; visit CDC's website at www.cdc.gov/vaccines/pubs/ACIP-list.htm; or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip. This table is revised periodically. Visit IAC's website at www.immunize.org/adultrules to make sure you have the most current version.

Technical content reviewed by the Centers for Disease Control and Prevention, April 2010.

www.immunize.org/catg.d/p2011.pdf • Item #P2011 (4/10)

Summary of Recommendations for Adult Immunization (continued)

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
MMR (Measles, mumps, rubella) *Give SC*	• People born in 1957 or later (especially those born outside the U.S.) should receive at least 1 dose of MMR if there is no laboratory evidence of immunity or documentation of a dose given on or after the first birthday. • People in high-risk groups, such as healthcare personnel (paid, unpaid, or volunteer), students entering college and other post–high school educational institutions, and international travelers, should receive a total of 2 doses. • People born before 1957 are usually considered immune, but evidence of immunity (serology or documented history of 2 doses of MMR) should be considered for healthcare personnel. • Women of childbearing age who do not have acceptable evidence of rubella immunity or vaccination.	• Give 1 or 2 doses (see criteria in 1st and 2nd bullets in box to left). • If dose #2 is recommended, give it no sooner than 4wks after dose #1. • If a pregnant woman is found to be rubella susceptible, give 1 dose of MMR postpartum. • If 2 or more of the following live virus vaccines are to be given—LAIV, MMR, Var, Zos, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d. • Within 72hrs of measles exposure, give 1 dose as postexposure prophylaxis to susceptible adults. **Note:** Routine post-vaccination serologic testing is not recommended.	**Contraindications** • Previous anaphylactic reaction 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). **Note:** HIV infection is NOT a contraindication to MMR for those who are not severely immunocompromised (i.e., CD4+ T-lymphocyte counts are greater than or equal to 200 cells/µL). **Precautions** • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin were given in past 11m, see ACIP statement *General Recommendations on Immunization** regarding time to wait before vaccinating. • History of thrombocytopenia or thrombocytopenic purpura. **Note:** If TST (tuberculosis skin test) and MMR are both needed but not given on same day, delay TST for 4–6wks after MMR.
Varicella (chickenpox) (Var) *Give SC*	• All adults without evidence of immunity. **Note:** Evidence of immunity is defined as written documentation of 2 doses of varicella vaccine; a history of varicella disease or herpes zoster (shingles) based on healthcare-provider diagnosis; laboratory evidence of immunity; and/or birth in the U.S. before 1980, with the exceptions that follow. - Healthcare personnel (HCP) born in the U.S. before 1980 who do not meet any of the criteria above should be tested or given the 2-dose vaccine series. If testing indicates they are not immune, give the 1st dose of varicella vaccine immediately. Give the 2nd dose 4–8 wks later. - Pregnant women born in the U.S. before 1980 who do not meet any of the criteria above should either 1) be tested for susceptibility during pregnancy and if found susceptible, given the 1st dose of varicella vaccine postpartum before hospital discharge, or 2) not be tested for susceptibility and given the 1st dose of varicella vaccine postpartum before hospital discharge. Give the 2nd dose 4-8wks later.	• Give 2 doses. • Dose #2 is given 4–8wks after dose #1. • If dose #2 is delayed, do not repeat dose #1. Just give dose #2. • If 2 or more of the following live virus vaccines are to be given—LAIV, MMR, Var, Zos, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d. • May use as postexposure prophylaxis if given within 5d. **Note:** Routine post-vaccination serologic testing is not recommended.	**Contraindications** • Previous anaphylactic reaction to this vaccine or to any of its components. • Pregnancy or possibility of pregnancy within 4wks. • Persons on high-dose immunosuppressive therapy or who are immunocompromised because of malignancy and primary or acquired cellular immunodeficiency, including HIV/AIDS (although vaccination may be considered if CD4+ T-lymphocyte counts are greater than or equal to 200 cells/µL. See *MMWR* 2007;56,RR-4). **Precautions** • Moderate or severe acute illness. • If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP statement *General Recommendations on Immunization** 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.

Summary of Recommendations for Adult Immunization (continued)

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
Td, Tdap (Tetanus, diphtheria, pertussis) *Give IM*	• All adults who lack written documentation of a primary series consisting of at least 3 doses of tetanus- and diphtheria-toxoid-containing vaccine. • A booster dose of tetanus- and diphtheria-toxoid-containing vaccine may be needed for wound management as early as 5yrs after receiving a previous dose, so consult ACIP recommendations.* • Using tetanus toxoid (TT) instead of Td or Tdap is not recommended. • In pregnancy, when indicated, give Td or Tdap in 2nd or 3rd trimester. If not administered during pregnancy, give Tdap in immediate postpartum period. **For Tdap only:** • All adults younger than age 65yrs who have not already received Tdap. • Adults in contact with infants younger than age 12m (e.g., parents, grandparents younger than age 65yrs, childcare providers, healthcare personnel) who have not received a dose of Tdap should be prioritized for vaccination. • Healthcare personnel who work in hospitals or ambulatory care settings and have direct patient contact and who have not received Tdap.	• For people who are unvaccinated or behind, complete the primary series with Td (spaced at 0, 1–2m, 6–12m intervals). A one-time dose of Tdap may be used for any dose if younger than age 65yrs. • Give Td booster every 10yrs after the primary series has been completed. For adults younger than age 65yrs, a 1-time dose of Tdap is recommended to replace the next Td. • Intervals of 2yrs or less between Td and Tdap may be used.	**Contraindications** • Previous anaphylactic reaction to this vaccine or to any of its components. • For Tdap only, history of encephalopathy within 7d following DTP/DTaP. **Precautions** • Moderate or severe acute illness. • Guillain-Barré syndrome within 6wks following previous dose of tetanus-toxoid-containing vaccine. • Unstable neurologic condition. • History of Arthus reaction following a previous dose of tetanus- and/or diphtheria-toxoid-containing vaccine, including MCV4. **Note:** Tdap may be given to pregnant women at the provider's discretion.
Hepatitis A (HepA) *Give IM* Brands may be used interchangeably.	• All people who want to be protected from hepatitis A virus (HAV) infection. • People who travel or work anywhere EXCEPT the U.S., Western Europe, New Zealand, Australia, Canada, and Japan. • People with chronic liver disease; injecting and non-injecting drug users; men who have sex with men; people who receive clotting-factor concentrates; people who work with HAV in experimental lab settings; food handlers when health authorities or private employers determine vaccination to be appropriate. • People who anticipate close personal contact with an international adoptee from a country of high or intermediate endemicity during the first 60 days following the adoptee's arrival in the U.S. • Adults age 40yrs or younger with recent (within 2 wks) exposure to HAV. For people older than age 40yrs with recent (within 2 wks) exposure to HAV, immune globulin is preferred over HepA vaccine.	• Give 2 doses. • The minimum interval between doses #1 and #2 is 6m. • If dose #2 is delayed, do not repeat dose #1. Just give dose #2. For Twinrix (hepatitis A and B combination vaccine [GSK]) for patients age 18yrs and older only: give 3 doses on a 0, 1, 6m schedule. There must be at least 4wks between doses #1 and #2, and at least 5m between doses #2 and #3. An alternative schedule can also be used at 0, 7d, 21–30d, and a booster at 12m.	**Contraindication** Previous anaphylactic reaction to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Safety during pregnancy has not been determined, so benefits must be weighed against potential risk.
Hepatitis B (HepB) *Give IM* Brands may be used interchangeably.	• All people through age 18yrs. • All adults who want to be protected from hepatitis B virus infection. • High-risk people, including household contacts and sex partners of HBsAg-positive people; injecting drug users; sexually active people not in a long-term, mutually monogamous relationship; men who have sex with men; people with HIV; persons seeking evaluation or treatment for an STD; patients receiving hemodialysis and patients with renal disease that may result in dialysis; healthcare personnel and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities; and certain international travelers. • People with chronic liver disease. **Note:** Provide serologic screening for immigrants from endemic areas. If patient is chronically infected, assure appropriate disease management. For sex partners and household contacts of HBsAg-positive people, provide serologic screening and administer initial dose of HepB vaccine at same visit.	Give 3 doses on a 0, 1, 6m schedule. • Alternative timing options for vaccination include 0, 2, 4m and 0, 1, 4m. • There must be at least 4wks between doses #1 and #2, and at least 8wks between doses #2 and #3. Overall, there must be at least 16wks between doses #1 and #3. • **Schedule for those who have fallen behind:** If the series is delayed between doses, DO NOT start the series over. Continue from where you left off.	**Contraindication** Previous anaphylactic reaction to this vaccine or to any of its components. **Precaution** Moderate or severe acute illness.

Summary of Recommendations for Adult Immunization (continued)

Vaccine name and route	For whom vaccination is recommended	Schedule for vaccine administration (any vaccine can be given with another)	Contraindications and precautions (mild illness is not a contraindication)
Human papillomavirus (HPV) (HPV2, Cervarix) (HPV4, Gardasil) *Give IM*	• All previously unvaccinated women through age 26yrs. • Consider giving HPV4 to men through age 26yrs to reduce their likelihood of acquiring genital warts.	• Give 3 doses on a 0, 2, 6m schedule. • There must be at least 4wks between doses #1 and #2 and at least 12wks between doses #2 and #3. Overall, there must be at least 24wks between doses #1 and #3. If possible, use the same vaccine product for all three doses.	**Contraindication** Previous anaphylactic reaction to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Data on vaccination in pregnancy are limited. Vaccination should be delayed until after completion of the pregnancy.
Zoster (shingles) (Zos) *Give SC*	• People age 60yrs and older.	• Give 1-time dose if unvaccinated, regardless of previous history of herpes zoster (shingles) or chickenpox. • If 2 or more of the following live virus vaccines are to be given—MMR, Zos, and/or yellow fever—they should be given on the same day. If they are not, space them by at least 28d.	**Contraindications** • Previous anaphylactic reaction to any component of zoster vaccine. • Primary cellular or acquired immunodeficiency. • Pregnancy. **Precautions** • Moderate or severe acute illness. • 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.
Meningococcal conjugate vaccine (MCV4) Menactra, Menveo *Give IM* ——— **Meningococcal** polysaccharide vaccine (MPSV4) *Give SC*	• All people age 11 through 18yrs. • Unvaccinated college freshmen who live in dormitories. • People with anatomic or functional asplenia or persistent complement component deficiency. • People who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of Sub-Saharan Africa). • Microbiologists routinely exposed to isolates of *N. meningitidis.* • Military recruits	• Give 1 dose. • MCV4 is preferred over MPSV4 for people age 55yrs and younger; use MPSV4 ONLY if age 56yrs or older or if there is a permanent contraindication/precaution to MCV4. • If previous vaccine was MCV4 or MPSV4, revaccinate after 5yrs if risk continues. • If the only risk factor is living in a campus dormitory, there is no need to give a 2nd dose if previous dose was MCV4.	**Contraindication** Previous anaphylactic reaction to this vaccine or to any of its components, including diphtheria toxoid (for MCV4). **Precautions** • Moderate or severe acute illness. • For MCV4 only, history of Guillain-Barré syndrome (if not at extremely high risk for meningococcal disease). • In pregnancy, studies of vaccination with MPSV4 have not documented adverse effects so may use MPSV4, if indicated. No data are available on the safety of MCV4 during pregnancy.
Polio (IPV) *Give IM or SC*	• Not routinely recommended for U.S. residents age 18yrs and older. **Note:** Adults living in the U.S. who never received or completed a primary series of polio vaccine need not be vaccinated unless they intend to travel to areas where exposure to wild-type virus is likely. Previously vaccinated adults can receive 1 booster dose if traveling to polio endemic areas or to areas where the risk of exposure is high.	• Refer to ACIP recommendations* regarding unique situations, schedules, and dosing information.	**Contraindication** Previous anaphylactic reaction to this vaccine or to any of its components. **Precautions** • Moderate or severe acute illness. • Pregnancy.

Last updated October 2009

Talking with Parents about Vaccines for Infants

Physicians, nurses, and parents agree: times have changed.

Because of questions or concerns about vaccines, well-child visits can be stressful for parents. As their infant's healthcare provider, you remain parents' most trusted source of information about vaccines, and your personal relationship uniquely qualifies you to help support parents in understanding and choosing vaccinations.

However, time for infant health evaluation at each well visit is at a premium, as you check physical, cognitive, and other milestones and advise parents on what to expect in the coming months. Therefore, making time to talk about vaccines may be stressful for *you*. But when an infant is due to receive vaccines, nothing is more important than making the time to assess the parents' information needs as well as the role they desire to play in making decisions for their child's health, and then following up with communication that meets their needs.

When it comes to communication, you may find that similar information—be it science or anecdote or some mix of the two—works for most parents you see. But keep a watchful eye to be sure that you are connecting with each parent to maintain trust and keep lines of communication open.

We hope that these brief reminders—and the materials that you, your staff, and parents can find on our website—will help ensure your continued success in immunizing infants and children. Success may mean that all vaccines are accepted when you recommend them, or that some vaccines are scheduled for another day. If a parent refuses to vaccinate, success may simply mean keeping the door open for future discussions about choosing vaccination.

THIS RESOURCE COVERS:

- What you may hear from parents about their vaccine safety questions and how to effectively address them when raised
- Proven communication strategies and tips for having a successful vaccine conversation with parents

Nurses and other office staff can play a key role in establishing and maintaining a practice-wide commitment to communicating effectively about vaccines and maintaining high vaccination rates, from providing parents with educational materials, to being available to answer their questions, to making sure that families who may opt for extra visits for vaccines make and keep vaccine appointments.

Source: www.cdc.gov/vaccines/spec-grps/hcp/downloads/talk-infants-bw-office.pdf
Distributed by Immunization Action Coalition • www.immunize.org

What You May Hear From Parents

As you plan for responding to parents' concerns, it may be useful to think of parental questions in the following categories.

Questions about whether vaccines cause autism

Parents may encounter poorly designed and conducted studies, misleading summaries of well-conducted studies, or anecdotes made to look like science—claiming that vaccines cause autism. Many rigorous studies show that there is no link between MMR vaccine or thimerosal and autism. Visit www.cdc.gov/vaccines/hcp for more information to help you answer parents' questions on these two issues. If parents raise other possible hypotheses linking vaccines to autism, four items are key: (1) patient and empathetic reassurance that you understand that their infant's health is their top priority, and it also is your top priority, so putting children at risk of vaccine-preventable diseases without scientific evidence of a link between vaccines and autism is a risk you are not willing to take; (2) your knowledge that the onset of regressive autism symptoms often coincides with the timing of vaccines but is not caused by vaccines; (3) your personal and professional opinion that vaccines are very safe; and (4) your reminder that vaccine-preventable diseases, which may cause serious complications and even death, remain a threat.

"All those people who say that the MMR vaccine causes autism must be on to something."

"Autism is a burden for many families and people want answers—including me. But well designed and conducted studies that I can share with you show that MMR vaccine is not a cause of autism."

Questions about whether vaccines are more dangerous for infants than the diseases they prevent

Today, parents may not have seen a case of a vaccine-preventable disease firsthand. Therefore, they may wonder if vaccines are really necessary, and they may believe that the risks of vaccinating infants outweigh the benefits of protecting them from infection with vaccine-preventable diseases. Visit www.cdc.gov/vaccines/hcp for up-to-date information on diseases and the vaccines that prevent them that you can share with parents. You may be able to provide information from your own experience about the seriousness of the diseases, the fact that cases and outbreaks of vaccine-preventable diseases are occurring now in the U.S., and that even when diseases are eliminated in the U.S., they can make a rapid return in children and adults who are not immunized if travelers bring the diseases into the U.S. You also can remind parents about ongoing efforts to ensure the safety of vaccines, including the large-scale reporting system, Vaccine Adverse Event Reporting System (www.vaers.hhs.gov), used to alert FDA and CDC to any possible problems with a vaccine so that they can be studied in more detail.

"I'm really not comfortable with my 2-month-old getting so many vaccines at once."

"There's no proven danger, but if you're very uncomfortable, we can give some vaccines today and schedule you to come back in two weeks for the rest, but this is not recommended. Remember, any time you delay a vaccine, you leave your baby vulnerable to disease. It's really best to stay on schedule."

Questions about the number of vaccines and vaccine ingredients

Some parents may have a general concern that there are too many vaccines. AAP's fact sheet *The Childhood Immunization Schedule: Why Is It Like That?* (www.cispimmunize.org/pro/pdf/Vaccineschedule.pdf) may be useful for those parents, as well as for parents who have specific questions. Some parents may be able to specify their concerns: whether each vaccine is needed, whether giving several vaccines at one time can cause harm, whether vaccine ingredients are harmful, or how well each vaccine works. For these parents, you can specifically reinforce the seriousness of the diseases prevented by vaccines, and share your knowledge that no evidence suggests that a healthy child's immune system will be damaged or overwhelmed by receiving several vaccines at one time. The AAP's *Questions and Answers about Vaccine Ingredients* (www.cispimmunize.org/pro/pdf/Vaccineingredients.pdf) can help you counter myths that have circulated about vaccine ingredients. Finally, you may need to share with some parents that not only should each vaccine series be started on time to protect infants and children as soon as possible, but each multi-dose series must be completed to provide full protection. With respect to timing and spacing of vaccines, the childhood vaccine schedule is designed to provide protection at the earliest possible time against serious diseases that may affect infants early in life.

"What are all these vaccines for? Are they really necessary?"

"I know you didn't get all these vaccines when you were a baby. Neither did I. But we were both at risk of serious diseases like Hib and pneumococcal meningitis. Today, we're lucky to be able to protect our babies from so many serious diseases with vaccines."

Questions about known side effects

It is reasonable for parents to be concerned about the possible reactions or side effects listed on the Vaccine Information Statements, especially fever, redness where a shot was given, or fussiness that their child may experience following vaccination. Remind parents to watch for the possible side effects and provide information on how they should treat them and how they can contact you if they observe something they are concerned about. To reinforce how rare serious side effects really are, share your own experience, if any, with seeing a serious side effect from a vaccine.

"I'm worried about the side effects of vaccines. I don't want my child to get any vaccines today."

"I'll worry if your child *doesn't* get vaccines today, because the diseases can be very dangerous—most, including Hib, pertussis, and measles, are still infecting children in the U.S. We can look at the Vaccine Information Statements together and talk about how rare vaccine side effects are."

Questions about unknown serious adverse events

Parents who look for information about vaccine safety will likely encounter suggestions about as-yet-unknown serious adverse events from vaccines. It is not unreasonable that parents find this alarming. You can share what the world was like for children before there were vaccines. And you can share that increases in health problems such as autism, asthma, or diabetes don't have a biologic connection to vaccination. We have no evidence to suggest that vaccines threaten a long, healthy life. We know lack of vaccination threatens a long and healthy life!

"You really don't know if vaccines cause any long-term effects."

"We have years of experience with vaccines and no reason to believe that vaccines cause long-term harm. I understand your concern, but I truly believe that the risk of diseases is greater than any risks posed by vaccines. Vaccines will get your baby off to a great start for a long, healthy life."

Communication Strategies—How to Have a Successful Dialogue

A successful discussion about vaccines involves a two-way conversation, with both parties sharing information and asking questions. These communication principles can help you connect with parents by encouraging open, honest, and productive dialogue.

Take advantage of early opportunities such as the prenatal, newborn, 1-week, and 1-month visits to initiate a dialogue about vaccines. These also are good opportunities to provide take-home materials or direct parents to immunization websites that you trust. This gives parents time to read and digest reputable vaccine information before the first and all future immunizations. And when parents have questions, you can build on the reputable information that they already have reviewed.

Take time to listen.

If parents need to talk about vaccines, give them your full attention. Despite a full schedule, resist the urge to multi-task while a parent talks. Maintain eye contact with parents, restate their concerns to be sure you understand their viewpoint, and pause to thoughtfully prepare your reply. Your willingness to listen will likely play a major role in helping parents with their decisions to choose vaccination.

Solicit and welcome questions.

If parents seem concerned about vaccines but are reluctant to talk, let them know that you want to hear their questions.

Put yourself in parents' shoes and acknowledge parents' feelings and emotions, including their fear and desire to protect their children. Remind parents that you know why they are concerned—their infant's health is their top priority. Remind them that it is yours too.

Don't be offended, and don't offend.

Some parents may come to you with a long list of questions or information from a variety of sources. Don't interpret this as a lack of respect for you or a lack of intelligence on the part of the parent. If you appear offended by questions, or if you imply that a parent's questions are uncalled for, dialogue may shut down and trust may be eroded.

Science versus anecdote?
Too much science will frustrate some parents. Too little science will frustrate others. For some parents, too much anecdotal information won't hit the mark. For others, a story from your experience about an unprotected child who became ill, or knowing that children in your family have received all of their vaccines, will be exactly on target. Which approach to use will depend on your knowledge of the family. Watch and listen. Be prepared to use the mix of science and personal stories that will be most effective in addressing parents' questions.

Acknowledge benefits and risks.
Never state that vaccines are risk-free and always discuss honestly the known side effects caused by vaccines. But don't forget to remind parents that the diseases vaccines prevent can return. It's honest to say that not vaccinating is a risk that will worry you.

Respect parents' authority.
Many parents today want to work in partnership with their child's physician. Of course, you work in partnership with parents every day, for example, by eliciting reports from them about how their infants are progressing. By talking respectfully with parents about their immunization concerns, you can build on this partnership, build trust, and support parents in the decision to choose vaccination.

Reduce the stress of shots.
Show parents ways they can make the vaccination visit less stressful for the child. It can begin by reinforcing that crying is a normal response for the child and suggesting that they stay calm so that the child does not become aware of their stress. For infants, you can suggest that parents use a favorite blanket or toy to distract the baby from the pain of the shots, and that they touch and soothe the baby, talk softly, and smile and make eye contact during the shots. After shots for infants, mothers may wish to cuddle or breastfeed. For toddlers, there are many more options to distract from the pain of the shot, including telling a favorite story, singing, or taking deep breaths and blowing out the pain. After the shots, toddlers can be praised for getting through the shots and reassured that everything is OK.

After the Office Visit

Document parents' questions and concerns.
A thorough record of your discussion will be an invaluable reference during the child's future visits.

Follow up.
If parents express extreme worry or doubt, contact them a few days after the visit. A caring call or e-mail will provide comfort and reinforce trust.

What If Parents Refuse to Vaccinate?

Excluding children from your practice when their parents decline immunizations is not recommended. It can put the child at risk of many different health problems—not just vaccine-preventable diseases. Remember, unvaccinated infants did not decide for themselves to remain unvaccinated. They need your care. Make sure that parents are fully informed about clinical presentations of vaccine-preventable diseases, including early symptoms. Diseases like pertussis and measles are highly contagious and may present early as a non-specific respiratory illness. Parents who refuse vaccines should be reminded at every visit to call before bringing the child into the office, clinic, or emergency department when the child is ill so appropriate measures can be taken to protect others. When scheduling an office visit for an ill child who has not received vaccines, take all possible precautions to prevent contact with other patients, especially those too young to be fully vaccinated and those who have weakened immune systems.

If a parent refuses to vaccinate, you can share the fact sheet *If You Choose Not to Vaccinate Your Child, Understand the Risks and Responsibilities* (www.cdc.gov/vaccines/hcp), which explains the risks involved with this decision including risks to other members of their community, and the additional responsibilities for parents, including the fact that, when their child is ill, they should always alert healthcare personnel to their child's vaccination status to prevent the possible spread of vaccine-preventable diseases. You also can tell the parent that you would like to continue the dialogue about vaccines during the next visit, and then make sure to do so. You may wish to have them sign AAP's *Refusal to Vaccinate* form (www.cispimmunize.org/pro/pdf/RefusaltoVaccinate.pdf) each time a vaccine is refused so that you have a record of their refusal in their child's medical file.

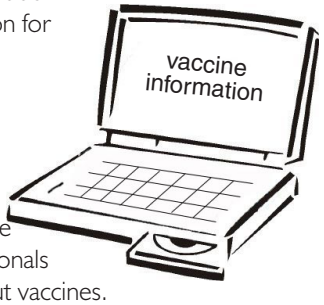
Remember, not all parents want the same level of medical or scientific information about vaccines. By assessing the level of information that a particular parent wants, you can communicate more effectively and build trust.

Reliable Sources of Immunization Information: Where to go to find answers!

Websites

American Academy of Pediatrics (AAP)

www.aap.org/immunization AAP's childhood immunization website contains information for both parents and clinicians.



Centers for Disease Control and Prevention (CDC)

www.cdc.gov/vaccines The information on this website ranges from official vaccine recommendations for healthcare professionals to information for the general public about vaccines.

Every Child by Two (ECBT) www.ecbt.org and www.vaccinateyourbaby.org ECBT, founded by Rosalynn Carter and Betty Bumpers, has created these two websites. Each contains a broad array of educational materials and information about vaccines, their safety, vaccine research and science, vaccine misperceptions, and many other topics to help clinicians and parents.

Immunization Action Coalition (IAC)

www.immunize.org and www.vaccineinformation.org IAC is a non-profit organization that promotes immunization for all people against vaccine-preventable diseases. These websites offer educational materials, photos, and video clips for parents, healthcare professionals, the media, and the general public.

National Network for Immunization Information (NNii) www.immunizationinfo.org NNii provides current, science-based, extensively reviewed information to healthcare professionals, the media, policy makers, and the public.

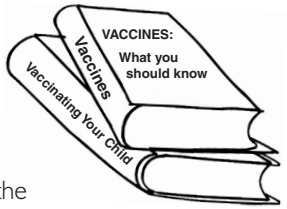
Vaccine Education Center (VEC) www.vaccine.chop.edu The goal of the VEC at Children's Hospital of Philadelphia is to accurately communicate the facts about each childhood vaccine. VEC publishes a monthly vaccine e-newsletter for parents titled "Parents PACK." For more information or to subscribe, visit www.vaccine.chop.edu/parents

Phone Numbers

CDC-INFO Contact Center

A toll-free number for consumers and healthcare professionals who have questions about immunization and vaccine-preventable diseases. Call (800) CDC-INFO or (800) 232-4636. The Center operates 24/7 in English & Spanish. TTY: (888) 232-6348.

Books for Parents



Baby 411, 4th edition

By Denise Fields and Ari Brown, MD, Windsor Peak Press, 2009. Written by a Harvard-trained pediatrician (Brown) and the author of the best-selling *Baby Bargains* (Fields), this book is the ultimate compilation of frequently asked questions for baby's first year. It includes a special section on vaccines. To purchase, visit your local bookstore or www.windsorpeak.com/baby411

Do Vaccines Cause That?! A Guide for Evaluating Vaccine Safety, 1st edition

By Martin Myers, MD, and Diego Pineda, MS. Published by Immunizations for Public Health, 2008. Get straight, science-based answers to parents' questions about the safety of vaccines. To purchase, visit your local bookstore or www.dovaccinescausethat.com

Parents Guide to Childhood Immunization, 2010

This 68-page booklet from CDC introduces parents to 14 childhood diseases and the 10 vaccines that can protect children from them. Parents can order a free booklet or print their own copy by visiting www.cdc.gov/vaccines/pubs/parents-guide *(coming later in 2010)*

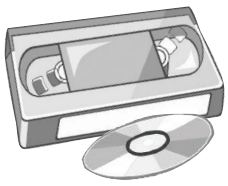
Vaccines: What You Should Know, 3rd edition

By Paul Offit, MD, and Louis Bell, MD, John Wiley & Sons, Inc., 2003. This third edition was written to help parents sort through the latest information about vaccines to determine what is right for their family. It includes a discussion of vaccines and autism, mercury in vaccines, and the ability of children to tolerate receiving numerous vaccines at once. To purchase, visit your local bookstore or www.wiley.com

Plain Talk About Childhood Immunization, 6th edition

Washington State Department of Health, et al., 2008. This 54-page booklet provides parents with accurate information about immunizations and the diseases they prevent, vaccine safety, and other topics of interest to the public. The publication, available in English and Spanish, can be downloaded at http://here.doh.wa.gov/materials/plain-talk-about-childhood-immunizations in either low resolution (for printing on office copiers) or high resolution (for professional printing).

Videos



"Vaccines and Your Baby" and "Vaccines: Separating Fact from Fear"

Available for a nominal charge in English and Spanish and in VHS and DVD formats, these videos answer many questions that new parents have. Ordering information is available at www.chop.edu/service/vaccine-education-center/familyOrder.cfm or parents can watch the videos online at www.chop.edu/service/vaccine-education-center/resources/multimedia.html.

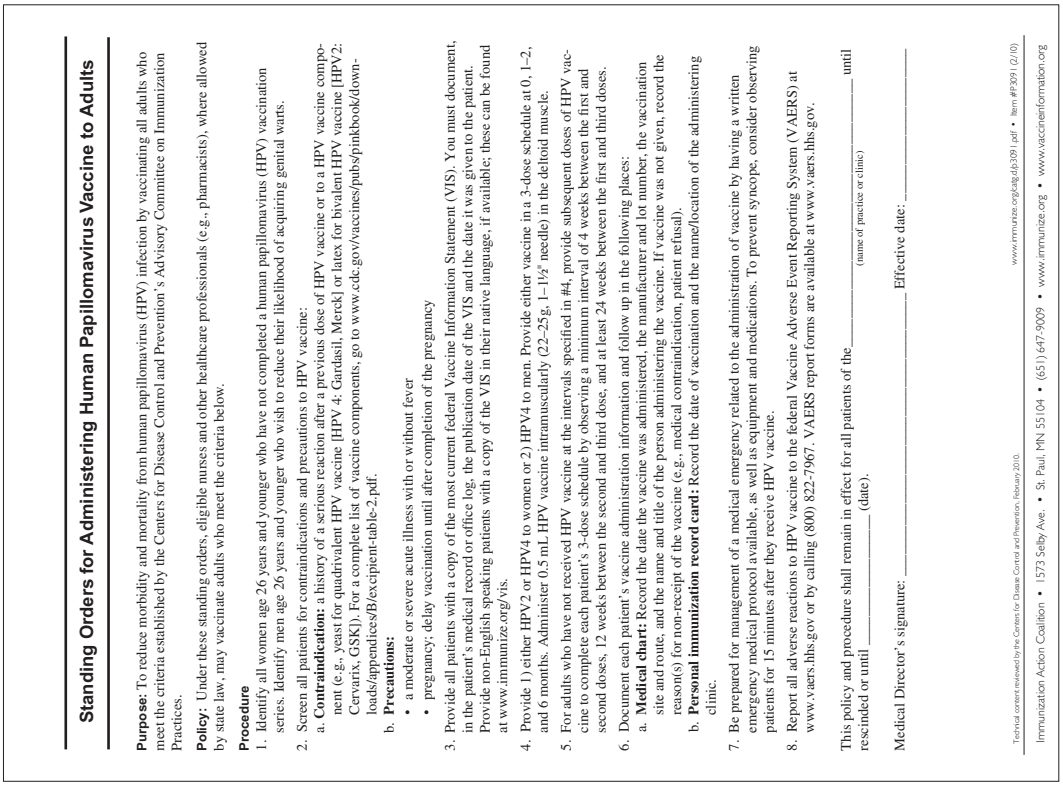
Technical content reviewed by the Centers for Disease Control and Prevention, February 2010.

www.immunize.org/catg.d/p4012.pdf • Item #P4012 (2/10)

Standing Orders for Administering HPV Vaccine

These documents are ready for you to download, copy, and use!

Download these HPV standing orders and use them as they are or modify them to suit your work setting.



Standing Orders for Administering Human Papillomavirus Vaccine to Adults

Purpose: To reduce morbidity and mortality from human papillomavirus (HPV) infection by vaccinating all adults who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

Policy: Under these standing orders, eligible nurses and other healthcare professionals (e.g., pharmacists), where allowed by state law, may vaccinate adults who meet the criteria below.

Procedure

1. Identify all women age 26 years and younger who have not completed a human papillomavirus (HPV) vaccination series. Identify men age 26 years and younger who wish to reduce their likelihood of acquiring genital warts.
2. Screen all patients for contraindications and precautions to HPV vaccine:
   a. **Contraindication:** a history of a serious reaction after a previous dose of HPV vaccine or to a HPV vaccine component (e.g., yeast for quadrivalent HPV vaccine [HPV 4: Gardasil, Merck] or latex for bivalent HPV vaccine [HPV2: Cervarix, GSK]). For a complete list of vaccine components, go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
   b. **Precautions:**
      - a moderate or severe acute illness with or without fever
      - pregnancy; delay vaccination until after completion of the pregnancy
3. Provide all patients with a copy of the most current federal Vaccine Information Statement (VIS). You must document, in the patient's medical record or office log, the publication date of the VIS and the date it was given to the patient. Provide non-English speaking patients with a copy of the VIS in their native language, if available; these can be found at www.immunize.org/vis.
4. Provide 1) either HPV2 or HPV4 to women or 2) HPV4 to men. Provide either vaccine in a 3-dose schedule at 0, 1–2, and 6 months. Administer 0.5 mL HPV vaccine intramuscularly (22–25g, 1–1½" needle) in the deltoid muscle.
5. For adults who have not received HPV vaccine at the intervals specified in #4, provide subsequent doses of HPV vaccine to complete each patient's 3-dose schedule by observing a minimum interval of 4 weeks between the first and second doses, 12 weeks between the second and third dose, and at least 24 weeks between the first and third doses.
6. Document each patient's vaccine administration information and follow up in the following places:
   a. **Medical chart:** Record the date the vaccine was administered, the manufacturer and lot number, the vaccination site and route, and the name and title of the person administering the vaccine. If vaccine was not given, record the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal).
   b. **Personal immunization record card:** Record the date of vaccination and the name/location of the administering clinic.
7. Be prepared for management of a medical emergency related to the administration of vaccine by having a written emergency medical protocol available, as well as equipment and medications. To prevent syncope, consider observing patients for 15 minutes after they receive HPV vaccine.
8. Report all adverse reactions to HPV vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or by calling (800) 822-7967. VAERS report forms are available at www.vaers.hhs.gov.

This policy and procedure shall remain in effect for all patients of the _____ (name of practice or clinic) until rescinded or until _____ (date).

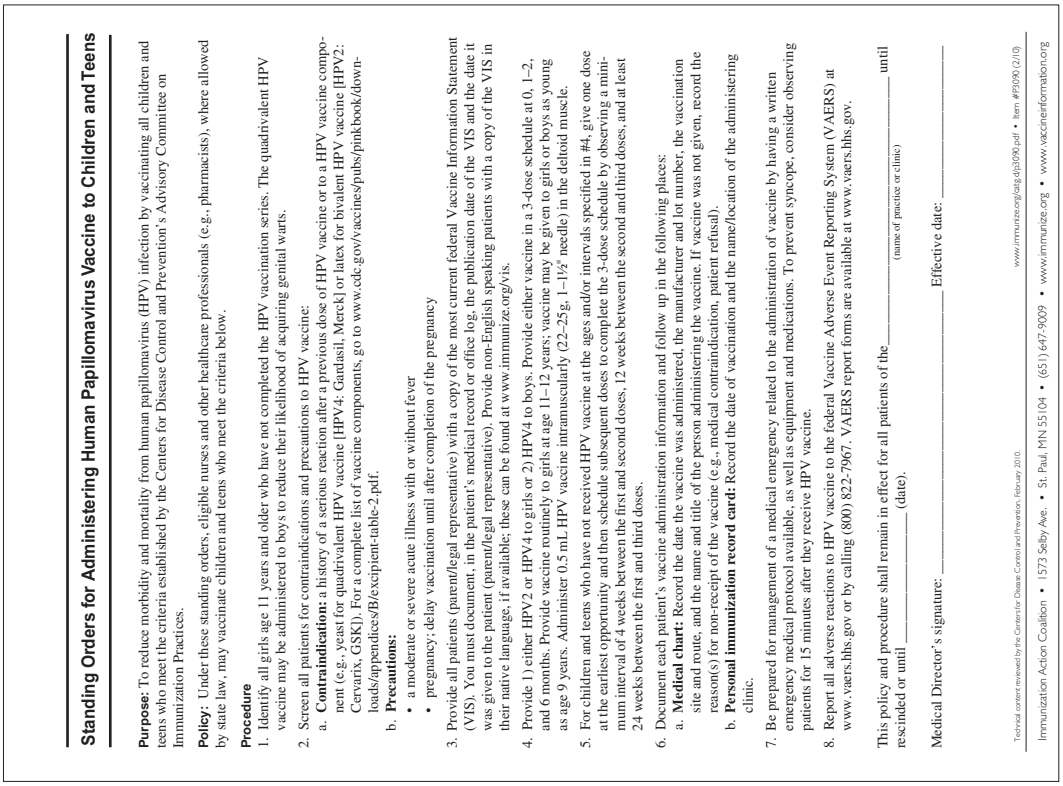
Medical Director's signature: _____ Effective date: _____

Technical content reviewed by the Centers for Disease Control and Prevention, February 2010. www.immunize.org/catg.d/p3091.pdf • Item #P3091 (2/10)

Immunization Action Coalition • 1573 Selby Ave. • St. Paul, MN 55104 • (651) 647-9009 • www.immunize.org • www.vaccineinformation.org

HPV vaccine standing orders for adults (www.immunize.org/catg.d/p3091.pdf)

Additional sets of standing orders are available at www.immunize.org/standingorders



Standing Orders for Administering Human Papillomavirus Vaccine to Children and Teens

Purpose: To reduce morbidity and mortality from human papillomavirus (HPV) infection by vaccinating all children and teens who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

Policy: Under these standing orders, eligible nurses and other healthcare professionals (e.g., pharmacists), where allowed by state law, may vaccinate children and teens who meet the criteria below.

Procedure

1. Identify all girls age 11 years and older who have not completed the HPV vaccination series. The quadrivalent HPV vaccine may be administered to boys to reduce their likelihood of acquiring genital warts.
2. Screen all patients for contraindications and precautions to HPV vaccine:
   a. **Contraindication:** a history of a serious reaction after a previous dose of HPV vaccine or to a HPV vaccine component (e.g., yeast for quadrivalent HPV vaccine [HPV4: Gardasil, Merck] or latex for bivalent HPV vaccine [HPV2: Cervarix, GSK]). For a complete list of vaccine components, go to www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
   b. **Precautions:**
      - a moderate or severe acute illness with or without fever
      - pregnancy; delay vaccination until after completion of the pregnancy
3. Provide all patients (parent/legal representative) with a copy of the most current federal Vaccine Information Statement (VIS). You must document, in the patient's medical record or office log, the publication date of the VIS and the date it was given to the patient (parent/legal representative). Provide non-English speaking patients with a copy of the VIS in their native language, if available; these can be found at www.immunize.org/vis.
4. Provide 1) either HPV2 or HPV4 to girls or 2) HPV4 to boys. Provide either vaccine in a 3-dose schedule at 0, 1–2, and 6 months. Provide vaccine routinely to girls at age 11–12 years; vaccine may be given to girls or boys as young as age 9 years. Administer 0.5 mL HPV vaccine intramuscularly (22–25g, 1–1½" needle) in the deltoid muscle.
5. For children and teens who have not received HPV vaccine at the ages and/or intervals specified in #4, give one dose at the earliest opportunity and then schedule subsequent doses to complete the 3-dose schedule by observing a minimum interval of 4 weeks between the first and second doses, 12 weeks between the second and third doses, and at least 24 weeks between the first and third doses.
6. Document each patient's vaccine administration information and follow up in the following places:
   a. **Medical chart:** Record the date the vaccine was administered, the manufacturer and lot number, the vaccination site and route, and the name and title of the person administering the vaccine. If vaccine was not given, record the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal).
   b. **Personal immunization record card:** Record the date of vaccination and the name/location of the administering clinic.
7. Be prepared for management of a medical emergency related to the administration of vaccine by having a written emergency medical protocol available, as well as equipment and medications. To prevent syncope, consider observing patients for 15 minutes after they receive HPV vaccine.
8. Report all adverse reactions to HPV vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at www.vaers.hhs.gov or by calling (800) 822-7967. VAERS report forms are available at www.vaers.hhs.gov.

This policy and procedure shall remain in effect for all patients of the _____ (name of practice or clinic) until rescinded or until _____ (date).

Medical Director's signature: _____ Effective date: _____

Technical content reviewed by the Centers for Disease Control and Prevention, February 2010. www.immunize.org/catg.d/p3090.pdf • Item #P3090 (2/10)

Immunization Action Coalition • 1573 Selby Ave. • St. Paul, MN 55104 • (651) 647-9009 • www.immunize.org • www.vaccineinformation.org

HPV vaccine standing orders for children and teens (www.immunize.org/catg.d/p3090.pdf)

Guide to Contraindications and Precautions to Commonly Used Vaccines* (Page 1 of 2)

Vaccine	Contraindications	Precautions[1]
Hepatitis B (HepB)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever • Infant weighing less than 2000 grams (4 lbs, 6.4 oz)[2]
Rotavirus (RV5 [RotaTeq], RV1 [Rotarix])	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever • Immunosuppression • Pre-existing chronic gastrointestinal disease • Previous history of intussusception
Diphtheria, tetanus, pertussis (DTaP) **Tetanus, diphtheria, pertussis (Tdap)**	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component • Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures) not attributable to another identifiable cause within 7 days of administration of previous dose of DTP or DTaP	• Moderate or severe acute illness with or without fever • Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Arthus-type hypersensitivity reaction following a previous dose of tetanus and/or diphtheria toxoid-containing vaccine: defer vaccination until at least 10 years have elapsed since the previous dose • Progressive or unstable neurologic disorder, uncontrolled seizures or progressive encephalopathy: defer vaccination with DTaP or Tdap until a treatment regimen has been established and the condition has stabilized For DTaP only: • Temperature of 105° F or higher (40.5° C or higher) within 48 hours after vaccination with a previous dose of DTP/DTaP • Collapse or shock-like state (i.e., hypotonic hyporesponsive episode) within 48 hours after receiving a previous dose of DTP/DTaP • Seizure or convulsion within 3 days after receiving a previous dose of DTP/DTaP • Persistent, inconsolable crying lasting 3 or more hours within 48 hours after receiving a previous dose of DTP/DTaP
Tetanus, diphtheria (DT, Td)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever • GBS within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Arthus-type hypersensitivity reactions following a previous dose of tetanus and/or diphtheria toxoid-containing vaccine: defer vaccination until at least 10 years have elapsed since the previous dose For Td only: In adults, unstable neurologic condition; in teens, progressive neurologic disorder
***Haemophilus influenzae* type b (Hib)**	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component • Age younger than 6 weeks	• Moderate or severe acute illness with or without fever
Inactivated poliovirus vaccine (IPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever • Pregnancy
Pneumococcal (PCV or PPSV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever
Hepatitis A (HepA)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever • Pregnancy
Measles, mumps, rubella (MMR)[3]	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component • Pregnancy • Known severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy[4]; or patients with HIV infection who are severely immunocompromised)	• Moderate or severe acute illness with or without fever • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[5] • History of thrombocytopenia or thrombocytopenic purpura

Technical content reviewed by the Centers for Disease Control and Prevention, February 2010.

www.immunize.org/catg.d/p3072a.pdf • Item #P3072a (2/10)

Guide to Contraindications and Precautions to Commonly Used Vaccines (continued) (Page 2 of 2)

Vaccine	Contraindications	Precautions[1]
Varicella (Var)[3]	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component • Substantial suppression of cellular immunity[5] • Pregnancy	• Moderate or severe acute illness with or without fever • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[5] • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination, if possible; delay resumption of these antiviral drugs for 14 days after vaccination.
Influenza, injectable trivalent (TIV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component, including egg protein	• Moderate or severe acute illness with or without fever • History of GBS within 6 weeks of previous influenza vaccine
Influenza, live attenuated (LAIV)[3]	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component, including egg protein • Possible reactive airways disease in a child age 2 through 4 years (e.g., history of recurrent wheezing or a recent wheezing episode) • Pregnancy • Known severe immunodeficiency (e.g., hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; long-term immunosuppressive therapy[4]; or patients with HIV infection who are severely immunocompromised) • Certain chronic medical conditions[6]	• Moderate or severe acute illness with or without fever • History of GBS within 6 weeks of previous influenza vaccine • Receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48 hours before vaccination. Avoid use of these antiviral drugs for 14 days after vaccination. • Close contact with an immunosuppressed person when the person requires protective isolation
Human papillomavirus (HPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever • Pregnancy
Meningococcal, conjugate (MCV4) **Meningococcal, polysaccharide (MPSV4)**	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component	• Moderate or severe acute illness with or without fever For MCV4 only: • History of GBS (if not at extremely high risk for meningococcal disease)
Zoster (Zos)	• Severe allergic reaction (e.g., anaphylaxis) after a previous vaccine dose or to a vaccine component • Substantial suppression of cellular immunity[5] • Pregnancy	• Moderate or severe acute illness with or without fever • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination, if possible; delay resumption of these antiviral drugs for 14 days after vaccination.

Footnotes

1. Events or conditions listed as precautions should be reviewed carefully. Benefits of and risks for administering a specific vaccine to a person under these circumstances should be considered. If the risk from the vaccine is believed to outweigh the benefit, the vaccine should not be administered. If the benefit of vaccination is believed to outweigh the risk, the vaccine should be administered. Whether and when to administer DTaP to children with proven or suspected underlying neurologic disorders should be decided on a case-by-case basis.
2. Hepatitis B vaccination should be deferred for preterm infants and infants weighing less than 2000 g if the mother is documented to be hepatitis B surface antigen (HBsAg)-negative at the time of the infant's birth. Vaccination can commence at chronological age 1 month. For infants born to women who are HBsAg-positive, hepatitis B immunoglobulin and hepatitis B vaccine should be administered at or soon after birth, regardless of weight.
3. LAIV, MMR, and varicella vaccines can be administered on the same day. If not administered on the same day, these vaccines should be separated by at least 28 days.
4. Substantially immunosuppressive steroid dose is considered to be 2 weeks or more of daily receipt of 20 mg or more (or 2 mg/kg body weight or more) of prednisone or equivalent.
5. For details, see CDC. "General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)" at www.cdc.gov/vaccines/pubs/acip-list.htm.
6. For details, see CDC. "Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP)" at www.cdc.gov/vaccines/pubs/acip-list.htm.

*Adapted from "Table 5. Contraindications and Precautions to Commonly Used Vaccines" found in: CDC. "General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP)." *MMWR* 2006; 55(No. RR-15), p. 10–14.

Should we return our existing supply of Rotarix to the manufacturer or distributor where we bought it?

No. FDA will be convening an expert advisory committee to review available data and will then issue subsequent recommendations. For now, you should keep it in proper storage (i.e., store the lyophilized Rotarix at refrigerated temperatures [35º to 46ºF; 2º to 8ºC] and store the diluent at room temperatures [68º to 77ºF; 20º to 25ºC]).

Where can I find the most up-to-date information about that status of Rotarix vaccine?

Both the FDA and CDC websites are excellent sources of information about Rotarix. Visit www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm205539.htm and www.cdc.gov/vaccines/vpd-vac/rotavirus/default.htm.

Has the World Health Organization (WHO) also recommended temporary suspension of the use of Rotarix?

No. WHO issued a statement on March 22 titled "WHO does not recommend any change to use of Rotarix vaccine." It includes the following: ". . .WHO concurs with the views of the FDA and EMA [European Medicines Agency] that the findings do not present a threat to public health. Moreover, rotaviruses are the most common cause of severe diarrhoeal disease in young children throughout the world, with an estimated 527,000 deaths among children under five years old, most of whom live in low-income countries. Therefore, WHO does not recommend any change to use of the vaccine. . . ." To read the full WHO statement on Rotarix, go to www.who.int/immunization/newsroom/news_rotavirus_vaccine_use/en.

Please tell me about the new pneumococcal conjugate vaccine, Prevnar 13.

On February 24, FDA licensed the 13-valent pneumococcal vaccine, PCV13 (Prevnar 13; Pfizer). It contains the 7 *Streptococcus pneumoniae* serotypes included in the first pneumococcal conjugate vaccine (PCV7, Prevnar), plus 6 additional serotypes (1, 3, 5, 6A, 7F, and 19A). Together, these 13 serotypes account for the majority of invasive pneumococcal disease (IPD) in the U.S., including serotype 19A, which is now the most common IPD-causing serotype in young children. On February 24, ACIP voted to approve recommendations for the use of PCV13, and on March 12 the recommendations were published in *MMWR*. To access them, go to www.cdc.gov/mmwr/PDF/wk/mm5909.pdf, and see pages 258–261.

What vaccination schedule should we follow for PCV13?

Generally, you should follow the same 4-dose schedule you followed for PCV7, administering doses at ages 2, 4, 6, and 12–15 months. Following are additional recommendations concerning PCV 13:

1. For children who have begun a series of PCV7, replace all remaining doses with PCV13. If you are unsure how to assess and complete the pneumococcal conjugate vaccine immunization schedule for children who may have fallen behind, consult the pneumococcal vaccine catch-up schedule that can be found at www.immunize.org/shop/views/childsched_pg4.pdf.
2. For children who have completed an age-appropriate 4-dose series of PCV7 do the following:
   a. Give 1 additional dose of PCV13 to all healthy children who have not yet reached their fifth birthday.
   b. Give 1 additional dose of PCV13 to children with underlying medical conditions who have not yet reached their sixth birthday.
3. For children ages 6 through 18 years with functional or anatomic asplenia (including sickle cell disease), HIV infection or other immunocompromising condition, cochlear implant or CSF leak, consider giving 1 dose of PCV13 regardless of previous history of PCV7 or pneumococcal polysaccharide vaccine (PPSV).

I continue to see conflicting advice for giving pneumococcal vaccine to patients who do not have a spleen. Do they get re-immunized with pneumococcal polysaccharide vaccine (PPSV) every 5 years, or do they get only 1 additional dose in their lifetime?

Giving pneumococcal vaccine every 5 years is a widespread myth; ACIP has never recommended an every-5-year schedule. People with asplenia age 2 years and older should receive a lifetime total of 2 doses of PPSV separated by a minimum of 5 years. Here is a good resource: www.immunize.org/catg.d/p2015.pdf.

We have a newly diagnosed diabetic who was given the first dose of PPSV at age 65 years. Should I give him a second dose in 5 years because of his chronic disease?

No. For people age 65 years and older, one-time revaccination is recommended only for those who are at highest risk for serious pneumococcal infection and those who are likely to have a rapid decline in pneumococcal antibody levels. This includes people with functional or anatomic asplenia (e.g., sickle cell disease), HIV infection, leukemia, or other conditions associated with immunosuppression. It does not include diabetics.

Now that the Hib vaccine shortage is over, should we recall patients who missed their 15-month Hib booster dose or simply wait for them to return for a well-child visit?

Recall the children who have fallen behind. Because of an increase in Hib vaccine production and the entrance of new Hib vaccine products into the market, CDC notified healthcare providers in July 2009 that the Hib vaccine shortage was over and to resume giving the Hib booster dose. Since September 2009, CDC has recommended that providers recall patients in need of a Hib booster dose. (See www.cdc.gov/mmwr/preview/mmwrhtml/mm5836a5.htm).

For the booster dose, providers can use any of the currently available Hib-containing vaccines such as ActHIB (sanofi), Pentacel (sanofi), PedvaxHIB (Merck), and Hiberix (GSK).

If an 8-year-old child who needed IPV and Td vaccines was mistakenly given a dose of DTaP-IPV (Kinrix; GSK), will that count as a valid dose of polio and Td vaccine?

Kinrix is licensed and recommended only for use in children ages 4 through 6 years, so you should take measures to prevent this error in the future. However, you can count the IPV dose as valid as long as it has met the minimum interval (4 weeks between doses except for the final dose in the series, which should be 6 months from the previous dose). With regard to the mistaken administration of the DTaP in a child older than age 6 years, the dose can be counted and does not need to be repeated with Td.

Please tell me about the newly licensed meningococcal conjugate vaccine, Menveo.

FDA licensed Menveo (Novartis) on Feb. 19. It is a quadrivalent meningococcal conjugate vaccine intended for use in people ages 11 through 55 years.

(continued on page 24)

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Menveo protects against *Neisseria meningitidis* serogroups A, C, Y, and W-135. The vaccine consists of two components, a lyophilized vaccine (containing the serogroup A conjugate) and a buffered saline diluent (containing the C, W-135, and Y conjugates) used for reconstitution. The reconstituted vaccine should be used immediately but may be held at or below 77°F (25°C) for up to 8 hours. Menveo is administered as an intramuscular injection.

ACIP recommends meningococcal conjugate vaccine for all people ages 11–18 years and for people ages 2–55 years who are at increased risk for meningococcal disease. These include (1) college freshmen living in dormitories, (2) microbiologists who are exposed routinely to isolates of *Neisseria meningitidis*, (3) military recruits, (4) people who travel to or reside in countries where meningococcal disease is hyperendemic or epidemic, (5) people who have persistent complement component deficiencies, and (6) people with anatomic or functional asplenia. Menveo or Menactra (sanofi pasteur) may be used in people ages 11–55 years. People ages 2–10 years who are recommended to receive a meningococcal vaccine should receive Menactra (which is licensed for this age group), and people older than age 55 years should receive meningococcal polysaccharide vaccine (MPSV).

I have a pediatric patient who has functional asplenia. I gave her a dose of Menactra meningococcal conjugate vaccine when she was 3 years old. Do I need to give her a booster at some time?

Yes. Since asplenia places her at highest risk for meningococcal infection, you should give her another dose 3 years after the date you gave her the first dose. Then, give her additional doses every 5 years. (Note: The interval between dose #1 and #2 is determined by the child's age when dose #1 was given. For children who received dose #1 at ages 2 through 6 years, separate doses #1 and #2 by 3 years. For children who received dose #1 at age 7 years or older, separate doses #1 and #2 by 5 years.)

Needle Tips correction policy

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I've heard that the recommendations for influenza vaccination have been expanded for the 2010–11 season. Tell me more.

At its February 2010 meeting, ACIP voted to recommend routine annual influenza vaccination for all people age 6 months and older, beginning with the 2010–11 influenza vaccination season. This change expands the existing recommendations to include all healthy adults ages 19 through 49 years who hadn't previously been included in routine vaccination recommendations. On March 2, the provisional influenza vaccine recommendations were posted on CDC's website at www.cdc.gov/vaccines/recs/provisional/downloads/flu-vac-mar-2010-508.pdf.

Will we need to give H1N1 vaccine as a separate vaccine in the next season (2010–11)?

No. The 2009 H1N1 virus will be incorporated into the 2010–11 seasonal influenza vaccine formulation. The three influenza viruses in the vaccine are A/California (H1N1) [formerly known as the 2009 H1N1], A/Perth (H3N2) [replacing the 2009–10 A/Brisbane (H3N2)], and B/Brisbane [same as in the 2009–10 vaccine].

I would like to help establish a policy of mandatory vaccination for healthcare workers in our facility and would like to learn from others. Can you help?

You will be happy to know that more and more healthcare facilities are adopting mandatory vaccination policies for their employees. IAC has included many of these on its Honor Roll for Patient Safety, which gives special recognition to institutions that enforce mandatory vaccination for all personnel who are in the vicinity of a patient (e.g., including volunteers, housekeeping staff). To read about the policies of the various facilities included in the Honor Roll, go to www.immunize.org/laws/influenzahcw.asp. We hope reviewing these policies will give you the information you need to assist you in developing a policy for your facility.

We have a mandatory vaccination policy in our facility; however, we allow employees to choose not to be vaccinated after filling out and signing an informed declination form. What can we do to achieve assurances that patient safety is still maintained?

Though vaccination is the most effective means of protecting your patients from influenza, there may be instances where employees are not vaccinated for medical or personal reasons. In these instances, you may want to consider reassigning unvaccinated workers to non-patient areas or requiring that they wear masks throughout the influenza season.

When should we stop giving H1N1 influenza vaccine for the 2009–10 season?

The answer is the same for both H1N1 and seasonal influenza vaccines—providers are encouraged to continue vaccinating patients into the spring months (e.g., through May), as long as they have vaccine in the refrigerator and unvaccinated patients in their office. No one knows for sure how the H1N1 influenza epidemic will progress; some experts predict a third wave of cases in the spring. Be sure to check the expiration date before administering 2009 H1N1 vaccine—some lots expire earlier than seasonal influenza vaccine. Expired vaccine should never be administered.

The new Zostavax vaccine (Merck) package insert says that Zostavax should not be given simultaneously with pneumococcal polysaccharide vaccine (PPSV). What does ACIP say about this?

ACIP has not changed its recommendation on the simultaneous administration of these two vaccines (i.e., they can be given at the same time or any time before or after each other).

Now that there is a second vaccine licensed for the prevention of Japanese encephalitis (JE) among travelers, where can I find the recommendations for its use?

CDC recently published updated recommendations of the Advisory Committee on Immunization Practices for the use of both vaccines—JE-VAX (sanofi) and Ixiaro (Intercell Biomedical distributed by Novartis)—in *MMWR* 2010;59(RR-1):1-26. You can find them on CDC's website at www.cdc.gov/mmwr/pdf/rr/rr5901.pdf. Ixiaro is licensed for use in persons 17 years and older. JE-VAX is no longer being produced, and remaining supplies are reserved for children ages 1 through 16 years.

My patient got JE-VAX 5 years ago and is now returning to Asia. Can I use Ixiaro as a booster dose?

There are no data on the use of Ixiaro as a booster for JE-VAX. If a previously vaccinated person age 17 years or older needs a booster dose, you should administer a full series (2 doses separated by at least 28 days) of Ixiaro.

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