

NEEDLE TIPS

Visit www.immunize.org for up-to-date immunization information from the Immunization Action Coalition

What's Inside?

Ask the Experts	1
New IAC Web Sections Give You All the News	2
Vaccine Highlights: Recommendations, licensures ...	4
After the Shots . . . What to do if your child has discomfort	6
Do I Need Any Vaccinations Today?	8
Handouts on Vax Schedules for Your Patients ...	10
U.S. Immunization Schedules for Persons Ages 0–18 Years, 2009	11
U.S. Immunization Schedule for Adults, 2009	14
How to Give IM and SC Injections	17
Immunization Resources Order Form	23
Influenza Vaccination for Healthcare Workers: Our Duty to Our Patients	24



**FEDERAL and
MILITARY
EMPLOYEES**

Friendly reminder! When fall
arrives, please make the
Immunization Action Coalition

your charity of choice for the
Combined Federal Campaign.

Use agency code

#10612

The Immunization Action Coalition
is a 501(c)(3) charitable organization
and your contribution is tax-deductible
to the fullest extent of the law.

Vital Immunization News from IAC

Where to Get the Latest Updates on Novel H1N1 Influenza

Because information about the novel H1N1 influenza (“swine flu”) virus is constantly changing, this issue of *Needle Tips* will not attempt to inform readers about the status of the H1N1 epidemic. The Centers for Disease Control and Prevention (CDC) has established extensive and continually updated H1N1 web resources for patients and healthcare professionals. Here are some that may be of particular interest:

CDC’s main H1N1 webpage	www.cdc.gov/h1n1flu
Latest information from CDC	www.cdc.gov/h1n1flu/whatsnew.htm
Guidance for clinicians	www.cdc.gov/h1n1flu/guidance
General information for the public	www.cdc.gov/h1n1flu/general_info.htm
Subscribe to CDC’s email updates	www.cdc.gov/emailupdates/index.html

In addition, the Immunization Action Coalition (IAC) has developed an H1N1 information web page, www.immunize.org/h1n1, which is updated daily. IAC selects from CDC website content, journal articles, partner resources, and news articles to present H1N1 influenza information that may have special relevance for *Needle Tips* readers and other users of IAC’s www.immunize.org website.

Don’t Miss an Issue of *Needle Tips*!

We thank the thousands of readers who subscribed to *Needle Tips* in response to our request in the most recent issue. If you have not yet requested a free subscription, please do so today!

When you subscribe, you’ll receive up-to-the-minute notifications of new online issues of *Needle Tips*. You can also sign up to receive IAC’s weekly vaccine news and information bulletin, *IAC Express*, which is delivered by email every Monday.

Please continue to share *Needle Tips* with your colleagues. You can print pages of interest to hand out at your office, or you can email a link to the issue to as many people as you like.

To subscribe to <i>Needle Tips</i>	www.immunize.org/subscribe
To access issues online	www.immunize.org/nt

As always, we thank you for your continued dedication to protecting health and saving lives through immunization.

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).

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)

General questions

The number of injections recommended to be given at a single office visit is increasing, and we are running out of injection sites. Should we defer certain vaccines?

We strongly recommend that you do not defer any recommended vaccines. This would be a missed opportunity. No upper limit has been established regarding the number of vaccines that can be administered in one visit. CDC’s Advisory Committee on Immunization Practices (ACIP) and the American Academy of Pediatrics (AAP) consistently recommend administering all vaccines indicated for the patient’s age. When giving several injections at a single visit, separate 2 intramuscular (IM) vaccines by at least 1 inch in the body of the muscle to reduce the likelihood of local reactions

overlapping. Here is a link to a collection of illustrations (i.e., “site maps”) that show how one can administer all indicated doses to children: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/D/site-map.pdf.

When we are giving multiple injections in a limb, what is the best way to accurately document the injection site? It is not unusual for us to give 4–6 injections to each infant/child that we see, and I want to ensure that we are doing this safely and documenting it adequately.

One way to handle this is to indicate if the vaccination was given either in the “upper” or “lower” portion of the injection area selected (e.g., DTaP: right thigh, upper; Hib: right thigh, lower; or PCV7: left thigh, upper; HepB: left thigh, lower). It is helpful if

(continued on page 18)

Needle Tips

Online at www.immunize.org/nt
Immunization Action Coalition
1573 Selby Avenue, Suite 234
St. Paul, MN 55104
Phone: (651) 647-9009
Fax: (651) 647-9131
Email: admin@immunize.org
Websites: www.immunize.org
www.vaccineinformation.org
www.izcoalitions.org

Needle Tips is a semiannual 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. 1U38IP000290. The content is solely the responsibility of IAC and does not necessarily represent the official views of CDC. ISSN 1944-2017.

Publication Staff

Editor: Deborah L. Wexler, MD
Associate Editor: Diane C. Peterson
Managing Editor: Dale Thompson
Contributing Editor: Lisa H. Randall, JD
Editorial Asst.: Janelle Tangonan Anderson
Consultants: Teresa A. Anderson, DDS, MPH
Linda A. Moyer, RN, and Mary Quirk
Layout: Kathy Cohen
Artwork: Sarah, Isaac, & Leo Wexler-Mann

IAC Staff

Assistant to the Director: Becky Payne
Office Administrator: Robin VanOss
Administrative Asst.: Susan Broadribb

IAC publishes a free email news service (*IAC Express*) and three free periodicals (*Needle Tips*, *Vaccinate Adults*, and *Vaccinate Women*). To subscribe to any or all of them, go to www.immunize.org/subscribe.

IAC, a 501(c)(3) charitable organization, publishes practical immunization information for health professionals to help increase immunization rates and prevent disease.

Needle Tips is also supported in part by
sanofi pasteur • Merck & Co., Inc.
GlaxoSmithKline • Novartis Vaccines
Wyeth Pharmaceuticals • CSL Biotherapies
MedImmune, Inc. • Baxter Healthcare Corp.
American Pharmacists Association
Mark and Muriel Wexler Foundation
Anonymous

IAC maintains strict editorial independence in its publications.

IAC Board of Directors

Kristen Ehresmann, RN, MPH
Minnesota Department of Health
Neal Holtan, MD, MPH
St. Paul-Ramsey County Public Health
Anne Kuettel, PHN
St. Paul-Ramsey County Public Health
Cindy Uldrich
UnitedHealthcare Corporation
Deborah L. Wexler, MD
Immunization Action Coalition

Three new IAC web sections make it easy to stay informed about U.S. immunization news and activities

If you want to stay current on news and activities pertaining to U.S. immunization, be sure to check out the web sections recently added under the “News and Information” heading at the top of the left column of IAC’s home page at www.immunize.org. Culled from sources as diverse as the federal government, professional societies, international organizations, and specialized and mainstream media, the content of the new web sections is organized into three categories: What’s New at IAC, New Releases, and Vaccines in the News.

1. **What’s New at IAC** (www.immunize.org/new) offers users a chronological list of new and revised IAC materials. To help users find selected materials of in-

Waiting for a new VIS translation or updated standing orders? Find new and revised IAC materials at
www.immunize.org/new

terest, the entries in What’s New at IAC are also organized into three subcategories: updated VISs, new and revised IAC print materials, and new and revised additions to various web sections on www.immunize.org.

2. Check out the **New Releases** (www.immunize.org/newreleases) web section for just-published Vaccine Information Statements from CDC, recommendations

Looking for just-published VISs or ACIP recommendations? Find official documents fast at
www.immunize.org/newreleases

from the Advisory Committee on Immunization Practices, vaccine policy statements from the American Academy of Pediatrics, position statements on vaccines from the World Health Organization, clinically relevant press releases from other federal agencies, and more.

3. The third web section, **Vaccines in the News** (www.immunize.org/vaccinenews), provides the opening paragraph of news articles, features, opinion pieces, and editorials published in the news media (newspapers, magazines, editorials, and more) about vaccines

Whenever vaccines make news, read all about it at
www.immunize.org/vaccinenews

and vaccine-preventable diseases. A hyperlink to the entire article is provided for interested readers.

Along with the chronological listing of articles, the Vaccines in the News section also indexes the articles by **disease** (www.immunize.org/vaccinenews/dis_ant.asp) and by **topic** (www.immunize.org/vaccinenews/topic_adjuv.asp). IAC selects only factually accurate articles for inclusion, ones that are suitable for sharing with patients and colleagues. You could, for example, use this web section to check for local and national news coverage about current measles and pertussis outbreaks, or influenza deaths, and then share what you find with vaccine-hesitant parents and patients. You could also check the latest media coverage on topics such as vaccine court rulings, exemptions, and new vaccine development.

Finally, we suggest that web users who want to stay up to date **subscribe** (www.immunize.org/subscribe) to our weekly email news service, *IAC Express* (www.immunize.org/express). Once you complete the sign-up form at www.immunize.org/subscribe, you’ll start receiving FREE email announcements about important developments related to immunization.

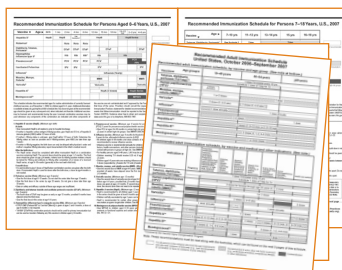
Stay current! Subscribe to Immunization Action Coalition’s free weekly email immunization news service, IAC Express.
www.immunize.org/subscribe

Visit IAC’s website for health professionals at www.immunize.org

DISCLAIMER: *Needle Tips* is available to all readers free of charge. Some of the information in this issue is supplied to us by the Centers for Disease Control and Prevention in Atlanta, Georgia, and some information is supplied by third-party sources. The Immunization Action Coalition (IAC) has used its best efforts to accurately publish all of this information, but IAC cannot guarantee that the original information as supplied by others is correct or complete, or that it has been accurately published. Some of the information in this issue is created or compiled by IAC. All of the information in this issue is of a time-critical nature, and we cannot guarantee that some of the information is not now outdated, inaccurate, or incomplete. IAC cannot guarantee that reliance on the information in this issue will cause no injury. Before you rely on the information in this issue, you should first independently verify its current accuracy and completeness. IAC is not licensed to practice medicine or pharmacology, and the providing of the information in this issue does not constitute such practice. Any claim against IAC must be submitted to binding arbitration under the auspices of the American Arbitration Association in Saint Paul, Minnesota.

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

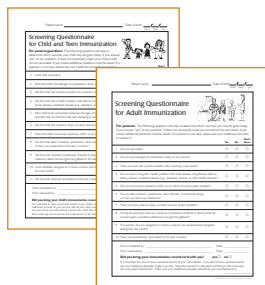
Here are the ACIP/AAP/AAPF-approved immunization schedule for people ages 0 through 18 years and the ACIP/AAP/ACOG/ACP-approved schedule for adults. Both are laminated for heavy-duty use, complete with essential footnotes, and printed in color for easy reading. The cost is \$10 for each schedule and only \$6.50 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 screening questionnaires for contraindications! Now with English on front/Spanish on back; in pads of 100 sheets

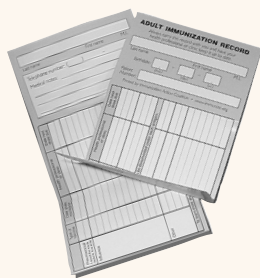


Save valuable staff time and make sure your patients are fully screened by using these simple 1-page questionnaires (one for child/teen immunization, another for adults). Patients respond to questions by checking off "yes" and "no" boxes while waiting to be seen. Staff reviews answers during the visit. These pads are priced at \$16 per 100-sheet pad. Prices drop to \$12 each for 2 pads, \$11 each for 3 pads, \$10 each for 4–9 pads. Keep pads at the receptionist's desk, the nurses' station, and in every exam room. To view the pads or for more details, visit IAC's website at www.immunize.org/shop.

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

For 10 or more pads, 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

Advisory Board

Liaisons from Organizations

William L. Atkinson, MD, MPH
Nat'l Ctr. for Immun. & Resp. Diseases, CDC
Anna DeBlois Buchanan, MPH
Assn. of State & Territorial Health Officials
Stephen L. Cochi, MD, MPH
Nat'l Ctr. for Immun. & Resp. Diseases, CDC
Lawrence J. D'Angelo, MD, MPH
Society for Adolescent Medicine
Paul Etkind, DrPH, MPH
Nat'l. Assn. of County & City Health Officials
Stanley A. Gall, MD
Amer. College of Obstetricians & Gynecologists
Bruce Gellin, MD, MPH
National Vaccine Program Office, DHHS
Kathleen F. Gensheimer, MD, MPH, FIDSA
Council of State & Territorial Epidemiologists
Neal A. Halsey, MD
Institute for Vaccine Safety, Johns Hopkins Univ.

Claire Hannan, MPH
Association of Immunization Managers
Carol E. Hayes, CNM, MN, MPH
American College of Nurse-Midwives
Gregory James, DO, MPH, FACOPF
American Osteopathic Association
Samuel L. Katz, MD
Pediatric Infectious Diseases Society
Mary Beth Koslap-Petraco, RN-CS, CPNP
National Assn. of Pediatric Nurse Practitioners
Marie-Michele Leger, MPH, PA-C
American Academy of Physician Assistants
Harold S. Margolis, MD
Pediatric Dengue Vaccine Initiative
Martin G. Myers, MD
National Network for Immunization Information
Kathleen M. Neuzil, MD, MPH
American College of Physicians
Paul A. Offit, MD
Vaccine Education Ctr., Children's Hosp. of Phila.
Mitchel C. Rothholz, RPh, MBA
American Pharmacists Association
Thomas N. Saari, MD
American Academy of Pediatrics
William Schaffner, MD
Infectious Diseases Society of America
Anne Schuchat, MD
Nat'l Ctr. for Immun. & Resp. Diseases, CDC
Thomas E. Stenvig, RN, PhD
American Nurses Association
Litjen Tan, PhD
American Medical Association
John W. Ward, MD
Division of Viral Hepatitis, NCHHSTP, CDC
Patricia N. Whitley-Williams, MD, MPH
National Medical Association
Walter W. Williams, MD, MPH
Office of Minority Health, CDC

Individuals

Hie-Won L. Hann, MD
Jefferson Medical College, Philadelphia, PA
Mark A. Kane, MD, MPH
Consultant, Seattle, WA
Edgar K. Marcuse, MD, MPH
University of Washington School of Medicine
Brian J. McMahon, MD
Alaska Native Medical Center, Anchorage, AK
Walter A. Orenstein, MD
Bill & Melinda Gates Foundation
Stanley A. Plotkin, MD
Vaxconsult.com
Gregory A. Poland, MD
Mayo Clinic, Rochester, MN
Sarah Jane Schwarzenberg, MD
University of Minnesota
Coleman I. Smith, MD
Minnesota Gastroenterology, Minneapolis, MN
Richard K. Zimmerman, MD, MPH
University of Pittsburgh

Vaccine Highlights

Recommendations, schedules, and more

Editor's note: The information in "Vaccine Highlights" is current as of June 22, 2009.

Novel H1N1 influenza

Because novel H1N1 influenza is a complex, rapidly emerging health concern, the Immunization Action Coalition (IAC) will not attempt to summarize H1N1 influenza developments in the Vaccine Highlights section of *Needle Tips*. Instead, on page 1 of this issue, we've listed links to excellent sources of up-to-date novel H1N1 influenza information. Please check these sources regularly to stay informed.

The next ACIP meetings

A committee of 15 national experts, the Advisory Committee on Immunization Practices (ACIP) advises CDC on the appropriate use of vaccines. ACIP meets three times a year in Atlanta; meetings are open to the public. The next meetings will be held on June 24–26 and Oct. 21–22. For more information, including details about registration procedures, visit www.cdc.gov/vaccines/recs/acip.

ACIP periodically issues public health recommendations on the use of vaccines. Clinicians who vaccinate should have a current set for reference. Published in the *Morbidity and Mortality Weekly Report (MMWR)*, ACIP recommendations are easily available. Here are sources:

- Download them from links on IAC's website: www.immunize.org/acip.
- Download them from CDC's website: www.cdc.gov/vaccines/pubs/acip-list.htm.
- Call the CDC-INFO Contact Center: (800) CDC-INFO [(800) 232-4636].

Recently published ACIP recommendations:

"Prevention of Rotavirus Gastroenteritis among Infants and Children" (2/6/09)

Immunization schedules

On Jan. 2, CDC published "Recommended Immunization Schedules for Persons Aged 0 Through 18 Years—U.S., 2009." Issued jointly by ACIP,

AAP, and AAFP, it is available in English and Spanish at www.cdc.gov/vaccines/recs/schedules/child-schedule.htm. *Needle Tips* has a reformatted version on pages 11–13. To learn about or order IAC's laminated 6-page color version of the child/teen schedule, go to www.immunize.org/shop/schedule_child.asp.

On Jan. 9, CDC published "Recommended Adult Immunization Schedule—U.S., 2009." Issued jointly by ACIP, AAFP, ACOG, and ACP, it is available in English and Spanish at www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm. *Needle Tips* has a reformatted version on pages 14–16. To learn about or order IAC's laminated 6-page color version of the adult schedule, go to www.immunize.org/shop/schedule_adult.asp.

Pneumococcal news

On June 9, CDC issued "Interim guidance for use of 23-valent pneumococcal polysaccharide vaccine during novel influenza A (H1N1) outbreak." It reminds healthcare professionals that during this H1N1 influenza outbreak, it is particularly important to administer PPSV vaccine to all the groups for whom vaccination is recommended. It also discusses how to use pneumococcal conjugate vaccine (PCV). To access the interim guidance, go to www.cdc.gov/h1n1flu/guidance/ppsv_h1n1.htm.

On Dec. 8, 2008, ACIP issued provisional recommendations for the use of PPSV in people ages 19–64 who smoke cigarettes or have asthma. The provisional recommendations are available at www.cdc.gov/vaccines/recs/provisional.

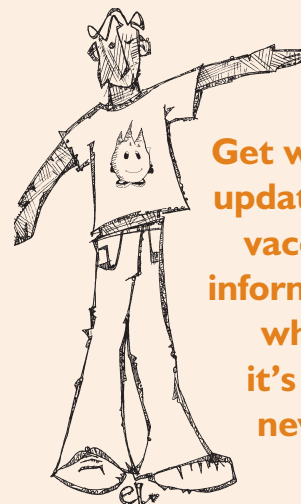
On April 16, CDC issued a new VIS for PPSV reflecting the expanded recommendations. To access it, go to www.immunize.org/vis/pneum3.pdf. Several translations of this new PPSV VIS are available at www.immunize.org/vis/vis_ppsv.asp.

On Dec. 9, 2008, CDC issued an interim VIS for PCV vaccine to incorporate changes made to the recommendations for vaccinating healthy children ages 2 through 4 years. To access it, go to www.immunize.org/vis/pnPCV7.pdf.

Influenza news

On Feb. 25, ACIP voted on recommendations for the use of seasonal influenza vaccine in the 2009–10 influenza season. These call for annual influenza vaccination for all people ages 6 months through 18 years. Previously, influenza vaccination for this age group was recommended "if feasible." Recommendations for adult influenza vaccination are unchanged. As of this writing, the recommendations have not been made official by

Subscribe to
IAC Express!



Get weekly updates on vaccine information while it's still news!

All the news we publish in "Vaccine Highlights" will be sent by email to you every Monday. Free! To sign up, visit

www.immunize.org/subscribe

At the same time, you'll be able to sign up to receive other free IAC publications!

publication in *MMWR*; however, provisional recommendations are available at www.cdc.gov/vaccines/recs/provisional.

CDC updated a page on its website, titled "Taking Care of Yourself: What to Do if You Get Sick with the Flu." It includes important information for providers, parents, and patients on emergency warning signs that indicate that immediate medical attention is needed. To access this important resource, go to www.cdc.gov/flu/takingcare.htm.

IAC recently created a new patient education piece on influenza vaccination that makes the case for all members of a family to be vaccinated against influenza. To access "Don't take chances with your family's health—make sure you all get vaccinated against influenza every year!" go to www.immunize.org/catg.d/p4069.pdf.

Td and Tdap news

On Dec. 4, 2008, FDA approved an expanded age range for administering Boostrix Tdap vaccine (GSK) to now include people ages 10 through 64 years. Previously, it was licensed for ages 10 through 18 years. To read a summary of indications for use of Boostrix, as published in *MMWR*,

What did one frog say to the other frog?



Time's fun when you're having flies!

go to www.cdc.gov/mmwr/preview/mmwrhtml/mm5814a5.htm.

On Nov. 18, 2008, CDC issued an interim edition of a new VIS that is to be used for both Td vaccine and Tdap vaccine. To access it, go to www.immunize.org/vis/td_tdap.pdf.

Rotavirus news

On Feb. 6, CDC published updated recommendations for prevention of rotavirus gastroenteritis in infants and children. It includes information on the use of recently licensed 2-dose Rotarix (RV1, GSK) vaccine and the 3-dose RotaTeq (RV5, Merck). To read the recommendations, go to www.cdc.gov/mmwr/pdf/rr/rr5802.pdf.

Hib news

On March 18, CDC issued a Health Advisory emphasizing the need for all children to receive the primary 3-dose series of Hib-containing vaccine and outlining recommendations for vaccinating children of various ages with vaccine produced by different manufacturers. Because of the Hib vaccine shortage, CDC recommends deferring the booster dose at age 12–15 months, except for high-risk groups. To access the Health Advisory, go to www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00281.

Supplies of Merck's PedvaxHIB and Comvax (Hib-HepB combination) vaccines are expected to be restored by mid-to-late 2009. Sanofi pasteur's supply of ActHIB and Pentacel (DTaP-IPV/Hib) vaccines are adequate to cover the 3-dose series through mid-2009.

To access CDC's vaccine supply and shortage updates, go to www.cdc.gov/vaccines/vac-gen/shortages.

Hepatitis A and B news

In June, CDC issued a 2-page document titled "Protecting Infants against Hepatitis B Virus Infection when Using Pentacel Vaccine during the Hib Vaccine Shortage." It advises providers who are using DTaP-IPV/Hib vaccine (Pentacel) to make every effort to have an adequate supply of monovalent HepB vaccine available to ensure that all infants receive timely HepB vaccination and to avoid excess doses of other antigens, e.g., DTaP. To access the document, go to www.cdc.gov/vaccines/vac-gen/shortages.

At its February meeting, ACIP voted to recommend hepatitis A vaccination for all previously unvaccinated people who anticipate having close personal contact with an international adoptee within 60 days of the adoptee's arrival in the U.S. when the adoptee is from a country that has high or intermediate hepatitis A endemicity. It is anticipated that the new recommendation will be published in *MMWR* later in 2009.

Pediatric hepatitis B (HepB) vaccine supply is expected to be tight in summer 2009. Despite supply constraints, current analysis indicates that sufficient pediatric HepB will be available to meet demand if providers continue to order vaccine judiciously. Providers should continue to administer pediatric HepB according to the recommended immunization schedule for children and teens.

Merck anticipates depleting supplies of its adult and dialysis formulations of Recombivax HB (HepB) vaccines. Supplies of GSK's adult Engerix-B (HepB) and Twinrix (HepA/HepB combination) will meet demands for routine and high-risk usage.

To access CDC's vaccine supply and shortage updates, go to www.cdc.gov/vaccines/vac-gen/shortages.

MMR, varicella & zoster news

Merck reports that though it is experiencing delays in shipping Varivax (varicella) vaccine, supplies are adequate to fully implement the recommended 2-dose schedule (including catch-up) for all age groups. Merck's ProQuad (MMRV) vaccine will not be available in 2009.

Merck is also experiencing delays in shipping Zostavax (shingles) vaccine but anticipates that shipping times will return to normal in mid-2009.

In Dec. 2008, Merck reported to CDC that it was not currently producing or taking orders for the following monovalent vaccines: Attenuvax (measles), Mumpsvax (mumps), and Meruvax (rubella).

To access CDC's vaccine supply and shortage updates, go to www.cdc.gov/vaccines/vac-gen/shortages.

Japanese encephalitis news

On March 30, FDA licensed Ixiaro (InterCell Bio-medical), an inactivated, adsorbed Japanese Encephalitis (JE) virus vaccine, for use in preventing disease in persons age 17 years and older. It is licensed for use as a 2-dose series for people who travel to or live in areas where JE outbreaks are known to occur. To view the package insert, go to the alphabetical listing of licensed biological products at www.fda.gov/BiologicsBloodVaccines/ucm133705.htm and scroll down to Japanese encephalitis.

Anthrax news

On Dec. 11, 2008, FDA approved a new vaccine administration schedule of 0 and 4 weeks and 6, 12, and 18 months for Emergent BioSolutions' BioThrax anthrax vaccine. Previously, the schedule also included an additional dose at 2 weeks. FDA also approved intramuscular administration; previously, the route was subcutaneous. To view the package insert, go to www.emergentbiosolutions.com/pdf/emergent_biobrax_us.pdf.

CDC resources

The eleventh edition of CDC's textbook *Epidemiology and Prevention of Vaccine-Preventable Diseases* (the Pink Book) provides healthcare professionals with comprehensive information on vaccine-preventable diseases and vaccines. It is available for downloading at www.cdc.gov/vaccines/pubs/pinkbook. Information for ordering a bound copy is also available at the URL above.

In April, CDC released "Guide to Vaccine Contraindications and Precautions," which summarizes CDC's recommendations regarding common symptoms and conditions that do and do not contraindicate administering vaccines licensed for use in the U.S. To access it, go to www.cdc.gov/vaccines/recs/vac-admin/downloads/contraindications-guide-508.pdf.

Vaccine concerns

On Feb. 12, three Special Masters of the U.S. Court of Federal Claims issued separate rulings related to autism and vaccine injury compensation cases. In each ruling, the Special Masters found that MMR vaccine, when administered with thimerosal-containing vaccines, does not cause autism. This is the first of two decisions that the U.S. Court of Federal Claims will make. The second decision will decide whether thimerosal-containing vaccines alone can cause autism. To read the Feb. 12 rulings, go to www.uscfc.uscourts.gov/node/5026.

For a wide selection of resources from a variety of organizations on vaccine concerns, visit www.immunize.org/concerns. ♦

Current VIS 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 one of these sources: CDC's website at www.cdc.gov/vaccines/pubs/vis (has VISs in English) or IAC's website at www.immunize.org/vis (has VISs in more than 30 languages).

DTaP/DT/DTP.....	5/17/07	PCV.....	12/9/08
hepatitis A.....	3/21/06	PPSV.....	4/16/09
hepatitis B.....	7/18/07	polio.....	1/1/00
Hib.....	12/16/98	rabies.....	1/12/06
HPV (H. papillomavirus)...	2/2/07	rotavirus.....	8/28/08
influenza (LAIV).....	7/24/08	shingles.....	9/11/06
influenza (TIV).....	7/24/08	Td/Tdap.....	11/18/08
Japan. enceph.....	5/11/05	typhoid.....	5/19/04
meningococcal....	1/28/08	varicella.....	3/13/08
MMR.....	3/13/08	yellow fever.....	11/9/04

Multi-vaccine VIS9/18/08
(for 6 vaccines given to infants/children:
DTaP, IPV, Hib, HepB, PCV, RV)

After the Shots...

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

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

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

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

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

What to do if your child has discomfort

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

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

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

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

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

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

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

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

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

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

HEALTHCARE PROVIDER: PLEASE FILL IN THE INFORMATION BELOW.

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

Healthcare provider phone number: _____

Technical content reviewed by the Centers for Disease Control and Prevention, May 2009.

Medicines and Dosages to Reduce Pain and Fever

Choose the proper medicine, and measure the dose accurately.

1. Ask your healthcare provider or pharmacist which medicine is best for your child.
2. Give the dose based on your child's weight. If you don't know your child's weight, give the dose based on your child's age. Do not give more medicine than is recommended.
3. If you have questions about dosage amounts or any other concerns, call your healthcare provider.
4. Always use a proper measuring device. For example:





- When giving infant drops, use the dropper enclosed in the package. Never use a spoon or a cup!
- When giving children's liquid, use the cup enclosed in the package. If you misplace the cup, consult your healthcare provider or pharmacist for advice. Kitchen spoons are not accurate measures.

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

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



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

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

CHILD'S WEIGHT	CHILD'S AGE	INFANT'S DROPS 80 mg in each 0.8 mL 	CHILDREN'S LIQUID 160 mg in 5 mL (1 tsp)  Kitchen spoons are not accurate measures.	CHILDREN'S TABLETS 80 mg in each tab	JUNIOR STRENGTH 160 mg in each tab
6–11 lbs (2.7–5 kg)	0–3 mos	Advised dose* _____	Advised dose* _____		
12–17 lbs (5.5–7.7 kg)	4–11 mos	Advised dose* _____	Advised dose* _____		
18–23 lbs (8.2–10.5 kg)	12–23 mos	Advised dose* _____	Advised dose* _____		
24–35 lbs (10.9–15.9 kg)	2–3 yrs	1.6 mL (0.8 mL + 0.8 mL)	1 teaspoon or 5 mL	2 tablets	
36–47 lbs (16.4–21.4 kg)	4–5 yrs		1½ teaspoon or 7.5 mL	3 tablets	
48–59 lbs (21.8–26.8 kg)	6–8 yrs		2 teaspoons or 10 mL	4 tablets	2 tablets
60–71 lbs (27.3–32.3 kg)	9–10 yrs		2½ teaspoons or 12.5 mL	5 tablets	2½ tablets
72–95 lbs (32.7–43.2 kg)	11 yrs		3 teaspoons or 15 mL	6 tablets	3 tablets

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

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

CHILD'S WEIGHT	CHILD'S AGE	INFANT'S DROPS 50 mg in each 1.25 mL 	CHILDREN'S LIQUID 100 mg in 5 mL (1 tsp)  Kitchen spoons are not accurate measures.	CHILDREN'S TABLETS 50 mg in each tab	JUNIOR STRENGTH 100 mg in each tab
less than 11 lbs (5 kg)	0–5 mos				
12–17 lbs (5.5–7.7 kg)	6–11 mos	1.25 mL	Advised dose* _____		
18–23 lbs (8.2–10.5 kg)	12–23 mos	1.875 mL	Advised dose* _____		
24–35 lbs (10.9–15.9 kg)	2–3 yrs		1 teaspoon or 5 mL	2 tablets	
36–47 lbs (16.4–21.4 kg)	4–5 yrs		1½ teaspoon or 7.5 mL	3 tablets	
48–59 lbs (21.8–26.8 kg)	6–8 yrs		2 teaspoons or 10 mL	4 tablets	2 tablets
60–71 lbs (27.3–32.3 kg)	9–10 yrs		2½ teaspoons or 12.5 mL	5 tablets	2½ tablets
72–95 lbs (32.7–43.2 kg)	11 yrs		3 teaspoons or 15 mL	6 tablets	3 tablets

* HEALTHCARE PROVIDER: PLEASE FILL IN THE ADVISED DOSE.

Your name: _____ Date of birth: ____/____/____ Today's date: ____/____/____
(mo.) (day) (yr.) (mo.) (day) (yr.)



Do I need any vaccinations today?

Many adults are behind on their vaccinations. This questionnaire will help you and your healthcare provider determine if you need any vaccinations today. Please check the boxes that apply to you.

Influenza vaccination

- ☐ I'd like to be vaccinated to avoid getting influenza or spreading it to others this season.
- ☐ I am age 50 or older.
- ☐ I live with or provide care for a child younger than age 5.
- ☐ I am younger than age 50 and have an ongoing health problem, such as lung, heart, kidney, liver, or blood disease; diabetes; HIV/AIDS; a disease that affects my immune system; or a health condition that may cause me to choke when I swallow.
- ☐ I live with or provide care for an adult age 50 or older or who has one of the health conditions described above.
- ☐ I live in a nursing home or chronic care facility.
- ☐ I am or will be pregnant during the influenza season.
- ☐ I am a healthcare worker.

Pneumococcal vaccination

- ☐ I am age 65 or older, and I have never had a pneumococcal shot.
- ☐ I am age 65 or older and had one pneumococcal shot when I was younger than age 65; it has been 5 years or more since that shot.
- ☐ I am younger than age 65, I have not been vaccinated against pneumococcal disease, and at least one of the following applies to me:
 - I smoke cigarettes.
 - I have heart, lung, liver, kidney, or sickle cell disease; diabetes; or alcoholism.
 - I have a weakened immune system due to cancer, Hodgkin's disease, leukemia, lymphoma, multiple myeloma, kidney failure, HIV/AIDS; or I am receiving radiation therapy; or I am on medication that suppresses my immune system.
 - I have had an organ or bone marrow transplant.
 - I have had my spleen removed, have had or will have a cochlear implant, or have leaking spinal fluid.

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

- ☐ I am younger than age 65 and have not had a pertussis-containing vaccine as an adult.
- ☐ I have or will have close contact with a child younger than age 12 months and have not had a pertussis-containing vaccine as an adolescent or adult.
- ☐ I have not yet had at least 3 tetanus- and diphtheria-containing shots.
- ☐ I have had at least 3 tetanus- and diphtheria-containing shots in my lifetime, but I believe it's been 10 years or more since I received my last shot.
- ☐ I have no idea if I ever received any tetanus- and diphtheria-containing shots in school, the military, or elsewhere.

Shingles (zoster) vaccination

- ☐ I am an adult age 60 or older and haven't had a shingles shot.

Note: Adults may need additional vaccinations, such as polio or others. Talk to your healthcare provider.

(continued on page 2)

Hepatitis A vaccination

- ☐ I want to be vaccinated to avoid getting hepatitis A and spreading it to others.
- ☐ I was vaccinated with hepatitis A vaccine in the past but never received the second shot.
- ☐ I might have been exposed to the hepatitis A virus in the past 2 weeks.
- ☐ I am in one of the following risk groups, and I haven't completed the 2-dose series of hepatitis A shots:
- I travel in countries other than the U.S., Western Europe, Canada, Japan, Australia, and New Zealand.¹
 - I use street drugs.
 - I am a man who has sex with men.
 - I have chronic liver disease.
 - I have a clotting factor disorder.

Hepatitis B vaccination

- ☐ I want to be vaccinated to avoid getting hepatitis B.
- ☐ I am age 18 or younger and haven't completed the series of hepatitis B shots.
- ☐ I was vaccinated with hepatitis B vaccine in the past but never completed the full 3-dose series.
- ☐ I am in one of the following risk groups, and I haven't completed the series of hepatitis B shots:
- I am sexually active and am not in a long-term, mutually monogamous relationship.
 - I inject street drugs.
 - I am a man who has sex with men.
 - I have chronic liver disease.
 - I am an immigrant, or my parents are immigrants from an area of the world where hepatitis B is common.^{2,3}
 - I am or will be on kidney dialysis.
 - I live with or am a sex partner of a person with hepatitis B.
 - I am a healthcare or public safety worker who is exposed to blood or other body fluids.
 - I have been diagnosed with a sexually transmitted disease.
 - I provide direct services for people with developmental disabilities.
 - I have been diagnosed with HIV.
 - I travel outside the U.S.^{1,2}

Measles-Mumps-Rubella (MMR) vaccination

- ☐ I was born in 1957 or later and never received an MMR shot.
- ☐ I am a woman thinking about a future pregnancy and do not know if I'm immune to rubella.
- ☐ I am a healthcare worker, I do not have a history of measles or mumps, and I've had only one dose of MMR vaccine.
- ☐ I was born in 1957 or later, and I am included in one of the following groups for whom 2 MMR shots are recommended, but I have received only 1 shot.
- _____ I am entering college or a post-high school educational institution.
- _____ I had a blood test that shows I do not have immunity to measles, mumps, or rubella.
- _____ I travel internationally.

Chickenpox (varicella) vaccination

- ☐ I was born in 1980 or later and have never had chickenpox or the vaccine, or I just don't know.
- ☐ I was born before 1980 and am either a healthcare worker or foreign born, and am not sure if I've had chickenpox or not.
- ☐ I may become pregnant and do not know if I've had chickenpox or the vaccine.

Meningococcal vaccination.

- ☐ I am age 18 or younger and haven't received a meningococcal shot.
- ☐ I am (or will be) a college freshman living in a dorm.
- ☐ I am traveling to an area of the world where meningococcal disease is common.¹
- ☐ I have sickle cell disease, or my spleen isn't working or has been removed, or I have a terminal complement component deficiency.

Human papillomavirus vaccination

- ☐ I am a woman age 26 or younger and haven't completed a series of shots against human papillomavirus.

1. Call your local travel clinic to find out if additional vaccines are recommended.


2. Areas with high rates of hepatitis B include Africa, China, Korea, Southeast Asia including Indonesia and the Philippines, South and Western Pacific Islands, interior Amazon Basin, certain parts of the Caribbean (i.e., Haiti and the Dominican Republic), and the Middle East except Israel. Areas with moderate rates include South Central and Southwest Asia, Israel, Japan, Eastern and Southern Europe, Russia, and most of Central and South America.

3. Most adults from moderate- or high-risk areas of the world do not know their hepatitis B status. All patients from these areas need hepatitis B blood tests to determine if they have been previously infected. The first hepatitis B shot can be given during the same visit as the blood tests but only after the blood is drawn.

Your patients will appreciate receiving these materials!

Free and CDC-reviewed, they're ready for you to download, copy, and distribute!

Here's the link: www.immunize.org/catg.d/p4010.pdf



Immunizations for Babies

A Guide for Parents
These are the vaccinations your baby needs!

Age	Vaccines
At birth	HepB
2 months	HepB + DTaP + PCV + Hib + Polio + RV
4 months	HepB + DTaP + PCV + Hib + Polio + RV
6 months	HepB + DTaP + PCV + Hib + Polio + RV + Influenza ²
12 months or older	MMR + DTaP + PCV + Hib + Chickenpox + HepA + Influenza ²

Check with your doctor or nurse to make sure your baby is receiving all vaccinations on schedule. Many times vaccines are combined to reduce the number of injections. Be sure you ask for a record card with the dates of your baby's vaccinations; bring this with you to every visit.

Here's a list of the diseases your baby will be protected against:

HepB: hepatitis B, a serious liver disease
DTaP: diphtheria, tetanus (lockjaw), and pertussis (whooping cough)
PCV: pneumococcal conjugate vaccine protects against a serious blood, lung, and brain infection
Hib: *Haemophilus influenzae* type b, a serious brain, throat, and blood infection
Polio: polio, a serious paralyzing disease
RV: rotavirus infection, a serious diarrheal disease
Influenza: a serious lung infection
MMR: measles, mumps, and rubella
HepA: hepatitis A, a serious liver disease
Chickenpox: also called varicella

Footnotes to above chart:
1. This is the age range in which this vaccine should be given.
2. Your baby may not need a dose of HepB vaccine at age 4 months, depending on the vaccine used. Check with your doctor or nurse.
3. Your baby may not need a dose of Hib vaccine at age 6 months, depending on the vaccine used. Check with your doctor or nurse.
4. Your baby may not need a dose of RV vaccine at age 6 months, depending on the vaccine used. Check with your doctor or nurse.
5. All children who are 6 months of age or older should be vaccinated against influenza in the fall or winter of each year.
6. Your child will need 2 doses of HepA vaccine, given at least 6 months apart.

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

Here's the link: www.immunize.org/catg.d/p4050.pdf


When Do Children and Teens Need Vaccinations?

Age	HepB	DTaP/Tdap	Hib	Polio	PCV	RV	MMR	Varicella	HepA	HPV	MCV4	Influenza
Birth	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 months	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4 months	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 months	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12 months	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15 months	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18 months	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-23 months	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4-6 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7-10 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11-12 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13-18 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

1. Your infant may not need a dose of HepB at age 4 months depending on the type of vaccine that your healthcare provider uses.
2. Your infant may not need a dose of Hib vaccine at age 6 months depending on the type of vaccine that your healthcare provider uses.
3. One dose is recommended for most people. Children younger than age 9 years who are receiving their first vaccination should receive 2 doses spaced at least 4 weeks apart this season.
4. This dose of Tdap may be given as early as 12 months (if it has been 6 months since the previous dose and you think you might need more) or more often by the time your child is age 6 months.
5. If your child's vaccinations are delayed or missed entirely, they should be given as soon as possible.
6. If your child is age 11 through 26 years, they should be vaccinated with 3 doses of HPV vaccine, given over a 6-month period. (Girls as young as age 9 years may be vaccinated.)
7. If you have a teenager who is enrolling in college and planning to live in a dormitory and hasn't previously been vaccinated against meningococcal disease, they should be vaccinated now.
Please note: Some children may need additional vaccines. Talk to your healthcare provider.

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

Here's the link: www.immunize.org/catg.d/p4020.pdf



Are you 11-19 years old?

Then you need to be vaccinated against these serious diseases!

Many people between the ages of 11 and 19 think they are done with their vaccinations. They think vaccinations are just for little kids. But guess what? There are millions of people between the ages of 11 and 19 who need vaccinations to prevent whooping cough, tetanus, diphtheria, hepatitis B, hepatitis A, chickenpox, measles, mumps, rubella, polio, influenza, meningococcal disease, pneumococcal disease, and human papillomavirus infection. Are you one of them?


Getting immunized is a lifelong, life-protecting job. Make sure you and your healthcare provider keep your immunizations up to date. Check to be sure you've had all the vaccinations you need.

Vaccine	Notes
Hepatitis B (HepB)	You need a series of doses of hepatitis B vaccine if you have not already received them.
Measles, Mumps, Rubella (MMR)	Check with your healthcare provider to make sure you've had two doses of MMR.
Tetanus, diphtheria, pertussis (whooping cough) (Tdap, Td)	You need a booster dose of Tdap at age 11-12 years. If you're older and already had a Td booster, you should get a Tdap shot to get the extra protection against pertussis. After that you will need a Td booster dose every ten years.
Polio	If you haven't completed your series of polio vaccine doses and you are not yet 18, you should complete them now.
Varicella (VZV) (chickenpox shot)	If you have not been previously vaccinated and have not had chickenpox, you should get vaccinated against this disease. The vaccine is given as a 2-dose series. Any teenager who was vaccinated as a child with only 1 dose should get a second dose now.
Hepatitis A (HepA)	Anyone can get infected with hepatitis A. That's why many teens want to be protected by vaccine. Some teens, however, have an even greater chance of getting the disease. These risk factors include travel outside the United States,* being a male who has sex with other males, using illegal drugs, or having a clotting factor disorder or chronic liver disease. Talk to your healthcare provider about this 2-dose series of shots.
Human Papillomavirus (HPV)	All adolescent girls should get a series of 3 doses of HPV vaccine to prevent cervical cancer. If you haven't had these shots, you should get vaccinated now.
Influenza	All children and teens through age 18 years should receive annual vaccination against influenza. All other adults who want to be protected from this serious disease should get yearly influenza vaccination every fall or winter.
Pneumococcal disease (pneumococcal shot)	Do you have a chronic health problem? Talk to your healthcare provider about whether you should receive a pneumococcal shot.
Meningococcal disease	This vaccine is recommended for all teens ages 11 through 18 years, college freshmen who will be or are living in dormitories, and those with certain special medical conditions. Ask your healthcare provider.

*** Do you travel outside the United States?**
If so, you may need additional vaccines. The Centers for Disease Control and Prevention (CDC) operates an international traveler's health information line. Call (877) 394-8747 or visit CDC's website at www.cdc.gov/travel for information about your destination. You may also consult a travel clinic or your healthcare professional.

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

Here's the link: www.immunize.org/catg.d/p4030.pdf



Vaccinations for Adults

You're NEVER too old to get immunized!

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

Vaccine	19-49 years	50-64 years	65 years & older
Influenza	You need a dose yearly if you have a chronic health problem,* are a healthcare worker, have close contact with certain individuals,* or you simply want to avoid getting influenza or spreading it to others.	You need a dose every fall (or winter).	
Pneumococcal	You need 1-2 doses if you smoke cigarettes or if you have certain chronic medical conditions.*	You need 1 dose at age 65 (or older) if you've never been vaccinated. You may also need a 2nd dose.*	
Tetanus, diphtheria, pertussis (Tdap, Td)	If you haven't had at least 3 tetanus-and-diphtheria-containing shots sometime in your life, you need to get them now. Start with dose #1, followed by dose #2 in 1 month, and dose #3 in 6 months. All adults need Td booster doses every 10 years. If you're younger than age 65 years and haven't had pertussis-containing vaccine as an adult, one of the doses that you receive should have pertussis (whooping cough) vaccine in it—known as Tdap. Be sure to consult your healthcare provider if you have a deep or dirty wound.		
Hepatitis B (HepB)	You need this vaccine if you have a specific risk factor for hepatitis B virus infection* or you simply wish to be protected from this disease. The vaccine is given as a 3-dose series (dose #1 now, followed by dose #2 in 1 month, and dose #3, usually given 5 months after dose #2).		
Hepatitis A (HepA)	You need this vaccine if you have a specific risk factor for hepatitis A virus infection* or you simply wish to be protected from this disease. The vaccine is usually given as 2 doses, 6-18 months apart.		
Human papillomavirus (HPV)	You need this vaccine if you are a woman who is age 26 years or younger. The vaccine is given in 3 doses over 6 months.		
Measles, mumps, rubella (MMR)	You need at least 1 dose of MMR if you were born in 1957 or later. You may also need a 2nd dose.*		
Varicella (chickenpox)	If you've never had chickenpox or you were vaccinated but only received 1 dose, talk to your healthcare provider about whether you need this vaccine.		
Meningococcal	If you are a young adult going to college and plan to live in a dormitory, you need to get vaccinated against meningococcal disease. People with certain medical conditions should also receive this vaccine.*		
Zoster (shingles)		If you are age 60 years or older, you should get this vaccine now.	

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

Do you travel outside the United States? If so, you may need additional vaccines. The Centers for Disease Control and Prevention (CDC) provides information to assist travelers and their healthcare providers in deciding the vaccines, medications, and other measures necessary to prevent illness and injury during international travel. Visit CDC's website at www.cdc.gov/travel or call (800) CDC-INFO (800) 232-4636. You may also consult a travel clinic or your healthcare provider.

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

Figure 1. Recommended Immunization Schedule for Persons Ages 0 through 6 Years, U.S., 2009

For those who fall behind or start late, see the catch-up schedule (Table 1).

Vaccine ▼	Age ►	Birth	1 mo	2 mo	4 mo	6 mo	12 mo	15 mo	18 mo	19–23 mo	2–3 yrs	4–6 yrs
Hepatitis B ¹	HepB	HepB	HepB	See footnote 1	HepB	HepB	HepB	HepB	HepB			
Rotavirus ²			RV	RV	RV ²							
Diphtheria, Tetanus, Pertussis ³			DTaP	DTaP	DTaP	See footnote 3	DTaP	DTaP	DTaP			DTaP
<i>Haemophilus influenzae</i> type b ⁴			Hib	Hib	Hib ⁴	Hib	Hib	Hib	Hib			
Pneumococcal ⁵			PCV	PCV	PCV	PCV	PCV	PCV	PCV		PPSV	
Inactivated Poliovirus			IPV	IPV	IPV	IPV	IPV	IPV	IPV			IPV
Influenza ⁶						Influenza (Yearly)	Influenza (Yearly)	Influenza (Yearly)	Influenza (Yearly)	Influenza (Yearly)	Influenza (Yearly)	Influenza (Yearly)
Measles, Mumps, Rubella ⁷						MMR	MMR	MMR	MMR	See footnote 7	MMR	MMR
Varicella ⁸						Varicella	Varicella	Varicella	Varicella	See footnote 8	Varicella	Varicella
Hepatitis A ⁹						HepA (2 doses)	HepA (2 doses)	HepA (2 doses)	HepA (2 doses)	HepA (2 doses)	HepA Series	HepA Series
Meningococcal ¹⁰											MCV	MCV

Range of recommended ages

Certain high-risk groups

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 17, 2008, for children ages 0 through 6 years. Any dose not given at the recommended age should be given at a subsequent visit, when indicated and feasible. Licensed combination vaccines may be used whenever any component of the combination is indicated and other components are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the relevant Advisory Committee on

Immunization Practices statement for detailed recommendations, including high-risk conditions: www.cdc.gov/vaccines/pubs/acip-list.htm. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at www.vaers.hhs.gov or by telephone, (800) 822-7967.

1. Hepatitis B vaccine (HepB). (Minimum age: birth)

At birth:

- Give monovalent HepB to all newborns before hospital discharge.
- If mother is hepatitis B surface antigen (HBsAg)-positive, give newborn HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
- If mother's HBsAg status is unknown, give newborn HepB within 12 hours of birth. Determine mother's HBsAg status as soon as possible and, if HBsAg-positive, give newborn HBIG (no later than age 1 week).

After the birth dose:

- The HepB series should be completed with either monovalent HepB or a combination vaccine containing HepB. The second dose should be given at age 1 or 2 months. The final dose should be given no earlier than age 24 weeks.
- Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg (anti-HBs) after completion of at least 3 doses of the HepB series, at age 9 through 18 months (generally at the next well-child visit).

4-month dose:

- Administration of 4 doses of HepB to infants is permissible when combination vaccines containing HepB are given after the birth dose.

2. Rotavirus vaccine (RV). (Minimum age: 6 weeks)

- Give the first dose at age 6 through 14 weeks (maximum age: 14 weeks 6 days). Vaccination should not be initiated for infants ages 15 weeks 0 days or older.
- Give the final dose in the series by age 8 months 0 days.
- If Rotarix[®] is given at ages 2 and 4 months, a dose at 6 months is not indicated.

3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP). (Minimum age: 6 weeks)

- The fourth dose may be given as early as age 12 months, provided at least 6 months have elapsed since the third dose.
- Give the final dose in the series at age 4 through 6 years.

4. *Haemophilus influenzae* type b conjugate vaccine (Hib). (Minimum age: 6 weeks)

- If PRP-OMP (PedvaxHIB[®] or ComVax[®] [HepB-Hib]) is given at ages 2 and 4 months, a dose at age 6 months is not indicated.
- TriHIBit[®] (DTaP/Hib) should not be used for doses at ages 2, 4, or 6 months but can be used as the final dose in children age 12 months or older.

5. Pneumococcal vaccine. (Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPSV])

- PCV is recommended for all children age younger than 5 years. Give 1 dose of PCV to all healthy

children ages 24 through 59 months who are not completely vaccinated for their age.

- Give PPSV to children age 2 years or older with certain underlying medical conditions (see *MMWR* 2000;49[No. RR-9]), including a cochlear implant.

6. Influenza vaccine. (Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 2 years for live, attenuated influenza vaccine [LAIV])

- Give annually to children ages 6 months through 18 years.
- For healthy nonpregnant persons (i.e., those who do not have underlying medical conditions that predispose them to influenza complications) ages 2 through 49 years, either LAIV or TIV may be used.
- Children receiving TIV should receive 0.25 mL if age 6 through 35 months or 0.5 mL if age 3 years or older.
- Give 2 doses (separated by at least 4 weeks) to children age younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.

7. Measles, mumps, and rubella vaccine (MMR). (Minimum age: 12 months)

- Give the second dose at age 4 through 6 years. However, the second dose may be given before age 4, provided at least 28 days have elapsed since the first dose.

8. Varicella vaccine. (Minimum age: 12 months)

- Give the second dose at age 4 through 6 years. However, the second dose may be given before age 4, provided at least 3 months have elapsed since the first dose.
- For children ages 12 months through 12 years, the minimum interval between doses is 3 months. However, if the second dose was given at least 28 days after the first dose, it can be accepted as valid.

9. Hepatitis A vaccine (HepA). (Minimum age: 12 months)

- Give to all children age 1 year (i.e., ages 12 through 23 months). Give 2 doses at least 6 months apart.
- Children not fully vaccinated by age 2 years can be vaccinated at subsequent visits.
- HepA also is recommended for children older than age 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See *MMWR* 2006;55[No. RR-7].

10. Meningococcal vaccine. (Minimum age: 2 years for meningococcal conjugate vaccine [MCV] and for meningococcal polysaccharide vaccine [MPSV])

- Give MCV to children ages 2 through 10 years with terminal complement deficiency, anatomic or functional asplenia, and certain other high-risk groups. See *MMWR* 2005;54 (No. RR-7).
- Persons who received MPSV 3 or more years previously and who remain at increased risk for meningococcal disease should be revaccinated with MCV.

Figure 2. Recommended Immunization Schedule for Persons Ages 7 through 18 Years, U.S., 2009

For those who fall behind or start late, see the schedule below and the catch-up schedule (Table 1).

Vaccine ▼	Age ►	7–10 yrs	11–12 yrs	13–18 yrs	
Tetanus, Diphtheria, Pertussis ¹	See footnote 1		Tdap	Tdap	Range of recommended ages
Human Papillomavirus ²	See footnote 2		HPV (3 doses)	HPV Series	
Meningococcal ³		MCV	MCV	MCV	Catch-up immunization
Influenza ⁴		Influenza (Yearly)			
Pneumococcal ⁵		PPSV			Certain high-risk groups
Hepatitis A ⁶		HepA Series			
Hepatitis B ⁷		HepB Series			
Inactivated Poliovirus ⁸		IPV Series			
Measles, Mumps, Rubella ⁹		MMR Series			
Varicella ¹⁰		Varicella Series			

This schedule indicates the recommended ages for routine administration of currently licensed vaccines, as of December 17, 2008, for children ages 7 through 18 years. Any dose not given at the recommended age should be given at a subsequent visit, when indicated and feasible. Licensed combination vaccines may be used whenever any component of the combination is indicated and other components are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the relevant Advisory

Committee on Immunization Practices statement for detailed recommendations, including high-risk conditions: www.cdc.gov/vaccines/pubs/acip-list.htm. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at www.vaers.hhs.gov or by telephone, (800) 822-7967.

1. Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap). (Minimum age: 10 years for BOOSTRIX[®] and 11 years for ADACEL[®])

- Give at age 11 or 12 years for those who have completed the recommended childhood DTP/DTaP vaccination series and have not received a tetanus and diphtheria toxoid (Td) booster dose.
- Persons ages 13 through 18 years who have not received Tdap should receive a dose.
- A 5-year interval from the last Td dose is encouraged when Tdap is used as a booster dose; however, a shorter interval may be used if pertussis immunity is needed.

2. Human papillomavirus vaccine (HPV). (Minimum age: 9 years)

- Give the first dose to females at age 11 or 12 years.
- Give the second dose 2 months after the first dose and the third dose 6 months after the first dose (at least 24 weeks after the first dose).
- Give the series to females at age 13 through 18 years if not previously vaccinated.

3. Meningococcal conjugate vaccine (MCV).

- Give at age 11 or 12 years, or at age 13 through 18 years if not previously vaccinated.
- Give to previously unvaccinated college freshmen living in a dormitory.
- MCV is recommended for children ages 2 through 10 years with terminal complement component deficiency, anatomic or functional asplenia, and certain other groups at high risk. See *MMWR* 2005;54(No. RR-7).
- Persons who received MPSV 5 or more years previously and remain at increased risk for meningococcal disease should be revaccinated with MCV.

4. Influenza vaccine.

- Give annually to children ages 6 months through 18 years.
- For healthy nonpregnant persons (i.e., those who do not have underlying medical conditions that predispose them to influenza complications) ages 2 through 49 years, either LAIV or TIV may be used.
- Give 2 doses (separated by at least 4 weeks) to children age younger than 9 years who are receiving influenza vaccine for the first time or who were vaccinated for the first time during the previous influenza season but only received 1 dose.

5. Pneumococcal polysaccharide vaccine (PPSV).

- Give to children with certain underlying medical conditions (see *MMWR* 1997;46[No. RR-8], including a cochlear implant. A single revaccination should be given to children with functional or anatomic asplenia or other immunocompromising condition after 5 years.

6. Hepatitis A vaccine (HepA).

- Give 2 doses at least 6 months apart.
- HepA is recommended for children older than 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See *MMWR* 2006;55(No. RR-7).

7. Hepatitis B vaccine (HepB).

- Give the 3-dose series to those not previously vaccinated.
- A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB[®] is licensed for children ages 11 through 15 years.

8. Inactivated poliovirus vaccine (IPV).

- For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if the third dose was given at age 4 years or older.
- If both OPV and IPV were given as part of a series, a total of 4 doses should be given, regardless of the child's current age.

9. Measles, mumps, and rubella vaccine (MMR).

- If not previously vaccinated, give 2 doses or the second dose for those who have received only 1 dose, with at least 28 days between the doses.

10. Varicella vaccine.

- For persons ages 7 through 18 years without evidence of immunity (see *MMWR* 2007;56 [No. RR-4]), give 2 doses if not previously vaccinated or the second dose if they have received only 1 dose.
- For persons ages 7 through 12 years, the minimum interval between doses is 3 months. However, if the second dose was given at least 28 days after the first dose, it can be accepted as valid.
- For persons age 13 years and older, the minimum interval between doses is 28 days.

The Recommended Immunization Schedules for Persons Ages 0 Through 18 Years are approved by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/recs/acip), the American Academy of Pediatrics (www.aap.org), and the American Academy of Family Physicians (www.aafp.org).

Information about reporting reactions after immunization is available online at www.vaers.hhs.gov or by telephone, (800) 822-7967. Suspected cases of vaccine-preventable diseases should be reported to the state or local health department. Additional information, including precautions and contraindications for immunization, is available from the National Center for Immunization and Respiratory Diseases at www.cdc.gov/vaccines or telephone, (800) CDC-INFO ([800] 232-4636).

Table 1. Catch-up Immunization Schedule for Persons Ages 4 Months through 18 Years Who Start Late or Who Are More Than 1 Month Behind, United States, 2009

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age.

Catch-up schedule for persons ages 4 months through 6 years					
Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 wks after first dose)		
Rotavirus ²	6 wks	4 weeks	4 weeks ²		
Diphtheria, Tetanus, Pertussis ³	6 wks	4 weeks	4 weeks	6 months	6 months ³
<i>Haemophilus influenzae</i> type b ⁴	6 wks	4 weeks if first dose given before age 12 mos 8 weeks (as final dose) if first dose given at age 12–14 mos No further doses needed if first dose given at age 15 mos or older	4 weeks ⁴ if current age is younger than 12 mos 8 weeks (as final dose) ⁴ if current age is 12 mos or older and second dose given before age 15 mos No further doses needed if previous dose given at age 15 mos or older	8 weeks (as final dose) This dose only necessary for children ages 12 mos through 59 mos who received 3 doses before age 12 mos	
Pneumococcal ⁵	6 wks	4 weeks if first dose given before age 12 mos 8 weeks (as final dose for healthy children) if first dose given at age 12 mos or older or current age is 24 through 59 mos No further doses needed for healthy children if first dose given at age 24 mos or older	4 weeks if current age is younger than 12 mos 8 weeks (as final dose for healthy children) if current age is 12 mos or older No further doses needed for healthy children if previous dose given at age 24 mos or older	8 weeks (as final dose) This dose only necessary for children ages 12 mos through 59 mos who received 3 doses before age 12 mos or for high-risk children who received 3 doses at any age	
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks	4 weeks ⁶	
Measles, Mumps, Rubella ⁷	12 mos	4 weeks			
Varicella ⁸	12 mos	3 months			
Hepatitis A ⁹	12 mos	6 months			
Catch-up schedule for persons ages 7 through 18 years					
Tetanus, Diphtheria/ Tetanus, Diphtheria, Pertussis ¹⁰	7 yrs ¹⁰	4 weeks	4 weeks if first dose is given before age 12 mos 6 months if first dose given at age 12 mos or older	6 months if first dose is given before age 12 mos	
Human Papillomavirus ¹¹	9 yrs	Routine dosing intervals are recommended ¹¹			
Hepatitis A ⁹	12 mos	6 months			
Hepatitis B ¹	Birth	4 weeks	8 weeks (and at least 16 wks after first dose)		
Inactivated Poliovirus ⁶	6 wks	4 weeks	4 weeks	4 weeks ⁶	
Measles, Mumps, Rubella ⁷	12 mos	4 weeks			
Varicella ⁸	12 mos	3 months if the person is younger than age 13 yrs 4 weeks if the person is age 13 years or older			

1. Hepatitis B vaccine (HepB).

- Give the 3-dose series to those not previously vaccinated.
- A 2-dose series (separated by at least 4 months) of adult formulation Recombivax HB® is licensed for children ages 11 through 15 years.

2. Rotavirus vaccine (RV).

- The maximum age for the first dose is 14 weeks 6 days. Vaccination should not be initiated for infants age 15 weeks or older (i.e., 15 weeks 0 days or older).
- Give the final dose in the series by age 8 months 0 days.
- If Rotarix® was given for the first and second doses, a third dose is not indicated.

3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP).

- The fifth dose is not necessary if the fourth dose was given at age 4 years or older.

4. *Haemophilus influenzae* type b conjugate vaccine (Hib).

- Hib vaccine is not generally recommended for persons age 5 years or older. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in persons who have sickle cell disease, leukemia, or HIV infection, or who have had a splenectomy; giving 1 dose of Hib vaccine to these persons is not contraindicated.
- If the first 2 doses were PRP-OMP (PedvaxHIB® or ComVax®), and given at age 11 months or younger, the third (and final) dose should be given at age 12 through 15 months and at least 8 weeks after the second dose.
- If the first dose was given at age 7 through 11 months, give 2 doses separated by 4 weeks and a final dose at age 12 through 15 months.

5. Pneumococcal vaccine.

- Give 1 dose of pneumococcal conjugate vaccine (PCV) to all healthy children ages 24 through 59 months who have not received at least 1 dose of PCV on or after age 12 months.
- For children ages 24 through 59 months with underlying medical conditions, give 1 dose of PCV if 3 doses were received previously or give 2 doses of PCV at least 8 weeks apart if fewer than 3 doses were received previously.
- Give pneumococcal polysaccharide vaccine (PPSV) to children ages 2 years or older with certain underlying medical conditions (see *MMWR* 2000;49[No. RR-9]), including a cochlear implant, at least 8 weeks after the last dose of PCV.

6. Inactivated poliovirus vaccine (IPV).

- For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if the third dose was given at age 4 years or older.
- If both OPV and IPV were given as part of a series, a total of 4 doses should be given, regardless of the child's current age.

7. Measles, mumps, and rubella vaccine (MMR).

- Give the second dose at age 4 through 6 years. However, the second dose may be given before age 4, provided at least 28 days have elapsed since the first dose.
- If not previously vaccinated, give 2 doses with at least 28 days between doses.

8. Varicella vaccine.

- Give the second dose at age 4 through 6 years. However, the second dose may be given before age 4, provided at least 3 months have elapsed since the first dose.
- For persons ages 12 months through 12 years, the minimum interval between doses is 3 months. However, if the second dose was given at least 28 days after the first dose, it can be accepted as valid.
- For persons ages 13 years and older, the minimum interval between doses is 28 days.

9. Hepatitis A vaccine (HepA).

- HepA is recommended for children older than 1 year who live in areas where vaccination programs target older children or who are at increased risk of infection. See *MMWR* 2006;55(No. RR-7).

10. Tetanus and diphtheria toxoids (Td) and tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap).

- Doses of DTaP are counted as part of the Td/Tdap series.
- Tdap should be substituted for a single dose of Td in the catch-up series or as a booster for children ages 10 through 18 years; use Td for other doses.

11. Human papillomavirus vaccine (HPV).

- Give the series to females at age 13 through 18 years if not previously vaccinated.
- Use recommended routine dosing intervals for series catch-up (i.e., the second and third doses should be given at 2 and 6 months after the first dose). However, the minimum interval between the first and second doses is 4 weeks. The minimum interval between the second and third doses is 12 weeks, and the third dose should be given at least 24 weeks after the first dose.

Recommended Adult Immunization Schedule – United States, 2009

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

Figure 1. Recommended adult immunization schedule, by vaccine and age group

Vaccine ▼	Age group ►	19–26 yrs	27–49 yrs	50–59 years	60–64 yrs	≥65 years
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs				Td booster every 10 yrs
Human papillomavirus (HPV) ^{2,*}		3 doses (females)				
Varicella ^{3,*}		2 doses				
Zoster ⁴					1 dose	
Measles, mumps, rubella (MMR) ^{5,*}		1 or 2 doses		1 dose		
Influenza ^{6,*}				1 dose annually		
Pneumococcal (polysaccharide) ^{7,8}			1 or 2 doses			1 dose
Hepatitis A ^{9,*}			2 doses			
Hepatitis B ^{10,*}			3 doses			
Meningococcal ^{11,*}			1 or more doses			

*Covered by the Vaccine Injury Compensation Program.

Figure 2. Vaccines that might be indicated for adults based on medical and other indications

Vaccine ▼	Indication ►	Pregnancy	Immunocompromising conditions (excluding human immunodeficiency virus [HIV]) ¹³	HIV infection ^{3,12,13} CD4+ T lymphocyte count	Diabetes, heart disease, chronic lung disease, chronic alcoholism	Asplenia ¹² (including elective splenectomy and terminal complement deficiencies)	Chronic liver disease	Kidney failure, end-stage renal disease, receipt of hemodialysis	Healthcare personnel
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}		Td		<200 cells/μL	≥200 cells/μL				
Human papillomavirus (HPV) ^{2,*}									
Varicella ^{3,*}		Contraindicated							
Zoster ⁴		Contraindicated							
Measles, mumps, rubella (MMR) ^{5,*}		Contraindicated							
Influenza ^{6,*}									
Pneumococcal (polysaccharide) ^{7,8}									
Hepatitis A ^{9,*}									
Hepatitis B ^{10,*}									
Meningococcal ^{11,*}									

*Covered by the Vaccine Injury Compensation Program.

For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

No recommendation

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly indicated for adults ages 19 years and older, as of January 1, 2009. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/pubs/acip-list.htm).

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

Footnotes

Note: Immunization recommendations from ACIP are available at www.cdc.gov/vaccines/pubs/acip-list.htm

1. Tetanus, diphtheria, and acellular pertussis (Td/Tdap) vaccination. Tdap should replace a single dose of Td for adults ages 19 through 64 years who have not received a dose of Tdap previously.

Adults with uncertain or incomplete history of primary vaccination series with tetanus and diphtheria toxoid-containing vaccines should begin or complete a primary vaccination series. A primary series for adults is 3 doses of tetanus and diphtheria toxoid-containing vaccines; give the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second. However, Tdap can substitute for any one of the doses of Td in the 3-dose primary series. The booster dose of tetanus and diphtheria toxoid-containing vaccine should be given to adults who have completed a primary series and if the last vaccination was received 10 or more years previously. Tdap or Td vaccine may be used, as indicated.

If a woman is pregnant and received the last Td vaccination 10 or more years previously, give Td during the second or third trimester. If the woman received the last Td vaccination less than 10 years previously, give Tdap during the immediate postpartum period. A dose of Tdap is recommended for postpartum women, close contacts of infants younger than age 12 months, and all healthcare personnel with direct patient contact if they have not previously received Tdap. An interval as short as 2 years from the last Td is suggested; shorter intervals can be used. Td may be deferred during pregnancy and Tdap substituted in the immediate postpartum period, or Tdap can be given instead of Td to a pregnant woman after an informed discussion with the woman.

Consult the [ACIP statement](#) for recommendations for giving Td as prophylaxis in wound management.

2. Human papillomavirus (HPV) vaccination. HPV vaccination is recommended for all females ages 11 through 26 years (and may begin at age 9 years) who have not completed the vaccine series. History of genital warts, abnormal Papanicolaou test, or positive HPV DNA test is not evidence of prior infection with all vaccine HPV types; HPV vaccination is recommended for persons with such histories.

Ideally, vaccine should be given before potential exposure to HPV through sexual activity; however, females who are sexually active should still be vaccinated consistent with age-based recommendations. Sexually active females who have not been infected with any of the four HPV vaccine types receive the full benefit of the vaccination. Vaccination is less beneficial for females who have already been infected with one or more of the HPV vaccine types.

A complete series consists of 3 doses. The second dose should be given 2 months after the first dose; the third dose should be given 6 months after the first dose.

HPV vaccination is not specifically recommended for females with the medical indications described in Figure 2, “Vaccines that might be indicated for adults based on medical and other indications.” Because HPV vaccine is not a live-virus vaccine, it may be given to persons with the medical indications described in Figure 2. However, the immune response and vaccine efficacy might be less for persons with the medical indications described in Figure 2 than in persons who do not have the medical indications described or who are immunocompetent. Healthcare personnel are not at increased risk because of occupational exposure, and should be vaccinated consistent with age-based recommendations.

3. Varicella vaccination. All adults without evidence of immunity to varicella should receive 2 doses of single-antigen varicella vaccine if not previously vaccinated or the second dose if they have received only one dose, unless they have a medical contraindication. Special consideration should be given to those who 1) have close contact with persons at high risk for severe disease (e.g., healthcare personnel and family contacts of persons with immunocompromising conditions) or 2) are at high risk for exposure or transmission (e.g., teachers; child care employees; residents and staff members of institutional settings, including correctional institutions; college students; military personnel; adolescents and adults living in households with children; nonpregnant women of childbearing age; and international travelers).

Evidence of immunity to varicella in adults includes any of the following: 1) documentation of 2 doses of varicella vaccine at least 4 weeks apart; 2) U.S.-born before 1980 (although for healthcare personnel and pregnant women, birth before 1980 should

not be considered evidence of immunity); 3) history of varicella based on diagnosis or verification of varicella by a healthcare provider (for a patient reporting a history of or presenting with an atypical case, a mild case, or both, healthcare providers should seek either an epidemiologic link with a typical varicella case or to a laboratory-confirmed case or evidence of laboratory confirmation, if it was performed at the time of acute disease); 4) history of herpes zoster based on healthcare provider diagnosis or verification of herpes zoster by a healthcare provider; or 5) laboratory evidence of immunity or laboratory confirmation of disease.

Pregnant women should be assessed for evidence of varicella immunity. Women who do not have evidence of immunity should receive the first dose of varicella vaccine upon completion or termination of pregnancy and before discharge from the healthcare facility. The second dose should be given 4–8 weeks after the first dose.

4. Herpes zoster vaccination. A single dose of zoster vaccine is recommended for adults ages 60 years and older regardless of whether they report a prior episode of herpes zoster. Persons with chronic medical conditions may be vaccinated unless their condition constitutes a contraindication.

5. Measles, mumps, rubella (MMR) vaccination. *Measles component:* Adults born before 1957 generally are considered immune to measles. Adults born during or after 1957 should receive 1 or more doses of MMR unless they have a medical contraindication, documentation of 1 or more doses, history of measles based on healthcare provider diagnosis, or laboratory evidence of immunity.

A second dose of MMR is recommended for adults who 1) have been recently exposed to measles or are in an outbreak setting; 2) have been vaccinated previously with killed measles vaccine; 3) have been vaccinated with an unknown type of measles vaccine during 1963–1967; 4) are students in postsecondary educational institutions; 5) work in a healthcare facility; or 6) plan to travel internationally.

Mumps component: Adults born before 1957 generally are considered immune to mumps. Adults born during or after 1957 should receive 1 dose of MMR unless they have a medical contraindication, history of mumps based on healthcare provider diagnosis, or laboratory evidence of immunity.

A second dose of MMR is recommended for adults who 1) live in a community experiencing a mumps outbreak and are in an affected age group; 2) are students in postsecondary educational institutions; 3) work in a healthcare facility; or 4) plan to travel internationally. For unvaccinated healthcare personnel born before 1957 who do not have other evidence of mumps immunity, giving 1 dose on a routine basis should be considered and giving a second dose during an outbreak should be strongly considered.

Rubella component: 1 dose of MMR vaccine is recommended for women whose rubella vaccination history is unreliable or who lack laboratory evidence of immunity. For women of childbearing age, regardless of birth year, rubella immunity should be determined and women should be counseled regarding congenital rubella syndrome. Women who do not have evidence of immunity should receive MMR vaccine upon completion or termination of pregnancy and before discharge from the healthcare facility.

6. Influenza vaccination: *Medical indications:* Chronic disorders of the cardiovascular or pulmonary systems, including asthma; chronic metabolic diseases, including diabetes mellitus, renal or hepatic dysfunction, hemoglobinopathies, or immunocompromising conditions (including immunocompromising conditions caused by medications or human immunodeficiency virus [HIV]); any condition that compromises respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration (e.g., cognitive dysfunction, spinal cord injury, or seizure disorder or other neuromuscular disorder); and pregnancy during the influenza season. No data exist on the risk for severe or complicated influenza disease among persons with asplenia; however, influenza is a risk factor for secondary bacterial infections that can cause severe disease among persons with asplenia.

Occupational indications: All healthcare personnel, including those employed by long-term care and assisted-living facilities, and caregivers of children younger than age 5 years.

Other indications: Residents of nursing homes and other long-term care and assisted-living facilities; persons likely to transmit influenza to persons at high risk (e.g., in-home

Footnotes (continued)

Note: Immunization recommendations from ACIP are available at www.cdc.gov/vaccines/pubs/acip-list.htm

household contacts and caregivers of children younger than age 5 years, persons 65 years and older, and persons of all ages with high-risk condition[s]; and anyone who would like to decrease their risk of getting influenza. Healthy, nonpregnant adults younger than age 50 years without high-risk medical conditions who are not contacts of severely immunocompromised persons in special care units can receive either intranasally administered live, attenuated influenza vaccine (FluMist®) or inactivated vaccine. Other persons should receive the inactivated vaccine.

7. Pneumococcal polysaccharide (PPSV) vaccination. *Medical indications:* Chronic lung disease (including asthma); chronic cardiovascular diseases; diabetes mellitus; chronic liver diseases, cirrhosis; chronic alcoholism; chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]); immunocompromising conditions; and cochlear implants and cerebrospinal fluid leaks. Vaccinate as close to HIV diagnosis as possible.

Other indications: Residents of nursing homes or long-term care facilities and persons who smoke cigarettes. Routine use of PPSV is not recommended for Alaska Native or American Indian persons younger than age 65 years unless they have underlying medical conditions that are PPSV indications. However, public health authorities may consider recommending PPSV for Alaska Natives and American Indians ages 50 through 64 years who are living in areas in which the risk of invasive pneumococcal disease is increased.

8. Revaccination with PPSV. One-time revaccination after 5 years is recommended for persons with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); and for persons with immunocompromising conditions. For persons age 65 years and older, one-time revaccination if they were vaccinated 5 or more years previously and were younger than age 65 years at the time of primary vaccination.

9. Hepatitis A vaccination. *Medical indications:* Persons with chronic liver disease and persons who receive clotting factor concentrates.

Behavioral indications: Men who have sex with men and persons who use illegal drugs.

Occupational indications: Persons working with hepatitis A virus (HAV)-infected primates or with HAV in a research laboratory setting.

Other indications: Persons traveling to or working in countries that have high or intermediate endemicity of hepatitis A (a list of countries is available at www.cdc.gov/travel/content/diseases.aspx) and any person seeking protection from HAV infection.

Single-antigen vaccine formulations should be given in a 2-dose schedule at either 0 and 6–12 months (Havrix®), or 0 and 6–18 months (Vaqta®). If the combined hepatitis A and hepatitis B vaccine (Twinrix®) is used, give 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, given on days 0, 7, and 21 to 30 followed by a booster dose at month 12 may be used.

10. Hepatitis B vaccination. *Medical indications:* Persons with end-stage renal disease, including patients receiving hemodialysis; persons with HIV infection; and persons with chronic liver disease.

Occupational indications: Healthcare personnel and public-safety workers who are exposed to blood or other potentially infectious body fluids.

Behavioral indications: Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than 1 sex partner during the previous

6 months); persons seeking evaluation or treatment for a sexually transmitted disease (STD); current or recent injection-drug users; and men who have sex with men.

Other indications: Household contacts and sex partners of persons with chronic hepatitis B virus (HBV) infection; clients and staff members of institutions for persons with developmental disabilities; international travelers to countries with high or intermediate prevalence of chronic HBV infection (a list of countries is available at www.cdc.gov/travel/content/diseases.aspx); and any adult seeking protection from HBV infection.

Hepatitis B vaccination is recommended for all adults in the following settings: STD treatment facilities; HIV testing and treatment facilities; facilities providing drug-abuse treatment and prevention services; healthcare settings targeting services to injection-drug users or men who have sex with men; correctional facilities; end-stage renal disease programs and facilities for chronic hemodialysis patients; and institutions and nonresidential daycare facilities for persons with developmental disabilities.

If the combined hepatitis A and hepatitis B vaccine (Twinrix®) is used, give 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, given on days 0, 7, and 21 to 30 followed by a booster dose at month 12 may be used.

Special formulation indications: For adult patients receiving hemodialysis or with other immunocompromising conditions, 1 dose of 40 µg/mL (Recombivax HB®) given on a 3-dose schedule or 2 doses of 20 µg/mL (Engerix-B®) given simultaneously on a 4-dose schedule at 0, 1, 2 and 6 months.

11. Meningococcal vaccination. *Medical indications:* Adults with anatomic or functional asplenia, or terminal complement component deficiencies.

Other indications: First-year college students living in dormitories; microbiologists routinely exposed to isolates of *Neisseria meningitidis*; military recruits; and persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the “meningitis belt” of sub-Saharan Africa during the dry season [December through June]), particularly if their contact with local populations will be prolonged. Vaccination is required by the government of Saudi Arabia for all travelers to Mecca during the annual Hajj.

Meningococcal conjugate vaccine (MCV) is preferred for adults with any of the preceding indications who are age 55 years or younger, although meningococcal polysaccharide vaccine (MPSV) is an acceptable alternative. Revaccination with MCV after 5 years might be indicated for adults previously vaccinated with MPSV who remain at increased risk for infection (e.g., persons residing in areas in which disease is epidemic).

12. Selected conditions for which *Haemophilus influenzae* type b (Hib) vaccine may be used. Hib vaccine generally is not recommended for persons age 5 years and older. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in patients who have sickle cell disease, leukemia, or HIV infection or who have had a splenectomy; giving 1 dose of vaccine to these patients is not contraindicated.

13. Immunocompromising conditions. Inactivated vaccines generally are acceptable (e.g., pneumococcal, meningococcal, influenza [trivalent inactivated influenza vaccine]) and live vaccines generally are avoided in persons with immune deficiencies or immunocompromising conditions. Information on specific conditions is available at www.cdc.gov/vaccines/pubs/acip-list.htm.

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

Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/vaccinecompensation or by telephone, (800) 338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, (202) 357-6400.

Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines or from the CDC-INFO Contact Center at (800) CDC-INFO [(800) 232-4636] in English and Spanish, 24 hours a day, 7 days a week.

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

How to administer IM and SC injections

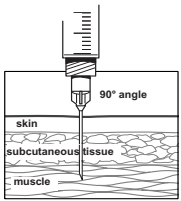
This CDC-reviewed document is ready for you to download, copy, and use!

Download these guides and make them available to all staff who give vaccines.

To obtain full-sized (8-1/2" by 11") copies of these charts, go to www.immunize.org/catg.d/p2020.pdf

How to Administer Intramuscular (IM) Injections

Administer these vaccines by the intramuscular (IM) route: Diphtheria-tetanus (DT, Td) with pertussis (DTaP, Tdap); *Haemophilus influenzae* type b (Hib); hepatitis B (HepB); human papillomavirus (HPV); inactivated influenza (TIV); meningococcal conjugate (MCV); and pneumococcal conjugate (PCV). Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV) either IM or SC.

Patient age	Injection site	Needle size	Needle insertion
Newborn (0–28 days)	Anterolateral thigh muscle	½" (22–25 gauge)	<p>Use a needle long enough to reach deep into the muscle.</p> <p>Insert needle at a 90° angle to the skin with a quick thrust.</p> <p>(Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.)</p> <p>Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.</p> 
Infant (1–12 months)	Anterolateral thigh muscle	1" (22–25 gauge)	
Toddler (1–2 years)	Anterolateral thigh muscle	1–1½" (22–25 gauge)	
	Alternate site: Deltoid muscle of arm if muscle mass is adequate	½–1" (22–25 gauge)	
Children (3–18 years)	Deltoid muscle	½–1" (22–25 gauge)	
	Alternate site: Anterolateral thigh muscle	1–1½" (22–25 gauge)	
Adults 19 years and older	Deltoid muscle of arm	1–1½" (22–25 gauge)	
	Alternate site: Anterolateral thigh muscle	1–1½" (22–25 gauge)	

*A ½" needle may be used only if the skin is stretched tight, the subcutaneous tissue is not bunched, and injection is made at a 90° angle.
 1A ½" needle is sufficient in adults weighing <130 lbs (<60 kg); a 1" needle is sufficient in adults weighing 130–152 lbs (60–70 kg);
 a 1–1½" needle is recommended in women weighing 152–200 lbs (70–90 kg) and men weighing 152–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing >200 lbs (>90 kg) or men weighing >260 lbs (>118 kg).

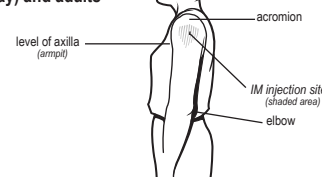
*CDC, "ACIP General Recommendations on Immunization" at www.immunize.org/acip

IM site for infants and toddlers



Insert needle at a 90° angle into the anterolateral thigh muscle.

IM site for children (after the 3rd birthday) and adults



Insert needle at a 90° angle into the thickest portion of deltoid muscle — above the level of the axilla and below the acromion.

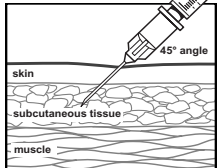
Technical content reviewed by the Centers for Disease Control and Prevention, February 2009.

www.immunize.org/catg.d/p2020.pdf • Item #P2020 (2/09)

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

How to Administer Subcutaneous (SC) Injections

Administer these vaccines by the subcutaneous (SC) route: MMR, varicella, meningococcal polysaccharide (MPSV), and zoster (shingles [Zos]). Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV) vaccines either SC or IM.

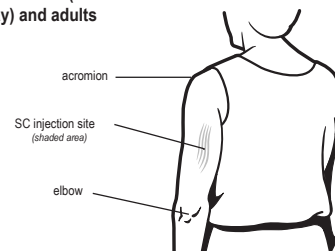
Patient age	Injection site	Needle size	Needle insertion
Birth to 12 mos.	Fatty tissue over the anterolateral thigh muscle	½" needle, 23–25 gauge	<p>Pinch up on subcutaneous (SC) tissue to prevent injection into muscle.</p> <p>Insert needle at 45° angle to the skin.</p> <p>(Before administering an injection, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.)</p> <p>Multiple injections given in the same extremity should be separated by a minimum of 1".</p> <p>*CDC, "ACIP General Recommendations on Immunization" at www.immunize.org/acip</p> 
12 mos. and older	Fatty tissue over anterolateral thigh or fatty tissue over triceps	½" needle, 23–25 gauge	

SC site for infants



Insert needle at a 45° angle into fatty tissue of the anterolateral thigh. Make sure you pinch up on SC tissue to prevent injection into the muscle.

SC site for children (after the 1st birthday) and adults



Insert needle at a 45° angle into the fatty tissue over the triceps muscle. Make sure you pinch up on the SC tissue to prevent injection into the muscle.

Technical content reviewed by the Centers for Disease Control and Prevention, February 2009.

www.immunize.org/catg.d/p2020.pdf • Item #P2020 (2/09)

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

IAC's
"Ask the
Experts"
team



William L. Atkinson,
MD, MPH



Andrew T. Kroger,
MD, MPH

everyone in your office or clinic uses the same sites for each vaccine. Use of standardized site maps can facilitate this. Site maps for administering vaccines to children are available at www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/D/site-map.pdf. Site maps for administering vaccines to adults are at www.eziz.org/PDF/IMM-718adult.pdf.

If I have to give more than 1 injection in a muscle, are certain vaccines best given together?

Since DTaP and pneumococcal conjugate are the vaccines most likely to cause a local reaction, it's practical to give DTaP and PCV in separate limbs (if possible), so there is no confusion about which vaccine caused the reaction.

When patients need multiple vaccines, can we just combine them in one syringe?

Absolutely not. Vaccines should never be mixed in a single syringe except when specifically approved by FDA and packaged for that specific purpose.

For which vaccines is an egg allergy a contraindication? What about MMR vaccine?

Influenza and yellow fever vaccines are the only vaccines that are contraindicated for people who have a history of a severe (anaphylactic) allergy to eggs. Allergy to eggs is no longer considered a contraindication for giving MMR vaccine. Though measles and mumps vaccines are grown in chick embryo tissue culture, several studies have documented the safety of these vaccines in children with severe egg allergy. In 1994, ACIP's

"General Recommendations on Immunization" listed egg allergy as a contraindication for administering MMR. That was changed, however, and by 1998 when ACIP's most recent recommendations for MMR were published, egg allergy was no longer listed as a contraindication. That remains true today: Neither AAP's Committee on Infectious Diseases ("Red Book Committee") nor ACIP consider egg allergy a contraindication to MMR vaccine.

You can always check for contraindications for any vaccine in CDC's Guide to Vaccine Contraindications and Precautions at www.cdc.gov/vaccines/recs/vac-admin/downloads/contraindications-guide-508.pdf.

We frequently see patients who are febrile or have an acute illness and are due for vaccinations. We're never quite sure if we should withhold the vaccines or not. What do you advise?

A "moderate or severe acute illness" is a precaution for administering any vaccine. A mild acute illness (e.g., diarrhea or mild upper-respiratory tract infection) with or without fever is not. The concern in vaccinating someone with moderate or severe illness is that a fever following the vaccine could complicate management of the concurrent illness (that is, it could be difficult to determine if the fever was from the vaccine or due to the concurrent illness). In deciding whether to vaccinate a patient with moderate or severe illness, the clinician needs to determine if forgoing vaccination will increase the patient's risk to vaccine-preventable diseases, as is the case if the patient is unlikely to return for vaccination or to seek vaccination elsewhere.

Some of our employees have a contact allergy to latex gloves. Can they receive vaccines that are supplied in vials or syringes that contains latex?

Yes. A contact allergy to latex is not a contraindication or precaution to vaccination. Consequently, a person with a *contact allergy* to latex can be safely vaccinated with a vaccine supplied in a vial or syringe that contains natural rubber or rubber latex. People who have an *anaphylactic allergy* to latex should not be vaccinated, however.

Which vaccines are supplied in vials or syringes containing latex?

You can find information on latex in vaccine packaging in Appendix B of CDC's Guide to Vaccine Contraindications and Precautions at www.cdc.gov/vaccines/recs/vac-admin/downloads/contraindications-guide-508.pdf.

Our large pediatric practice is struggling with the requirement to provide VISs to the parents of every child we vaccinate. We think we have a solution and would like your opinion of it. We would like to create a re-usable packet

of laminated VIS sheets (fastened together on a ring). We plan to place a packet in each exam room for parents to read prior to vaccine administration. On the bottom of each sheet would be a statement, "If you would like a copy of this sheet to take home, please ask our staff." This will ensure that parents are given the VIS sheets to read prior to vaccine administration. It will also help save paper; our experience is that many parents throw out the VIS documents or leave them behind in the waiting room.

Many clinicians are looking for ways to reduce paper overload, so this is a common question. Your solution will meet the spirit of the federal law, as long as you make sure to encourage the patient (or parent) to take home a paper copy of the VIS and to refer to it if needed (e.g., if they need to know what to do if there is an adverse event or how to contact VAERS). Patients can also download VISs onto mobile devices. For more information about this technology, go to www.cdc.gov/vaccines/pubs/vis/vis-downloads.htm.

Where can I find names of vaccines used outside the U.S.?

Appendix B of the CDC publication *Epidemiology and Prevention of Vaccine-Preventable Diseases* (the Pink Book) contains a list of vaccines used outside the U.S. You'll find Appendix B at www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/foreign-products-tables.pdf.

Where can I find a list of vaccines currently licensed for use in the U.S.?

CDC maintains a sortable list of vaccine names at www.cdc.gov/vaccines/about/terms/USVaccines.html.

Many of my patients are reading The Vaccine Book, in which the author, Dr. Robert W. Sears, cites studies that he interprets as showing that the amount of aluminum found in certain vaccines might be unsafe. He thinks it is better to separate aluminum-containing vaccines, rather than give them according to the recommended U.S. immunization schedule. I would love any information you have about this.

Paul Offit, MD, and Charlotte Moser, BS, of the Vaccine Education Center (VEC) at the Children's

What do bees say on a hot day?



Needle Tips correction policy

The Immunization Action Coalition works tirelessly to ensure the accuracy of the information we make available. At times, however, mistakes occur. If you find an error, please notify us immediately by sending an email message to admin@immunize.org. We publish notification of significant errors in our email announcement service *IAC Express*. Be sure you're signed up for this service. To subscribe, visit www.immunize.org/subscribe.

Shots

Don't you fret
Don't you cry
The pain will pass
by and by.
It might hurt
It might swell
but It will help you
to stay well.

IZZ⁷
and
Sarah.

Hospital of Philadelphia, published an article, "The Problem with Dr. Bob's Alternative Vaccine Schedule," in the January 2009 issue of *Pediatrics*. It includes a section about aluminum. You can read it in its entirety at <http://pediatrics.aappublications.org/cgi/content/full/123/1/e164>. Here are two sources of related information:

- "Aluminum in Vaccines: What you should know" is available from VEC at www.chop.edu/vaccine/pdf/aluminum_eng.pdf.
- "Questions and Answers about Vaccine Ingredients" is available from AAP at www.cisimmunize.org/pro/pdf/vaccineingredients.pdf.

Combination vaccines

Can Kinrix (DTaP-IPV; GSK) be used at kindergarten entry if the previous brand of DTaP is unknown?

Yes. Though it is preferable to use the same manufacturer's DTaP vaccine for all of the doses in the series, you can give Kinrix as the fifth dose of DTaP and fourth dose of IPV at age 4 through 6 years if the previous brand is unknown or if Kinrix is the only product stocked.

We mistakenly gave Kinrix (DTaP-IPV) to a child age 3 years 10 months. We later realized that he had a prior history of receiving 4 doses of DTaP and IPV. Can the dose of Kinrix count as his 4 through 6 year booster?

Use of the vaccine in a child younger than age 4 is off-label and is not recommended. You should take measures to prevent this error in the future. The minimum age for the fifth dose of the DTaP series is 4 years, so this dose of DTaP is not valid. The current minimum age for the fourth dose of IPV is 18 weeks, so the IPV component may be counted

as long as at least 4 weeks have elapsed since the third dose. Some states may require a dose of IPV on or after age 4 years regardless of the number of previous doses. For detailed information, see CDC's useful table "Recommended and Minimum Ages and Intervals Between Doses of Routinely Recommended Vaccines" at www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/A/age-interval-table.pdf.

If Kinrix is inadvertently given to a child age 15 through 18 months, as the fourth DTaP dose and the third IPV dose, does the Kinrix dose have to be repeated?

Since Kinrix is licensed and recommended only for children ages 4 through 6 years, you should take measures to prevent this error in the future. However, you can count this as a valid dose for DTaP and IPV as long as you met the minimum interval between administering dose #3 and dose #4 of DTaP (i.e., 6 months) and dose #2 and dose #3 of IPV (i.e., 4 weeks).

We inadvertently gave a child only the DTaP-IPV component of Pentacel (DTaP-IPV/Hib; sanofi pasteur), not realizing that this component was intended to reconstitute the Hib component. Does this count as a valid dose of DTaP and IPV? Can we mix the unused Hib component with sterile water and give it separately?

Use of DTaP-IPV solution as the diluent for the Hib component is specifically written both on the Pentacel box AND on the DTaP-IPV vial label. In answer to your first question, the DTaP-IPV component will count as valid doses of DTaP and IPV vaccines, but take measures to prevent this error in the future. In answer to your second question, NO, you cannot mix the Hib component with

sterile water. ActHib must ONLY be reconstituted with either the DTaP-IPV solution supplied with Pentacel, or with a specific ActHib diluent. If you have ActHib but neither diluent, you must contact the manufacturer (sanofi pasteur) and obtain ActHib diluent.

I've lost a vial of MMR diluent, which is sterile water. Since it's sterile water, is there any reason I can't dilute the vaccine with sterile water from our clinic's treatment room supply?

No, you cannot mix the MMR component with sterile water. A vaccine should only be mixed with the diluent formulated for it and supplied with it.

Our nurses have been routinely giving DTaP-HepB-IPV (Pediarix; GSK) to toddlers who were overdue for their third doses of DTaP, IPV, and HepB. Recently someone told me that Pediarix is only intended for use at 2, 4, and 6 months of age. Did we err?

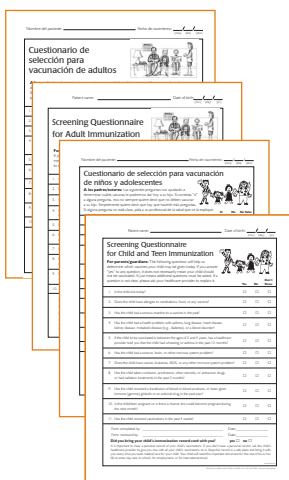
No you did not err. Pediarix is licensed for use in children ages 6 weeks through 6 years for doses 1, 2, and 3 of the DTaP primary series. This would not constitute a vaccine error, as long as you observe the recommended minimum intervals for all the vaccine components (i.e., DTaP, IPV, and HepB).

We have been giving DTaP-HepB-IPV (Pediarix) to children who are overdue for DTaP #4, IPV #3, and HepB #3. Is this an acceptable practice?

No. Pediarix is intended to be used only for doses 1, 2, or 3 of the DTaP primary series; consequently using Pediarix for DTaP #4 is off-label and not recommended. You should take measures to prevent this error in the future. The DTaP, IPV, and HepB doses given in this scenario do not need to be repeated as long as you met the recommended

(continued on page 20)

Immunization screening questionnaires for contraindications! Now with English on front/Spanish on back; in pads of 100 sheets



Save valuable staff time and make sure your patients are screened for vaccine contraindications by having them or their parents fill out these simple 1-page questionnaires (one for children/teen immunization; another for adults) while waiting to be seen. Each pad has 100 sheets. Prices start at \$16 per pad and drop to \$12 each for 2 pads, \$11 each for 3 pads, \$10 each for 4-9 pads. Keep pads at the receptionist's desk, the nurses' station, and in every exam room. To view pads or for more details, visit IAC's website at www.immunize.org/shop.

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

For 10 or more pads, contact us for discount pricing: admininfo@immunize.org

minimum intervals for each vaccine component (DTaP, IPV, HepB). If you did meet the minimum intervals, the doses should be counted as valid.

Can we switch back and forth from monovalent vaccines at one visit to combination vaccines at another visit? For example, if a child is given monovalent DTaP, IPV, Hib, and Hep B during her 2-month visit, could we give her either DTaP-IPV/Hib (Pentacel) or DTaP-HepB-IPV (Pediarix) at her 4-month visit?

Switching between combination and single-antigen vaccines poses no problem as long as you maintain the recommended minimum intervals for all vaccines.

Tetanus, diphtheria, pertussis

If a dose of DTaP or Tdap is inadvertently given to a patient for whom the product is not indicated (e.g., wrong age group), how do we rectify the situation?

The first step is to inform the parent/patient that you administered the wrong vaccine. Next, follow these guidelines:

1. Tdap given to a child younger than age 7 years as either dose 1, 2, or 3, is NOT valid. Repeat with DTaP as soon as feasible.
2. Tdap given to a child younger than age 7 years as either dose 4 or 5, can be counted as valid for DTaP dose 4 or 5.
3. Tdap given to a child age 7 through 9 years can be counted as valid for the 1-time Tdap dose.
4. DTaP given to patients age 7 or older can be counted as valid for the 1-time Tdap dose.

Can an adult receive Tdap if they had a contraindication or precaution to DTP as a child?
Tdap has two contraindications and four precautions. The contraindications are (1) anaphylactic reaction to a prior dose of the vaccine or any of

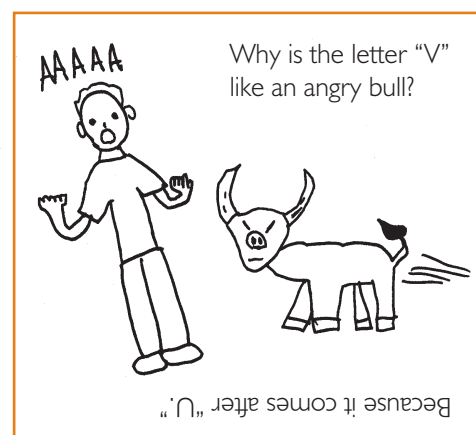
its components and (2) encephalopathy within 7 days of a previous dose of DTaP or DTP; in this case, give Td instead of Tdap. The precautions are (1) moderate or severe acute illness; (2) history of an Arthus reaction following a previous dose of a tetanus-containing and/or diphtheria toxoid-containing vaccine, including meningococcal conjugate vaccine; (3) Guillain-Barré Syndrome (GBS) 6 weeks or sooner after a previous dose of tetanus-toxoid containing vaccine; and (4) progressive or unstable neurological disorder, uncontrolled seizures or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized. CDC has recently issued an excellent publication, Guide to Vaccine Contraindications and Precautions. To access it, go to www.cdc.gov/vaccines/recs/vac-admin/downloads/contraindications-guide-508.pdf.

We recently saw a 30-year-old man who remembers that he received a "tetanus booster" in another state within the past 2 years. The problem is he cannot remember if he received Tdap or Td, and we can't obtain an immunization record. His wife is pregnant, and we would like to immunize him against pertussis as a way to protect their soon-to-be-born child. Should we give him Tdap in this situation?

Yes. Whenever you lack vaccination documentation and vaccination is indicated, give the patient Tdap unless they are older than age 64.

Should we give Tdap to an adult who had pertussis as a child?

CDC recommends that adults who have a history of pertussis generally receive Tdap according to the routine recommendation. This practice is preferred because the duration of protection induced by pertussis is unknown (waning might begin as early as 7 years after infection) and because the diagnosis of pertussis can be difficult to confirm, particularly with tests other than culture for *B. pertussis*. Administering pertussis vaccine to persons



with a history of pertussis presents no theoretical safety concern.

Human papillomavirus vaccine

We inadvertently gave HPV #1 to a woman who didn't know she was pregnant at the time. How should we complete the schedule?

First, you should report the vaccination incident to the Merck registry at (800) 986-8999. Second, withhold further HPV vaccine until she is no longer pregnant. Shortly after the pregnancy is completed, administer HPV#2. Give HPV#3 at 16 weeks after HPV#2 and no sooner than 24 weeks after HPV#1.

Measles, mumps, rubella

What is the earliest age at which I can give MMR to an infant who will be traveling internationally? Also, which countries pose a high risk to children for contracting measles?

ACIP recommends that children who travel or live abroad be vaccinated at an earlier age than that recommended for children who reside in the United States. Before their departure from the United States, children age 6 through 11 months should receive 1 dose of monovalent measles vaccine (if available) or MMR. The risk for measles exposure can be high in both developed and developing countries. Consequently, CDC encourages all international travelers to be up to date on their immunizations regardless of their travel destination and to keep a copy of their immunization records with them as they travel. For continually updated information on the worldwide measles situation, and on CDC's measles vaccination information for travelers, go to www.cdc.gov/travel/content/in-the-news/measles.aspx.

Can I give the second dose of MMR earlier than age 4 through 6 years (i.e., the kindergarten entry dose) to young children traveling to areas of the world where there are measles cases?

Yes. The second dose of MMR can be given a minimum of 28 days after the first dose if necessary.

To receive "Ask the Experts" by email, subscribe to the Immunization Action Coalition's news service, IAC Express. Special "Ask the Experts" issues are published five times per year. Subscribe at:

www.immunize.org/subscribe

To find hundreds of "Ask the Experts" questions online answered by CDC experts, go to:

www.immunize.org/askexperts

If I give MMR to an infant traveler younger than age 1 year, will that dose be considered valid for the U.S. immunization schedule?

No. A measles-containing vaccine administered before the first birthday should not be counted as part of the series. MMR should be repeated when the child is age 12 to 15 months (12 months if the child remains in an area where disease risk is high). The second dose should be administered at least 28 days after the first dose.

Why is the second dose of MMR routinely given at kindergarten entry (age 4 through 6 years) rather than at an earlier age?

The second dose of MMR vaccine is usually given at age 4 through 6 years as a scheduling convenience. The second dose of MMR may be given as early as 28 days after the first dose and can be counted as a valid dose if both doses were given after the first birthday. The second dose is not a booster; rather, it is intended to produce immunity in the small number of people who fail to respond to the first dose.

Varicella vaccine (chickenpox)

If a child had 1 varicella vaccination and developed a vesicular (chickenpox-like) rash at the vaccination site 7 to 10 days after vaccination, does the patient still need the second dose? What if the rash covered the entire body?

If you believe the child had varicella disease (that is, breakthrough varicella) after the first dose, the child does not need another dose. If you are uncertain whether the child had varicella, the second dose should be administered on schedule. If in doubt, plan to give the second dose. If this was a case of breakthrough varicella, a second dose will not be harmful.

How do you drive a baby buggy?



Tickle its little feet.

Meningococcal vaccine

If a student received MCV (Menactra; sanofi pasteur) before their eleventh birthday, does the dose need to be repeated at age 11?

No. On October 17, 2007, FDA expanded the age indications for Menactra for use in children as young as age 2 years (i.e., it is now licensed for use in people ages 2 through 55 years). Right now only a 1-time dose of Menactra is recommended. ACIP will consider making recommendations for revaccination with Menactra as more data on duration of protection become available.

What do you do if an adult patient is in a high-risk situation for meningococcal disease (e.g., traveling to Sub-Saharan Africa) and doesn't know whether they received MCV or MPSV (Menomune; sanofi pasteur) in the past. If they received MPSV 5 years ago or more, re-vaccination may be recommended, but if they received MCV it isn't. Should we vaccinate them?

Yes. The ACIP recommendation is to vaccinate when vaccination is indicated and when you don't have adequate documentation.

Pneumococcal vaccine

Some physicians in our area order PPSV every 5 years for their patients. Is this correct?

No. CDC recommends 1 dose of PPSV for most people in a lifetime and 2 doses for certain people. PPSV is a polysaccharide vaccine that does not boost well, and data do not indicate that more than 2 doses are beneficial. IAC has a handy summary piece about the use of PPSV vaccine titled "Pneumococcal polysaccharide vaccine: CDC answers your questions" at www.immunize.org/catg.d/p2015.pdf. For detailed information, see the 1997 ACIP recommendations on prevention of pneumococcal disease at [ftp://ftp.cdc.gov/pub/Publications/mmwr/RR/RR4608.pdf](http://ftp.cdc.gov/pub/Publications/mmwr/RR/RR4608.pdf). Also see the 2008 provisional recommendations at www.cdc.gov/vaccines/recs/provisional.

In its provisional pneumococcal recommendations ACIP recommends immunizing adult asthmatics with PPSV. Should I give PPSV to people with mild, intermittent asthma or exercise-induced asthma? Why isn't PPSV recommended for asthmatic children?

PPSV is recommended for adults 19 years and older with all types of asthma. Available data do not indicate that asthma alone increases the risk of invasive pneumococcal disease among persons younger than 19 years, so PPSV is not currently recommended for persons younger than 19 years with asthma.

Zoster vaccine (shingles)

Can I give our long-term care residents zoster, injectable influenza, and pneumococcal vaccines on the same day?

Yes. Here are the general rules: (1) all vaccines used

Why do we go to bed?



Because the bed won't come to us!

for routine vaccination in the United States can be given on the same day; (2) an inactivated vaccine can be administered either on the same day as or at any time before or after another inactivated or a live vaccine; and (3) any 2 LIVE vaccines that are not given on the same day must be spaced at least 4 weeks apart.

Zostavax (Merck) is a live, attenuated vaccine; injectable trivalent influenza vaccine (TIV) and pneumococcal polysaccharide vaccine (PPSV) are inactivated vaccines. Therefore, these 3 vaccines can be given on the same day or at any time before or after each other. They cannot, however, be given in the same syringe.

When can a patient previously on immunosuppressive chemotherapy receive zoster vaccine?

If the patient was on anticancer therapy, wait 3 months. If they were on high-dose steroids, isoantibodies, immune-mediators, immunomodulators, wait 1 month. Lastly, if they were on low doses of methotrexate, azathioprine, or 6-mercaptopurine, waiting is not indicated as these are not considered immunosuppressive. See the ACIP recommendations for zoster at www.cdc.gov/mmwr/pdf/rr/rr5705.pdf for details.

How long should we wait before giving zoster vaccine to a patient who has had a blood transfusion?

There is no waiting period for administering zoster vaccine following transfusion. Studies have shown the efficacy of zoster vaccine in patients receiving blood products. The amount of antigen in zoster vaccine is so substantial that it overpowers any antibody to herpes zoster that may be in the blood product. This is not the case for varicella and MMR vaccines, however. Wait 3 or more months before administering these vaccines to a patient who has received an antibody-containing blood product.

(continued on page 22)

Stay current! Subscribe to Immunization Action Coalition's free weekly email immunization news service, IAC Express.
www.immunize.org/subscribe

Hepatitis A & B vaccines

I thought hepatitis A vaccine (HepA) was recommended for all children. Why does the bar on CDC's childhood immunization schedule indicate that HepA should be routinely given to children ages 12 through 23 months, but not be given to children age 2 years and older unless they are in certain high-risk groups? In our practice in a historically "low-risk" state, we currently give hepA to any unvaccinated child. Is this incorrect?

No. Though the ACIP recommendation says children ages 12 through 23 months should routinely be vaccinated with 2 doses of HepA, it also says, "children who are not vaccinated by age 2 years can be vaccinated at subsequent visits."

An infant was given monovalent hepatitis B vaccine (HepB) at birth. Later we gave her monovalent HepB at age 1 month and age 4 months. Did we give her the third dose too early?

Yes. Poorer immune response rates are seen in infants who complete the vaccination series prior to age 6 months. Do not count dose #3, which you gave at age 4 months. Repeat dose #3 when the infant is at least age 6 months (no earlier than age 24 weeks).

I understand there is a now a shortage of HepB vaccine for children and possibly for adults. Could you please tell me about it and what we should do to cut back on using it?

The supply of Merck's hepatitis B vaccines (pediatric, adult, and dialysis formulations) is limited at this time, but recommendations for its use are unchanged. For detailed information about HepB shortages, go to CDC's website at www.cdc.gov/vaccines/vac-gen/shortages.

We heard there is an alternative schedule for the adult HepA-HepB (Twinrix; GSK) vaccine that gives the patient protection sooner than the standard schedule does. Can you tell us more?

Yes. Licensed for use in people age 18 and older, the combined HepA-HepB vaccine is normally given as a 3-dose series at intervals of 0, 1, and 6 months. However, if someone needs protection sooner (e.g., imminent foreign travel), you can give it as a 4-dose series at intervals of 0, 7, and 21–30 days, followed by a dose at 12 months.

How does a tree get online?



Resources to Help You Respond to Vaccine-Hesitant Parents

Science-based materials from respected organizations

American Academy of Pediatrics – www.cispimmunize.org

Facts for Parents About Vaccine Safety

www.cispimmunize.org/fam/facts/VaccineSafety_English.doc

The Childhood Immunization Schedule: Why Is It Like That?

www.cispimmunize.org/pro/pdf/Vaccineschedule.pdf

Questions and Answers about Vaccine Ingredients

www.cispimmunize.org/pro/pdf/Vaccineingredients.pdf

Vaccine Studies: Examine the Evidence

www.cispimmunize.org/Vaccine%20Studies.pdf

Adhering to the Vaccine Schedule is Best Way to Protect Children

www.immunize.org/aap/fisher.pdf

Documenting Parental Refusal to Have Their Children Vaccinated

www.cispimmunize.org/pro/pdf/RefusaltoVaccinate_revised%204-11-06.pdf

Centers for Disease Control & Prevention –

www.cdc.gov/vaccines

Common Questions Parents Ask about Infant Immunizations

www.cdc.gov/vaccines/events/niiw/2009/downloads/f_provider-qa-color-508.pdf

Parents' Guide to Childhood Immunizations

www.cdc.gov/vaccines/pubs/parents-guide/default.htm

Vaccine Safety for Parents (flyer)

www.cdc.gov/vaccines/pubs/downloads/f_vacsafe.pdf

Immunization Action Coalition – www.immunize.org & www.vaccineinformation.org

Clear Answers & Smart Advice About Your Baby's Shots

www.immunize.org/catg.d/p2068.pdf

Sample Vaccine Policy Statement

www.immunize.org/catg.d/p2067.pdf

What if you don't immunize your child?

www.immunize.org/catg.d/p4017.pdf

MMR vaccine does not cause autism

www.immunize.org/catg.d/p4026.pdf

Reliable sources of immunization information

www.immunize.org/catg.d/p4012.pdf

Vaccine Education Center, CHOP – www.vaccine.chop.edu

Aluminum in Vaccines: What you should know

www.chop.edu/vaccine/pdf/aluminum_eng.pdf

The Facts About Childhood Vaccines

www.chop.edu/vaccine/images/vec_tear_sheet.pdf

Thimerosal: What you should know

www.chop.edu/vaccine/images/vec_thimerosal.pdf

Too Many Vaccines? What you should know

www.chop.edu/vaccine/images/vec_tomany.pdf

Vaccines and Autism: What you should know

www.chop.edu/vaccine/images/autism.pdf

IAC has a wide selection of resources from a variety of organizations on its website at www.immunize.org/concerns. Visit often!

Order Essential Immunization Resources from IAC

Laminated immunization schedules give you solid information for 2009—order today!

IAC has two laminated immunization schedules for 2009—one for children/teens and one for adults. Based on CDC's immunization schedules, the laminated schedules are covered with a tough, washable coating. This allows them to stand up to a year's worth of use as at-your-fingertips guides to immunization and as teaching tools you can use to give patients and parents authoritative information. Plus,

each schedule includes a guide to vaccine contraindications and precautions, an additional feature that will help you make on-the-spot determinations about the safety of vaccinating patients of any age.

To order laminated schedules or any of our other essential immunization resources, print out and mail or fax the form below or place your order online at www.immunize.org/shop.

It's convenient to shop IAC online at www.immunize.org/shop

Order Essential Immunization Resources

CD-ROM of IAC print materials

FREE with a contribution of \$75 or more (see below). The CD contains all of IAC's ready-to-print materials in English and any translations available in Spanish. Includes VISs in English and Spanish.

Laminated U.S. Immunization Schedules (details p. 3; call for discounts on bulk orders)

Qty.		Amt.
___ R2008	Child/teen schedule: 1-4 copies—\$10 each; 5-19 copies—\$6.50 each ...	\$
___ R2009	Adult schedule: 1-4 copies—\$10 each; 5-19 copies—\$6.50 each.....	\$

Padded Questionnaires for Vaccine Contraindications English on one side/Spanish on the other (details p. 3; call for discounts on bulk orders)

100 sheets/pad; 1 pad—\$16; 2 pads—\$12 each; 3 pads—\$11 each; 4 pads—\$10 each

___ R4060 Child/teen screening questionnaire in English/Spanish..... \$

___ R4065 Adult screening questionnaire in English/Spanish..... \$

Patient Immunization Record Cards – (wallet-sized) (details p. 3; call for discounts on bulk orders)

250 cards/box; 1 box—\$37.50; 2 boxes—\$35 each; 3 boxes—\$32.50 each; 4 boxes—\$30 each

___ R2003 Child/teen immunization record cards \$

___ R2005 Adult immunization record cards \$

___ R2004 Lifetime immunization record cards \$

DVD and Videotape (call for discounts on bulk orders)

___ D2020 DVD: Immunization Techniques: Safe, Effective, Caring \$10.50

___ V2020 Videotape: Immunization Techniques: Safe, Effective, Caring \$10.50

Subtotal for Purchases \$ _____

Make a Charitable Contribution

I am a ☐ new ☐ renewing contributor.

Here is my contribution:

☐ \$25 ☐ \$50 ☐ \$75 ☐ \$100 ☐ \$125

☐ \$150 ☐ \$200 ☐ \$250 other: \$ _____

☐ As a thank-you gift, I'd like a packet of IAC's 15 most popular print pieces, such as the "Summary of Recommendations for Childhood and Adolescent Immunization."

☐ I'm contributing \$75 or more and would like the additional thank-you gift of a CD containing all of IAC's English- and Spanish-language print materials, plus Vaccine Information Statements in English and Spanish.

IAC is a 501(c)(3) charitable organization and your contribution is tax deductible to the fullest extent of the law.

Purchases and Contribution Total \$ _____

How to Place an Order

By Credit Card: Order easily online at our secure shopping cart at www.immunize.org/shop.

By Check, Purchase Order, or Credit Card: Print out this page, fill out the necessary information, and

Fax the page to: (651) 647-9131 or

Mail the page to: Immunization Action Coalition
1573 Selby Avenue, Suite 234
St. Paul, MN 55104

Our federal ID# is 41-1768237.

For Questions or International Orders: Contact us by phone at (651) 647-9009 or email admininfo@immunize.org

Thank you for your support of the Immunization Action Coalition. We depend on you!

Method of payment: ☐ **Check enclosed** (payable to Immunization Action Coalition)

☐ **Purchase order #** _____

☐ Visa ☐ Mastercard ☐ Am. Express ☐ Discover

Card # _____

Expiration Date mo/yr _____ CV Code #* _____

*The CV Code is the Credit Verification Code, the additional 3- or 4-digit number on your credit card.

Name/Title _____

Organization _____

Shipping address (Check one: This is my ☐ organization address ☐ home address)

City/State/Zip _____

Telephone _____

Email address _____

It's convenient to shop IAC online at www.immunize.org/shop

