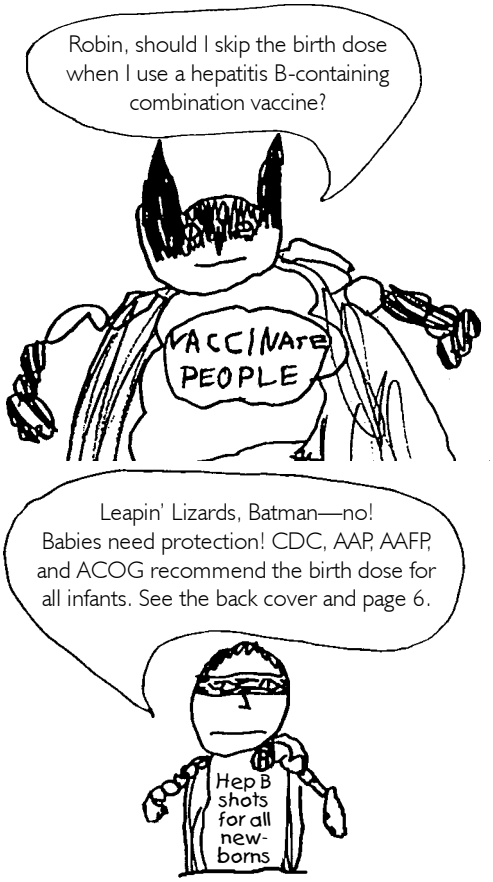
Volume 13 – Number 1 Spring 2003

# NEEDLE TIPS

## *and the* Hepatitis B Coalition News

Published by the Immunization Action Coalition for individuals and organizations concerned about vaccine-preventable diseases




## *WHAT'S ON THE INSIDE:*



# Ask the Experts

*Editor's note: The Immunization Action Coalition thanks William L. Atkinson, MD, MPH; Harold S. Margolis, MD; and Linda A. Moyer, RN, of the Centers for Disease Control and Prevention (CDC) for answering the following questions for our readers. Dr. Atkinson, medical epidemiologist at the National Immunization Program, and Dr. Margolis, director of the Division of Viral Hepatitis, serve as CDC liaisons to the Coalition. Ms. Moyer is an epidemiologist at the Division of Viral Hepatitis.*

### Immunization questions?

- E-mail nipinfo@cdc.gov
- Call CDC's Immunization Information Hotline at (800) 232-2522
- Call your state health department (for phone numbers visit: www.immunize.org/coordinators)

## Immunization questions

*by William L. Atkinson, MD, MPH*

***Is it required to use a VIS in an emergency room when we give Td to a patient?***

Yes. The National Childhood Vaccine Injury Act requires that a Vaccine Information Statement be given to persons of any age before they receive a dose of any vaccine included in the Act. Tetanus and diphtheria toxoids are included in the Act. If the patient is unaccompanied and unable to clearly read and understand the information in the VIS (e.g., unconscious), this should be noted in the patient's chart.

***If two live virus vaccines are inadvertently given less than 4 weeks apart, what should be done?***

If two live virus vaccines are administered less than 4 weeks apart and not on the same day, the vaccine given second should be considered invalid and repeated. The repeat dose should be administered at least 4 weeks after the invalid dose. Alternatively, one can perform serologic testing to check for immunity, but this option may be more costly.

***What should we do if a dose of expired vaccine is given to a patient?***

The dose should be repeated. If the expired dose is a live virus vaccine, you must wait at least 4 weeks after the previous (expired) dose was given before repeating it. If you prefer, you can perform serologic testing to check for immunity.

***Is it recommended to change needles after a vaccine dose has been drawn into a syringe?***

No. Also, it is unnecessary to change the needle if it has passed through two stoppers, which is done when a lyophilized vaccine is reconstituted. Changing needles is a waste of resources and increases the risk of needlestick injury.

*(continued on page 20)*

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## NEEDLE TIPS

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**The Immunization Action Coalition (IAC),** a 501(c)3 nonprofit organization, publishes practical immunization information for health professionals to help increase immunization rates and prevent disease.

**The Hepatitis B Coalition,** a program of IAC, promotes hepatitis B vaccination for all children 0-18 years; HBsAg screening for all pregnant women; testing and vaccination for high-risk groups; and education and treatment for people chronically infected with hepatitis B.




# Letter to the Editor

*Editor's note: IAC welcomes letters of interest to readers. Please send your letters by mail, fax, or e-mail to the address at the left.*

### Time-tested strategies overcome parents' qualms about immunization

As the Immunization Action Coalition's advisory board member representing the American Academy of Pediatrics, I'd like to share with *NEEDLE TIPS'* readers some concerns about dealing with parents who refuse vaccinations for their children. I know that there are physicians who respond to this situation by excluding the unimmunized child from their practice as a matter of practice philosophy. I am not at all convinced this is in the best interest of the child, and I believe there has to be a better way of handling this dilemma.

My thinking is that each practitioner must cross the Rubicon on certain issues in our practice life, and this is certainly one of them. I made a decision early in my practice that parents who refuse to immunize their children are misinformed or misguided and need my support and the support of my office staff to work through their fears. My goal in working with such parents is to provide them with the information they need over time to help them understand what is best for their child, their family, and the community as a whole.

I have never believed that the naturopath, the chiropractor, or the quack is the best guardian for an innocent child who is held prisoner by the faulty judgment of an otherwise caring parent. I would no more turn such a child out of my practice than I would the child with diabetes or asthma who has a difficult-to-reach parent.

I have had numerous parents who have questioned vaccines. I have failed only once in 25 years of practice to eventually convince a parent to at least partially immunize their child. To assume a parent who balks at the idea of vaccinating their child won't eventually change their mind is simply not true in practice. Educating such parents is hard, frustrating, time-consuming work. I am certain it is the perceived time drain that drives physicians to use the immunization "litmus test" to weed out "problem" parents. Time is money in office practice, and anything that affects office efficiency affects the physician's bottom line.

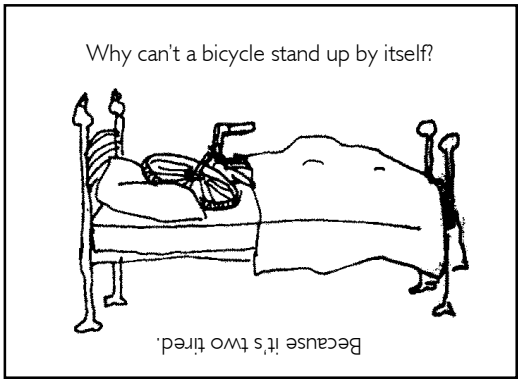
Most parents who refuse vaccines for their children do not refuse them all; they have concerns about only one or two. I teach my medical students and pediatric residents how to counter misinformation with key messages and suggest they offer "staged" immunizations, starting with vaccines that produce few reactions (Hib and IPV) and working up from there as the parent's and child's positive experience with immunization builds. For parents who are influenced by anti-immunization websites on the Internet, I have my own handout of "reputable" websites that I ask them to give equal time to.

I've had a few "hard core" anti-immunization parents who are extremely entrenched in their beliefs. I make certain they understand their decision not to immunize their child is an "active" one that puts not only their own child at risk, but also endangers the rest of their family and the contact community. I make it clear that they must assume responsibility for adverse outcomes at every level. I consider these parents a personal challenge to reform. I peck away mercilessly, until they relent, and most often they do.

As you can tell, I am not sympathetic with physicians who refuse to care for children with difficult parents whose only failing might be that their opinion about the perceived value of a vaccine differs from the physician's. It is hard to defend an approach to patient care that forces these patients onto other physicians in the community, who in turn must care for them. I can only appeal to a spirit of fair play. I encourage physicians to be child focused rather than parent fearful, to view parent education as part of the Hippocratic Oath, and to develop the patience of Job.

*— Thomas N. Saari, MD, FAAP*
*University of Wisconsin School of Medicine*
*Madison, Wisconsin*

*Editor's note: In the event that you've done all you can to convince a parent to vaccinate his/her child and he/she still declines, IAC recommends you use the American Academy of Pediatrics' newly developed "Refusal to Vaccinate" form.* *See pages 16-17 for details.*



# IAC welcomes Advisory Board liaisons

The Immunization Action Coalition has restructured its Advisory Board to include both liaisons from organizations as well as individuals. It is inspiring to have such a strong group of committed experts from throughout the immunization community help us carry out our mission to increase immunization rates and prevent disease.

We are delighted to have the following organizations as partners in the Coalition's work:

- **American Academy of Pediatrics**
- **American College of Obstetricians and Gynecologists**
- **American College of Physicians**
- **American Medical Association**
- **American Nurses Association**
- **American Pharmacists Association**
- **Children's Vaccine Program at PATH**
- **Division of Viral Hepatitis, National Center for Infectious Diseases, Centers for Disease Control and Prevention (CDC)**
- **Infectious Diseases Society of America**
- **Institute for Vaccine Safety, Johns Hopkins University**
- **National Association of Pediatric Nurse Associates and Practitioners**
- **National Immunization Program, CDC**
- **National Medical Association**
- **National Network for Immunization Information**
- **National Vaccine Program Office**
- **Office of the Associate Director for Minority Health, CDC**
- **Pediatric Infectious Diseases Society**
- **Vaccine Education Center, Children's Hospital of Philadelphia**

We warmly welcome the following seven new liaison members to IAC's Advisory Board:

**Dennis A. Brooks, MD, MPH, MBA**
National Medical Association (NMA)
Dr. Brooks is Assistant Professor of Pediatrics at Johns Hopkins School of Medicine. He has done research on the use of immunization registries working with both CDC and the National Vaccine Advisory Committee. At NMA, he is Director of Research for the Pediatric Section. Dr. Brooks also serves on CDC's Advisory Committee on Immunization Practices (ACIP).

**Louis Z. Cooper, MD, FAAP**
National Network for Immunization Information (NNii)
Dr. Cooper is Professor of Pediatrics, Columbia University, and emeritus Chair of Pediatrics at St. Luke's-Roosevelt Hospital Center in New York City. He served as President of the American Academy of Pediatrics (AAP) during 2001–2002 and is currently the Interim Executive Director of NNii.

**Mark A. Kane, MD, MPH**
Children's Vaccine Program at PATH (Program for Appropriate Technology in Health)
Dr. Kane, pediatrician, is Director of the Children's Vaccine Program (CVP) at PATH, whose mission is to improve immunization rates of children in the developing world. Dr. Kane completed a three-year term as a Global Alliance for Vaccines and Immunization (GAVI) Board member and continues to serve as a member of the GAVI Working Group.

**Kathleen M. Neuzil, MD, MPH**
American College of Physicians
Dr. Neuzil is Assistant Professor of Medicine, Division of Infectious Diseases, University of Washington School of Medicine, and Staff Physician and Hospital Epidemiologist, Veterans Affairs Puget Sound Health Care System, Seattle. She is a member of ACP's Adult Immunization Initiative Physician Advisory Board and is ACP's liaison representative to ACIP.

**Walter A. Orenstein, MD**
National Immunization Program (NIP), CDC
Dr. Orenstein, pediatric infectious disease specialist, has been Director of CDC's National Immunization Program since 1993, and for five years prior, was Director of CDC's Division of Immunization. He serves on the National Vaccine Advisory Committee and the AAP's Committee on Infectious Diseases. He is Chairman of the Technical Consultative Group on the Global Eradication of Poliomyelitis of WHO's Expanded Program on Immunization and is the co-editor of the third edition of the textbook *Vaccines.*

**Mitchel C. Rothholz, RPh**
American Pharmacists Association (APhA)
Mr. Rothholz, pharmacist, is Vice President for Professional Practice of APhA. He is responsible for APhA's academies, practice and career development activities, immunization and other public health initiatives, awards and election processes. He is an active member of numerous state and national pharmacy organizations.

**Litjen Tan, PhD**
American Medical Association (AMA)
Dr. Tan is Director, Infectious Disease, Immunology, and Molecular Medicine at AMA. He is responsible for all scientific and policy issues that pertain to infectious diseases and ensures that AMA remains abreast of critical happenings in infectious diseases. He has been active in issues pertaining to vaccine safety, vaccine accessibility for children and adults, increasing vaccination coverage, and reaching out to high-risk groups. Dr. Tan is AMA's liaison representative to ACIP.

Brief biosketches of all Advisory Board members are found on the Web at www.immunize.org/genr.d/advbd.htm

# Vaccine highlights

## *Recommendations, schedules, and more*

*Editor's note: The information on these pages is current as of April 4, 2003.*

### The next ACIP meetings

The Advisory Committee on Immunization Practices (ACIP) is a committee of 15 national experts that provides advice and guidance to the Centers for Disease Control and Prevention (CDC) regarding the most appropriate use of vaccines. ACIP meetings are held three times a year in Atlanta, Ga., and are open to the public. The next meetings will be held on June 18–19 and Oct. 15–16.

### ACIP statements

All clinicians should have a set of ACIP statements, public health recommendations on vaccines, published in the *Morbidity and Mortality Weekly Report (MMWR).* Free continuing education credits are available for reading the statement and completing the brief test at the end of the statement.

**To obtain ACIP statements:**

- Download individual statements from links on IAC's website: www.immunize.org/acip
- Call CDC's Immunization Information Hotline: (800) 232-2522.
- Order the "Immunization Works" CD (CDC, 2003). It contains all ACIP statements, VISs, and the *Pink Book.* To obtain a copy, use CDC's free online ordering system: https://www2.cdc.gov/nchstp_od/PIWeb/NIPorderform.asp

**Recently published ACIP statements:**

- "Recommendations for Using Smallpox Vaccine in a Pre-Event Vaccination Program"(4/4/03)
- "Yellow Fever Vaccine" (11/8/02)

**Looking for your state health dept. immunization and hepatitis consultants?**

For phone numbers of people to contact at your state (or federal project) health department for help on immunization issues, the Vaccines For Children program, or hepatitis A, B, or C, visit:

**www.immunize.org/coordinators**

### Combination vaccine news

On December 16, 2002, the FDA licensed Pediarix, a new combination vaccine product manufactured by GlaxoSmithKline. It is composed of DTaP, hepatitis B, and IPV vaccines and is approved for use at ages 2, 4, and 6 months. The vaccine should not be given to anyone less than 6 weeks of age or 7 years of age or older.

On March 14, CDC published a "Notice to Readers" in the *MMWR* regarding ACIP's recommendations for its use. When Pediarix or any other combination vaccine that includes hepatitis B (i.e., Comvax) is given, ACIP recommends that infants continue to receive monovalent hepatitis B vaccine at birth, regardless of the mother's HBsAg status. Use of 3 doses of Pediarix following monovalent hepatitis B vaccine given at birth will result in a 4-dose hepatitis B vaccine series, which is considered acceptable practice by ACIP.

At its Feb. 27 meeting, ACIP approved Pediarix for use in the Vaccines For Children program.

### Thimerosal-free vaccine news

On January 29, FDA approved a supplement to the biologics license application for Diphtheria and Tetanus Toxoids Adsorbed (DT), for Pediatric Use, manufactured by Aventis Pasteur, to include the addition of a preservative-free, single-dose-vial presentation.

On September 4, 2002, FDA approved a supplement to the biologics license application for the influenza virus vaccine Fluzone, manufactured by Aventis Pasteur, to include a preservative-free formulation. Intended for infants age six to 35 months, the vaccine was available in limited quantity for shipment during fall 2002.

### Vaccine supply news

On April 4, CDC's website (www.cdc.gov/nip/news/shortages) reported that the supply of Prevnar is rapidly improving and there should be few, if any, spot shortages at this time. The shortage should be completely resolved during the month of April.

On November 19, 2002, Wyeth Vaccines announced that it is ceasing production of two of its vaccine products—FluShield (influenza vaccine) and Pnu-Imune (polysaccharide pneumococcal vaccine).

On October 18, 2002, Aventis Pasteur voluntarily recalled multiple lots of Menomune (quadravalent meningococcal vaccine) due to potency issues against disease caused by serogroup A. This recall has resulted in a shortage of single-dose vials; 10-dose vials have not been affected.

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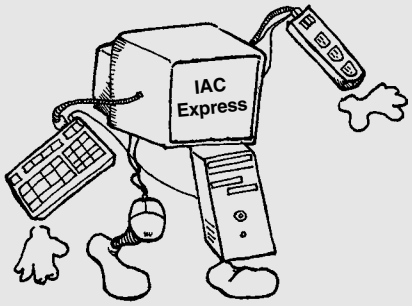


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**www.immunize.org/express**

### Smallpox vaccine news

On April 4, CDC published a Notice to Readers in *MMWR* titled "Supplemental Recommendations on Adverse Events Following Smallpox Vaccine in the Pre-Event Vaccination Program." In this notice ACIP recommends that persons be excluded from the pre-event smallpox vaccination program who have known underlying heart disease, with or without symptoms, or who have three or more known major cardiac risk factors (i.e., hypertension, diabetes, high cholesterol, heart disease at age 50 years in a first-degree relative, and smoking).

Due to the constantly evolving information on smallpox vaccine and U.S. preparedness activities, readers are encouraged to visit CDC's smallpox website found at www.cdc.gov/smallpox.

What did the grape say when the elephant stepped on it?

Nothing, it just let out a little wine.

## Immunization schedule news

In January, the "Recommended Childhood and Adolescent Immunization Schedule—2003" was issued jointly by ACIP, the American Academy of Pediatrics, and the American Academy of Family Physicians. The new schedule introduces a second page, which displays a "catch-up" schedule to help providers determine minimum intervals and accelerated schedules for children who have fallen behind. A black-and-white copy of the schedule is found in this issue of *NEEDLE TIPS* (pages 8-9). It can also be accessed in color at www.immunize.org/cdc/child-schedule.pdf

On October 11, 2002, CDC published the "Recommended Adult Immunization Schedule—2002–03" along with "Recommended Immunizations for Adults with Medical Conditions." Black-and-white copies of these schedules are found in this issue of *NEEDLE TIPS* (pages 10-12). To access a copy in color, visit www.cdc.gov/nip/recs/adult-schedule.pdf

## Viral hepatitis news

In January, CDC published recommendations in an *MMWR* report titled "Prevention and Control of Infections with Hepatitis Viruses in Correctional Settings" (Vol. 52, No. RR-1). The recommendations provide guidelines for juvenile and adult correctional systems regarding 1) identification and investigation of acute viral hepatitis; 2) pre-exposure and postexposure immunization for hepatitis A and hepatitis B; 3) prevention of hepatitis C virus infection and its consequences; 4) health education; and 5) release planning. To obtain a copy, visit www.cdc.gov/mmwr/pdf/rr/rr5201.pdf

On Sept. 20, 2002, the FDA approved the use of Hepsera (adefovir dipivoxil) tablets, manufactured by Gilead Sciences Inc., for the treatment of chronic hepatitis B in adults with evidence of active viral replication.

## Flu & PPV news from CMS

On March 1, a revised Centers for Medicare and Medicaid Services (CMS) physician's fee schedule became effective that nearly doubles Medicare reimbursement for the administration fee for some adult vaccines, including influenza, from $3.98 to approximately $7.26.

On October 2, 2002, CMS published an interim final rule that removes the requirement that a physician must sign a patient-specific order for the administration of influenza and/or pneumococcal vaccine for patients in hospitals, long-term care facilities, and home health agencies. This ruling authorizes nurses or pharmacists, where allowed by state law, to administer these two vaccines to patients per physician-approved facility or agency policy (i.e., standing orders) following an assessment for contraindications. For more information on this ruling and other CMS influenza and pneumococcal vaccination policies, visit www.cms.hhs.gov/preventiveservices/2.asp

## New video and booklet!

A new video and accompanying booklet titled "Vaccines and Your Baby," were recently released by the Vaccine Education Center at the Children's Hospital of Philadelphia. Highlights of this 29-minute video include physicians discussing details of each disease and parents sharing stories about disease consequences. The video also provides answers to several questions parents ask about vaccines. Accompanying the video is a 40-page booklet filled with colorful photographs and illustrations.

To order the video for your clinic, hospital, or practice, visit http://vaccine.chop.edu/order_hc_profs.shtml or call (215) 590-9990. Two copies of the video and booklet may be ordered free of charge for any medical practice site. Additional videos are $5 each plus shipping and handling. Be sure to find out about their other resources as well.

## New record-keeping tools!

The recent licensure of Pediarix exacerbates the problems providers face in accurate record-keeping, especially for combination vaccines. In this issue of *NEEDLE TIPS* (pages 14-15), we offer our revised "Vaccine Administration Record for Children and Teens" and "Vaccine Administration Record for Adults," redesigned to help providers clearly record use of combination vaccine products. Both revised records contain a new column titled "Type of vaccine" to record the generic abbreviation of the vaccine (e.g., DTaP-HepB-IPV or Hib-HepB) rather than the vaccine's tradename (e.g., Pediarix or Comvax).

The revised records also require users to record the complete information on each row for each antigen in the combination. The advantages of this system are 1) the complete vaccination history for each vaccine type is maintained in one section, whether monovalent or combination products were used; 2) when combination vaccines are given and more than one VIS has to be given to the patient, the two or three publication dates of VISs can be recorded in separate rows; and 3) when there is more than one lot number for a combination vaccine (i.e., DTaP-Hib), the lot numbers can be recorded for each vaccine type.

To download the "Vaccine Administration Record for Children and Teens," along with an example of a completed record, visit www.immunize.org/catg.d/p2022b.pdf. For the adult record sheet, visit: www.immunize.org/catg.d/p2023b.pdf

## Current VIS dates

Here are the most current VISs and the issue date printed at the bottom of each. Make sure you are using the current ones. Recycle your old copies.

| | |
|---|---|
| DTaP/DT/DTP ... 7/30/01 | MMR ..... 1/15/03 |
| Td ..... 6/10/94 | varicella ..... 12/16/98 |
| polio ..... 1/1/00 | Hib ..... 12/16/98 |
| hepatitis A ..... 8/25/98 | hepatitis B ..... 7/11/01 |
| pneumo (PPV23).7/29/97 | influenza ..... 6/26/02 |
| meningococcal ..3/31/00 | anthrax ..... 11/6/00 |
| smallpox .. ..... 1/16/03 | yellow fever ..... 3/14/03 |
| pneumococcal conjugate (PCV7) ..... 9/30/02 | |

VISs and instructions on how to use them can be obtained from CDC's website: www.cdc.gov/nip/publications/vis or from your state health department (for contact information see box on page 4). The VISs, some in 28 languages, and the VIS instruction sheet are also available on IAC's website: www.immunize.org/vis

# States Report Hundreds of Medical Errors in Perinatal Hepatitis B Prevention

## *Avoid tragic mistakes—vaccinate newborns against HBV in the hospital*

*By Teresa A. Anderson, DDS, MPH, and Deborah L. Wexler, MD**

On two annual surveys conducted by the Immunization Action Coalition covering the period from July 1999 to October 2002, state and local hepatitis coordinators reported more than 500 medical errors regarding perinatal hepatitis B prevention. Examples of types of errors included:

- not properly prophylaxing infants born to HBsAg-positive mothers with both hepatitis B vaccine and HBIG within 12 hours of birth
- not giving hepatitis B vaccine to infants born to mothers of unknown HBsAg status within 12 hours of birth
- misinterpreting or mistranscribing hepatitis B screening test results, or failing to communicate results to or within the hospital
- ordering the wrong hepatitis B screening test

Because of these types of errors, many children are now chronically infected with hepatitis B virus (HBV) and at least one infant has died. Children infected when less than one year of age have a 90% chance of developing chronic HBV infection with all its serious potential sequelae such as cirrhosis and liver cancer.

Consider the following examples reported by the nation's hepatitis coordinators where infants were needlessly put at risk for perinatal HBV infection.

### Medical Error Type #1: Infants born to HBsAg-positive mothers who did not receive both hepatitis B vaccine and HBIG within 12 hours of birth.

*Recommendation of ACIP, ACOG, AAP, and AAFP: All infants of HBsAg-positive mothers (including premies) should receive hepatitis B vaccine and HBIG within 12 hours of birth.*

Case report examples:

- "The mother had been diagnosed with chronic hepatitis B in 1994. In her prenatal record she was documented to be HBsAg and HBeAg positive, and this information appeared in several places on the record that was sent to the hospital. Despite this, her baby did not receive HBIG or the first dose of hepatitis B vaccine in the hospital. In fact, the hepatitis B vaccine order was crossed out in the infant's chart. Follow-up with the pediatrician on day six indicated that the baby still had not received any prophylaxis. The first dose of vaccine was given when the infant was three weeks of age, the second three months after the first, and the third six months after the first. The child's current status is unfortunate. Diagnosed HBsAg-positive at 19 months of age, the child is now being followed by a liver specialist for chronic hepatitis B."
- "We have two cases where infants born to carrier mothers received the first dose of hepatitis B vaccine three weeks after birth and no HBIG. In one of the cases, a resident interviewed the mother who claimed she was not HBsAg positive."
- "In 2000, we had 25 cases where the babies of positive moms did not receive HBIG at birth. Three of these babies are now infected. In one of the cases, the mother's status was erroneously marked as unknown, another was marked as negative, and in one the status was correctly marked, but the HBIG was still not given."
- "In 2000, there were eight infants of HBsAg-positive mothers who never received HBIG and six who did not get hepatitis B vaccine within 12 hours of birth. This is despite letters to the hospital and to the OB/GYN prior to the birth."
- "In one case in a rural hospital, the mother's positive hepatitis B status was documented in her chart and the infant's chart, which was seen by many nurses and three pediatricians, but no prophylaxis was ever initiated."
- "For 1999 and 2000, of the 771 infants born to HBsAg-positive women in our state, 30 did not receive HBIG at birth, 10 did not receive the first dose of vaccine, and 9 didn't receive either."

### Medical Error Type #2: Infants born to mothers of unknown HBsAg status who were not properly prophylaxed.

*Recommendation of ACIP, AAP, AAFP, and ACOG: If the mother's HBsAg status is unknown, infants must receive hepatitis B vaccine within 12 hours of birth. For premies weighing <2kg, HBIG is also given. [Authors' note: It's not recommended to wait for the HBsAg lab result to determine your course of action. Order hepatitis B vaccine from the pharmacy and give it immediately—within 12 hours of birth.]*

Case report examples:

- "The mother's positive lab result was not received before she was discharged, and the hospital had not re-instituted the birth dose. The infant did not receive HBIG or the first dose of vaccine within the recommended time frame."
- "During a hospital audit, I found one case where the vaccine had been withheld for 25 hours while the staff awaited the results of the 'stat' HBsAg blood work on a mother of unknown status."
- "In one case a mother came in with no prenatal care. The intern did not think she *looked* high risk. She turned out positive. Her child did not receive vaccine."
- "The mother was known to be HBsAg positive with a previous pregnancy; however, with this pregnancy the woman did not receive prenatal care and reported to a different hospital in active labor. HBIG and hepatitis B vaccine were not given until two days after birth when the mother was found to be HBsAg positive."
- "The mother's status was unknown at birth. She left the hospital without the baby being vaccinated. She gave a fictitious address."
- "This mom had no prenatal care, knew she was a carrier, but gave no indication of her HBsAg status when admitted. The hospital ran tests on mom at delivery, but it wasn't until two days later when the lab results came back positive that the baby was treated with HBIG and hepatitis B vaccine."
- "My survey found 36 women unscreened in a six-month period. Ten infants did not get vaccine."

### Medical Error Type #3: Screening test results that were misordered, misinterpreted, mistranscribed, or miscommunicated.

*[Authors' note: To avoid these types of errors, IAC recommends that a copy of the mother's original HBsAg lab report be sent to the birthing hospital as part of the prenatal record. Labor and delivery units and nursery units should carefully review this original lab report to determine the appropriate course of action.]*

Case report examples:

- "We had a mom who was reported to the hospital as HBsAg negative by the prenatal care provider. Unfortunately, this woman was actually HBsAg positive. The baby did not receive HBIG or the birth dose of hepatitis B vaccine, and by three months of age developed fulminant hepatitis B and died."
- "In June 2002, a situation occurred where an infant born to an HBsAg-positive mother at a large teaching hospital was not appropriately

www.immunize.org/catg.d/p2062.pdf • Item #P2062 (4/03)

treated with hepatitis B vaccine and HBIG at birth. A full investigation was launched, and it was found that although the mother's HBsAg status was clearly marked on the prenatal record as 'reactive,' a resident at the hospital mistranscribed the mother's HBsAg status onto the hospital chart as 'negative.'"

- "On an average, we receive ten newborn screening forms each month that indicate a misinterpreted or mistranscribed maternal hepatitis B status."
- "We find that doctors' offices sometimes have a positive result in the mother's chart and neglect to look at it. Or they order labs and neglect to notice that they were never drawn."
- "Three infants were born to HBsAg-positive mothers where the hospital record erroneously indicated that the mothers were negative for HBsAg. The babies were not prophylaxed within 12 hours with HBIG and hepatitis B vaccine."
- "In two cases, the mothers were tested prenatally and the mothers' charts showed positive HBsAg test results. However, the HBsAg test result was documented as negative in the infants' charts, resulting in neither HBIG nor hepatitis B vaccine being given. In two other cases, the positive results were transcribed incorrectly in the mothers' charts as negative."
- "The hospital nursery claimed they had a record of the mother being HBsAg negative. The baby was not immunized at time of birth, although the health department had a copy of the lab slip indicating that mom was HBsAg positive. The OB's office claimed that they did not have this lab slip in the patient's chart but later confirmed that mom was HBsAg positive."
- "We have two cases due to transcription error. The children are now positive."
- "Concerning an HBsAg-positive mom, I was told by both the doctor and nurse that this meant that the woman had hepatitis B antibodies."
- "The physician's interpretation of a mother's prenatal HBsAg-positive lab was 'hepatitis B negative.' This infant was not given HBIG or vaccine prior to hospital discharge. The hospital records recorded the physician's interpretation of the lab rather than the actual lab results. This child is now HBsAg positive."

### Medical Error Type #4: Pregnant women screened with the wrong hepatitis B test.

*Recommendation of ACIP, ACOG, AAP, and AAFP: The hepatitis B screening test to order for each and every pregnancy is HBsAg (hepatitis B surface antigen). [Authors' note: The standard screening test is NOT antibody to hepatitis B surface antigen (anti-HBs or HBsAb), antibody to hepatitis B core antigen (anti-HBc or HBcAb), HBeAg, anti-HBe, or HBV-DNA. These tests are easily confused and often misordered since some differ only by a single letter. Ordering the wrong lab test can be a fatal error.]*

Case report examples:

- "We have examples of approximately 25 such cases: we ask for copies of the labs and we find that anti-HBs has been frequently ordered."
- "We get reports of the wrong screening test ordered, including HBcAb and HBV-DNA."
- "Two maternal records were found to have anti-HBc documented instead of HBsAg. In one hospital, cord blood was used to test mother's HBsAg status."
- "We see anti-HBs erroneously ordered in clinics and hospitals for unscreened women. We also see HBsAg ordered correctly in the hospitals but sent to the labs requesting an anti-HBs test. These appear to be errors and lack of knowledge on the part of the physicians and other hospital staff. Most disturbing is that it has never been noticed by the physicians, lab staff, or nursing staff until it is brought to their attention by health department staff. We also see physicians who only order HBsAg screening for the first pregnancy and none of the following pregnancies, and also those who order only anti-HBs when their patient has had the vaccine series."

### Conclusion

As these examples demonstrate, medical errors in perinatal hepatitis B prevention can occur at any time—beginning with the woman's first prenatal visit and extending beyond the mother's and infant's hospital discharge. The errors described in this article are only the "tip of the iceberg." Most errors remain undiscovered. CDC estimates that annually about 2,000 infants are born to unidentified HBsAg-positive women and approximately 10,000 HBsAg-positive women are not reported to their state's perinatal hepatitis B program and therefore do not benefit from case management.

Errors are made by a broad range of perinatal health care workers including obstetricians, family physicians, pediatricians, nurses, lab technicians, and clerical staff, and these errors occur in hospitals as well as primary care settings. While you may be following the national recommendations for the patients under your care, you can't be certain about everyone else. Human error will never be eliminated.

Only a universal hepatitis B vaccine birth dose policy in every hospital will optimize the protection of all infants from human error and chronic HBV infection. If your hospital isn't vaccinating every infant against hepatitis B virus infection prior to discharge, IAC urges you to work together with your hospital, your medical staff, and your local and/or state health departments to institute this lifesaving policy in your hospital. The words of one hepatitis coordinator (whose state experienced an infant death from fulminant hepatitis B) make the case for this policy: "Life is messy, and giving the birth dose is the best way to avoid worst-case scenarios."

*For resources and ideas to help you, including all responses to IAC's 2001 and 2002 birth dose surveys, related journal articles, and more, visit the Immunization Action Coalition's birth dose web pages at:* www.immunize.org/birthdose

**Other Related Resources:**

"Hospitals and Doctors Sued for Failure to Protect Newborns from Hepatitis B Virus Transmission." Source: Immunization Action Coalition (IAC). www.immunize.org/catg.d/p2061.pdf

"Labor & Delivery and Nursery Unit Guidelines to Prevent Hepatitis B Virus Transmission." Source: IAC. www.immunize.org/catg.d/p2130.htm

"Give the Birth Dose... Hepatitis B Vaccine at Birth Saves Lives!" Source: IAC. www. immunize. org/catg.d/p2125.htm

"Recommended Childhood Immunization Schedule." Source: ACIP, AAP, AAFP. www.cdc.gov/nip/recs/child-schedule.PDF

"General Recommendations on Immunization" Source: *MMWR,* 2/8/02, Vol. 51(RR02):1-36. www.cdc.gov/mmwr/preview/mmwrhtml/rr5102a1.htm

"Thimerosal in Vaccines—Joint Statement of the AAFP, AAP, ACIP, and PHS" Source: *MMWR,* 7/14/00, Vol. 49(27):622-631. www.aap.org/policy/jointthim.html

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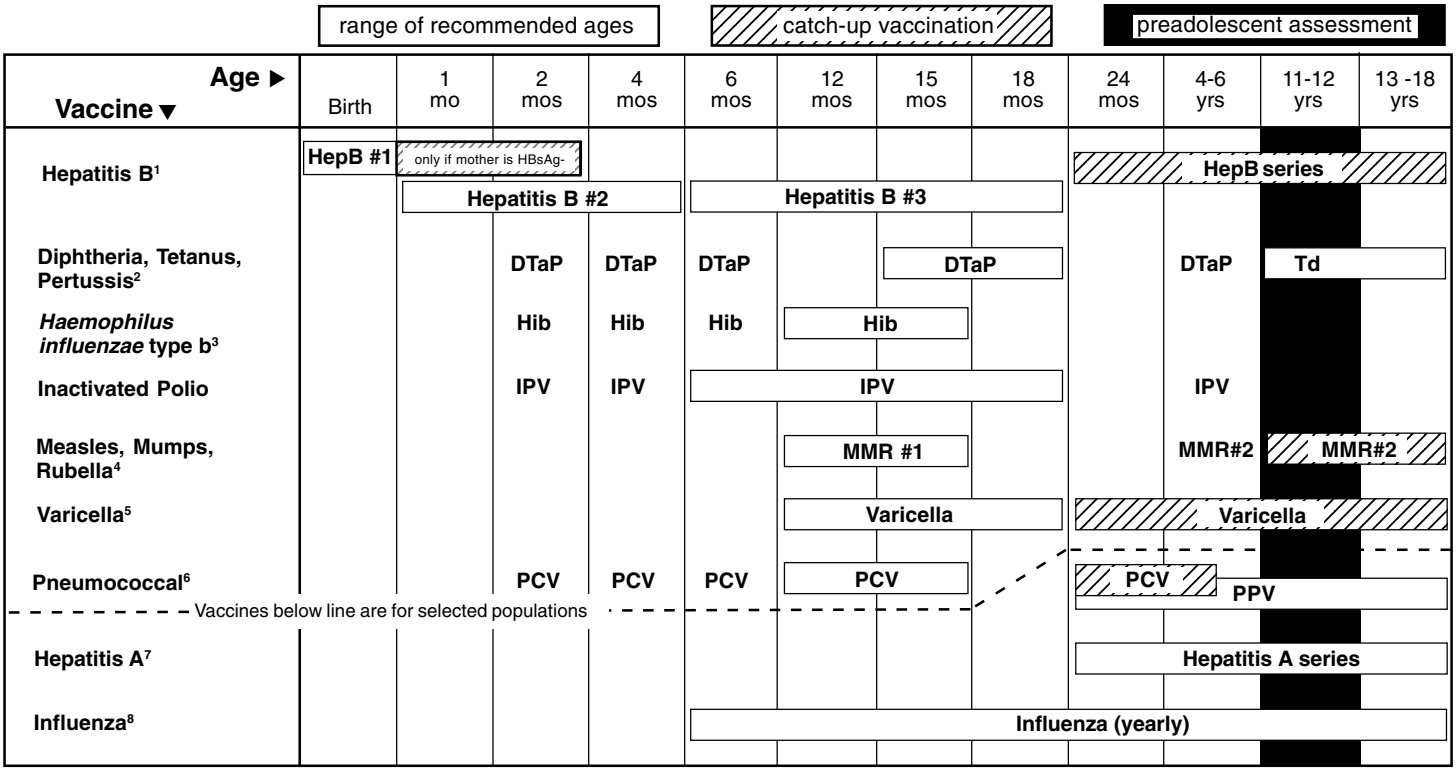
*Deborah L. Wexler, MD, a board-certified family physician, is the founder and executive director of the Immunization Action Coalition (IAC). The Coalition provides practical immunization education materials to health professionals and patients. IAC promotes the recommendation to give hepatitis B vaccine to every newborn no later than hospital discharge.*

# Recommended Childhood and Adolescent Immunization Schedule -- United States, 2003




This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2002, for children through age 18 years. Any dose not given at the recommended age should be given at any subsequent visit when indicated and feasible. ▨ Indicates age groups that warrant special effort to administer those vaccines not previously given. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations.

**1. Hepatitis B vaccine (HepB).** All infants should receive the first dose of hepatitis B vaccine soon after birth and before hospital discharge; the first dose may also be given by age 2 months if the infant's mother is HBsAg-negative. Only monovalent HepB can be used for the birth dose. Monovalent or combination vaccine containing HepB may be used to complete the series. Four doses of vaccine may be administered when a birth dose is given. The second dose of vaccine should be given at least 4 weeks after the first dose, except for combination vaccines which cannot be administered before age 6 weeks. The third dose should be given at least 16 weeks after the first dose and at least 8 weeks after the second dose. The last dose in the vaccination series (third or fourth dose) should not be administered before age 6 months.

Infants born to HBsAg-positive mothers should receive HepB and 0.5 mL Hepatitis B Immune Globulin (HBIG) within 12 hours of birth at separate sites. The second dose is recommended at age 1-2 months. The last dose in the vaccination series should not be administered before age 6 months. These infants should be tested for HBsAg and anti-HBs at 9-15 months of age.

Infants born to mothers whose HBsAg status is unknown should receive the first dose of the HepB series within 12 hours of birth. Maternal blood should be drawn as soon as possible to determine the mother's HBsAg status; if the HBsAg test is positive, the infant should receive HBIG as soon as possible (no later than age 1 week). The second dose is recommended at age 1-2 months. The last dose in the vaccination series should not be administered before age 6 months.

**2. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP).** The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at age 15-18 months. **Tetanus and diphtheria toxoids (Td)** is recommended at age 11-12 years if at least 5 years have elapsed since the last dose of tetanus and diphtheria-containing vaccine. Subsequent routine Td boosters are recommended every 10 years.

**3. *Haemophilus influenzae* type b (Hib) conjugate vaccine.** Three Hib conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB® or Comvax® [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required. DTaP/Hib combination products should not be used for primary immunization in infants at ages 2, 4 or 6 months, but can be used as boosters following any Hib vaccine.

**4. Measles, mumps, rubella vaccine (MMR).** The second dose of MMR is recommended routinely at age 4-6 years but may be administered during any visit, provided at least 4 weeks have elapsed since the first dose and that both doses are administered beginning at or after age 12 months. Those who have not previously received the second dose should complete the schedule by the 11-12 year-old visit.

**5. Varicella vaccine.** Varicella vaccine is recommended at any visit at or after age 12 months for susceptible children, i.e., those who lack a reliable history of chickenpox. Susceptible persons aged ≥13 years should receive two doses, given at least 4 weeks apart.

**6. Pneumococcal vaccine.** The heptavalent **pneumococcal conjugate vaccine (PCV)** is recommended for all children age 2-23 months. It is also recommended for certain children age 24-59 months. **Pneumococcal polysaccharide vaccine (PPV)** is recommended in addition to PCV for certain high-risk groups. See *MMWR* 2000;49(RR-9);1-38.

**7. Hepatitis A vaccine.** Hepatitis A vaccine is recommended for children and adolescents in selected states and regions, and for certain high-risk groups; consult your local public health authority. Children and adolescents in these states, regions, and high-risk groups who have not been immunized against hepatitis A can begin the hepatitis A vaccination series during any visit. The two doses in the series should be administered at least 6 months apart. See *MMWR* 1999;48(RR-12);1-37.

**8. Influenza vaccine.** Influenza vaccine is recommended annually for children ≥6 mos of age with certain risk factors (including but not limited to asthma, cardiac disease, sickle cell disease, HIV, diabetes, and household members of persons in groups at high risk; see *MMWR* 2002;51(RR-3);1-31) and can be administered to all others wishing to obtain immunity. In addition, healthy children age 6-23 months are encouraged to receive influenza vaccine if feasible because children in this age group are at substantially increased risk for influenza-related hospitalizations. Children aged ≤12 years should receive vaccine in a dosage appropriate for their age (0.25 mL if age 6-35 months or 0.5 mL if aged ≥3 years). Children aged ≤8 years who are receiving influenza vaccine for the first time should receive two doses separated by at least 4 weeks.

For additional information about vaccines, including precautions and contraindications for immunization and vaccine shortages, please visit the National Immunization Program Website at www.cdc.gov/nip or call the National Immunization Information Hotline at 800-232-2522 (English) or 800-232-0233 (Spanish).

**Approved by the Advisory Committee on Immunization Practices (www.cdc.gov/nip/acip), the American Academy of Pediatrics (www.aap.org), and the American Academy of Family Physicians (www.aafp.org).**

# For Children and Adolescents Who Start Late or Who Are >1 Month Behind

Tables 1 and 2 give catch-up schedules and minimum intervals between doses for children who have delayed immunizations. There is no need to restart a vaccine series, regardless of the time that has elapsed between doses. Use the chart appropriate for the child's age.

## Table 1. Catch-up schedule for children age 4 months through 6 years

| Dose One (Minimum age) | Minimum Interval Between Doses | | | |
|---|---|---|---|---|
| | Dose One to Dose Two | Dose Two to Dose Three | Dose Three to Dose Four | Dose Four to Dose Five |
| **DTaP** (6 wks) | **4 weeks** | **4 weeks** | **6 months** | **6 months**[1] |
| **IPV** (6 wks) | **4 weeks** | **4 weeks** | **4 weeks**[2] | |
| **HepB**[3] (birth) | **4 weeks** | **8 weeks** (and 16 weeks after first dose) | | |
| **MMR** (12 mos) | **4 weeks**[4] | | | |
| **Varicella** (12 mos) | | | | |
| **Hib**[5](6 wks) | **4 weeks:** if 1st dose given at age <12 mos<br>**8 weeks** (as final dose): if 1st dose given at age 12-14 mos<br>**No further doses needed:** if first dose given at age ≥15 mos | **4 weeks**[6]**:** if current age <12 mos<br>**8 weeks (as final dose)**[6]**:** if current age ≥12 mos and 2nd dose given at age <15 mos<br>**No further doses needed:** if previous dose given at age ≥15 mos | **8 weeks (as final dose)**: this dose only necessary for children age 12 mos - 5 yrs who received 3 doses before age 12 mos | |
| **PCV**[7](6 wks) | **4 weeks:** if 1st dose given at age <12 mos and current age <24 mos<br>**8 weeks (as final dose):** if 1st dose given at age ≥12 mos or current age 24-59 mos<br>**No further doses needed:** for healthy children if 1st dose given at age ≥24 mos | **4 weeks:** if current age <12 mos<br>**8 weeks (as final dose):** if current age ≥12 mos<br>**No further doses needed:** for healthy children if previous dose given at age ≥24 mos | **8 weeks (as final dose)**: this dose only necessary for children age 12 mos - 5 yrs who received 3 doses before age 12 mos | |

## Table 2. Catch-up schedule for children age 7 through 18 years

| Minimum Interval Between Doses | | |
|---|---|---|
| Dose One to Dose Two | Dose Two to Dose Three | Dose Three to Dose Four |
| **Td:** **4 weeks** | **Td: 6 months** | **Td**[8]**: 6 months:** if 1st dose given at age <12 mos and current age <11 yrs<br>**5 years:** if 1st dose given at age ≥12 mos and 3rd dose given at age <7 yrs and current age ≥11 yrs<br>**10 years:** if 3rd dose given at age ≥7 yrs |
| **IPV**[9]**:** **4 weeks** | **IPV**[9]**: 4 weeks** | **IPV**[9] |
| **HepB:** **4 weeks** | **HepB: 8 weeks** (and 16 weeks after 1st dose) | |
| **MMR:** **4 weeks** | | |
| **Varicella**[10]**:** **4 weeks** | | |

1. **DTaP**: The fifth dose is not necessary if the fourth dose was given after the 4th birthday.
2. **IPV:** For children who received an all-IPV or all-OPV series, a fourth dose is not necessary if third dose was given at age ≥4 years. If both OPV and IPV were given as part of a series, a total of four doses should be given, regardless of the child's current age.
3. **HepB:** All children and adolescents who have not been immunized against hepatitis B should begin the hepatitis B vaccination series during any visit. Providers should make special efforts to immunize children who were born in, or whose parents were born in, areas of the world where hepatitis B virus infection is moderately or highly endemic.
4. **MMR:** The second dose of MMR is recommended routinely at age 4-6 years but may be given earlier if desired.
5. **Hib:** Vaccine is not generally recommended for children age ≥5 years.
6. **Hib**: If current age <12 months and the first 2 doses were PRP-OMP (PedvaxHIB or Comvax), the third (and final) dose should be given at age 12-15 months and at least 8 weeks after the second dose.
7. **PCV**: Vaccine is not generally recommended for children age ≥5 years.
8. **Td:** For children age 7-10 years, the interval between the third and booster dose is determined by the age when the first dose was given. For adolescents age 11-18 years, the interval is determined by the age when the third dose was given.
9. **IPV:** Vaccine is not generally recommended for persons age ≥18 years.
10. **Varicella:** Give 2-dose series to all susceptible adolescents age ≥13 years.

### Reporting Adverse Reactions

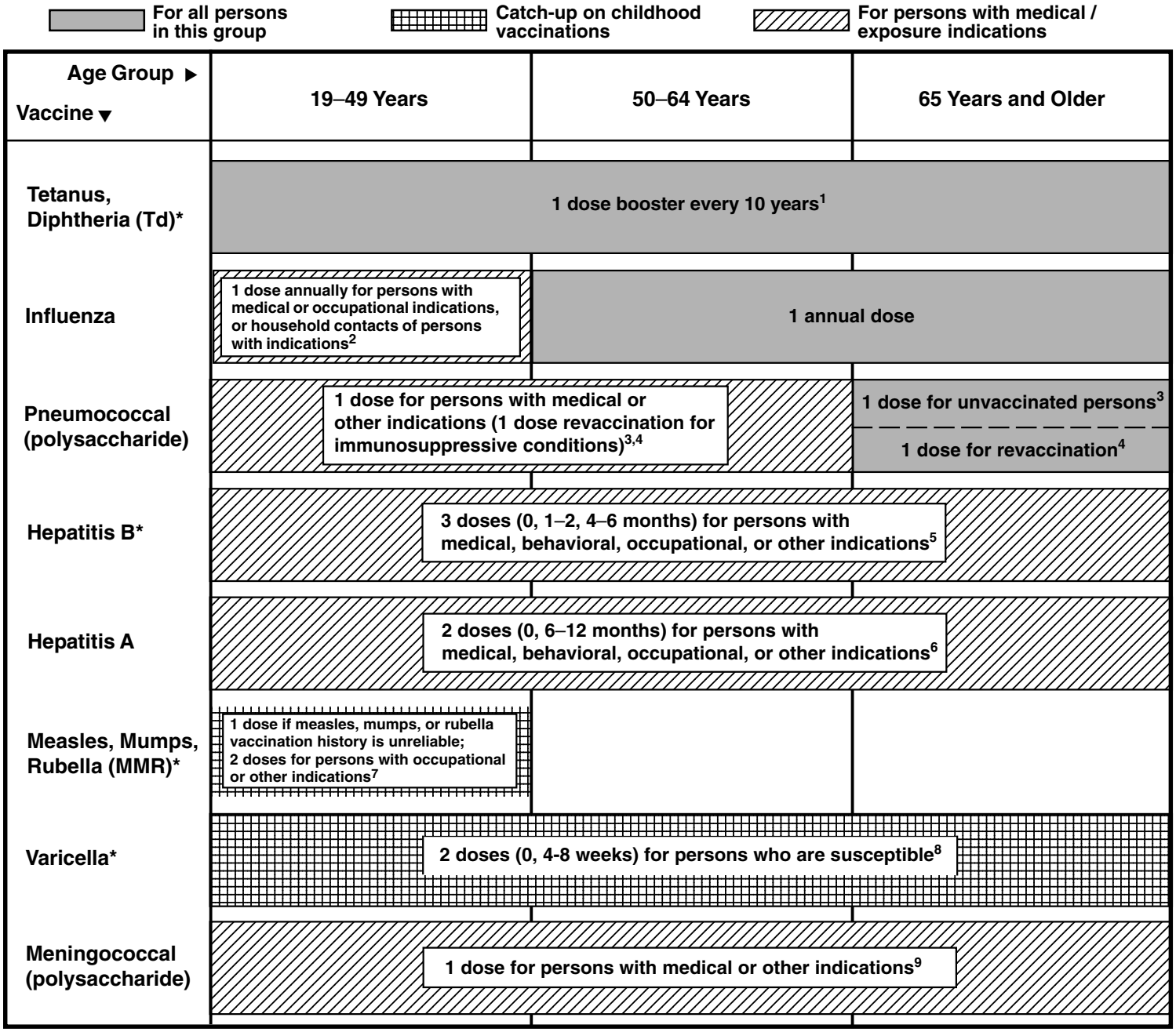
Report adverse reactions to vaccines through the federal Vaccine Adverse Event Reporting System. For information on reporting reactions following vaccines, please visit www.vaers.org or call the 24-hour national toll-free information line (800) 822-7967.

### Disease Reporting

Report suspected cases of vaccine-preventable diseases to your state or local health department.

For additional information about vaccines, including precautions and contraindications for immunization and vaccine shortages, please visit the National Immunization Program Website at www.cdc.gov/nip or call the National Immunization Information Hotline at 800-232-2522 (English) or 800-232-0233 (Spanish).

# Recommended Adult Immunization Schedule, United States, 2002-2003




See "Footnotes for Recommended Adult Immunization Schedule, United States, 2002-2003" on next page.

*Covered by the Vaccine Injury Compensation Program. For information on how to file a claim, call 800-338-2382. Please also visit www.hrsa.gov/osp/vicp To file a claim for vaccine injury write: U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington D.C. 20005. (202) 219-9657.

This schedule indicates the recommended age groups for routine administration of currently licensed vaccines for persons 19 years of age and older. Licensed combination vaccines may be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations.

Report all clinically significant post-vaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available by calling (800) 822-7967 or from the VAERS website at www.vaers.org

For additional information about the vaccines listed above and contraindications for immunization, visit the National Immunization Program Website at www.cdc.gov/nip/ or call the National Immunization Hotline at 800-232-2522 (English) or 800-232-0233 (Spanish).

**Approved by the Advisory Committee on Immunization Practices (ACIP), and accepted by the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Family Physicians (AAFP)**

# Footnotes for Recommended Adult Immunization Schedule, United States, 2002-2003

1. **Tetanus and diphtheria (Td)**—A primary series for adults is 3 doses: the first 2 doses given at least 4 weeks apart and the 3rd dose, 6-12 months after the second. Administer 1 dose if the person had received the primary series and the last vaccination was 10 years ago or longer. MMWR 1991;40(RR-10):1-21. The ACP Task Force on Adult Immunization supports a second option: a single Td booster at age 50 years for persons who have completed the full pediatric series, including the teenage/young adult booster. *Guide for Adult Immunization.* 3rd ed. ACP 1994:20.

2. **Influenza vaccination**—Medical indications: chronic disorders of the cardiovascular or pulmonary systems including asthma; chronic metabolic diseases including diabetes mellitus, renal dysfunction, hemoglobinopathies, immunosuppression (including immunosuppression caused by medications or by human immunodeficiency virus [HIV]), requiring regular medical follow-up or hospitalization during the preceding year; women who will be in the second or third trimester of pregnancy during the influenza season. Occupational indications: health-care workers. Other indications: residents of nursing homes and other long-term care facilities; persons likely to transmit influenza to persons at high-risk (in-home care givers to persons with medical indications, household contacts and out-of-home caregivers of children birth to 23 months of age, or children with asthma or other indicator conditions for influenza vaccination, household members, and care givers of elderly and adults with high-risk conditions); and anyone who wishes to be vaccinated. *MMWR* 2002; 51(RR-3):1-31.

3. **Pneumococcal polysaccharide vaccination**—Medical indications: chronic disorders of the pulmonary system (excluding asthma), cardiovascular diseases, diabetes mellitus, chronic liver diseases including liver disease as a result of alcohol abuse (e.g.,cirrhosis), chronic renal failure or nephrotic syndrome, functional or anatomic asplenia (e.g., sickle cell disease or splenectomy), immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection, leukemia, lymphoma, multiple myeloma, Hodgkins disease, generalized malignancy, organ or bone marrow transplantation), chemotherapy with alkylating agents, anti-metabolites, or long-term systemic corticosteroids. Geographic/other indications: Alaskan Natives and certain American Indian populations. Other indications: residents of nursing homes and other long-term care facilities. *MMWR* 1997; 47(RR-8):1-24.

4. **Revaccination with pneumococcal polysaccharide vaccine**—One-time revaccination after 5 years for persons with chronic renal failure or nephrotic syndrome, functional or anatomic asplenia (e.g., sickle cell disease or splenectomy), immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection, leukemia, lymphoma, multiple myeloma, Hodgkins disease, generalized malignancy, organ or bone marrow transplantation), chemotherapy with alkylating agents, anti-metabolites, or long-term systemic corticosteroids. For persons 65 or older, one-time revaccination if they were vaccinated 5 or more years previously and were aged less than 65 years at the time of primary vaccination. *MMWR* 1997; 47(RR-8):1-24.

5. **Hepatitis B vaccination**—Medical indications: hemodialysis patients, patients who receive clotting-factor concentrates. Occupational indications: health-care workers and public-safety workers who have exposure to blood in the workplace, persons in training in schools of medicine, dentistry, nursing, laboratory technology, and other allied health professions. Behavioral indications: injecting drug users, persons with more than one sex partner in the previous 6 months, persons with a recently acquired sexually transmitted disease (STD), all clients in STD clinics, men who have sex with men. Other indications: household contacts and sex partners of persons with chronic HBV infection, clients and staff of institutions for the developmentally disabled, international travelers who will be in countries with high or intermediate prevalence of chronic HBV infection for more than 6 months, inmates of correctional facilities. *MMWR* 1991;40(RR-13):1-25. (www.cdc.gov/travel/diseases/hbv.htm)

6. **Hepatitis A vaccination**—(For the combined HepA-HepB vaccine, use 3 doses at 0, 1, 6 months). Medical indications: persons with clotting-factor disorders or chronic liver disease. Behavioral indications: men who have sex with men, users of injecting and noninjecting illegal drugs. Occupational indications: persons working with 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. *MMWR* 1999; 48(RR-12):1-37. (www.cdc.gov/travel/diseases/hav.htm)

7. **Measles, Mumps, Rubella vaccination (MMR)**—Measles component: Adults born before 1957 may be considered immune to measles. Adults born in or after 1957 should receive at least one dose of MMR unless they have a medical contraindication, documentation of at least one dose or other acceptable evidence of immunity. A second dose of MMR is recommended for adults who:
   - are recently exposed to measles or in an outbreak setting
   - were previously vaccinated with killed measles vaccine
   - were vaccinated with an unknown vaccine between 1963 and 1967
   - are students in post-secondary educational institutions
   - work in health care facilities
   - plan to travel internationally

   Mumps component: 1 dose of MMR should be adequate for protection. Rubella component: Give 1 dose of MMR to women whose rubella vaccination history is unreliable and counsel women to avoid becoming pregnant for 4 weeks after vaccination. For women of child-bearing age, regardless of birth year, routinely determine rubella immunity and counsel women regarding congenital rubella syndrome. Do not vaccinate pregnant women or those planning to become pregnant in the next 4 weeks. If pregnant and susceptible, vaccinate as early in postpartum period as possible. *MMWR* 1998; 47(RR-8):1-57.

8. **Varicella vaccination**—Recommended for all persons who do not have reliable clinical history of varicella infection, or serological evidence of varicella zoster virus (VZV) infection; health-care workers and family contacts of immunocompromised persons, those who live or work in environments where transmission is likely (e.g., teachers of young children, day care employees, and residents and staff members in institutional settings), persons who live or work in environments where VZV transmission can occur (e.g., college students, inmates and staff members of correctional institutions, and military personnel), adolescents and adults living in households with children, women who are not pregnant but who may become pregnant in the future, international travelers who are not immune to infection. Note: Greater than 90% of U.S. born adults are immune to VZV. Do not vaccinate pregnant women or those planning to become pregnant in the next 4 weeks. If pregnant and susceptible, vaccinate as early in postpartum period as possible. *MMWR* 1996; 45(RR-11):1-36, *MMWR* 1999; 48(RR-6):1-5.

9. **Meningococcal vaccine (quadrivalent polysaccharide for serogroups A, C, Y, and W-135)**—Consider vaccination for persons with medical indications: adults with terminal complement component deficiencies, with anatomic or functional asplenia. Other indications: travelers to countries in which disease is hyperdendemic or epidemic ("meningitis belt" of sub-Saharan Africa, Mecca, Saudi Arabia for Hajj). Revaccination at 3-5 years may be indicated for persons at high risk for infection (e.g., persons residing in areas in which disease is epidemic). Counsel college freshmen, especially those who live in dormitories, regarding meningococcal disease and the vaccine so that they can make an educated decision about receiving the vaccination. *MMWR* 2000; 49 (RR-7):1-20. Note: The AAFP recommends that colleges should take the lead on providing education on meningococcal infection and vaccination and offer it to those who are interested. Physicians need not initiate discussion of the meningococcal quadravalent polysaccharide vaccine as part of routine medical care.

# Recommended Immunizations for Adults with Medical Conditions, United States, 2002-2003

For all persons in this group | Catch-up on childhood vaccinations | For persons with medical / exposure indications | Contraindicated

| Medical Conditions ▼ / Vaccine ▶ | Tetanus-Diphtheria (Td)* | Influenza | Pneumococcal (polysaccharide) | Hepatitis B* | Hepatitis A | Measles, Mumps, Rubella (MMR)* | Varicella* |
|---|---|---|---|---|---|---|---|
| Pregnancy | | A | | | | | |
| Diabetes, heart disease chronic pulmonary disease, chronic liver disease, including chronic alcoholism | | B | C | | D | | |
| Congenital immunodeficiency, leukemia, lymphoma, generalized malignancy, therapy with alkylating agents, antimetabolites, radiation or large amounts of corticosteroids | | | E | | | | F |
| Renal failure / end stage renal disease, recipients of hemodialysis or clotting factor concentrates | | | E | G | | | |
| Asplenia including elective splenectomy and terminal complement component deficiencies | | | E, H, I | | | | |
| HIV infection | | | E, J | | | K | |

A. If pregnancy is at 2nd or 3rd trimester during influenza season.

B. Although chronic liver disease and alcoholism are not indicator conditions for influenza vaccination, give 1 dose annually if the patient is ≥ 50 years, has other indications for influenza vaccine, or if the patient requests vaccination.

C. Asthma is an indicator condition for influenza but not for pneumococcal vaccination.

D. For all persons with chronic liver disease.

E. Revaccinate once after 5 years or more have elapsed since initial vaccination.

F. Persons with impaired humoral but not cellular immunity may be vaccinated. *MMWR* 1999; 48 (RR-06): 1-5.

G. Hemodialysis patients: Use special formulation of vaccine (40 ug/mL) or two 1.0 mL 20 ug doses given at one site. Vaccinate early in the course of renal disease. Assess antibody titers to hep B surface antigen (anti-HBs) levels annually. Administer additional doses if anti-HBs levels decline to <10 milliinternational units (mlU)/ mL.

H. Also administer meningococcal vaccine.

I. Elective splenectomy: vaccinate at least 2 weeks before surgery.

J. Vaccinate as close to diagnosis as possible when CD4 cell counts are highest.

K. Withhold MMR or other measles containing vaccines from HIV-infected persons with evidence of severe immunosuppression. *MMWR* 1996; 45: 603-606, *MMWR* 1992; 41 (RR-17): 1-19.

# How's your state doing?

## *Current U.S. immunization information by state*

| State | Immunization rates reported by adults 65 years of age or older (%) | | Hepatitis B childhood vaccination mandates, with year implemented** | | | | Varicella childhood vaccination mandates, with year implemented** | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | influenza vaccine in past year* | pneumococcal vaccine during lifetime* | Mandate? | Daycare | Elementary School | Middle School | Mandate? | Daycare | Elementary School | Middle School |
| AL | 65.9 | 60.3 | | | | | yes | 2000 | 2001† | |
| AK | 62.8 | 65.3 | yes | 2001 | 2001 | 2001 | yes | 2001 | | |
| AZ | 61.8 | 65.6 | yes | 1997 | 1997 | 2000 | | | | |
| AR | 63.2 | 59.0 | yes | 2000 | 2000 | 2000 | yes | 2000 | 2000 | |
| CA | 68.9 | 59.6 | yes | 1997 | 1997 | 1999 | yes | 2001 | 2001 | |
| CO | 77.4 | 68.6 | yes | 1997 | 1997 | 1997 | yes | 2000 | 2000 | 2006 |
| CT | 69.1 | 63.3 | yes | 1995 | 1996 | 2000 | yes | 2000 | 2000 | 2000 |
| DE | 67.6 | 68.9 | yes | 1999 | 1999 | 1999 | yes | 9/02 | 9/03 | 9/03 |
| DC | 55.5 | 49.0 | yes | 1997 | 1997 | 1997 | yes | 1997 | 1997† | 1997† |
| FL | 54.9 | 58.1 | yes | | 1998† | 1997† | yes | 2001 | 2001† | |
| GA | 62.2 | 57.9 | yes | 1997 | 1997 | | yes | 2000 | 2000 | 2001 |
| HI | 79.0 | 63.7 | yes | 1998 | 1998 | 7/02 | yes | 7/02 | 7/02 | 7/02 |
| ID | 65.1 | 60.3 | yes | 1995 | 1995 | born >11/22/91 | | | | |
| IL | 62.2 | 56.7 | yes | 1997 | 1997 | 1997 | yes | 7/02 | 7/02† | |
| IN | 65.7 | 60.2 | yes | | 1999 | | yes | 1/03 | | |
| IA | 72.8 | 65.9 | yes | | 1999 | | | | | |
| KS | 68.5 | 62.9 | | | | | | | | |
| KY | 60.9 | 55.1 | yes | 1998 | 1998 | 2001 | yes | 2001 | 2001 | |
| LA | 56.1 | 49.5 | yes | 1998 | 1998 | | yes | 9/03 | 9/03 | |
| ME | 71.5 | 65.0 | | | | | yes | 11/02 | 9/03† | 9/04† |
| MD | 67.3 | 62.3 | yes | 2000 | 2001† | 2007† | yes | 2000 | 2001† | 2007† |
| MA | 70.6 | 63.5 | yes | 1992 | 1996 | 1999 | yes | 1998 | 1999† | 1999† |
| MI | 60.4 | 56.6 | yes | 1997 | 2001 | 9/02 | yes | 2000 | 9/02 | 9/02 |
| MN | 70.1 | 62.9 | yes | | 2000 | 2001 | | | | |
| MS | 61.8 | 55.7 | yes | | 1999 | | yes | 9/02 | 9/02 | |
| MO | 67.5 | 56.0 | yes | 1995 | 1997 | 1999 | yes | 2001 | | |
| MT | 73.1 | 67.9 | | | | | | | | |
| NE | 70.1 | 61.2 | yes | | 1999 | 2000 | | | | |
| NV | 63.3 | 66.3 | yes | | 7/02 | | yes | | 7/03 | |
| NH | 69.4 | 62.7 | yes | 1996 | born >1/1/93 | born >1/1/93 | yes | 1/03 | 9/03 | 9/03 |
| NJ | 64.5 | 58.9 | yes | | 2001 | 2001 | | | | |
| NM | 70.0 | 62.7 | yes | 2000 | 9/02 | 1999 | yes | 2000 | 9/02 | |
| NY | 62.5 | 55.9 | yes | 1995 | 1998 | 2000 | yes | 2001 | 9/03 | |
| NC | 66.1 | 65.8 | yes | 1994 | 1999 | 9/05 | yes | 4/02 | 2006 | 2012 |
| ND | 70.0 | 64.2 | yes | | 2000 | | yes | tbd†† | tbd†† | |
| OH | 63.4 | 59.3 | yes | 1999 | 1999 | | | | | |
| OK | 72.7 | 66.1 | yes | 1999 | 1998† | 1997† | yes | 1998 | 1998† | 2004† |
| OR | 71.7 | 70.9 | yes | 1998 | 1998 | 2000 | yes | 2000 | 2000 | 2000 |
| PA | 63.8 | 59.5 | yes | 1994 | 1997 | 2002 | yes | 1997 | 9/02 | 9/02 |
| RI | 72.6 | 67.0 | yes | 1998 | 1999 | 2000 | yes | 1999 | 1999† | 2000† |
| SC | 66.2 | 57.9 | yes | 1994 | 1998 | 1998 | yes | 2000 | 2001 | |
| SD | 74.1 | 59.2 | | | | | yes | | 2000 | |
| TN | 65.6 | 55.4 | yes | 1998 | 1999 | 7/02 | yes | 1999 | 7/02 | |
| TX | 61.8 | 58.0 | yes | 1998 | 1998 | 2000 | yes | 2000 | 2000† | 2000† |
| UT | 68.7 | 67.3 | yes | | 1999 | | yes | | 7/02 | |
| VT | 71.5 | 67.3 | yes | | | 1999 | | | | |
| VA | 65.3 | 60.1 | yes | 1994 | 1994 | 2001 | yes | born >1/97 | born >1/97 | |
| WA | 72.5 | 66.8 | yes | 1997 | 1997† | | | | | |
| WV | 61.7 | 61.3 | | | | | yes | 2000 | | |
| WI | 70.4 | 65.6 | yes | 1997 | 1997 | 1997† | yes | 2001† | 2001† | 2004† |
| WY | 69.6 | 68.4 | yes | 1999 | 1999 | 1998 | | | | |

* From the 2001 Behavioral Risk Factor Surveillance System (BRFSS). *MMWR*, 11/15/02, Vol. 51, No. 45, pp. 1019–1024.

† Signifies a "progressive" law in which a successive grade becomes covered by the law in each new school year (e.g., grade 7 in 2000, grades 7–8 in 2001)

** IAC data; updates appear on our website throughout the year at www.immunize.org/laws

†† tbd = Date to be determined

# Vaccine Administration Record for Children and Teens

Patient name: _____

Birthdate: _____

Chart number: _____

Before administering any vaccines, give the parent/guardian all appropriate copies of Vaccine Information Statements (VISs) and make sure they understand the risks and benefits of the vaccine(s). Update the patient's personal record card or provide a new one whenever you administer vaccine.

| Vaccine | Type of Vaccine* (generic abbreviation) | Date given (mo/day/yr) | Route | Site given (RA, LA, RT, LT) | Vaccine | | Vaccine Information Statement | | Signature/ initials of vaccinator |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | lot # | mfr. | Date on VIS§ | Date given§ | |
| **Hepatitis B**† (e.g., HepB, Hib-HepB, DTaP-HepB-IPV) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Diphtheria, Tetanus, Pertussis**† (e.g, DTaP, DT, DTaP-Hib, DTaP-HepB-IPV, Td) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| ***Haemophilus influenzae* type b**† (e.g., Hib, Hib-HepB, DTaP-Hib) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Polio**† (e.g, IPV, DTaP-HepB-IPV) | | | IM•SC | | | | | | |
| | | | IM•SC | | | | | | |
| | | | IM•SC | | | | | | |
| | | | IM•SC | | | | | | |
| **Pneumococcal conjugate** (PCV) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Measles, Mumps, Rubella** (MMR) | | | SC | | | | | | |
| | | | SC | | | | | | |
| **Varicella** (Var) | | | SC | | | | | | |
| | | | SC | | | | | | |
| **Hepatitis A**** (HepA) | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Influenza**** (Flu) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Other**** | | | | | | | | | |
| **Other**** | | | | | | | | | |

*Record the generic abbreviation for the type of vaccine given (e.g., DTaP-Hib, PCV), *not* the trade name.

† For combination vaccines, fill in the row for each individual antigen composing the combination.

§ Record the publication date of each VIS as well as the date it is given to the patient. According to federal law, VISs must be given to patients (or parent/guardian of a minor child) before administering each dose of DTaP, Td, Hib, polio, MMR, varicella, PCV, or HepB vaccine, or combinations thereof.

** Influenza, pneumococcal polysaccharide (PPV23), hepatitis A, and/or meningococcal vaccines are recommended for certain high-risk children.

www.immunize.org/catg.d/p2022b.pdf • Item #P2022 (4/03)

# Vaccine Administration Record for Adults

Patient name: _____

Birthdate: _____

Chart number: _____

Before administering any vaccines, give the patient copies of all pertinent Vaccine Information Statements (VISs) and make sure he/she understands the risks and benefits of the vaccine(s). Update the patient's personal record card or provide a new one whenever you administer vaccine.

| Vaccine | Type of Vaccine* (generic abbreviation) | Date given (mo/day/yr) | Route | Site given (RA, LA) | Vaccine | | Vaccine Information Statement | | Signature/ initials of vaccinator |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | lot # | mfr. | Date on VIS§ | Date given§ | |
| **Tetanus and Diphtheria** (e.g., Td) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Hepatitis A**† (e.g, HepA, HepA-HepB) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Hepatitis B**† (e.g., HepB, HepA-HepB) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Measles, Mumps, Rubella** (MMR) | | | SC | | | | | | |
| | | | SC | | | | | | |
| **Varicella** (Var) | | | SC | | | | | | |
| | | | SC | | | | | | |
| **Pneumococcal**** (PPV) | | | IM•SC | | | | | | |
| | | | IM•SC | | | | | | |
| **Influenza** (Flu) | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
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| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| | | | IM | | | | | | |
| **Other** | | | | | | | | | |
| **Other** | | | | | | | | | |

*Record the generic abbreviation for the type of vaccine given (e.g., PPV, HepA-HepB), *not* the trade name.

† For combination vaccines, fill in the row for each individual antigen composing the combination.

§ Record the publication date of each VIS as well as the date it is given to the patient. According to federal law, VISs must be given to patients before administering each dose of Td, MMR, varicella, or hepatitis B vaccine.

** Some high-risk patients need a one-time revaccination with pneumococcal polysaccharide vaccine (PPV).

www.immunize.org/catg.d/p2023b.pdf • Item #P2023 (4/03)

# Hesitant parent?

## *Here are some helpful ideas!*

Although the number of parents who choose not to have their children vaccinated is very small, the issues and concerns these parents present to physicians and other health professionals can be time consuming and may result in frustration and sometimes anger. A few doctors have even made the decision to exclude unvaccinated children from their practices. Vaccinated or not, children deserve the best medical care that our medical system can provide.

Thomas Saari, MD, a Wisconsin pediatrician, writes in *NEEDLE TIPS'* "Letters to the Editor" this month: "I made a decision early in my practice that parents who refuse to immunize their children are misinformed or misguided and need my support and the support of my office staff to work through their fears. My goal in working with such parents is to provide them with the information they need over time to help them understand what is best for their child, their family, and the community as a whole."

Magna Dias, MD, and Edgar Marcuse, MD, MPH, wrote the following in an article titled "When Parents Resist Immunizations," published in *Contemporary Pediatrics* in July 2000: "If a parent is concerned about a specific vaccine, try to ascertain exactly what is bothering her, clearly state your recommendation and rationale, voice your respect for the parent's view, and develop a mutually acceptable plan. If possible, administer those vaccines that protect against the disease for which the child is most at risk based on the child's age, immunization history, and the prevalence of the disease in your community. Be sure to repeat your recommendation on subsequent visits: Parents may change their minds."

When all else fails, remind the parent that their unvaccinated child may be removed from school or child care during an outbreak of a disease. Remind them, too, that vaccination schedules do permit unvaccinated children to catch up if they start late. And lastly, we suggest that you document the parent's refusal in the child's medical record by filling out a form such as the one on the accompanying page developed by the American Academy of Pediatrics (AAP). AAP has made this form available for *NEEDLE TIPS'* readers to review and use. This document is also available from the AAP website at: www.cispimmunize.org/pro/pdf/RefusalToVaccinate.pdf

*For more resources to help you respond to parents who have concerns about immunization, visit the Immunization Action Coalition's web page titled "Responding to Concerns about Vaccines" at www.immunize.org/concerns.*

**Information about the American Academy of Pediatrics' "Refusal to Vaccinate" Form**

**This document is available from the AAP's website. Click here to view it.**

## Refusal to Vaccinate

**This document is available from the AAP's website. Click here to view it.**

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# Don't Be Guilty of These Errors in Vaccine Storage and Handling

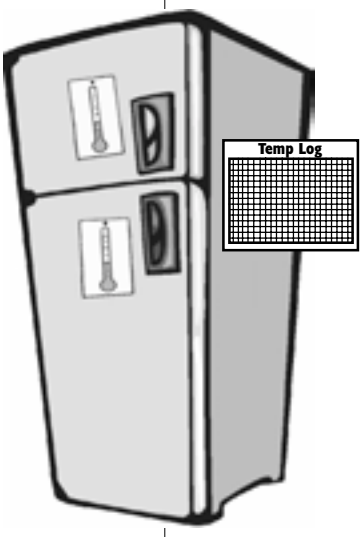
The following are frequently reported errors in vaccine storage and handling. Some of these errors are much more serious than others, but none of them should occur. Be sure your clinic or practice is not making errors such as these.

**Error #1: Designating only one person in the office to be responsible for storage and handling of vaccines, instead of a minimum of two.**

It's important to train at least one back-up person to learn proper storage and handling of vaccines. The back-up person should be familiar with all aspects of vaccine storage and handling, including knowing how to handle vaccines when they arrive, how to properly record refrigerator and freezer temperatures, and what to do in case of an equipment problem or power outage.

**Error #2: Recording temperatures only once per day.**

Temperatures fluctuate throughout the day. Temperatures in the refrigerator and freezer should be checked at the beginning and end of the day to determine if the unit is getting too cold or too warm. Ideally, you should have continuous thermometers that measure and record temperatures all day and all night. A less expensive alternative is to purchase maximum/minimum thermometers. It's also a good idea to record the room temperature on your temperature log in case there is a problem with the refrigerator or freezer temperature. This information may be helpful to the vaccine company's telephone consultant in ascertaining whether your vaccine can still be used.




**Error #3: Recording temperatures for only the refrigerator or freezer.**

If your facility administers varicella vaccine, you should have thermometers in both the refrigerator and the freezer. Rather than buying cheap thermometers that may not accurately measure the temperature, buy quality thermometers that will last for years.

**Error #4: Documenting out-of-range temperatures on vaccine temperature logs and not taking action.**

Documenting temperatures is not enough. Acting on the information is even more important! So, what should you do? Notify your supervisor whenever you have an out-of-range temperature. Safeguard your vaccines by moving them to another location and then determine if they are still viable. Check the condition of the unit for problems. Are the seals tight? Is there excessive lint or dust on the coils? After you have made the adjustment, document the date, time, temperature, what the problem was, the action you took, and the results of this action. Recheck the temperature every two hours. Call maintenance or a repair person if the temperature is still out of range.

**Error #5: Throwing away temperature logs at the end of every month.**

It's important that you keep your temperature logs for at least three years. As the refrigerator ages, you can track recurring problems. If temperatures have been documented out of range, you can determine how long this has been happening and take appropriate action. It's also a great way to lobby for a new refrigerator.

**Error #6: Storing vaccine in the wrong part of the refrigerator (e.g.,vegetable bin, plastic container, the door, bottom, or near the cold air outlet from the freezer).**

The temperature in these areas may differ significantly from the temperature in the body of the refrigerator. Always place vaccines on the shelves in open, labeled containers, so that air can circulate around the vaccines.

**Error #7: Storing varicella vaccine in a dorm-style refrigerator.**

Varicella must be stored in a freezer that has its own external door separate from the refrigerator. No matter how hard you try to adjust the temperature to +5°F in a dorm-style refrigerator's freezer, you won't be able to reach this low temperature in the freezer, and you'll probably freeze the rest of your vaccines in the refrigerator!

**Error #8: Inadvertently leaving the refrigerator or freezer door open or having inadequate seals.**

Remind staff to close the unit doors tightly each time they open them. Also, check the seals on the doors on a regular schedule, and if there is any indication the door seal may be cracked or not sealing properly, have it replaced. The cost of replacing a seal is much less than replacing a box of pneumococcal conjugate or varicella vaccine.

**Error #9: Discarding multi-dose vials 30 days after they are opened.**

Don't discard your vaccines prematurely. Almost all multi-dose vials of vaccine have preservatives in them and can be used until the expiration date on the vial unless there is visible contamination. However, you must discard multi-dose vials of reconstituted vaccine (e.g., meningococcal, yellow fever) if they are not used within a defined period after reconstitution. Refer to the vaccine package inserts for additional information.

**Error #10: Not having emergency plans for a power outage or natural disaster.**

Every clinic should have a written Disaster Recovery Plan that identifies a refrigerator with a back-up generator in which to store vaccine in the event of a power outage or natural disaster. Consider contacting a local hospital or similar facility to be your back-up location if you should need it.

www.immunize.org/catg.d/p3036.pdf • Item #P3036 (4/03)

# Vaccines and Related Products Distributed in the United States, 2003

| Vaccine/Biologic | Brand name | Manufacturer | Type | How supplied |
|---|---|---|---|---|
| Diphtheria, Tetanus, acellular Pertussis | Infanrix | GlaxoSmithKline | Inactivated | single-dose vial or syringe |
| Diphtheria, Tetanus, acellular Pertussis | Tripedia | Aventis Pasteur | Inactivated | single-dose vial |
| Diphtheria, Tetanus, acellular Pertussis | Daptacel | Aventis Pasteur | Inactivated | single-dose vial |
| Diphtheria, Tetanus, acellular Pertussis + Hib | TriHIBit | Aventis Pasteur | Inactivated | single-dose vial |
| Diphtheria, Tetanus, acellular Pertussis + Hep B + IPV | Pediarix | GlaxoSmithKline | Inactivated | single-dose vial or syringe |
| Diphtheria, Tetanus (DT; pediatric <7 yrs) | generic | Aventis Pasteur | Inactivated | 10-dose vial |
| Tetanus, diphtheria, adsorbed (Td; ≥7 yrs) | generic | Aventis Pasteur | Inactivated | single-dose syringe and 10-dose vial |
| Tetanus, diphtheria, adsorbed (Td; ≥7 yrs) | generic | U of Mass Labs[1] | Inactivated | 15-dose vial |
| Tetanus toxoid (TT; ≥7 yrs), adsorbed | generic | Aventis Pasteur | Inactivated | 10-dose vial |
| Tetanus toxoid (TT; adult booster use only) | generic | Aventis Pasteur | Inactivated | 15-dose vial |
| Tetanus immune globulin (TIG) | BayTet | Bayer | Human immunoglobulin | single-dose syringe |
| Measles, Mumps, Rubella (MMR) | M-M-R II | Merck | Live attenuated | single-dose vial |
| Rubella | Meruvax II | Merck | Live attenuated | single-dose vial |
| Varicella | Varivax | Merck | Live attenuated | single-dose vial |
| Haemophilus b conjugate (PRP-T) | ActHIB | Aventis Pasteur | Inactivated | single-dose vial |
| Haemophilus b conjugate (HbOC) | HibTITER | Wyeth | Inactivated | single-dose vial |
| Haemophilus b conjugate (PRP-OMP) | PedvaxHIB | Merck | Inactivated | single-dose vial |
| Haemophilus b conjugate (PRP-OMP) + Hep B | Comvax | Merck | Inactivated | single-dose vial |
| Pneumococcal 7-valent conjugate | Prevnar | Wyeth | Inactivated | single-dose vial |
| Polio (E-IPV) | IPOL | Aventis Pasteur | Inactivated | single-dose syringe and 10-dose vial |
| Hepatitis B: pediatric/adolescent formulation | Engerix-B | GlaxoSmithKline | Inactivated | single-dose vial or syringe |
| Hepatitis B: pediatric/adolescent formulation | Recombivax HB | Merck | Inactivated | single-dose vial or syringe |
| Hepatitis B: adult formulation | Engerix-B | GlaxoSmithKline | Inactivated | single-dose vial or syringe |
| Hepatitis B: adult/adolescent formulation | Recombivax HB | Merck | Inactivated | single-dose vial or syringe |
| Hepatitis B: dialysis formulation | Recombivax HB | Merck | Inactivated | single-dose vial |
| Hepatitis B immune globulin (HBIG) | BayHep B | Bayer | Human immunoglobulin | single-dose vial or syringe |
| Hepatitis B immune globulin (HBIG): ped. formulation | BayHep B | Bayer | Human immunoglobulin | single-dose neonatal syringe |
| Hepatitis B immune globulin (HBIG) | Nabi-HB | Nabi | Human immunoglobulin | single-dose vial |
| Hepatitis A: pediatric/adolescent formulation | Havrix | GlaxoSmithKline | Inactivated | single-dose vial or syringe |
| Hepatitis A: pediatric/adolescent formulation | Vaqta | Merck | Inactivated | single-dose vial or syringe |
| Hepatitis A: adult formulation | Havrix | GlaxoSmithKline | Inactivated | single-dose vial or syringe |
| Hepatitis A: adult formulation | Vaqta | Merck | Inactivated | single-dose vial or syringe |
| Hepatitis A immune globulin | BayGam | Bayer | Human immunoglobulin | single-dose vial |
| Hepatitis A & B: adult formulation | Twinrix | GlaxoSmithKline | Inactivated | single-dose vial or syringe |
| Influenza | Fluvirin | Evans | Inactivated | single-dose syringe and 10-dose vial |
| Influenza | Fluzone | Aventis Pasteur | Inactivated | single-dose syringe and 10-dose vial |
| Influenza: pediatric use (preservative-free) | Fluzone | Aventis Pasteur | Inactivated | single-dose syringe (0.25 & 0.5 mL) |
| Pneumococcal polysaccharide, 23-valent | Pneumovax 23 | Merck | Inactivated | single-dose vial or syringe and 5-dose vial |
| Meningococcal vaccine | Menomune | Aventis Pasteur | Inactivated | single- and 10-dose vial |
| Rabies | Imovax | Aventis Pasteur | Inactivated | single-dose vial |
| Rabies | RabAvert | Chiron | Inactivated | single-dose vial |
| Rabies immune globulin (RIG) | Imogam Rabies-HT | Aventis Pasteur | Human immunoglobulin | 2 mL and 10 mL vials |
| Rabies immune globulin (RIG) | BayRab | Bayer | Human immunoglobulin | single-dose vial |
| Japanese encephalitis | JE-VAX | Aventis Pasteur | Inactivated | single- and 10-dose vial |
| Typhoid | Typhim Vi | Aventis Pasteur | Inactivated | single-dose syringe and 20-dose vial |
| Typhoid, live oral Ty21 | Vivotif Berna | Berna | Live attenuated | 4-capsule package |
| Varicella-zoster immune globulin (VZIG) | generic | U of Mass Labs[2] | Human immunoglobulin | 125 unit and 625 unit vials |
| Yellow fever | YF-VAX | Aventis Pasteur | Live attenuated | single- and 5-dose vial |
| Anthrax, adsorbed | BioThrax | BioPort | Inactivated | multi-dose vial |

[1]Distributed by General Injectables & Vaccines, Inc. (800) 270-2273

[2]Distributed by FFF Enterprises (800) 843-7477

This product listing is current as of April 2003.

## Vaccine Company Contact Information

Aventis Pasteur Inc. (www.aventispasteur.com) ..... (800) 822-2463
Bayer Corporation (www.bayerbiologicals.com) ..... (800) 468-0894
Berna Products Corporation (www.bernaproducts.com) ..... (800) 533-5899
BioPort Corporation (www.bioport.com) ..... (517) 327-1500
Chiron Vaccines USA (www.rabavert.com or www.chiron.com) ..... (800) 244-7668
Evans Vaccines, Ltd. (www.evansvaccines.com) ..... (800) 200-4278
GlaxoSmithKline (www.GSKvaccines.com) ..... (866) 475-8222
Merck & Co., Inc. (www.merckvaccines.com) ..... (800) 672-6372
Nabi Biopharmaceuticals (www.nabi.com) ..... (800) 327-7106
Wyeth Vaccines (www.vaccineworld.com) ..... (800) 358-7443

**IAC's "Ask the Experts" team from CDC**

*William L. Atkinson, MD, MPH*

*Linda A. Moyer, RN*

*Harold S. Margolis, MD*

***What is the dosing schedule for the newly licensed combination vaccine, Pediarix?***
Pediarix, the new combination vaccine from GlaxoSmithKline, contains the vaccine components DTaP, IPV, and hepatitis B. The primary series is 3 doses (0.5 mL) given intramuscularly at 2, 4, and 6 months of age. It should not be given to infants younger than 6 weeks of age or to children 7 years or older.

***Can Pediarix be given to infants born to mothers who are HBsAg-positive?***
Yes, although the package insert states that Pediarix should only be given to infants born to mothers who are HBsAg-negative, the ACIP voted on February 26, 2003, to expand its recommendations for use to also include infants born to mothers whose HBsAg status is positive or unknown. In expanding the use of Pediarix beyond FDA prescribing information, ACIP remained consistent with its 1997 vote, which permitted the use of Comvax (Merck's Hib-hepatitis B combination vaccine) to complete the hepatitis B vaccine series in infants born to HBsAg-positive mothers and mothers whose HBsAg status is unknown.

### Correction

The article "Vaccines and Autism" by Paul A. Offit, MD, which appeared in the Summer 2002 issue of ***NEEDLE TIPS,*** contained a one-word error. In the last paragraph of page 7, in the section titled "Evidence that autism occurs in utero," the phrase "24 weeks" appeared twice. Both instances have been corrected to "24 days." To obtain a copy of the corrected article, visit www.immunize.org/catg.d/p2065.pdf

### *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 and we welcome your review of our content. If you find an error, please notify us immediately. We publish notification of significant errors in ***NEEDLE TIPS*** and on our e-mail announcement service ***IAC EXPRESS.*** Be sure you're signed up for this service. Visit www.immunize.org/express to sign up, or subscribe by sending an e-mail to express@immunize.org Enter the word SUBSCRIBE in the "Subject:" field. No message is needed.

***Can Pediarix be used in infants and children who have fallen behind?***
Yes. As with any combination vaccine, it may be used when any of the components are indicated and none are contraindicated. Providers must observe spacing intervals such that the minimum interval between doses is equal to the greatest interval of any of the individual antigens (see the first footnote to Table 1 on page 3 of ACIP's *General Recommendations on Immunization, MMWR*, February 8, 2002*)*. The vaccine may only be used in children less than 7 years of age.

***Is it still necessary to give monovalent hepatitis B vaccine at birth since we now have two combination vaccines that include a hepatitis B component?***
Yes. The ACIP voted to support continuing to give monovalent hepatitis B vaccine at birth as the recommended schedule. They noted that when combination vaccines are used to complete the series, this may result in giving 4 doses of hepatitis B vaccine which is an acceptable practice.

***Now that Prevnar supplies are improving, which children are the most important to vaccinate?***
The first priority should be to continue to vaccinate high-risk children less than age 5 and to vaccinate infants who have received only one or two doses. As supplies improve, clinicians can resume providing age-appropriate vaccination to infants (3 doses at appropriate intervals). The next priority is to catch up children for whom the vaccine is recommended using the guidelines in the ACIP statement on pneumococcal disease in children *(MMWR,* Oct 6. 2000, Table 11, page 24).

***Does ACIP now recommend that providers have patients wait for 15-20 minutes after a vaccination?***
No, but because of the risk of syncope, this issue is discussed in the 2002 *General Recommendations on Immunization.* The ACIP recommends that you consider observing people for 15–20 minutes after vaccination, if possible. This is particularly important if you are vaccinating older children, adolescents, and adults, groups who are at greater risk for syncope than younger children.

***We see many children with foreign vaccination records. Sometimes we suspect the record isn't valid. What should we do?***
If a provider suspects an invalid vaccination record in any person vaccinated outside the U.S., one of two approaches can be taken. Repeating the vaccinations is an acceptable option. Doing so is usually safe and avoids the need to obtain and interpret serologic tests. If avoiding unnecessary injections is desired, judicious use of serologic testing might be helpful in determining which immunizations are needed. This may be particularly helpful in determining tetanus and diphtheria antitoxin levels for children whose records indicate 3 or more doses of DTP or DTaP. For details, see the *General Recommendations on Immunization, MMWR*, February 8, 2002.

***Is there any evidence that MMR or thimerosal causes autism?***
No. To obtain information on this topic, visit www.immunize.org/safety.

***Must both ActHib and TriHibit (Aventis' combination Hib+DTaP) be used within 30 minutes of reconstitution?***
ActHib must be used within 24 hours of reconstitution. When ActHib is reconstituted with Tripedia to form TriHibit, it must be discarded if not used within 30 minutes.

***What is the appropriate lab test to use to determine whether there has been previous chickenpox disease?***
Commercially available laboratory tests for varicella antibody are usually based on a technique called EIA (enzyme immunoassay). Though these tests are sufficiently sensitive to detect antibody resulting from varicella zoster virus infection, they are generally not sensitive enough to detect vaccine-induced antibody. The more sensitive assays needed to detect vaccine-induced antibody are not widely available. This is why CDC does not recommend antibody testing after varicella vaccination.

***There is no single-dose meningococcal vaccine available, and we can only purchase 10-dose vials. After reconstitution, the vial contents have to be used or discarded in 10 days. Any suggestions on how not to lose money and keep vaccinating?***
The first thing you can do is schedule your patients who need meningococcal vaccine to come in during the same 10-day period. If you are unable to use the full 10 doses, Aventis will refund the cost of up to 5 doses when you return the vial of unused vaccine to them.

**Visit IAC's new website for the public: www.vaccineinformation.org**

## Hepatitis A and B

*by Harold S. Margolis, MD, and Linda Moyer, RN*

***Our hospital is dragging its feet on reinstituting a policy for the hepatitis B birth dose. How can I help convince them that this is the standard of care?***

Use of a birth dose for all infants is recommended and should be implemented for the following reasons: 1) to safeguard against maternal hepatitis B testing errors and test reporting failures; 2) to protect neonates discharged to households in which persons with chronic HBV infection other than the mother may reside; and 3) to enhance the completion of the childhood immunization series. CDC's Advisory Committee on Immunization Practices, the American Academy of Pediatrics, and the American Academy of Family Physicians recommend the birth dose as the preferred standard of care. For more information, go to www. immunize.org/birthdose.

***Some of my patients weren't vaccinated for hepatitis B as infants. Must they wait until 11-12 years before starting the series?***

No. Vaccinate them at the earliest opportunity.

***How much protection is provided for babies, teens, and adults after each dose of hepatitis B vaccine?***

The data depicted below represent the percentage of persons at various ages who develop anti-HBs of at least 10 mIU/mL after their first, second, and third doses of hepatitis B vaccine.

| Dose | Infants* | Teens and Adults** |
|---|---|---|
| #1 | 16-40% | 20-30% |
| #2 | 80-95% | 75-80% |
| #3 | 98-100% | 90-95% |

*Pre-term infants under 2 kg have been shown to respond to vaccination less often.

**Factors that may lower vaccine response rates are age >40 years, male gender, smoking, obesity, and immune deficiency.

***Is it necessary to tell a child's school nurse that s/he is infected with HBV?***

It might be advisable to inform the school nurse regarding the child's infection status but it is certainly not mandatory. The decision rests with the parent. If other children are exposed to the infected student's blood, specific counseling could then be more directive if the nurse were aware of the infected child. Clearly, standard blood exposure precautions should be in place in every school setting. If the issue is mandatory hepatitis B vaccination, and the school is requiring proof of hepatitis B vaccination, you might have the child's physician provide the school with a letter stating that vaccination is contraindicated for the child. You should also check with your state health department, as states may vary in what they require for declination of vaccination.

***How do I interpret some of the common hepatitis B panel results?***

| Tests | Results | Interpretation |
|---|---|---|
| HBsAg<br>anti-HBc<br>anti-HBs | negative<br>negative<br>negative | susceptible |
| HBsAg<br>anti-HBc<br>anti-HBs | negative<br>negative<br>positive with ≥10mIU/mL* | immune due to vaccination |
| HBsAg<br>anti-HBc<br>anti-HBs | negative<br>positive<br>positive | immune due to natural infection |
| HBsAg<br>anti-HBc<br>IgM anti-HBc<br>anti-HBs | positive<br>positive<br>positive<br>negative | acutely infected |
| HBsAg<br>anti-HBc<br>IgM anti-HBc<br>anti-HBs | positive<br>positive<br>negative<br>negative | chronically infected |
| HBsAg<br>anti-HBc<br>anti-HBs | negative<br>positive<br>negative | four interpretations possible† |

*Postvaccination testing, when it is recommended, should be performed 1–2 months following dose #3.

†1. May be recovering from acute HBV infection.
2. May be distantly immune and the test is not sensitive enough to detect a very low level of anti-HBs in serum.
3. May be susceptible with a false positive anti-HBc.
4. May be chronically infected and have an undetectable level of HBsAg present in the serum.

***How often should I test health care workers after they've received the hepatitis B vaccine series to make sure they're protected?***

Postvaccination testing should be done 1–2 months after the last dose of hepatitis B vaccine. If adequate anti-HBs (≥10 mIU/mL) is present, nothing more needs to be done. Periodic testing or periodic boosting is not needed. If the postvaccination test result is less than 10 mIU/mL, the vaccine series should be repeated and then test 1–2 months after the second series. This information should be recorded in the person's health record.

***If a health care worker (HCW) had 3 doses of hepatitis B vaccine but never had post-vaccination testing, should I test them now?***

No. In this scenario, a HCW does not need to be tested unless he or she has an exposure. If an exposure occurs, refer to the updated recommendations for hepatitis B postexposure prophylaxis (*Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis.* 6/29/01). In addition to

*(continued on page 22)*

## Hepatitis A and B lab tests

### Hepatitis A lab nomenclature

**anti-HAV:** *Antibody to hepatitis A virus.* This diagnostic test detects total antibody of both IgG and IgM subclasses of HAV. Its presence indicates either acute or resolved infection, or vaccine-induced immunity.

**IgM anti-HAV:** *IgM antibody subclass of anti-HAV.* Its presence indicates a recent infection with HAV. It is used to diagnose acute hepatitis A.

### Hepatitis B lab nomenclature

**HBsAg:** *Hepatitis B surface antigen* is a marker of infectivity. Its presence indicates either acute or chronic HBV infection.

**anti-HBs:** *Antibody to hepatitis B surface antigen* is a marker of immunity. Its presence indicates an immune response to HBV infection, an immune response to vaccination, or the presence of passively acquired antibody. (It is also known as ***HBsAb,*** but this abbreviation is best avoided since it is often confused with abbreviations such as HBsAg.)

**anti-HBc:** *Antibody to hepatitis B core antigen* is a marker of acute, chronic, or resolved HBV infection. It is *not* a marker of vaccine-induced immunity. It may be used in prevaccination testing to determine previous exposure to HBV infection. (It is also known as ***HBcAb,*** but this abbreviation is best avoided since it is often confused with other abbreviations.)

**IgM anti-HBc:** *IgM antibody subclass of anti-HBc.* Positivity indicates recent infection with HBV (≤6 mos). Its presence indicates acute infection.

**IgG anti-HBc:** *IgG antibody subclass of anti-HBc* is a marker of past or current infection with HBV. If it and HBsAg are both positive (in the absence of IgM anti-HBc), this indicates chronic HBV infection.

**HBeAg:** *Hepatitis B "e" antigen* is a marker of a high degree of HBV infectivity and it correlates with a high level of HBV replication. It is primarily used to help determine the clinical management of patients with chronic HBV infection.

**Anti-HBe:** *Antibody to hepatitis B "e" antigen* may be present in an infected or immune person. In persons with chronic HBV infection, its presence suggests a low viral titer and a low degree of infectivity.

**HBV-DNA:** *HBV Deoxyribonucleic acid* is a marker of viral replication. It correlates well with infectivity. It is used to assess and monitor the treatment of patients with chronic HBV infection.

following these guidelines, if prophylaxis (HBIG and a booster dose of vaccine) is indicated, the person should receive postvaccination testing 3–6 months after the doses because testing at an earlier time might only measure passive antibody derived from HBIG. This postvaccination anti-HBs test result should be recorded in the person's health record.

***Before reading the ACIP recommendations that say not to do this, we tested our employees for hepatitis B immunity (anti-HBs) and some people were not immune, even though they had all completed a 3-dose series. What should we do now?***
These persons might have just lost detectable anti-HBs over time, but are still protected. You can either follow the answer to the previous question or give one dose of vaccine, test in 1 month and if anti-HBs is adequate (≥10 mIU/mL), nothing further needs to be done. If anti-HBs is less than 10 mIU/mL, complete the second series (2 more doses) and test 1–2 months after the last dose and record the result in the person's health record.

***I want to be able to start vaccinating high-risk adults against hepatitis B in our clinic but we know that many of them are uninsured or have minimal insurance coverage. Is there any way that we can get free vaccine from CDC?***
The federal Vaccines for Children (VFC) program provides free vaccine for qualified children and teens under 19 years of age. Information on this program is available at www.cdc.gov/nip/vfc. In addition, some states have special programs that make hepatitis A and/or B vaccines available for certain groups of individuals with risk factors. Check with your state immunization program manager or hepatitis coordinator on the availability of low-cost or free vaccine. A list of state immunization program managers and hepatitis coordinators is available at www.immunize.org/coordinators.

***If a patient is diagnosed with acute hepatitis B and then resolves the infection, can the patient ever get hepatitis B again?***
For practical purposes, no. However, it is possible for a person to have two different HBV infections, the second due to an HBV variant or a person could have two infections with different HBV subtypes.

***Are all Native American/Alaska Native children eligible to receive hepatitis A vaccine through the federal VFC program?***
Yes. All Native American/Alaska Native children throughout the United States (urban and rural) are eligible, even if the children do not live in states, counties, or communities with historically increased rates of hepatitis A.

***Can VFC-eligible children who travel to hepatitis A endemic areas (e.g., Mexico, the Caribbean) receive hepatitis A vaccine under the VFC program?***
Yes. Children (≥2 years of age) and teens who travel outside the U.S. (to all countries except for Western Europe, New Zealand, Australia, Canada, and Japan) should receive hepatitis A vaccine. This vaccine is covered under VFC for eligible children.

## Do you have patients who are HBsAg-positive?

They need medical monitoring, including liver cancer screening, and many can benefit from treatment.

There are three FDA-licensed treatment options available in the U.S.

1. interferon alfa-2b, recombinant administered subcutaneously
2. lamivudine administered orally
3. adefovir dipivoxil administered orally

Consult a liver specialist experienced in the treatment of viral hepatitis for appropriate monitoring guidelines and to help you determine which of your patients might benefit from treatment.

## Smallpox

*The following Q&As were excerpted from CDC's website. To access all the Q&As and additional CDC information, go to www.cdc.gov/smallpox*

***What are the symptoms of smallpox?***
The symptoms of smallpox begin with high fever, head and body aches, and sometimes vomiting. A rash follows that spreads and progresses to raised bumps and pus-filled blisters that crust, scab, and fall off after about three weeks, leaving pitted scars.

***If someone comes in contact with smallpox, how long does it take to show symptoms?***
After exposure, it takes between 7 and 17 days for symptoms of smallpox to appear (average incubation time is 12 to 14 days). During this time, the infected person feels fine and is not contagious.

***How is smallpox spread?***
Smallpox normally spreads from contact with infected persons. Generally, direct and fairly prolonged face-to-face contact is required to spread smallpox from one person to another. Smallpox also can be spread through direct contact with infected bodily fluids or contaminated objects such as bedding or clothing. Indirect spread is less common. Rarely, smallpox has been spread by virus carried in the air in enclosed settings such as buildings, buses, and trains. Smallpox is not known to be transmitted by insects or animals.

***Is smallpox contagious before the smallpox symptoms show?***
A person with smallpox is sometimes contagious with onset of fever (prodrome phase), but the person becomes most contagious with the onset of rash. The infected person is contagious until the last smallpox scab falls off.

***If someone is exposed to smallpox, is it too late to get a vaccination?***
Vaccination within 3 days of exposure will completely prevent or significantly modify smallpox in the vast majority of persons. Vaccination 4 to 7 days after exposure likely offers some protection from disease or may modify the severity of disease.

***Is it possible for people to get smallpox from the vaccination?***
No. The smallpox vaccine does not contain smallpox virus and cannot spread or cause smallpox. However the vaccine does contain another virus called vaccinia, which is "live" in the vaccine. Because the virus is live, it can spread to other parts of the body or to other people from the vaccine site. This can be prevented through proper care of the vaccination site (e.g., hand washing and careful disposal of used bandages).

***Is it possible to get vaccinia, the virus in the vaccine, from someone who has recently been vaccinated?***
Yes. Vaccinia is spread by touching a vaccination site before it has healed or by touching bandages or clothing that have become contaminated with live virus from the vaccination site. Vaccinia is not spread through airborne contagion. The vaccinia virus may cause rash, fever, and head and body aches.

***Who should NOT get the vaccine?***
People who should not get the vaccine include anyone who is allergic to the vaccine or any of its components (polymyxin B, streptomycin, chlortetracycline, neomycin); pregnant women; women who are breastfeeding; people who have, or have had, skin conditions (especially eczema and atopic dermatitis); and people with weakened immune systems, such as those who have received a transplant, are HIV positive, are receiving treatment for cancer, or are taking medications (like steroids) that suppress the immune system. In addition, persons with a household or other close contact who is pregnant, currently has or has a history of eczema/atopic dermatitis (irrespective of disease severity or activity), or who is immunosuppressed should not be vaccinated. Also indi-

viduals younger than 12 months of age should not get the vaccine. Additionally, the Advisory Committee on Immunization Practices (ACIP) advises against non-emergency use of smallpox vaccine in children younger than 18 years of age. Also, people who are using steroid drops in their eyes should wait until they are no longer using the medication to get the vaccine. In addition, people who have been diagnosed by a doctor as having a heart condition with or without symptoms, including conditions such as previous myocardial infarction (heart attack), angina (chest pain caused by lack of blood flow to the heart), congestive heart failure, and cardiomyopathy, stroke or transient ischemic attack (a "mini-stroke" that produces stroke-like symptoms but no lasting damage), chest pain or shortness of breath with activity (such as walking up stairs), or other heart conditions being treated by a doctor should not get the vaccine at this time. In addition, individuals who have 3 or more of the following risk factors should not get the vaccine at this time: high blood pressure diagnosed by a doctor; high blood cholesterol diagnosed by a doctor; diabetes or high blood sugar diagnosed by a doctor; a first degree relative (for example, mother, father, brother or sister) with a heart condition before the age of 50; and/or, currently a cigarette smoker. (These may be temporary exclusions and may change as more information is gathered.) ♦

## Visit IAC websites

www.immunize.org

www.vaccineinformation.org

www.hepprograms.org

www.izcoalitions.org

# Coalition Catalog

## *Publications and resources*

- **All our materials, reviewed by national experts, are camera-ready and copyright-free! You can order one of any item (including videos) and make as many copies as you need.**
- **A $60 contribution entitles you to one copy of all IAC print materials as well as our brightly colored mousepad!**
- **Each (camera-ready) item costs $1 unless otherwise noted.**
- **To order materials, see instructions on page 26.**
- **Date of latest revision indicated in parentheses.**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**★ Starred items are available in languages in addition to English.**

| **Key to Languages:** | | | | |
|---|---|---|---|---|
| **En:** English | **Ab:** Arabic | **Far:** Farsi | **Po:** Portuguese | **Ta:** Tagalog |
| **Sp:** Spanish | **Am:** Amharic | **Hm**: Hmong | **Ro:** Romanian | **Ti:** Tigrinya |
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| | **Ca:** Cambodian | **Ko:** Korean | **Sa:** Samoan | **Vi:** Vietnamese |
| | **Ch:** Chinese | **La:** Laotian | **So:** Somali | |

*We gratefully acknowledge all the translations provided by Dr. Mustafa Kozanoglu and Dr. Murat Serbest, Adana, Turkey (Tu); Suffolk County Department of Health Services, New York (Sp); State of New York (Ch, Sp); State of California (Sp, Ca, Ch, Fa, Hm, Ko, La, Ru, So, Vi); St. Paul-Ramsey Co. Public Health (Hm); and Centers for Disease Control and Prevention (Sp).*

## Materials for your patients

★ **Immunizations for babies.** 1-page info. sheet of the shot schedule. Sp, Tu (1/02). *Item #P4010*

***Revised!*** **Reliable sources of immunization information.** A brochure listing IAC's top choices for reliable information. (11/02). *Item #P4012*

★ **After the shots . . . what to do if your child has discomfort.** Sp, Tu (8/99); Ca, Ch, Fa, Hm, Ko, La, Ru, Ta, Vi (10/97). *Item #P4015*

***New!*** **What if you don't immunize your child?** (1/03). *Item #P4017*

★ ***Revised!*** **Are you 11–19 years old? Then you need to be vaccinated!** 1-page info. sheet. Sp, Tu (9/02). *Item #P4020*

**Questions parents ask about baby shots.** A brochure about childhood vaccinations. (4/00). *Item #P4025*

★ ***New translation!*** **Vaccinations for adults—you're never too old to get shots!** 1-page info. sheet on adult vaccinations. Sp (6/02). *Item #P4030*

★ **Immunizations . . . not just kids' stuff.** Adult immunization brochure. Sp (9/00). *Item #P4035*

**Do I need any vaccinations today?** 2-page questionnaire for adult patients to find out which shots they need. (3/02). *Item #P4036*

**What would happen if we stopped vaccinations?** A CDC publication including vaccine-preventable disease rates. (3/02). *Item #P4037*

**Vaccine myths.** Chapter 16 of the book *Vaccines: What Every Parent Should Know*, written by P.A. Offit, MD, and L.M. Bell, MD. (1/00). *Item #P4038*

**Shots for adults with HIV.** 1-page info. sheet. (7/97). *Item #P4041*

**Vaccinations for adults with hep C.** 1-page info. sheet. (5/00). *Item #P4042*

★ **When do children and teens need vaccinations?** 1-page info. sheet of the shot schedule. Sp (1/02). *Item #P4050*

★ **All kids need hepatitis B shots!** A brochure covering children 0–18.Sp, Ar, Ca, Ch, Fa, Hm, Ja, Ko, La, Po, Ro, Ru, Sa, So, Ta, Tu, Vi (4/98). *Item #P4055*

★ **Chickenpox isn't just an itchy, contagious rash.** A brochure covering all ages. Sp, Vi (1/96). *Item #P4070*

★ **Hepatitis A, B, and C: Learn the differences.** 1-page info. sheet. Tu (1/02). *Item #P4075*

★ **Hepatitis A is a serious liver disease . . . should you be vaccinated?** A brochure covering all ages. Sp, Vi (10/97). *Item #P4080*

***Revised!*** **Questions frequently asked about hepatitis B.** Four pages of commonly asked questions. (1/03). *Item #P4090*

★ **Every week hundreds of teens are infected with hepatitis B.** A brochure for teens. Sp, Ca, Ch, Hm, Ko, La, Ru, Ta, Tu, Vi (6/97). *Item #P4100*

★ **Hepatitis B shots are recommended for all new babies.** A brochure for parents. Sp, Ca, Ch, Fa, Hm, Ko, La, Ru, So, Tu, Vi (9/01). *Item #P4110*

★ **Every week thousands of sexually active people are infected with hepatitis B.** A brochure. Sp (4/98). *Item #P4112*

**If you have sex, read this . . . and stop a killer STD from sneaking up on you!** Reprinted from *Mademoiselle.* (12/02). *Item P4113*

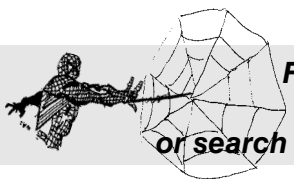
★ **Hepatitis B . . . 100 times easier to catch than HIV.** A brochure for men who have sex with men. Tu (5/01). *Item #P4115*

**You don't have to go all the way to get hepatitis A.** A brochure for men who have sex with men. (6/97). *Item #P4116*

**You are not alone!** Article for teens with chronic HBV infection. By S.J. Schwarzenberg, MD, and K. Wainwright, RN. (2/01). *Item #P4118*

★ **Do you have chronic hepatitis B?** 1-page info. sheet on how to take care of yourself. Sp, Ch, Tu (1/01). *Item #P4120*

**Brief intro. to hepatitis B for parents of adopted children.** 1-page info. sheet by S.J. Schwarzenberg, MD. (10/01). *Item #P4150*



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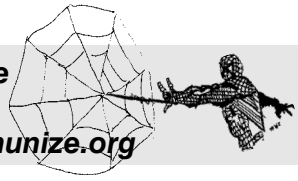

**Confused about the hepatitis B panel?** 1-page info. sheet for adoptive parents to help them understand hep B tests. (9/01). *Item #P4151*

**Hepatitis B vaccine is imperative for families adopting from abroad.** 1-page info. sheet by Dr. J. Aronson. (9/01). *Item #P4153*

★ **If you, your parents, or your children were born in any of these places.** A brochure encouraging testing and vaccination. Ab, Am, Ca, Ch, Fa, Hm, Ko, La, Ru, So, Ti, Vi (5/95) *Item #P4170*

**Hepatitis B information for Asian & Pacific Islander Americans.** 3-page article. (4/01). *Item #P4190*

## Materials for your staff

★ **Summary of rules for childhood immunization.** This 2-sided reference table discusses the appropriate use, scheduling, and contraindications of childhood vaccines. Tu (7/02). *Item #P2010*

★ **Summary of recommendations for adult immunization.** A 2-sided reference table on appropriate use, scheduling, and contraindications of adult vaccines. Tu (6/02). *Item #P2011*

***Revised!*** **Give these people influenza vaccine!** 1-page checklist to help you decide whom to vaccinate. (9/02). *Item #P2013*

**Pneumococcal vaccine: Who needs it and who needs it again?** 1-page Q&A with a table about revaccination. (1/01). *Item #P2015*

***Revised!*** **Vaccines & related products distributed in the United States, 2003.** 1-page info. sheet. (4/03). *Item #P2019*

**How to administer IM and SC injections.** 2-sided info. sheet with illustrations. (7/02). *Item #P2020*

***Revised!*** **Ask the experts.** Compilation of hundreds of Q&As on childhood and adult immunization written by CDC experts. (7/02). *Item #P2021 - $5*

***Revised!*** **Vaccine administration record for children and teens.** 1-page record sheet for the front of the medical chart. (4/03). *Item #P2022*

***Revised!*** **Vaccine administration record for adults.** 1-page record sheet for the front of the medical chart. (4/03). *Item #P2023*

***Revised!*** **It's federal law! You must give your patients current Vaccine Information Statements (VISs).** By N.A. Halsey, MD. (2/03). *Item #P2027*

**The truth about using VISs.** 1-page info. sheet reviewing myths and truths about the use of VISs. (7/02). *Item #P2028*

**Tips to improve your clinic's immunization rates.** 2-page checklist for use in both pediatric and adult health settings. (2/97). *Item #P2045*

**Vaccinate, don't vacillate! Varicella kills 100 people each year in the U.S.** By W.A. Orenstein, MD, Director, NIP, CDC. (10/98). *Item #P2058*

**Hospitals & doctors sued for failing to immunize.** 1-page article describing 7 lawsuits against physicians and hospitals. (9/94). *Item #P2060*

***New!*** **Hospitals & doctors sued for failing to protect newborns from hepatitis B virus transmission.** (1/03). *Item #P2061*

***New!*** **States report hundreds of medical errors in perinatal hepatitis B prevention...** (4/03). *Item #P2062*

***Revised!*** **Vaccines and autism.** By P.A. Offit, MD. 3-page article. (9/02). *Item #P2065*

***Revised!*** **Hepatitis A and B vaccines . . . be sure your patient gets the correct dose!** 1-page info. sheet. (1/03). *Item #P2081*

**No risk?? No way!!** 1-page article reviewing unusual transmissions of hepatitis B in "low-risk" individuals. (9/94). *Item #P2100*

**Hepatitis B and the health care worker.** 2-page Q&A. Includes postexposure prophylaxis guidelines. (3/01). *Item #P2109*

***Revised!*** **Hepatitis B facts: testing & vaccination.** 1-page list of high-risk groups, interpretation of the hep B panel, and a glossary. (10/02). *Item #P2110*

***New!*** **Give the birth dose . . . hepatitis B vaccine at birth saves lives!** (10/02). *Item #P2125*

***New!*** **Two more infants chronically infected with HBV . . . the medical errors continue.** (1/03). *Item #P2127*

***Revised!*** **Labor & delivery unit and nursery unit guidelines to prevent HBV transmission.** 1-page document. (10/02). *Item #P2130*

***Revised!*** **Management of chronic hepatitis B in children and adults.** Four liver experts share management guidelines. (1/03). *Item #P2164 - $1*

**Tracking hepatitis B patients & contacts.** 3 pages. (11/98). *Item #P2180*

★ **Are you at risk for hepatitis A?** Use this 1-page questionnaire to assess your patients' risk factors. Sp, Tu (4/01). *Item #P2190*

★ **Are you at risk for hepatitis B?** Use this 1-page questionnaire to assess your patients' risk factors. Sp, Tu (10/01). *Item #P2191*

★ **Are you at risk for hepatitis C?** Use this 1-page questionnaire to assess your patients' risk factors. Sp, Tu (3/01). *Item #P2192*

**Coalition kid art.** 10 pages of immunization artwork (babies, bears, balloons) to use in your own brochures. (4/98). *Item #P3015 - $5*

**Checklist for safe vaccine handling and storage.** (11/01). *Item #P3035*

***New!*** **Don't be guilty of these errors in vaccine storage and handling.** (4/03). *Item #P3036*

**Protect your vaccines: check temperatures twice a day.** 2-page Fahrenheit & Celsius temperature log to post on your refrigerator. (7/02). *Item #P3039*

**Community-based IZ supplies checklist.** (10/01). *Item #P3046*

**Sample vaccination clinic notification letter.** (8/01). *Item #P3060*

★ **Screening questionnaire for child and teen immunization.** 1-page contraindications screening form for the patient's parent/guardian to fill out. Sp, Ch, Hm, Tu (1/02). *Item #P4060*

★ **Screening questionnaire for adult immunization.** 1-page contraindications screening form for adult patients to fill out. Sp, Ch, Hm, Tu (1/02). *Item #P4065*

**Patient notification letter regarding hepatitis B test results.** Sample letter explaining test results to patients. (4/02). *Item #P4140*

## Photos, slides, and more

**IAC mousepad**. This mousepad is wildly colorful and irresistible! Order this while supplies last. *Item #R2000 - $3*

*(continued on page 26)*

***FREE MATERIALS ONLINE! All of these items are available free on our website at www.immunize.org/catalog or search by alphanumeric item # using our search engine at www.immunize.org***

***Revised!*** **Adult immunization record card**. A wallet-size card to give to your patients to keep track of their vaccinations. (11/02) *Item #R2005 - 250 cards per box; 1 box–$25; 2 boxes–$45; 3 boxes–$60; 4 boxes–$70*

***New!*** **Adult immunization record card including smallpox vaccine.** A credit-card size lime green card to give to your patients to keep track of their vaccinations including smallpox vaccine. (2/03). *Item #R2006 - 250 per box; 1 box–$40; 2 boxes–$75; 3 boxes–$105; 4 boxes–$130*

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***Revised!*** **Photo notebook of vaccine-preventable diseases.** Includes 20 full-page color photos of children and adults with vaccine-preventable diseases, and simple text that describes the diseases. Perfect for taking out into the community to give presentations. (2/03). *Item #R2053 - $75*

**Directory of Immunization Resources.** Over 50 pages of useful organizations, websites, & hotlines with resources. (6/02). *Item #R2065 - $10 (2 copies–$13; 3 copies–$15; 4 copies–$17; 5 copies–$20; please call for ≥6)*

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## Videos

**How to Protect Your Vaccine Supply** (**Ice, Champagne, and Roses**) (CA Dept. of Health, MN Dept. of Health, 1996, 15 min). *Item #V2010 - $10*

**Immunization Techniques: Safe, Effective, Caring** (CA Dept. of Health, 2001, 35 min). See description in box below or on page 23. *Item #V2020 - $15*

**Other videos available from IAC but not listed here:** *Changing the Legacy—Catching Up With Hepatitis B; Hepatitis B & Uncle Tam's Family; Immunization Day, Get the Facts, Get the Vax!;* and *Partnership for Prevention*. For more information, visit www.immunize.org/videos

**"Immunization Techniques: Safe, Effective, Caring"**
**developed by**
**California Dept. of Health Services Immunization Branch, 2001**

*** Order online at www.immunize.org/iztech or see page 23 or 27.**

Every clinic in the U.S. that delivers vaccination services should have a copy of this training video available for staff. The video comes with presenter's notes and includes a skills checklist. (35 min) $15/copy. (To order more than 10 copies, see page 23 pricing.) Item #V2020


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# Don't risk another child's health—give the birth dose!

*Deborah L. Wexler, M.D.*
*IAC Executive Director*

Dear Colleagues:

Recently, when Pediarix entered the combination vaccine marketplace for use in infants six weeks of age and older, health professionals began calling the Immunization Action Coalition (IAC), asking if the hepatitis B vaccine birth dose is still recommended for all infants.

"Yes!" is IAC's answer and the answer of the U.S. Public Health Service's Advisory Committee on Immunization Practices, the American Academy of Pediatrics, the American Academy of Family Physicians, and the American College of Obstetricians and Gynecologists.

IAC's commitment to the birth dose is based on three facts: (1) clinic and hospital staff across multiple occupational groups continue to make significant numbers of errors in perinatal hepatitis B prevention; (2) hepatitis B vaccine is extremely effective; and (3) failure to give the birth dose can take a huge human toll. In exploring these three facts, I hope I can convince you to give the birth dose and to work to get a birth dose policy instituted in your hospital.

**(1) Errors abound regarding perinatal hepatitis B prevention.** Based on the findings of IAC's 2001 and 2002 surveys of all state and federally funded perinatal hepatitis B prevention programs, we know that annually *reported* medical errors number in the hundreds and *unreported* errors are estimated in the thousands. Please turn to page 6 and read "States Report Hundreds of Medical Errors in Perinatal Hepatitis B Prevention," which summarizes our two surveys.

*Everyone, everywhere makes errors.* Errors in perinatal hepatitis B prevention occur in hospitals as well as in primary care settings and are made by a broad range of perinatal health care workers, including obstetricians, family physicians, pediatricians, nurses, lab technicians, and clerical staff. The best insurance a health professional can have against making a significant, irreversible error in the life of an infant is a policy that requires that each newborn receive the birth dose of hepatitis B vaccine before hospital discharge.

**(2) Hepatitis B vaccine is extremely effective—and in a growing number of states, it's *free*.** Hepatitis B vaccine is one of the most effective vaccines available. Studies have shown that infants of the most highly infectious mothers (HBsAg+ *and* HBeAg+) who receive postexposure prophylaxis with *only* hepatitis B vaccine (without HBIG) at birth are protected in 90–95% of cases. This is essentially the same level of protection afforded by administering hepatitis B vaccine in addition to HBIG. In addition, many states make this vaccine available *free* to hospitals who request it for all their infants, such as Massachusetts, Michigan, Montana, and Wisconsin.

**(3) Failure to give the birth dose can take a huge human toll.** The medical errors our surveys uncovered regarding perinatal hepatitis B prevention practices caused one infant to develop fulminant hepatitis B and die. In addition, we know that infants infected with hepatitis B virus (HBV) have a 90% chance of developing chronic HBV infection with all its serious potential sequelae such as cirrhosis and liver cancer and up to a 25% risk of death. Only a policy of vaccinating all infants before hospital discharge will protect and save lives that are currently being put at risk.

What can you do to help infants escape the tragic consequences of contracting HBV infection? If you aren't giving the birth dose to your newborn patients, please start now. If a birth dose policy isn't in place in your hospital, I urge you to work with your hospital, medical staff, and state health department to institute a birth dose policy in your hospital for all newborns.

Deborah L. Wexler MD

Deborah L. Wexler, M.D.
Executive Director

P.S. A birth dose policy will also help protect you (and obstetricians) and your hospital from legal proceedings. To read about lawsuits against hospitals and physicians for failure to protect infants from hepatitis B at birth, visit www.immunize.org/catg.d/p2061.pdf. To read about medical errors surrounding a Michigan infant's death from fulminant hepatitis B and two Colorado children who are now chronically infected, go to www.immunize.org/catg.d/p2125.pdf and www.immunize.org/catg.d/p2127.pdf, respectively. For additional information and articles about the birth dose, go to: www.immunize.org/birthdose.

**Thank you to CDC!**
The CDC's National Immunization Program and the Division of Viral Hepatitis, National Center for Infectious Diseases, provide invaluable technical and financial support.

**Thank you, readers!**
We greatly appreciate your financial support and your comments and suggestions.

A special thank you to the Mark and Muriel Wexler Foundation.

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