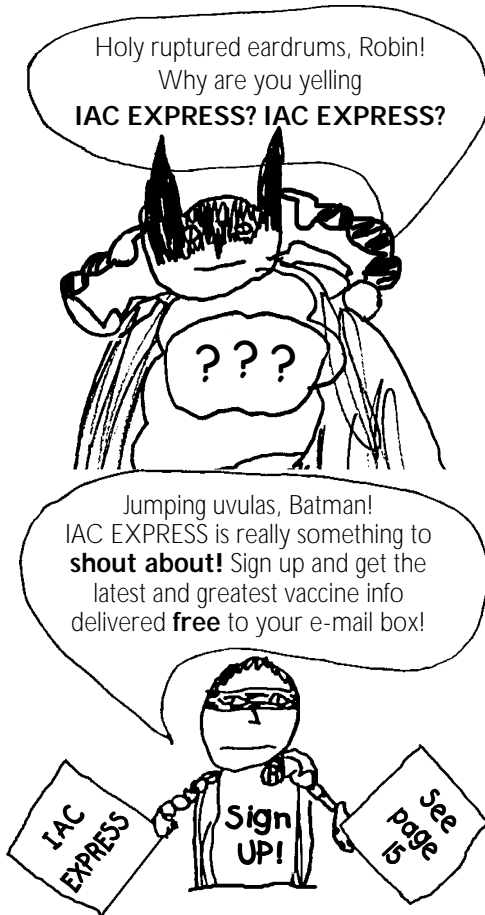


NEEDLE TIPS

& 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

CDC's William Atkinson, MD, answers immunization questions 1
 CDC's Harold Margolis, MD, and Linda Moyer, RN, answer hepatitis questions 20

What's New?

Surgeon General's Warning: 45,000 adults die yearly from vaccine-preventable diseases 2
 "Today's Vaccine Paradox" by Samuel L. Katz, MD, Vaccine Initiative 3
 Vaccine Highlights: new vaccines and new recommendations 4
 "Hepatitis B Vaccine Is Safe" by Neal Halsey, MD, Institute for Vaccine Safety 6
 U.S. Congressman Joe Moakley encourages states to pass hepatitis B laws 7
 "Unprotected People" – two deaths ignite pneumococcal vaccine campaign 8

Photocopy these materials!

Revised! Summary of recommendations for childhood immunization 9
NEW! Rotavirus Vaccine Information Statement (VIS) 11
NEW! "What would happen if we stopped vaccinating?" by CDC 13
NEW! "If you have sex, read this..." by Lynda Liu (reprinted from *Mademoiselle*) 16

National Resources

Where to get immunization and hepatitis B reference books, videos, and more 22

Coalition Catalog

Immunization and hepatitis B videos, brochures, etc. Order one, make copies! 24

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A \$50 annual membership will help support the Coalition plus we'll send you a huge packet of all our printed materials, too! 28

Ask the Experts

Editors' 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 for answering the following questions for our readers. Dr. Atkinson, medical epidemiologist at the National Immunization Program, and Dr. Margolis, chief of the Hepatitis Branch, serve as CDC liaisons to the Coalition. Ms. Moyer is an epidemiologist at the Hepatitis Branch.

Immunization questions?

- E-mail nipinfo@cdc.gov
- Call your state health department (phone numbers on page 23)
- Call CDC's Immunization Information Hotline at 800/232-2522

General vaccine questions

by William L. Atkinson, MD, MPH

Why do ACIP recommendations not always agree with package inserts?

There is usually very close agreement between vaccine package inserts and ACIP statements. The Food and Drug Administration must approve the package insert, and requires documentation for all claims and recommendations made in the insert. Occasionally, ACIP may use different data to formulate its recommendations, or try to add flexibility to its recommendations, which results in wording different than on the insert.

If my state has a registry, do I still need to give patients vaccine record cards?

Yes. Patient-held cards are an extremely important part of a person's medical history. The person may move to an area without a registry, and the personal record may be the only vaccination record available. In addition, even within a state, all health care providers may not participate in the registry, and the personal record card would be needed.

An 11-year old with no immunization record recently immigrated to the USA. What do I do?

An attempt should be made to locate an immunization record. If no record can be located, the person should be revaccinated as indicated for his or her age. You should never assume that anyone was vaccinated without documentation. The child will need the following vaccines: Td, IPV, hepatitis B, MMR, and varicella (or a reliable history of the disease).

What vaccines should be given to adults who have had bone marrow transplants?

ACIP is currently formulating recommendations for the vaccination of persons receiving bone marrow and other hematopoietic cell transplants. While
(continued on page 17)

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The Immunization Action Coalition (IAC), a 501(c)3 nonprofit organization, works to increase immunization rates and prevent disease. IAC promotes physician, community, and family awareness of, and responsibility for, appropriate immunization of all people of all ages against all vaccine-preventable diseases.

The Hepatitis B Coalition, a program of the Immunization Action Coalition, 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 who are chronically infected with hepatitis B.

Join the Coalition!



SURGEON GENERAL'S WARNING:

45,000 adults die each year in the U.S. from influenza, pneumococcal, and hepatitis B disease

To All Immunization Action Coalition Members:

While childhood immunization rates in the U.S. are at an all-time high—with the most critical vaccine doses reflecting coverage rates of over 90 percent—the news is not as good among older adults, who are at increased risk for many vaccine-preventable diseases. Each year an estimated 45,000 adults die of infections related to influenza, pneumococcal disease, and hepatitis B despite the availability of safe and effective vaccines to prevent these conditions and their complications.

Approximately 90 percent of all influenza-associated deaths in the United States occur in people aged 65 and older, the fastest growing age group of the population. Reduction of deaths in this age group has been hindered in part by relatively low vaccine utilization.

There is a disproportionate burden of these diseases in minority and underserved populations.

There is a disproportionate burden of these diseases in minority and underserved populations. Although vaccination levels against pneumococcal infections and influenza among people 65 years and older have increased slightly for Blacks and Hispanics, the coverage in both these groups remains substantially below the overall population.

People aged 65 and older who reported receiving vaccines (by race/ethnicity)

Influenza vaccine

White, non-Hispanic	67.2%
Black, non-Hispanic	50.2%
Hispanic	57.9%

Pneumococcal vaccine

White, non-Hispanic	47.3%
Black, non-Hispanic	29.7%
Hispanic	34.1%

Source: Behavioral Risk Factor Surveillance System, CDC, 1997. *MMWR*, Oct. 21, 1998, Vol. 47, No. 38.

These areas are of great concern because, particularly in large urban areas with traditionally underserved populations, there is a potential for outbreaks of vaccine-preventable diseases.

At the U.S. Public Health Service, our goal is to increase pneumococcal and influenza immunizations among all adults aged 65 years and older and eventually to eliminate disparities among groups.

I encourage you to vaccinate adults of all races and ethnic backgrounds.

As health professionals, you are on the front line in this effort, and play a critical part in achieving this goal. I encourage you to vaccinate adults of all races and ethnic backgrounds against the above-mentioned diseases. You should also be sure to vaccinate high-risk adults against hepatitis B virus infection, and make sure that all your adult patients are up to date on their Td vaccinations.

The reduction in incidence of vaccine-preventable diseases is one of the most significant public health achievements of the past 100 years. The major factor in this success is the development and widespread use of vaccines, which are among the safest and most effective preventive measures.

The reduction in incidence of vaccine-preventable diseases is one of the most significant public health achievements of the past 100 years.

Immunization is one of the most cost-effective strategies to prevent needless morbidity and mortality. In addition, the overall cost to society for vaccine-preventable diseases exceeds \$10 billion each year.

With your help and your dedication, we can continue to build upon the impressive health achievements that vaccines already have made possible. Thank you for your efforts.

David Satcher, MD, PhD
Assistant Secretary for Health
and U.S. Surgeon General

Today's vaccine paradox

Our success in immunization has become a major liability

By **Samuel L. Katz, MD**, Professor Emeritus, Duke University Medical Center. Dr. Katz, a pediatric infectious disease specialist, has been a tireless advocate of childhood immunization for over 43 years. He is the Infectious Diseases Society of America's (IDSA) liaison to the Advisory Committee on Immunization Practices, a committee he chaired from 1985–1993. Currently, Dr. Katz is co-chair of the Vaccine Initiative, a special project of the IDSA and the Pediatric Infectious Diseases Society, designed to serve as a source of comprehensive information on vaccination and vaccination-related issues for parents, health professionals, legislators, and the media.

Our very success with infant and childhood vaccines during the past 40 years has paradoxically proven to be one of our major liabilities in maintaining high levels of immunization for today's infants and children.

In the 1950s, parents and grandparents were personally familiar with the annual summer–autumn devastations of polio with 25,000 or more victims ending up with braces, crutches, wheelchairs, or in iron lungs. Similarly, the vision of a child choking and strangling from obstruction to breathing caused by diphtheria was well recognized by families in that same era.

More recently the millions of cases of measles that occurred every year have become increasingly rare. The pneumonia, diarrhea, and ear infections which complicated large numbers of measles patients were even less frightening than the encephalitis which claimed a smaller number, perhaps 1 in 1,000. Those who survived were left with deficits ranging from severe mental retardation to paralysis and seizures.

In one year in the 1960s, more than 25,000 infants were born with major malformations including deafness, blindness, congenital heart disease, and mental retardation due to rubella virus infecting their pregnant mothers. Once again a disorder of that

magnitude has nearly disappeared thanks to effective rubella virus vaccines.

Today's young parents have rarely if ever seen the toll of these diseases because of the success of our vaccine programs that prevent them.

More recently parents may have been aware of meningitis, most frequent in the first 18 months of life due to an organism called *Haemophilus influenzae* type b. Development and widespread use of vaccines to prevent this invasive infection have reduced the 20,000 cases of meningitis, epiglottitis and pneumonia with empyema that occurred each year to only a few hundred. Even today's young physicians are unfamiliar with many of these diseases which formerly crowded the wards of our children's hospitals.

These organisms have not disappeared but have only receded into the background.

These organisms have not disappeared but have only receded into the background due to the remarkable effects of vaccines developed to prevent them. Failure to continue these vaccine programs can have disastrous results as we saw in 1989 and 1990 when populations of inner-city children, who had not received measles vaccine, suffered a virulent outbreak of more than 50,000 cases which included all the complications of the past plus 125 deaths.

Some parents have been loathe to have their children immunized because of unfortunate, misleading, exaggerated misinformation.

Regrettably, some parents have been loathe to have their children immunized because of unfortunate, misleading, exaggerated misinformation regarding the rare, possible reactions to the vaccines. Biomedical scientists, pharmaceutical companies and the Food & Drug Administration continue to collaborate in their constant efforts to produce vaccines that are both safe and effective. ♦

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Executive Director



Vaccine highlights

Latest recommendations and schedules

The next ACIP meetings...

Editors' note: The information on this page is current as of March 8, 1999.

The Advisory Committee on Immunization Practices (ACIP) is a committee of 10 national experts that provides advice and guidance to CDC regarding the most appropriate use of vaccines and immune globulins. 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 16–17, 1999, and Oct. 20–21, 1999.

ACIP statement information

ACIP statements. No clinic should be without a set of these public health recommendations on vaccines which are published in the *MMWR*. Continuing education credits (CMEs, CEUs, CNEs) are available for reading and completing the brief tests found in the 1999 ACIP statements.

To get a complete set of ACIP statements or just the ones you want:

- Download individual statements from CDC's website: www.cdc.gov/epo/mmwr/mmwr.html (You also can request a free electronic subscription to *MMWR* at this site.)
- E-mail your request to nipinfo@cdc.gov
- Call CDC's Immunization Information Hotline: 800-232-2522.
- Call your state's immunization program (phone numbers on page 23).
- Request them from your medical library.
- Call 781-893-3800 to subscribe to the *MMWR*.

The most recently published ACIP statements are as follows:

- *Human Rabies Prevention – U.S. (1/8/99)*
- *Measles, Mumps, and Rubella – Vaccine Use and Strategies for Elimination of Measles, Rubella, and Congenital Rubella Syndrome and Control of Mumps (5/22/98)*
- *Prevention and Control of Influenza (5/1/98)*

Varicella news and laws

On Feb. 17–18, 1999, the ACIP voted to recommend that "all states implement a requirement that children entering child care facilities and elementary school have received varicella vaccine or have other evidence of immunity to varicella."

The following states have passed varicella vaccine school entry laws: Maryland, Massachusetts, Michigan, Oklahoma, Oregon, Rhode Island,

and Virginia. The District of Columbia and San Antonio County, TX, have also passed varicella school entry laws.

On Feb. 17–18, 1999, the ACIP voted to expand the varicella vaccine recommendations to include information about: 1) postexposure use of varicella vaccine (see "Ask the Experts," page 18); 2) varicella vaccine use for outbreak control; 3) vaccination of persons ≥ 13 years of age who are at high risk of exposure; and 4) considering the vaccine for a subset of HIV-positive children in CDC Class I with CD4% $>25\%$. These recommendations will be published as a "Notice to Readers" in the *MMWR* (date unknown at the time of this writing).

Editors' note: Varicella vaccine is recommended for all susceptible children 1 through 18 years of age. VFC vaccine can be used for any VFC-eligible child within this age range.

Rotavirus vaccine news

On Oct. 22, 1998, the ACIP voted to approve the inclusion of rotavirus vaccine in the Vaccines for Children program (VFC). Rotavirus vaccine will be available for distribution through VFC after a supply contract is finalized.

Rotavirus vaccine, an oral vaccine, is recommended for infants at 2, 4, and 6 months of age by the ACIP, the AAP, and the AAFP. These three groups recognize that the incorporation of this vaccine into clinical practice may require additional time and resources from health care providers. See "Ask the Experts," page 18 for more information on the use of this vaccine.

Hepatitis A news

On Feb. 18, 1999, the ACIP voted to expand its hepatitis A vaccine recommendations to include children living in states, counties, and/or communities with hepatitis A rates consistently higher than the national average.

- Routine vaccination of children is recommended in states where the average annual hepatitis A rate during 1987–97 was at least 20/100,000 population (i.e., approximately 2 times the national average). These states are Alaska, Arizona, California, Idaho, Nevada, New Mexico, Oklahoma, Oregon, South Dakota, Utah, and Washington.
- Routine vaccination of children is also recommended in counties and/or communities where the average annual hepatitis A rate during 1987–97 was at least 20/100,000 population (i.e., approximately 2 times the national average).



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- Routine hepatitis A vaccination of children may be considered in states where the average annual hepatitis A rate during 1987–97 was at least 10/100,000 population but less than 20/100,000. These states are Arkansas, Colorado, Missouri, Montana, Texas, and Wyoming.
- Routine hepatitis A vaccination of children may also be considered in counties and/or communities where the average annual hepatitis A rate during 1987–97 was at least 10/100,000 population but less than 20/100,000.

Hepatitis B vaccine news

On Jan. 22, 1999, "Update: Recommendations to Prevent Hepatitis B Transmission—U.S." was published as a "Notice to Readers" in the *MMWR*. It begins: "In Oct. 1997, the Advisory Committee on Immunization Practices expanded its hepatitis B vaccination recommendations to include all unvaccinated children aged 0–18 years and made hepatitis B vaccine available through the Vaccines for Children program (VFC) for persons aged 0–18 years who are eligible for VFC. ACIP pri-

(continued on page 5)

in populations at high risk for hepatitis B virus (HBV) infection (e.g., Alaska Natives, Pacific Islanders, and children who reside in households of first-generation immigrants from countries where HBV infection is moderately or highly endemic); previously unvaccinated children aged 11–12 years; and older adolescents and adults in defined risk groups.”

On Jan. 22, 1999, the Vaccine Initiative issued a press release to clarify a statement by the National Vaccine Information Center (formerly known as Dissatisfied Parents Together [DPT]) that incorrectly portrayed the risks of serious side effects associated with giving the hepatitis B vaccine to children.

The Vaccine Initiative stated that “a published review of VAERS data from 1991–94 shows no unexpected events in infants who received approximately 12 million doses of the hepatitis B vaccine during that period. In addition, an analysis of data from the National Center for Health Statistics shows no increase in reports of infant deaths since 1991, the year routine hepatitis B immunization began.”

Editors’ note: The Vaccine Initiative, a special project of the Infectious Diseases Society of America and the Pediatric Infectious Diseases Society, is supported by a grant from the Robert Wood Johnson Foundation and is an independent source of information on immunization and immunization-related issues for parents, health professionals, legislators, and the media. Visit their website at www.idsociety.org or you can call 615-343-6306.

Polio vaccine news

On Oct. 21, 1998, the ACIP voted to no longer recommend OPV for the first two doses of the polio series, except in special circumstances such as a child whose parents do not accept the recommended number of injections, or an unvaccinated child who will be traveling within 4 weeks to a polio-endemic area.

DTaP news

In the 1999 *Childhood Immunization Schedule* the following statement appears: “DTaP is the preferred vaccine for all doses in the immunization series including completion of the series in children who have received one or more doses of whole-cell DTP vaccine.” DTP remains an acceptable alternative when DTaP is not available.

On Jan. 26, 1999, Pasteur-Mérieux Connaught, USA (PMC) issued a voluntary recall of Tripedia DTaP vaccine, lot #0916490, which was distributed between February and June 1998. Routine stability testing determined that the potency of the diphtheria component, which had been acceptable at the time of release, had fallen below specifications. Children traveling outside the U.S. who were vaccinated with Tripedia DTaP lot #0916490 may need supplemental doses of diphtheria tox-

oid-containing vaccines. Call CDC’s Immunization Hotline at 800-232-2522 for more information. Questions can also be addressed to PMC’s medical affairs department at 800-325-7709.

Lyme disease vaccine news

On Feb. 18, 1999, the ACIP voted to approve “Prevention of Lyme Disease through Active Vaccination,” the ACIP statement on Lyme disease. The statement will include ACIP recommendations on whom to vaccinate. The expected publication date is spring or summer 1999.

On Dec. 21, 1998, the FDA licensed LYMERix, a new Lyme disease vaccine manufactured by SmithKline Beecham. The vaccine is licensed for use in persons ages 15–70 years. It is given IM on a 0-, 1-, 12-month schedule.

Rabies news

On Jan. 8, 1999, *MMWR* published the ACIP recommendation, “Human Rabies Prevention—United States, 1999,” in *Recommendations and Reports*. It includes new information about a human rabies vaccine, recommendations regarding exposure to bats, and how to administer rabies immune globulin.

1999 Childhood IZ schedule

On Jan. 15, 1999, the 1999 *Childhood Immunization Schedule* was published as a “Notice to Readers” in the *MMWR*. **The new schedule has significant changes and new vaccine recommendations** that were not on the 1998 schedule so make sure you have a copy. Call your state health department (phone numbers on page 23) or obtain it from CDC’s website: www.cdc.gov/nip/ and click on “Publications.” You can also call CDC’s Immunization Hotline at 800-232-2522.

VISs (vax info statements)

On Feb. 23, 1999, CDC published “Instructions for Use of Vaccine Information Materials (Vaccine Information Statements).” In these instructions CDC states that all health care providers in the U.S. who administer any vaccine containing diphtheria, tetanus, pertussis, measles, mumps, rubella, polio, hepatitis B, *Haemophilus influenzae* type b (Hib), or varicella (chickenpox) vaccine shall, prior to administration of each dose of the vaccine, provide a copy of the relevant vaccine information materials (also known as VISs) to the patient or parent/guardian.

In Feb. 1999, CDC released five new Vaccine Information Statements (VISs) – varicella, MMR, Hib, hepatitis B, and polio.

You must give your patients the most current versions of the VISs (the date appears at the bottom of each VIS). Note: VISs dated Dec. 16, 1998, must be in place no later than June 1, 1999, and

the interim polio vaccine information materials, dated Feb. 1, 1999, must be used as soon as practicable. Following is a table of the most current VISs and the date that is at the bottom of each one. Use the current ones and throw away (recycle) your old ones.

Current VISs

DTaP/DT/DTP	8/15/97	MMR	12/16/98
Td	6/10/94	varicella	12/16/98
polio	2/1/99	Hib	12/16/98
hepatitis A	8/25/98	hepatitis B ..	12/16/98
pneumococcal ..	7/29/97	influenza	7/1/98

In January, CDC released a rotavirus interim VIS, which is reprinted on pages 11–12 of this issue of *NEEDLE TIPS*. The rotavirus VIS, dated Dec. 1, 1998, is not required at this time but is an excellent information piece for parents.

VISs and the instructions on how to use them can be obtained from your state health department (phone numbers on page 23). The VISs and the new VIS instruction sheet are also on IAC’s website at: www.immunize.org/vis/

VFC coverage in 1999

As of March 1, 1999, the age guidelines (for children who are VFC-eligible) are as follows:

- Children 1 through 18 years of age are eligible to receive two doses of MMR vaccine and one or two doses of varicella vaccine (depending on the child’s age at the time of vaccination).
- Children 0 through 18 years of age are eligible to receive three doses of hepatitis B vaccine.
- Children 11 through 18 years of age are eligible to receive a Td vaccine booster if at least 5 years have elapsed since the previous dose.
- Children 0 through 18 years of age who need routine or catch-up doses are eligible to receive DTaP, DT, Td, polio, and Hib vaccines.
- Children 2 through 18 years of age are eligible for pneumococcal vaccine if they are in an ACIP-recommended risk group.

NOTE: Some states have used state funding to expand these age limits. Check with your state immunization program (phone numbers on page 23). ♦



Here's the score!

Hepatitis B vaccine is safe and effective

This article was written by **Neal A. Halsey, MD**, Director, Institute for Vaccine Safety, Johns Hopkins School of Public Health, in response to recent news reports about hepatitis B vaccine, multiple sclerosis, and other disorders.



The panel concluded that vaccines are not responsible for causing diabetes

Hepatitis B vaccines provide protection against serious and life-threatening liver diseases including cancer of the liver. More than 20 million persons in the U.S. and more than 500 million worldwide have been immunized. However, recent news reports have questioned the safety of hepatitis B vaccines and suggested associations between the vaccine and multiple sclerosis (MS) and other autoimmune disorders. Unfortunately, these news reports have not included the results of expert panels who have carefully reviewed the data and found no scientific evidence of a causal relationship between hepatitis B vaccine and MS and other disorders.

Media stories have focused on anecdotal reports of adults and children who developed disorders after vaccination. Because the disorders developed at varying times after hepatitis B vaccination, some people (falsely) concluded that the disorders might have been caused by hepatitis B vaccines.

Hepatitis B vaccines should be given to all children as part of their routine vaccination schedule

Hepatitis B infection is not a risk factor for developing MS and there has been no increase in MS or other disorders associated with the introduction of hepatitis B vaccines. Therefore, there is no biologic reason to anticipate that hepatitis B vaccines would cause these disorders.

Hepatitis B vaccination is recommended for young adults – the same age when MS typically develops. As such, some cases of MS develop as a coincidence in persons who have received hepatitis B vaccination. Moreover, other studies have shown that administering vaccines, including influenza vaccine, has not led to increased risk of exacerbations in persons who have MS. Unpublished case-control studies in Europe and the U.S. have revealed that persons who develop MS are not significantly more likely to have received hepatitis B vaccines than matched controls.

Experts concluded that available data do not demonstrate a causal association between hepatitis B immunization and MS

On September 28–30, 1998, the Viral Hepatitis Prevention Board (VHPB) assembled experts to review the epidemiology and current understanding of MS. The panel of experts concluded that available data do not demonstrate a causal association between hepatitis B immunization and demyelinating disorders including MS. [Halsey NA, DuClos P, Van Damme P, Margolis H. Hepatitis B vaccine and central nervous system demyelinating diseases. *Pediatric Infectious Disease Journal* 1999;18:23-24.]

Editors' note: To obtain the VHPB's summary statement on the hepatitis B vaccine and MS from the Internet, visit: <http://esoc-www.uia.ac.be/esoc/VHPB/statement.html>

Prior to routine immunization, every year in the U.S. more than 300,000 people developed hepatitis B infections and 5,000 died from chronic hepatitis or cancer of the liver caused by chronic hepatitis B infection. Hepatitis B vaccines provide 95% protection against chronic hepatitis B infection. Therefore, the World Health Organization, the American Academy of Pediatrics, the American Academy of Family Physicians, and the Advisory Committee on Immunization Practices of the CDC all recommend that all children 0–18 years of age should receive the vaccine.

Parents should not be misled by the occasional inflammatory reports in the press. Hepatitis B vaccines are very safe and effective and should continue to be given to all children as part of their routine vaccination schedule.

On March 20, 1998, the Institute for Vaccine Safety convened a panel of experts to review data regarding the relationship between Type I diabetes and immunization. The panel concluded that vaccines are not responsible for causing diabetes and that some vaccines might prevent diabetes. In animals predisposed to developing diabetes, some vaccines administered early in life prevent diabetes. Several studies are underway to determine if hepatitis B vaccine at birth is associated with a reduced risk of diabetes in high-risk children. [The Institute for Vaccine Safety Diabetes Workshop Panel. Childhood Immunizations and Type 1 Diabetes: Summary of an Institute for Safety Workshop. *Pediatric Infectious Disease Journal* 1999;18:217-22.] ♦

Vaccine Safety Resources

- National Immunization Program: www.cdc.gov/nip/vacsafe/
- CDC's Hepatitis Branch: www.cdc.gov/ncidod/diseases/hepatitis/index.htm
- CDC Immunization Hotline: 800-232-2522
- Institute for Vaccine Safety 410-955-2955 www.vaccinesafety.edu
- Immunization Action Coalition 651-647-9009 www.immunize.org
- IAC EXPRESS: www.immunize.org/express/
- Vaccine Initiative 615-343-6306 www.idsociety.org/vaccine/index.html
- World Health Organization press release: "No Scientific Justification to Suspend Hepatitis B Immunization" www.who.int/inf-pr-1998/en/pr98-67.html

Institute for Vaccine Safety



Johns Hopkins University

The Institute for Vaccine Safety is committed to investigating vaccine safety issues and providing timely and objective information on vaccine safety to health care providers, journalists, and parents. Visit their website at www.vaccinesafety.edu

What's your state doing?

An empty box in this table means "NO"

U.S. Congressman encourages states to pass laws that will help protect schoolchildren from hepatitis B

The Immunization Action Coalition received the following letter from **U.S. Congressman John Joseph Moakley**, House of Representatives, 9th District, Massachusetts. In his letter, Congressman Moakley describes his personal battle with hepatitis B and writes about his successful liver transplant. In his letter, he also encourages states to add hepatitis B vaccine to their school immunization laws, rules, or regulations.

Don't Hesitate, Vaccinate!

In the early 1980s, I was diagnosed with hepatitis B. It has never been determined where or how I contracted the virus. It may have been during a Congressional fact finding trip to China at that time. That is one of the very frightening facts about hepatitis B. While risk factors have been identified that are associated with viral transmission, up to 40 percent of the cases of hepatitis B in adults have no known risk factors associated with them.

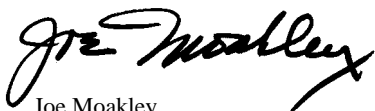
By 1995, I was told by my doctors that I had about two months to live. In my case, the hepatitis B virus had led to cirrhosis of the liver and this vital organ had deteriorated beyond function. I was terribly ill. I had no strength and I had become severely jaundiced. But I was lucky; a liver transplant saved my life. Today I am happy, healthy and so grateful that I have been able to celebrate 25 years in the United States Congress.

Unfortunately, more than one and a quarter million Americans have hepatitis B, and up to 6,000 Americans every year die from the complications associated with the hepatitis B virus. All of the horrors that I endured could have been avoided if I had had available to me the very safe and effective vaccine against hepatitis B that now exists. The three shot series over a period of four to six months can protect most people from the agony of this disease.

I strongly encourage states to add hepatitis B vaccine to their school immunization laws, rules, or regulations. I also urge everyone to check with their providers about immunization against hepatitis B for themselves and for those they love.

There is no reason for anyone to suffer from this totally preventable disease.

Sincerely,



Joe Moakley
Member of Congress

Editors' note: Since 1996, thanks to a statewide hepatitis B school mandate, Massachusetts children in daycare, kindergarten and first grade have been protected from hepatitis B virus infection. Starting in the fall of 1999, middle school students in Massachusetts were required to have hepatitis B vaccination.

To date, 41 states plus the District of Columbia have added hepatitis B vaccination to their list of vaccinations that are required for school.

State	Do you have any hepatitis B childhood vaccination mandate?	Is there a hepatitis B daycare law? Who is covered &/or what is date of implementation?	Is there a hep B kindergarten &/or 1st grade law? Date of implementation?	Is there a hepatitis B middle school law? Date of implementation?
AL				
AK				
AZ	yes	yes 97	yes 97	
AR	yes	yes 97	yes 98	yes 98
CA	yes	yes 97	yes 97	yes 9/99
CO	yes	yes 97	yes 97	yes 97
CT	yes	yes 95	yes 96	
DE	yes		yes 9/99	yes 9/99
DC	yes	yes 97	yes 97	yes 97
FL	yes		yes 98	yes 97
GA	yes	yes 97	yes 97	
HI	yes	yes 98	yes 98	
ID	yes	born after 11/91	born after 11/91	born after 11/91
IL	yes	yes 98		yes 98
IN	yes		yes 7/99	
IA	yes		yes 1/99	
KS	yes		yes 9/99	
KY	yes	yes 98	yes 98	
LA	yes	yes 98	yes 98	
ME				
MD	yes	yes 95	yes 9/01	
MA	yes	yes 96	yes 96	yes 9/99
MI	yes	yes 97	yes 1/00	
MN	yes		yes 9/00	yes 9/01
MS	yes		yes 8/99	
MO	yes	yes 95	yes 96	
MT				
NE	yes		yes 7/99	yes 7/00
NV				
NH	yes	yes 96	yes 96	
NJ				
NM	yes	yes 9/00	yes 9/02	yes 9/99
NY	yes	yes 95	yes 98	
NC	yes	born after 7/94	born after 7/94	born after 7/94
ND				
OH	yes		yes 8/99	
OK	yes		yes 97	yes 97
OR	yes	yes 98	yes 98	yes 9/00
PA	yes		yes 97	
RI	yes	yes 8/99	yes 8/99	yes 8/00
SC	yes	yes 94	yes 98	yes 98
SD				
TN	yes	yes 98	yes 9/99	
TX	yes	yes 98	yes 98	
UT	yes		yes 7/99	
VT	yes			yes 8/99
VA	yes	yes 9/99	yes 9/99	
WA	yes	yes 97	yes 97	
WV				
WI	yes	yes 97	yes 97	yes 97
WY	yes	born after 1/96	yes 9/99	yes 98

Unprotected people ...

Two deaths in a nursing home ignite pneumococcal vaccine campaign

The Immunization Action Coalition collects stories and case reports such as the one below of people who have suffered or died from vaccine-preventable diseases. Stories and case reports can help get out an urgent message about the importance of vaccination. Please help! Send us stories, news items, or case reports about ANY vaccine-preventable disease. E-mail these items to the Immunization Action Coalition to <deborah@immunize.org> or fax your information to 651-647-9131.



Editors' note: Pneumococcal disease causes approximately 40,000 deaths, 500,000 cases of pneumonia, and 50,000 cases of bacteremia each year in the United States. A 1997 CDC survey indicated that only 45% of adults 65 years of age and older have received their recommended dose of pneumococcal vaccine (MMWR, October 2, 1998, vol. 47, no.38).

The following article is from the Texas Department of Health's newsletter, Accent on Health, March 10, 1997.

According to Devora Goodnight, it wasn't just luck that only two people died in a recent outbreak of deadly pneumococcal disease where she works at the Houston County Nursing Home in Crockett. What undoubtedly saved lives when the outbreak began was a combination of the nursing home staff's recognizing the seriousness of the outbreak and their getting an immediate response from experts at the Texas Department of Health (TDH).

But perhaps the most decisive single factor was the quick immunization of all potential patients with a vaccine which often is overlooked by physicians and patients alike.

After two patients died of streptococcal pneumonia infections and one other was stricken, Goodnight said, "We knew we had a situation that might cost many of our residents' lives if it got further out of hand. We had never had anything like this happen before and didn't even know what to expect if we called TDH for help. But we knew we would most likely lose more of our 'family' if we didn't."

At TDH's Infectious Disease Control and Surveillance Division, epidemiologist Beverly Ray said that Goodnight and the home's nursing director Debbie Hargrove showed "the highest standard of concern for their residents."

Ray explained that although outbreaks of pneumococcal disease caused by the *Streptococcus pneumoniae* bacteria are rare, the bacteria spread rapidly among unimmunized people whose health may already be compromised. People in good health with normal immune systems are not as likely to develop infections, but ill people, such as

elderly nursing home residents with existing problems, are especially at risk of developing pneumonia after exposure to the bacteria.

According to Ray, *Streptococcus pneumoniae* causes about half a million individual cases of pneumonia, some 3,000 cases of meningitis and about seven million ear infections in the United States every year. The most susceptible people are the elderly and ill, such as those at the Crockett nursing home, infants and toddlers, people with chronic health conditions such as diabetes or emphysema, and people without spleens or with weakened immune systems. Outbreaks of the disease occur most commonly during the winter months, among nursing home patients, jail or prison inmates, and other groups who share close living quarters and often breathe the same air.

The U.S. Centers for Disease Control and Prevention recommends that all people 65 years of age or older receive one dose of pneumococcal vaccine. Those at greatest risk for serious complications from pneumococcal disease need to receive a second dose five years later. The vaccine is effective against at least 23 different strains of streptococcal bacteria and is fast acting. However, Ray said that in a recent survey of Texans 65 and older, only 42 percent said they had been vaccinated against bacterial pneumonia.

Pneumococcal vaccine is unbelievably underused.

Ray said, "This vaccine is one of the most effective, fastest-acting vaccines we have for averting outbreaks among such groups as nursing home residents, yet it is unbelievably underused. We hope that physicians will offer the vaccine more often to their own patients who may be at risk, and that more patients or family members will remember to ask for the vaccine if they have not already had it."

After TDH received the Crockett nursing home's call for help on Jan. 23, Ray and a team of other epidemiology staff drove directly to Crockett to begin taking blood samples from about 90 nurs-

ing home residents and staff and obtaining permission to begin vaccinating as many of the residents as possible. Only 14 of 88 residents had previously been immunized. Vaccinations began the following morning, Jan. 24.

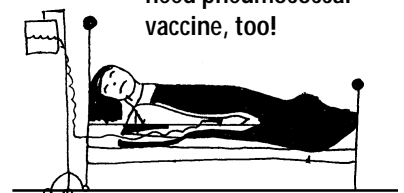
According to Hargrove, she and others on the nursing home staff "were amazed at how quickly TDH brought the outbreak under control."

Only 14 of the 88 residents had previously been immunized.

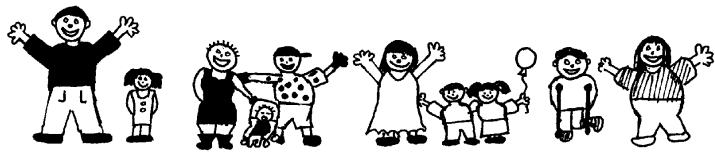
Although two patients out of the first three diagnosed with pneumococcal disease died, the remaining victim of the outbreak survived and has recovered. The vaccines which the other residents received have begun protecting the home's residents from further infections. For a few days after the residents were vaccinated, some of their visiting friends and family members were advised to take antibiotics as an additional precaution against more pneumococcal infections, but no other cases occurred.

Goodnight said that the loss of the two residents who died from pneumococcal disease has been hard on the other residents and the staff alike. "They were part of our family. We always try to operate as one big family here, and a death is personal to all of us. We are just very, very grateful that help was there when we needed it to prevent even more tragedies," she said. ♦

Many people under 65 need pneumococcal vaccine, too!



For a copy of "Pneumococcal vaccine: who needs it and who needs it again?" visit www.immunize.org/catg.d/2015pne.htm or see item #P2015 on page 27.



Summary of Rules for Childhood Immunization*

Adapted from ACIP, AAP, and AAFP by the Immunization Action Coalition, March 1999

Vaccine	Ages usually given, other guidelines	If child falls behind - minimum intervals	Contraindications (Remember, mild illness is not a contraindication.)
<p>DTaP contains acellular pertussis</p> <p>DTP contains whole-cell pertussis</p> <p>Give IM</p>	<ul style="list-style-type: none"> DTaP is preferred over DTP for all doses in the series. Give at 2m, 4m, 6m, 15-18m, 4-6yrs of age. May give #1 as early as 6wks of age. May give #4 as early as 12m of age if 6m has elapsed since #3 and the child is unlikely to return at age 15-18m. If started with DTP, complete the series with DTaP. Do not give DTaP or DTP to children ≥ 7 yrs of age (give Td). DTaP/DTP may be given with all other vaccines but at a separate site. It is preferable but not mandatory to use the same DTaP product for all doses. 	<ul style="list-style-type: none"> #2 & #3 may be given 4wks after previous dose. #4 may be given 6m after #3. If #4 is given before 4th birthday, wait at least 6m for #5. If #4 is given after 4th birthday, #5 is not needed. Don't restart series, no matter how long since previous dose. 	<p>(DTaP and DTP have the same contraindications and precautions.)</p> <ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component. Moderate or severe acute illness. Don't postpone for minor illness. Previous encephalopathy within 7 days after DTP/DTaP. Unstable progressive neurologic problem. <p>Precautions: The following are precautions not contraindications. Generally when these conditions are present, the vaccine shouldn't be given. But, there are situations when the benefit outweighs risk so vaccination should be considered (e.g., pertussis outbreak).</p> <ul style="list-style-type: none"> Previous $T \geq 105^\circ\text{F}$ (40.5°C) within 48 hrs after dose. Previous continuous crying lasting 3 or more hours within 48 hrs after dose. Previous convulsion within 3 days after immunization. Previous pale or limp episode, or collapse within 48 hrs after dose.
<p>DT</p> <p>Give IM</p>	<ul style="list-style-type: none"> Give to children < 7 yrs of age if the child has had a serious reaction to the "P" in DTaP/DTP, or if the parents refuse the pertussis component. DT can be given with all other vaccines but at a separate site. 	<p>For children who have fallen behind, use information in box directly above.</p>	<ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component. Moderate or severe acute illness. Don't postpone for minor illness.
<p>Td</p> <p>Give IM</p>	<ul style="list-style-type: none"> Use for persons ≥ 7 yrs of age. A booster dose is recommended for children 11-12 yrs of age if 5 yrs have elapsed since last dose. Then boost every 10 years. Td may be given with all other vaccines but at a separate site. 	<p>For those never vaccinated or behind, or if the vaccination history is unknown: give dose #1 now; dose #2 is given 4wks later; dose #3 is given 6m after #2; and then boost every 10 years.</p>	<ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component. Moderate or severe acute illness. Don't postpone for minor illness.
<p>Polio</p> <p>IPV and OPV</p> <p>Give IPV SQ or IM</p> <p>Give OPV PO</p>	<ul style="list-style-type: none"> Give at 2m, 4m, 6-18m, and 4-6yrs of age. Give IPV for doses #1 and #2 (except in special circumstances, e.g., parent's refusal, imminent travel to polio-endemic area). ACIP says for dose #3, give OPV at 12-18m, and for dose #4, give OPV at 4-6yrs. An all-IPV schedule is also acceptable. If an all-IPV or all-OPV schedule is used, dose #3 may be given as early as 6m of age. AAP/AAFP say give either IPV or OPV for doses #3 and #4. Dose #3 is given at 6-18m of age and dose #4 at 4-6yrs. ACIP/AAP/AAFP say IPV is acceptable for all 4 doses. Not routinely given to anyone ≥ 18 yrs of age (except certain travelers). IPV may be given with all other vaccines but at a separate site. OPV may be given with all other vaccines. 	<ul style="list-style-type: none"> #1, #2, & #3 (IPV or OPV) should be separated by at least 4wks. All IPV: a 6m interval is preferred between dose #2 and #3 for best response. #4 (IPV or OPV) is given between 4-6yrs of age. If #3 of an all-IPV or all-OPV series is given at ≥ 4 yrs of age, dose #4 is not needed. Children who receive any combination of IPV and OPV doses must receive all 4 doses, regardless of the age when first initiated. Don't restart series, no matter how long since previous dose. 	<ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component. Moderate or severe acute illness. Don't postpone for minor illness. Use IPV when an adult in the household or other close contact has never been vaccinated against polio. In pregnancy, if immediate protection is needed, see the ACIP recommendations on the use of polio vaccine. <p>The following are contraindications for OPV (so use IPV in these situations):</p> <ul style="list-style-type: none"> Cancer, leukemia, lymphoma, immunodeficiency, including HIV/AIDS. Taking a drug that lowers resistance to infection, e.g., anti-cancer, high-dose steroids. Someone in the household has any of the above medical problems.
<p>Varicella</p> <p>Var</p> <p>Give SQ</p>	<ul style="list-style-type: none"> Routinely give at 12-18m. Vaccinate all children ≥ 12 m of age including all adolescents who have not had prior infection with chickenpox. If Var and MMR (and/or yellow fever vaccine) are not given on the same day, space them ≥ 28 d apart. Var may be given with all other vaccines but at a separate site. 	<ul style="list-style-type: none"> Do not give to children < 12 m of age. Susceptible children < 13 yrs of age receive 1 dose. Susceptible persons ≥ 13 yrs of age receive 2 doses 4-8wks apart. Don't restart series, no matter how long since previous dose. 	<ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component. Moderate or severe acute illness. Don't postpone for minor illness. Pregnancy, or possibility of pregnancy within 1 month. If blood, plasma, or immune globulin (IG or VZIG) were given in past 5 months, see ACIP recs or AAP's 1997 Red Book (p. 353) re: time to wait before vaccinating. Immunocompromised persons due to high doses of systemic steroids, cancer, leukemia, lymphoma, immunodeficiency. Note: For patients on high doses of systemic steroids or for patients with leukemia, consult ACIP recommendations. Note: Manufacturer recommends "no salicylates" for 6wks following this vaccine.

* Hepatitis A, influenza, pneumococcal, and Lyme disease vaccines are indicated for many children and teens, so make sure you provide these vaccines to at-risk children. The newer combination vaccines are not listed on this table but may be used whenever administration of any component is indicated and none is contraindicated.

Read the package inserts. For full immunization information, see recent ACIP statements published in the *MMWR*; and for the latest recommendations of the AAP's Committee on Infectious Diseases, see the AAP's 1997 *Red Book* and the journal, *Pediatrics*.
Item #P2010 (rev 3/99)

Summary of Rules for Childhood Immunization (continued)

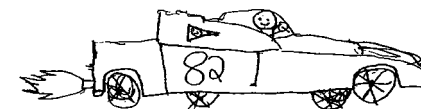
Vaccine	Ages usually given and other guidelines	For children fallen behind (minimum intervals)	Contraindications (Remember, mild illness is not a contraindication.)
MMR Give SQ	<ul style="list-style-type: none"> Give #1 at 12-15m. Give #2 at 4-6yrs. Make sure that all children (and teens) over 4-6 yrs have received both doses of MMR. If a dose was given before 12m of age, give #1 at 12-15m of age with a minimum interval of 4wks between these doses. If MMR and Var (and/or yellow fever vaccine) are not given on the same day, space them $\geq 28d$ apart. May give with all other vaccines but at a separate site. 	<ul style="list-style-type: none"> 2 doses of MMR are recommended for all children ≤ 18 yrs of age. Give whenever behind. Exception: If MMR and Var (and/or yellow fever vaccine) are not given on the same day, space them $\geq 28d$ apart. There should be a minimum interval of 28d between MMR #1 and MMR #2. Dose #2 can be given at any time if at least 28d have elapsed since dose #1, and both doses are administered after 1 year of age. Don't restart series, no matter how long since previous dose. 	<ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component. Pregnancy or possible pregnancy within next 3m (use contraception). Moderate or severe acute illness. Don't postpone for minor illness. If blood, plasma, or immune globulin were given in past 11 months, see ACIP recs or 1997 Red Book (p.353) re: time to wait before vaccinating. HIV is NOT a contraindication unless severely immunocompromised. Immunocompromised persons, e.g., cancer, leukemia, lymphoma. <p>Note: For patients on high-dose immunosuppressive therapy, consult ACIP recommendations regarding delay time.</p> <p>Note: MMR is NOT contraindicated if a PPD test was done recently, but PPD should be delayed if MMR was given 1-30 days before the PPD.</p>
Hib Give IM	<ul style="list-style-type: none"> HibTITER (HbOC) & ActHib (PRP-T): give at 2m, 4m, 6m, 12-15m. PedvaxHib (PRP-OMP): give at 2m, 4m, 12-15m. Dose #1 of Hib vaccine may be given as early as 6wks of age but not earlier. May give with all other vaccines but at a separate site. All Hib products licensed for the primary series are interchangeable. Any Hib vaccine may be used for the booster dose. Hib is not routinely given to children ≥ 5 yrs of age. 	<p>Rules for all Hib vaccines:</p> <ul style="list-style-type: none"> The last dose (booster dose) is given no earlier than 12 months of age and a minimum of 2 months since the previous dose. For children $\geq 15m$ and less than 5yrs who have NEVER received Hib vaccine, only 1 dose is needed. Don't restart series, no matter how long since previous dose. <p>Rules for HbOC (HibTITER) & PRP-T (ActHib) only:</p> <ul style="list-style-type: none"> #2 and #3 may be given 4 wks after previous dose. If #1 was given at 7-11m only 3 doses are needed: #2 is given 4-8wks after #1, then boost at 12-15m. If #1 was given at 12-14m, give a booster dose in 2m. <p>Rules for PRP-OMP (PedvaxHib) only:</p> <ul style="list-style-type: none"> #2 may be given 4 wks after dose #1. If #1 was given at 12-14m, boost 8wks later. 	<ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component. Moderate or severe acute illness. Don't postpone for minor illness.
Hep-B Give IM	<ul style="list-style-type: none"> Vaccinate all infants at 0-2m, 1-4m, 6-18m. Vaccinate all children 0-18 years of age. For older children/teens, spacing options include: 0m, 1m, 6m; 0m, 2m, 4m; or 0m, 1m, 4m. Children who were born or whose parents were born in countries of high HBV endemicity or who have other risk factors should be vaccinated as soon as possible. If mother is HBsAg positive: give HBIG and hep-B #1 within 12 hrs of birth, #2 at 1-2m, and #3 at 6m of age. If mother's HBsAg status is unknown: give hep B #1 within 12hrs of birth, #2 at 1-2m, and #3 at 6m of age. If mother is later found to be HBsAg-positive, her infant should receive the additional protection of HBIG within the first 7 days of life. May give with all other vaccines but at a separate site. Hepatitis B vaccine brands are interchangeable. 	<ul style="list-style-type: none"> Don't restart series, no matter how long since previous dose. 3-dose series can be started at any age. Minimum spacing for children and teens: 4wks between #1 & #2, and 2m between #2 & #3. Overall there must be 4m between #1 and #3. Dose #3 should not be given earlier than 6 months of age. <p>Dosing of hepatitis B vaccines:</p> <p>For Engerix-B, use 10μg (0.5ml) for 0 through 19 yrs of age.</p> <p>For Recombivax HB, use 5μg (0.5ml) for 0 through 19 yrs of age.</p>	<ul style="list-style-type: none"> Anaphylactic reaction to a prior dose or to any vaccine component Moderate or severe acute illness. Don't postpone for minor illness.
Rota-virus Rv Give PO	<ul style="list-style-type: none"> Give at 2m, 4m, and 6m. Dose #1 should not be given before 6wks or at $\geq 7m$. No dose should be given on or after the first birthday. Do not readminister a regurgitated dose. May give with all other vaccines. 	<ul style="list-style-type: none"> Minimum interval is 3wks between doses. Use minimum intervals to achieve protection prior to rotavirus season or if behind schedule. Don't restart the series no matter how long since previous dose. 	<ul style="list-style-type: none"> Moderate or severe acute illness, including persistent vomiting. Don't postpone for minor illness. Anaphylactic reaction to a prior dose or to any vaccine component. Known or suspected altered immunity, including infants born to HIV+ mothers unless it is known that the child is not HIV infected. For infants with pre-existing chronic GI conditions, see ACIP statement.

The Immunization Action Coalition developed this table to combine the recommendations for childhood immunization onto one page and to assist health care workers in determining the appropriate use and scheduling of vaccines. It can be posted in immunization clinics or clinicians' offices.

Comments? e-mail: medinfo@immunize.org, call: 651-647-9009, or mail to IAC at 1573 Selby Avenue, St. Paul, MN 55104.

Thank you to the following individuals for their review: William Atkinson, MD, Harold Margolis, MD, Linda Moyer, RN, Jane Seward, MBBS, Robert Sharrar, MD, Thomas Vernon, MD, Richard Zimmerman, MD. Final responsibility for errors lies with the editors.

This table is revised yearly. The most recent edition of this table is available on our website at www.immunize.org



"I follow the rules of the road. If you follow the rules of immunization, you won't get lost!"

ROTAVIRUS VACCINE

WHAT YOU NEED TO KNOW

1 What is rotavirus?

Rotavirus is a virus (germ) that causes severe diarrhea, often with vomiting. Rotavirus affects mostly babies and young children.

Rotavirus is not the only cause of severe diarrhea, but it is the most common. Rotavirus infection strikes most children by the time they are 3 years old. In the United States, over 500,000 of these children are taken to a doctor or emergency room every year and about 50,000 are hospitalized. About 20 children a year die from rotavirus diarrhea in the U.S. The disease usually occurs between November and May, depending on the part of the country.



Your child can get rotavirus infection by being around children who are already infected.

2 Rotavirus vaccine

A vaccine has been developed that helps protect children against rotavirus infection. This vaccine is swallowed, not given as a shot.

Rotavirus vaccine will not prevent all cases of diarrhea or vomiting – only those caused by rotavirus. There are many other causes of diarrhea.

About 50% - 70% of children who get rotavirus vaccine will not get rotavirus diarrhea at all. But more important, about 70% - 90% of vaccinated children will not get *severe* rotavirus diarrhea, even if they get a mild case. Vaccinated children are much less likely to go to the doctor or hospital than unvaccinated children who get the disease.

3 Who should get rotavirus vaccine and when?

Children should get 3 doses of rotavirus vaccine:

- ✓ One dose at 2 months of age
- ✓ One dose at 4 months of age
- ✓ One dose at 6 months of age

Catch-up: If your child misses a dose or gets behind schedule, get the next dose as soon as you can. There is no need to start over.

However, children should not get rotavirus vaccine after their first birthday. A child who has not gotten the *first* dose by 7 months of age should not get the vaccine.

NOTE: Children who are born during the summer or fall may need to get rotavirus vaccine at slightly younger ages than usual to be sure they are protected during the winter rotavirus season. Your doctor or nurse can give you details.

Rotavirus vaccine may be given at the same time as other vaccines.

4 Some babies should not get rotavirus vaccine or should wait

- Babies who have passed their first birthday should not get rotavirus vaccine.
- Babies 7 months of age or older *who have not gotten at least one dose of rotavirus vaccine* should not get the vaccine.
- Babies who have ever had a serious allergic reaction to a previous dose of rotavirus vaccine should not get another dose. Babies who have ever had a serious allergic reaction to certain antibiotics, or to monosodium glutamate, should not get the vaccine.

- Babies with certain diseases of the stomach or intestines should not get rotavirus vaccine.
- For babies with ongoing diarrhea, check with their doctor about whether they should get rotavirus vaccine.
- For babies who are unable to fight serious infections because of
 - HIV/AIDS, or any other disease that affects the immune system
 - treatment with drugs such as long-term steroids
 - any kind of cancer
 - cancer treatment with x-rays or drugs,
 should check with their doctor about whether they should get rotavirus vaccine.
- Babies who are moderately or severely ill at the time the vaccination is scheduled should usually wait until they recover before getting rotavirus vaccine.
- If your baby was premature, check with your doctor before getting rotavirus vaccine.

Ask your doctor or nurse for details.

5

What are the risks from rotavirus vaccine?

A vaccine, like any medicine, is capable of causing serious problems, such as severe allergic reactions. The risk of a vaccine causing serious harm, or death, is extremely small.

In studies that have been done so far rotavirus vaccine has been associated only with mild problems. The risk from rotavirus vaccine is much smaller than the risk from the disease.

Most babies who get rotavirus vaccine do not have any problems with it.

Mild problems

- mild fever (over 100°F): up to 15% of children getting the vaccine
- moderate fever (over 102°F): about 1% of children getting the vaccine
- less appetite, tiredness, fussiness

If these problems happen, it is usually 3-5 days after vaccination.

6

What if there is a moderate or severe reaction?

What should I look for?

Any unusual condition, such as a high fever or behavior changes. Signs of a serious allergic reaction can include difficulty breathing, hoarseness or wheezing, hives, paleness, weakness, a fast heart beat or dizziness, occurring within a few minutes to a few hours after the vaccination. A high fever or seizure, should it occur, would be within a week after the vaccination.

What should I do?

- Call a doctor, or get the person to a doctor right away.
- Tell your doctor what happened, the date and time it happened, and when the vaccination was given.
- Ask your doctor, nurse, or health department to file a Vaccine Adverse Event Reporting System (VAERS) form, or call VAERS yourself at **1-800-822-7967**.

7

How can I learn more?

- Ask your doctor or nurse. They can give you the vaccine package insert or suggest other sources of information.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
 - Call **1-800-232-2522** (English)
 - Call **1-800-232-0233** (Español)
 - Visit the National Immunization Program's website at <http://www.cdc.gov/nip>



U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Disease Control and Prevention
National Immunization Program

What would happen if we stopped vaccinations?



This information was compiled by the National Immunization Program, Centers for Disease Control and Prevention. Visit their website at www.cdc.gov/nip/vacsafe/

The viruses and bacteria that cause vaccine-preventable disease and death still exist. They have not disappeared. Vaccines have dramatically reduced the number of people who get infectious diseases and the complications these diseases produce. Without vaccines, epidemics of vaccine-preventable diseases would return, resulting in increased illness, disability, and death. Vaccine preventable diseases also have a costly impact, resulting in doctors' visits, hospitalizations, and lost time from work for many parents.

Polio

Polio virus causes acute paralysis that can lead to permanent physical disability and even death. Before polio vaccine was available, annual epidemics of polio often left thousands of victims—mostly children—in braces, crutches, wheelchairs, and iron lungs.

Prior to the availability of polio vaccines, between 13,000 and 20,000 cases of paralytic poliomyelitis were reported each year in the United States.

Development of polio vaccines and implementation of polio immunization programs have eliminated paralytic polio caused by wild polio viruses in the U.S. and the entire Western hemisphere.

In 1996, as a result of global immunization efforts to eradicate the disease, there were only 3,500 documented cases of polio in the world. However, in today's global economy, importations of wild polio virus are only an airplane ride away.

In 1994, wild polio virus was imported to Canada from India, but high vaccination levels prevented it from spreading in the population.

If we were to discontinue polio vaccination in the U.S., immunity to polio would decline, leading to the risk of polio epidemics similar to those that occurred in the past.

Measles

Before measles immunizations were available, nearly everyone in the U.S. got measles. There were approximately 3 to 4 million measles cases each year. An average of 450 measles-associated deaths were reported each year between 1953 and 1963.

Widespread use of measles vaccine has led to a greater than 95 percent reduction in measles, compared with the pre-vaccine era.

Measles virus is common throughout the world and is frequently imported into the U.S. In 1996, 47 cases were known to have been imported by people traveling to the U.S. from other countries. In the first three months of 1997, all U.S. measles cases reported have been linked to imported cases.

According to the World Health Organization, 1.1 million deaths occurred worldwide from measles in 1995. If vaccinations were stopped, 2.7 million measles deaths could be expected.

Stopping measles vaccination would be expected to lead to massive epidemics similar to those that occurred in the pre-vaccine era. Between 1989 and 1991, the number of

These diseases are disappearing thanks to vaccines. But if we stop vaccinating, they will surely return.

Disease	Max. cases reported	Year max. reported	Reported cases 1997
Polio (wild virus)	21,269	1952	0
Measles	894,134	1941	138
Hib	20,000	1984	139
Pertussis	265,269	1934	6,564
Rubella	57,686	1969	181
Congenital Rubella Synd.	20,000 (est.)	1964-65	5

Source: Centers for Disease Control and Prevention

In industrialized countries, up to 20 percent of persons with measles are hospitalized, and 7 percent to 9 percent suffer from complications such as pneumonia, diarrhea, or ear infections. Some persons with measles develop encephalitis, resulting in brain damage. It is estimated that as many as 1 of every 1,000 persons with measles will die.

reported measles cases in the U.S. increased sharply, with more than 55,000 cases, 11,000 hospitalizations, and 120 deaths reported. The major cause of this epidemic was low rates of vaccination among preschool children. The risk of measles in preschool-age African-American and Hispanic children was 8 to 10 times

higher than that of white children, due to lower vaccination rates in these children.

***Haemophilus influenzae* type b (Hib) meningitis**

Hib Before Hib immunizations became available, Hib was the most common cause of bacterial meningitis in U.S. infants and children. Before the vaccine was developed, there were approximately 20,000 invasive Hib cases annually. Approximately two-thirds of the annual cases were meningitis. Up to 8,000 additional cases of life-threatening invasive Hib disease—bacteremia, pneumonia, or epiglottitis—also occurred annually. One of every 200 U.S. children less than 5 years of age got Hib disease. Hib meningitis killed 600 children each year, and left many survivors with deafness, seizures, or mental retardation.

Hib Since introduction of conjugate Hib vaccine in December 1987, the incidence of Hib has declined by 97–99 percent. Fewer than 10 fatal cases of invasive Hib disease were reported in 1995.

Hib This preventable disease was still a common, devastating illness as recently as 1990. Now, most pediatricians just finishing training have never seen a case. If we were to discontinue immunization, we would likely soon return to the pre-vaccine numbers of invasive Hib disease cases and deaths.

Pertussis (whooping cough)

Hib Before pertussis immunizations were available, nearly all children developed pertussis. In the U.S., prior to pertussis immunization, between 150,000 and 260,000 cases of pertussis were reported each year, with up to 9,000 pertussis-related deaths.

Hib Pertussis can be a severe illness, resulting in prolonged coughing and vomiting spells that can last for weeks. These spells can make it difficult for a child to eat, drink, and breathe. In infants, it can also cause pneumonia and lead to brain damage, seizures, and mental retardation.

Hib The newer pertussis vaccine (acellular or DTaP) that has been available for use in the United States since 1991 is also effective and is associated with fewer mild and moderate adverse reactions when compared with the older (whole-cell DTP) vaccine. In the 1970s, Sweden and Japan's use of pertussis vaccine dropped significantly for various periods of time due to adverse publicity about the older vaccine. These countries experienced a resulting resurgence in pertussis disease.

Hib During the 1970s, widespread concerns about the safety of pertussis immunization led to a rapid fall in immunization levels in the United Kingdom. Within the next several years, a series of pertussis epidemics occurred. More than 100,000 cases and 36 deaths due to pertussis were reported during an epidemic in the mid 1970s.

Hib In Japan, pertussis vaccination coverage fell from 80 percent in 1974 to 20 percent in 1979. An epidemic occurred in 1979, resulting in more than 13,000 cases and 41 deaths.

Hib Pertussis cases occur throughout the world. If we were to discontinue pertussis immunizations in the U.S., we would experience a massive resurgence of pertussis disease. A very recent study found that, in eight countries where immunization coverage was reduced, incidence rates of pertussis surged to 10 to 100

times the rates in countries where vaccination rates were sustained.

Rubella

Hib While rubella is usually mild in children and adults, up to 90 percent of infants born to mothers infected with rubella during the first trimester of pregnancy will develop congenital rubella syndrome (CRS), resulting in heart defects, cataracts, mental retardation, and/or deafness.

Hib In 1964–1965, before rubella immunization was used routinely in the U.S., there was an epidemic of rubella that resulted in an estimated 20,000 infants born with CRS, with 2,100 neonatal deaths and 11,250 miscarriages. Of the 20,000 infants born with CRS, 11,600 were deaf, 3,580 were blind, and 1,800 were mentally retarded.

Hib Many developing countries do not include rubella in the childhood immunization schedule. In 1996, two outbreaks of rubella in young adults occurred among recently arrived immigrants who were not protected against rubella. At least four pregnant women contracted rubella during this outbreak.

Hib If immunity to rubella were to decline, rubella would once again return, resulting in pregnant women becoming infected and then giving birth to infants with CRS. Incidence of CRS declined dramatically with widespread use of rubella vaccine. ♦

The above information covers five of the 11 vaccine-preventable diseases for which children are routinely vaccinated. Information on the importance of vaccinating against diphtheria, tetanus, hepatitis B, chickenpox, and mumps will appear in the fall/winter 1999 issue of NEEDLE TIPS.

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If you have sex, read this . . .

And stop a killer STD from sneaking up on you!

This article, written by **Lynda Liu**, is reprinted from *Mademoiselle*, February 1999

Just a few months after she graduated from college, 22-year-old Wendy Marx began to feel so bone-tired that she could barely make it to her brand-new job as an office manager at a San Francisco marketing firm. She ate little or no food and became nauseated when she did force down a meal. Still, it wasn't until a coworker pointed out that her eyes were slightly yellowish that she finally saw a doctor. Blood tests revealed that she had hepatitis B, a potentially deadly liver infection.

Wendy was admitted to the hospital, but the virus was already out of control, attacking and killing her liver cells. As a last-ditch effort, doctors tried an experimental drug; it failed. Toxins in her bloodstream - which a normally functioning liver would filter out - caused her brain to swell, and four weeks after she was diagnosed, Wendy slipped into a coma. No one was even sure how she'd gotten sick.

Silent but Deadly

You may not think of hepatitis B as a sexually transmitted disease (STD), but it's 100 times more contagious than HIV, and about one in every 20 Americans will be infected at some point in their life. In most adults, the immune system springs into action at the first contact with the virus, killing it before it does any serious damage to the liver, and spurring the body to manufacture antibodies to ward off the disease in the future.

But in 5 to 10 percent of the people infected - more than a million Americans - the disease takes hold despite the immune system's best efforts. Those people, called chronic carriers, have the disease for life and are more prone to cirrhosis, a life-threatening disease that scars the liver. They also have a **200-times greater chance of liver cancer** than people without the disease. A small number of them develop, as Wendy did, acute fulminant hepatitis, an overwhelming vicious version of the infection that can lead to liver failure and death in a matter of weeks.

Hepatitis B is especially dangerous because chronic carriers are likely to have no recognizable symptoms - and so they may never suspect that they're spreading the disease. And, unfortunately, though medication can help control hepatitis B in some patients, there is no cure.

A Disease That Can Live on a Doorknob

Hepatitis B is classified as an STD because, among adults who get it, it's transmitted through unprotected sex, says Deborah Wexler, MD, executive director of the Immunization Action Coalition in St. Paul, MN. But Wendy Marx was positive that this hadn't been her mistake; nor did she use intravenous drugs or work at a job where she was exposed to blood - other common ways to catch the disease.

Scarily, the answer to Wendy's mystery may lie in the fact that hepatitis B can survive for up to a month outside the body, on surfaces such as doorknobs and table-tops (and, yes, toilet seats). The virus is transmitted through body fluids like semen, vaginal secretions and blood, so it's extremely unlikely that a toilet seat poses any danger, says Dr. Wexler. But, theoretically,

you could contract the disease by touching a doorknob that harbored the virus and then rubbing your eye with your hand. (She emphasizes that it's a *remote* possibility.) The far more dangerous culprits are personal items **like toothbrushes and razors**, which might

come in contact with infected blood. For the same reason, unsterilized manicure instruments, body-piercing equipment and tattoo and electrolysis needles could be potential carriers.

Protection by Injection

There's reassuring news, however: "Hepatitis B is entirely preventable," says Henry C. Bodenheimer, Jr., MD, medical director of liver diseases at the Recanati Miller Transplantation Institute at Mt. Sinai Medical Center in New York. An effective vaccine can be given in three shots over six months. Some insurance companies will cover the cost, around \$200. Dr. Wexler says that, for sexually active young women, the vaccine "is **an excellent insurance policy**" against hepatitis B. (But it doesn't

mean saying so long to safe-sex practices, both she and Dr. Bodenheimer point out; plenty of other STDs are lurking.)

For Wendy Marx, it was far too late for a vaccine. Her failed liver had to be replaced by a transplant. And since hepatitis B can't be cured, the virus was still in her system, causing damage. Two years later, the transplanted liver failed, too. Wendy, now 31, was lucky - she got a second transplant and now her life seems relatively normal. "I work long hours," she says. "I go to the gym. I have a boyfriend." But she also lives

with the possibility that the hepatitis could flare up yet again.

"You don't want to go through what I've been through," she says. "It's a hell of a lot easier to get the three shots. My life would be entirely different if I had." ♦

Have you seen these symptoms?

The symptoms that appear when you're first infected with hepatitis B are actually a sign that your immune system is fighting off the disease, says Paul Martin, MD, director of hepatology (liver studies) at the UCLA School of Medicine. See your doctor if you experience any of the following:

- flu-like symptoms such as loss of appetite, nausea, vomiting and fever
- feeling tired or weak for weeks or even months
- pain in the area of the liver (the right side of your abdomen)
- dark, tea-colored urine
- jaundice (yellowing of the skin or eyes)

not final, it appears that ACIP will recommend revaccination with most vaccines after transplant. Revaccination with inactivated vaccines (Td, hepatitis B, IPV, Hib, pneumococcal, and influenza) will probably be recommended at 12 months post-transplant. MMR will probably be recommended at 24 months or more post-transplant, but only for persons who are determined not to be immunosuppressed and not experiencing graft-versus-host disease. More definitive information will be available later this year after the guidelines are finalized.

Can influenza and pneumococcal vaccine be put together in the same syringe?

Absolutely not. No vaccines should ever be mixed in the same syringe unless the combination has been specifically approved by the FDA. At present, only Pasteur Mérieux Connaught's DTaP and Hib vaccines (as TriHIBit) have been approved for mixing in the same syringe but only for the fourth dose.

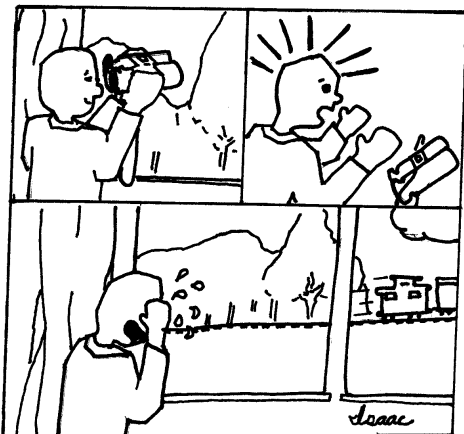
After a blood transfusion, which vaccines are contraindicated and for how long?

Measles, mumps, and rubella vaccines should not be given for at least 6 months following a transfusion of whole blood. A table in the 1998 MMR ACIP statement (*MMWR* 1998;47[RR-8]) lists the recommended delay following other antibody-containing blood products. Varicella vaccine should be delayed for at least 5 months after a transfusion of whole blood. Inactivated vaccines (DTaP, Hib, etc.) and live oral vaccines (OPV, rotavirus) may be given at any time before or after receipt of blood products.

What vaccines can a child with severe combined immunodeficiency syndrome (SCIDS) receive?

Children with SCIDS may be given inactivated vaccines (i.e., DTaP, Hib, hepatitis B, IPV, influenza, and, if indicated, pneumococcal and hepatitis A). They should not be given live vaccines (MMR, oral polio, varicella, and rotavirus).

What bird is getting run over all the time?



A rali

Diphtheria, tetanus, pertussis

by William L. Atkinson, MD, MPH

Is there a problem with using DTaP-Hib combined vaccines at 2, 4, and 6 months of age?

DTaP-Hib vaccine is currently licensed only for the fourth dose of the DTaP and Hib series. It should not be used for the first three doses of the series regardless of the child's age. There are data that suggest that response to the Hib component may be reduced if given combined with DTaP for the first three doses of the series.

Is there a recommendation about how many doses of DTaP (DTP) a child can receive by a certain age? Does this include half doses?

ACIP recommends that children receive no more than 6 doses of diphtheria and tetanus toxoids before the seventh birthday (*MMWR* 1991;40[RR-10]:6) because of concern about adverse reactions, primarily local reactions. Half doses of DTaP or DTP are not recommended under any circumstances, and should not be counted as part of the vaccination series. Only documented doses (those recorded on a written record) count toward the maximum of 6 doses.

What is the minimum interval between DTaP #4 and DTaP #5?

ACIP has not yet addressed the DTaP4-DTaP5 minimum interval. I recommend that when a minimum interval is not defined by ACIP that it should be no less than the minimum interval between the two prior doses. Therefore, I would suggest that the DTaP4-DTaP5 minimum interval be no less than 6 months, the same as the DTaP3-DTaP4 minimum interval.

A 5-year old received DTaP at 2m, 4m, 6m, 16m, and a 5th dose incorrectly at 23m. Does this child require a booster dose of DTaP now, or will the incorrect dose given at 23m suffice?

The fifth dose of the DTaP series should be given no earlier than 4 years of age. The dose at 23 months should be disregarded. The child needs one more dose to complete the series.

What vaccines can be safely given to a 6-month old who had an afebrile seizure 3 weeks ago?

An infant with a recent seizure or evolving neurologic condition should not receive DTP, DTaP, or DT until the condition has been evaluated and stabilized. Other indicated vaccines may be administered on schedule. To assure that the child is at least protected against tetanus and diphtheria, the decision to give either DTaP or DT should be made no later than the first birthday.

Are there any studies looking at use of acellular pertussis vaccines in adults?

Studies on the safety and efficacy of acellular pertussis vaccine in adults are currently underway. No pertussis vaccine is currently licensed for persons 7 years of age or older.

We have a patient who received tetanus toxoid 3 weeks ago. This patient is traveling internationally and needs diphtheria vaccine. What should we do?

Single antigen tetanus toxoid has almost no indications. Persons who require tetanus vaccination should always receive combined tetanus and diphtheria toxoids (Td). Single antigen diphtheria toxoid is not generally available. Because of the concern of local adverse reactions, it would be preferable to delay Td for a few months after the tetanus toxoid. However, if travel is imminent, particularly to an area where diphtheria is common (such as countries of the former Soviet Union), Td should be administered. The person should be informed about the possibility of a local reaction and advised about measures to decrease discomfort if a local reaction should occur.

Polio

by William L. Atkinson, MD, MPH

What changes did the ACIP make in 1999 to the polio vaccine recommendations?

The ACIP, the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP) recommend IPV be used for the first two doses of the polio vaccination series. The use of OPV for the first two doses of the series is no longer recommended except in special circumstances, primarily when the parents will not accept the increased number of injections required when using IPV. IPV is also recommended for children traveling to polio-endemic countries except when travel will occur in less than 4 weeks.

Is there any reason not to use an all-IPV schedule?

A schedule that includes only IPV is an acceptable alternative to the sequential IPV-OPV schedule. It is also recommended for immunodeficient persons and their household contacts.

For immigrant children who need to receive polio vaccine (no past records available), should we use OPV or IPV?

The sequential IPV-OPV polio vaccination schedule is routinely recommended for children, which includes children whose vaccination history is unknown. As noted in an earlier question, OPV may be used for the first two doses if the parents will not accept an additional injection. If using the sequential schedule, 4 doses of polio vaccine must be administered. If using an all-OPV or an all-IPV schedule, only 3 doses are needed if the child receives dose #3 after the fourth birthday.

Hib

by William L. Atkinson, MD, MPH

What is the Hib schedule for children ≥15 months of age who have fallen behind?

Children 15-59 months of age who have an incomplete Hib vaccination schedule should receive

(continued on page 18)

a single dose of any Hib conjugate vaccine. Hib vaccine is not routinely recommended for persons 5 years of age or older.

Does anyone 5 years of age or older need to receive Hib vaccine?

There are few data on the efficacy of Hib vaccine in persons 5 years of age or older. ACIP recommends consideration of Hib vaccination for unvaccinated persons 5 years of age and older with anatomic or functional asplenia, sickle-cell anemia, or HIV infection (*MMWR* 1993;42[RR-4]:8; *MMWR* 1991;40[RR-12]:29). A single dose of any licensed conjugate vaccine is probably sufficient in most cases (using the dose recommended by the manufacturer for a child). The 1997 *AAP Red Book* suggests 2 doses separated by 1–2 months for persons with HIV infection or IgG2 immune deficiency.

Varicella

by William L. Atkinson, MD, MPH

Can varicella vaccine be used postexposure to prevent disease?

Several studies have shown that administration of varicella vaccine within 72 hours, and possibly up to 5 days after exposure to varicella, may prevent or significantly reduce the severity of varicella. ACIP is currently developing a revised statement on varicella that will recommend vaccination of susceptible persons following exposure to varicella. Vaccine should be administered as soon as possible after exposure, preferably within 72 hours. Limited data indicate that vaccination 5 days or more after exposure is less likely to prevent or modify the disease, however, it will provide future protection if the exposed person has not been infected.

If a child breaks out in 5–10 maculopapular spots 2 weeks following varicella vaccination, can s/he go to school?

Transmission of varicella vaccine virus is a rare event, and appears to occur only when the vaccinated person develops a vesicular rash. A maculopapular rash 2 weeks after varicella vaccine may

not have been caused by the vaccine. If the rash were caused by the vaccine, the risk of transmission is very small. The child's activities, including attendance at school, do not need to be restricted.

If a vaccinated child gets 5–10 vesicular lesions 2 weeks after vaccination, can s/he attend school?

You cannot distinguish a mild case of varicella disease from a rash caused by the vaccine. The child may have been infected with varicella at about the same time s/he was vaccinated. The conservative approach would be to treat the child as if s/he had chickenpox and restrict his/her activities until all the lesions crust over.

If a child gets breakthrough varicella infection, ~50 lesions, can s/he go to school?

Breakthrough varicella represents replication of wild varicella virus in a vaccinated person. Although most breakthrough disease is very mild, the child is contagious and activities should be restricted to the same extent as an unvaccinated person with varicella disease.

Under what circumstances would you obtain a varicella titer after vaccination?

Postvaccination serologic testing is not recommended in any group, including vaccinated health care workers.

Can a pregnant health care worker with a history of varicella infection care for a patient with varicella? Is it possible for her to have a declining titer, thus making her susceptible to the virus again?

Persons with a reliable history of varicella can be considered to be immune. Immunity following disease or vaccination is probably life-long. More than one primary infection with varicella is unusual.

Measles, mumps, rubella

by William L. Atkinson, MD, MPH

I have adult patients going back to school who must show proof of MMR vaccine and are unable to retrieve their immunization records. What are my options?

Your options are to either bring the person into compliance with the school entry requirement by vaccinating or to perform serologic testing for all the antigens for which documented immunity is required. There is no evidence that adverse reactions are increased when MMR is given to a person who is already immune to one or more of the components of the vaccine.

In the last issue of NEEDLE TIPS you said that if a pregnant woman had a positive rubella titer in the past, and now has a negative rubella titer, she would not need another MMR vaccination. Doesn't the negative rubella titer mean her immunity has waned and she needs a booster dose?

Rubella antibody levels may decline with time, and may even fall below the level of detection of

standard screening tests. However, data from surveillance of rubella and congenital rubella syndrome suggest that waning immunity with increased susceptibility to rubella disease does not occur (*MMWR* 1998;47[RR-8]:14). Studies of persons who have "lost" detectable rubella antibody indicate that almost all had antibody detectable by more sensitive tests, or demonstrated a booster-type response (absence of IgM antibody and a rapid rise in IgG antibody) after revaccination.

Rotavirus

by William L. Atkinson, MD, MPH

When will the ACIP statement on rotavirus vaccine be released?

The rotavirus ACIP statement should be published by April 1999.

Will rotavirus vaccine prevent most cases of diarrhea?

Rotavirus vaccine will only prevent diarrhea caused by rotavirus. Rotavirus appears to be responsible for 5–10% of all diarrhea episodes among children less than 5 years of age, however, it is responsible for 30–50% of all severe diarrhea in this age group.

What is the schedule for rotavirus vaccine?

Rotavirus vaccine is an oral vaccine given as a three-dose series. The vaccine should be routinely administered at 2, 4, and 6 months of age. The first dose should not be given before 6 weeks of age, and doses may be separated by 3 weeks if an accelerated schedule is needed. The first dose should not be given to children 7 months of age or older because of an increased risk of fever after vaccination in older children. Rotavirus vaccine should not be administered after 12 months of age even if the series has not been completed.

Why isn't rotavirus vaccine given to children over one year of age?

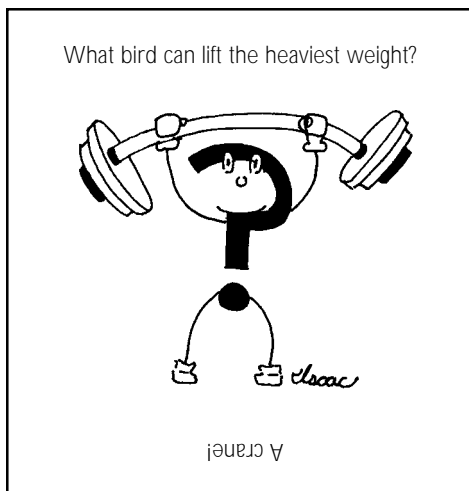
There are insufficient data on the safety and efficacy of rotavirus vaccine in children 12 months of age and older. The vaccine is not licensed for use after 12 months of age.

Can I give rotavirus vaccine to an infant who was born preterm?

Few data are available regarding the safety or efficacy of rotavirus vaccine in premature infants. However, both the ACIP and the AAP recommend vaccination of premature infants if they are at least 6 weeks of age, no longer hospitalized, and clinically stable.

In whom is rotavirus vaccine contraindicated?

Rotavirus vaccine should not be given to infants with known or suspected immunodeficiency. Infants whose mothers are infected with HIV should not be given rotavirus vaccine unless laboratory tests have established that the infant is not infected. Rotavirus vaccine should not be given to an infant who has a severe allergy to a vaccine component (aminoglycoside antibiotics, monosodium glutamate, or amphotericin B) or who had



an anaphylactic reaction to a prior dose of vaccine. Precautions include a moderate or severe acute illness or diarrhea, or pre-existing chronic gastrointestinal disease, such as a malabsorption syndrome, Hirschsprung's disease, or short gut syndrome.

Pregnant or immunodeficient household contacts, recent administration of antibody-containing blood products, and minor acute illness are NOT contraindications to vaccination of a healthy infant.

What are the storage requirements for rotavirus vaccine?

Rotavirus vaccine is supplied as a lyophilized powder, and is reconstituted with 2.5 ml of citrate-bicarbonate buffer. The vaccine and buffer are stable for at least 24 months at room temperatures below 77°F (25°C). If the temperature in your office or clinic exceeds 77°F, the vaccine and buffer should be stored at refrigerator temperature (36–45°F). The vaccine and buffer should not be frozen. Once reconstituted, the vaccine is stable for up to 60 minutes at room temperature (73–81°F) and up to 4 hours at refrigerator temperature.

Lyme disease

by William L. Atkinson, MD, MPH

How serious is Lyme disease?

Lyme disease is the most common insect-transmitted disease in the United States. About 12,000 to 13,000 cases are reported to CDC each year, primarily from states in the northeast, mid-Atlantic, upper midwest, and from northern California. The disease is characterized by a rash, fever, fatigue, and muscle and joint pain. If not adequately treated with antibiotics, Lyme disease may progress to neurologic or rheumatic complications.

Who should receive Lyme disease vaccine?

LYMERix (SmithKline Beecham) is licensed for persons 15–70 years of age. It should not be given to children younger than 15 years of age until approved by the FDA for this age group. Safety and efficacy studies in children are in progress now. Lyme disease vaccine **should be considered** for persons who reside, work, or recreate in areas of high or moderate risk during Lyme disease transmission season, and who engage in activities that result in frequent or prolonged exposure to tick-infested habitat. The vaccine **may be considered** for persons in areas of high or moderate risk but whose exposure to tick-infested habitats is neither frequent nor prolonged. An upcoming ACIP statement will include a map to indicate moderate- and high-risk counties. The statement should be published sometime in mid-1999.

What is the dosing schedule for Lyme disease vaccine?

Optimum protection from the vaccine requires 3 doses. The first two doses are given a month apart, and dose #3 is given 12 months after dose #1.

Ideally, all 3 doses should be completed one month prior to the anticipated tick-exposure. However, if your patient hasn't planned a year in advance, dose #1 is recommended 2 months before the anticipated tick-exposure and dose #2 one month later. (Dose #3 should be given 11 months later.)

How effective is Lyme disease vaccine?

Vaccine efficacy of LYMERix against clinical Lyme disease in clinical trials was 49% after two doses and 76% after three doses.

Are booster doses needed every year?

The need for booster doses has not yet been determined. Studies are ongoing.

Rabies

by William L. Atkinson, MD, MPH

An updated ACIP statement on rabies was released in January 1999. What's new?

"Human Rabies Prevention—United States, 1999," Recommendations of the Advisory Committee on Immunization Practices, was published in the *MMWR* on January 8, 1999. The 1999 statement contains new information on the following topics: a human rabies vaccine that was FDA-approved for use in the U.S. in 1997; recommendations regarding exposure to bats; recommendations regarding an observation period for domestic ferrets; and changes in how to administer rabies immune globulin.

Editors' note: For information on how to obtain this ACIP statement, see page 4.

Who should be offered preexposure rabies vaccination?

Preexposure vaccination should be offered to persons in high-risk groups, such as veterinarians, animal handlers, and certain laboratory workers. Preexposure vaccination also should be considered for other persons whose activities bring them into frequent contact with rabies virus or potentially rabid bats, raccoons, skunks, cats, dogs, or other species at risk for having rabies. In addition, international travelers might be candidates for preexposure vaccination if they are likely to come in contact with animals in areas where dog rabies is enzootic and immediate access to appropriate medical care, including biologics, might be limited.

Influenza

by William L. Atkinson, MD, MPH

Is influenza vaccine recommended for institutionalized or incarcerated youth populations?

Influenza vaccine is not recommended for healthy institutionalized or incarcerated youth. However, institutionalized and incarcerated youth who have underlying illnesses (respiratory, cardiovascular, metabolic, immunosuppression, etc.) should receive annual influenza vaccination.

Should siblings of a patient with a chronic illness receive influenza vaccine even though the patient received the vaccine?

Yes. All household contacts (6 months of age or older) of persons with "high-risk" conditions or persons 65 years of age or older should receive annual influenza vaccination.

In whom is influenza vaccine contraindicated?

Persons who have experienced a severe allergic reaction to a prior dose of influenza vaccine, or who are known to have a severe allergy to a vaccine component (such as egg protein) should not be vaccinated. Vaccination should be deferred for a person with moderate or severe acute illness until his/her condition improves. It seems prudent to avoid subsequent influenza vaccine in persons known to have developed Guillain-Barré syndrome within 6 weeks of a previous influenza vaccination.

Pneumococcal

by William L. Atkinson, MD, MPH

How severe is pneumococcal disease?

Pneumococcal infection is estimated to cause up to 40,000 deaths annually in the U.S., accounting for more deaths than any other vaccine-preventable bacterial disease. Approximately half of these deaths potentially could be prevented through the use of vaccine. Case-fatality rates are highest for meningitis and bacteremia, and the highest mortality occurs among the elderly and patients who have underlying medical conditions. Among children, death from pneumococcal infections is relatively uncommon except among those who have meningitis, are immunocompromised, or have undergone splenectomy. Despite appropriate antimicrobial therapy and intensive medical care, the overall case-fatality rate for pneumococcal bacteremia is 15–20% among adults. Among elderly patients, this rate is approximately 30–40%.

My in-laws received pneumococcal vaccine this year and they forgot they had received it last year. Have there been problems with repeating this vaccine dose?

Two doses of pneumococcal vaccine this close together could lead to an increase in local reactions, such as pain, redness, or swelling at the site of injection.



Hepatitis B

by Harold Margolis, MD, and Linda Moyer, RN

Should all children 0-18 be vaccinated against hepatitis B?

Yes. In October 1997, the Advisory Committee on Immunization Practices expanded its hepatitis B vaccination recommendations to include all unvaccinated children aged 0-18 years and made hepatitis B vaccine available through the Vaccines for Children program (VFC) for persons age 0-18 years who are eligible for VFC.

We must, however, not forget that our focus should be on routine infant immunization, vaccination of children aged 11-12 who were not routinely vaccinated as infants, high-risk adolescents, and high-risk immigrant and refugee children.

Will vaccinating an infant protect him/her from chronic HBV infection throughout life?

As with all new vaccines, it is currently not known whether infant hepatitis B immunization will confer lifelong immunity against chronic HBV infection, especially adult-acquired infections. A large number of persons vaccinated as infants or young children, and living in populations with high rates of chronic HBV infection, have been followed for up to 15 years, with almost no (<0.1%) late chronic HBV infections. These studies indicate that immune memory persists for a long time and data indicate that boosters of hepatitis B vaccine are not required for at least the first decade following infant, childhood, or adult immunization.

While it is not known whether a booster dose of vaccine will be required to provide lasting immunity for adolescents entering the period of highest risk for HBV infection, follow-up studies are ongoing and should provide this information. The very long incubation period of HBV infection (40-120 days), coupled with the excellent anamnestic antibody response to HBsAg in previously immunized persons, would appear to limit breakthrough infections to ones that do not become persistent.

The Engerix-B package insert states that adolescents aged 11-19 years can receive either 10 mcg or 20 mcg of this vaccine. Everything I have read, however, states 10 mcg is the recommended dose. What should I do?

The FDA has licensed the 10 mcg dosage of Engerix B vaccine for adolescents. The ACIP recommendations for the use of Engerix-B vaccine state that all children 0-19 years of age should be given 10 mcg per dose (MMWR 1996; 45[RR-13]:5).

I work in a dialysis unit. Our lab reports anti-HBs results as adequate or inadequate, rather than providing a quantitative result. Is this acceptable?

Reporting of adequate and inadequate is acceptable only if your lab is using mIU as the measurement for anti-HBs and the cutoff is below 10 for reporting inadequate anti-HBs and 10 or above for reporting adequate anti-HBs. You should check with your lab to be certain this is being done.

For a pre-employment physical, a health care worker states she received all three hepatitis B vaccine doses as an adolescent. Would you do a titer?

This is a situation that will become more common in the future and for which there are no specific guidelines. A reasonable approach, however, can be developed from current recommendations. Currently, CDC recommends postvaccination testing for antibody to hepatitis B surface antigen (anti-HBs) 1-2 months after the last dose of hepatitis B vaccine for persons vaccinated as health care workers or in training. This employee was vaccinated as an adolescent, and postvaccination testing was not done since it was not indicated at the time of vaccination.

If the health care worker has written documentation of three doses of vaccine given as an adolescent, that should be sufficient to meet the needs of the employer and the requirements of OSHA guidelines. Another option would be to test the person for the presence of anti-HBs, since a person vaccinated as an adolescent is still likely to have detectable antibody. If the person, however, is anti-HBs negative on testing, that does not mean s/he was not immunized, since s/he could have lost detectable antibody over time and still be protected. If the person is found to be anti-HBs negative, that status should be recorded on her/his employee health record along with the vaccination history. If the health care worker subsequently has a blood exposure, s/he should follow the current guidelines for postexposure immunoprophylaxis. If the health care worker has no written documentation of vaccination as an adolescent, the person should receive the 3-dose vaccine series and anti-HBs testing 1-2 months after the full series.

A person who is a "known non-responder" to hepatitis B vaccine has a percutaneous exposure to HBsAg positive blood. According to the ACIP recommendations, I have

HBV Clinical Trials

The National Institute of Allergy and Infectious Diseases has information about adult and pediatric HBV clinical trials being conducted in the U.S. for the treatment of chronic HBV infection. For information about adult trials, contact Lanette Sherrill, CRNP, MSN. For information about pediatric trials, contact Jan Kiell, RN, BS. Both can be reached at 205-934-2424.

Parents of Kids with Infectious Diseases (PKIDS) has information about additional pediatric HBV clinical trials. For information call 360-695-0293.

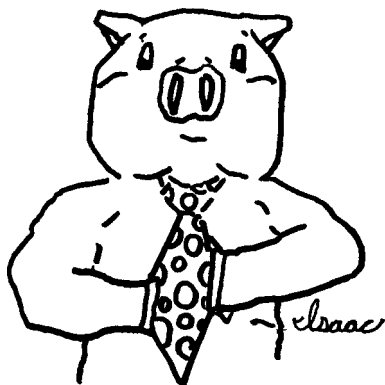
the option to give hepatitis B immune globulin (HBIG) x 2 or HBIG x 1 and initiate revaccination. How do I decide which to do?

If the person is a true "non-responder" (i.e., failed to produce adequate anti-HBs after two full vaccine series), it seems illogical to give a third hepatitis B vaccine series. The two-dose HBIG regimen would be the better choice. The first dose of HBIG (0.06ml/kg) should be given as soon as possible after exposure and the second dose (same dosage) given one month later. If the person has failed only one hepatitis B vaccine series, the second option (HBIG x 1 and initiate revaccination) should be used. Postvaccination testing with anti-HBs should be done 1-2 months after the second series of vaccine.

I oversee the employees of a clinic in which all the health care workers decided to check their anti-HBs titers (15 employees got tested). Eight of them had titers less than 10 mIU/mL, although two of them had previously had adequate titers. The other seven had not been previously tested. What should I do?

CDC does not recommend periodic testing for anti-HBs or booster doses of hepatitis B vaccine for immune competent persons. When testing is done as described above, it places the employee health service in a difficult position. The two employees who previously had documented adequate titers should have nothing done as they are protected. It also appears that 7 of the 15 employees had adequate levels of anti-HBs when tested. That leaves 6 employees in which it is not known if they had previously responded to hepatitis B vaccination and now have undetectable anti-HBs. The most helpful approach to define the issue, would be to give one dose of vaccine to each of the employees and then test anti-HBs in one month. For employees with adequate anti-HBs (≥ 10 mIU/mL), nothing more need be done, as they are protected. For employees with inadequate anti-HBs after one additional dose of vaccine, we would complete the revaccination series by giving two

What kind of neckwear would a smart pig choose?



ipstiv

more doses of vaccine according to the recommended schedule and test 1–2 months after the third dose of vaccine. If anti-HBs is adequate, they are protected; if inadequate, they are “non-responders” to the vaccine.

How many days after a percutaneous exposure can HBIG be given? Our lab doesn't provide blood results until 7 days after the blood is drawn. Should we wait to give HBIG, or should we go ahead with HBIG and hepatitis B vaccine?

If you must wait on testing to determine the patient's HBsAg status, vaccine should be started immediately while awaiting test results. HBIG can then be given within 7 days if the patient is HBsAg-positive. Considering the type of tests that are available today, laboratories should be capable of reporting results back to you within 7 days. We would not give HBIG farther out than 7 days from an exposure to HBsAg-positive blood. The hepatitis B vaccine series, however, should be completed and would alone offer good protection.

If the health care worker had been vaccinated and had developed adequate anti-HBs, this would not be an issue. If the exposure is to known HBsAg-positive blood and the health care worker was not vaccinated, a single dose of HBIG (0.06mL/kg) should be given as soon as possible after exposure (within 24 hours, if possible). The first dose of hepatitis B vaccine should be administered at a different site, but at the same time as the HBIG. The vaccine series should be completed according to current recommendations.

I have chronic HBV and am HBeAg-positive with normal liver functions. I am expecting my first baby and my doctor says that because I am HBeAg-positive, I should not breast-feed. Do you agree?

No, we do not agree. Babies who have HBIG and hepatitis B vaccine given in a timely fashion at birth can be breast-fed, even by mothers who are HBeAg-positive. Prior to hepatitis B vaccine and HBIG availability, studies found no transmission from HBsAg-positive mothers to their breast-fed babies.

Babies born to HBsAg-positive mothers should receive their first dose of hepatitis B vaccine and HBIG within 12 hours of birth; the second dose of vaccine at age 1–2 months; and the third dose of vaccine at age 6 months. Babies should be tested for HBsAg and anti-HBs at age 9–15 months to determine success or failure of immunoprophylaxis.

Which adults are at the highest risk of HBV infection?

Most HBV infections in adults occur among persons who have defined risk factors for HBV infection, including persons with multiple sex partners (more than one partner during the preceding 6 months); men who have sex with men; persons who have a sexually transmitted disease (STD) or who have ever had an STD; sex partners and household contacts of persons who have chronic

HBV infection; patients in hemodialysis units; recipients of certain blood products; illicit injecting-drug users; health care workers and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; persons who are incarcerated; and certain international travelers.

CDC's 33rd Nat'l Immunization Conference

June 22–25, 1999, Dallas, Texas

For more information, call
404-639-8225

Hepatitis A

by Harold Margolis, MD, and Linda Moyer, RN

Is it true that children who live in certain states, counties, and/or communities in the U.S. need hepatitis A vaccine?

Yes. Routine vaccination of children is recommended in states where the average annual hepatitis A rate during 1987–97 was at least 20/100,000 population (i.e., approximately 2 times the national average). These states are Alaska, Arizona, California, Idaho, Nevada, New Mexico, Oklahoma, Oregon, South Dakota, Utah, and Washington.

Routine vaccination of children is also recommended in counties and/or communities where the average annual hepatitis A rate during 1987–97 was at least 20/100,000 population (i.e., approximately 2 times the national average).

Routine hepatitis A vaccination of children may be considered in states where the average annual hepatitis A rate during 1987–97 was at least 10/100,000 population but less than 20/100,000. These states are Arkansas, Colorado, Missouri, Montana, Texas, and Wyoming.

Routine hepatitis A vaccination of children may also be considered in counties and/or communities where the average annual hepatitis A rate during 1987–97 was at least 10/100,000 population but less than 20/100,000.

Possible strategies for childhood vaccination include vaccinating one or more single age cohorts of children or adolescents (e.g., children at the age of entry into pre-school, elementary school, and/or middle school), vaccination of children in selected settings (e.g., daycare entry), or vaccination of children over a wider range of ages in a variety of settings, such as when they seek health care for other purposes.

I have a patient on interferon for hepatitis C, but I want to give him hepatitis A and hepatitis B vaccines. Is it okay to vaccinate him against hepatitis A and B while he is on interferon?

Patients with chronic liver disease are at increased risk for adverse outcomes if they acquire hepati-

tis A virus (HAV) infection. Therefore, hepatitis A vaccine should be given to all susceptible patients with chronic liver disease. Hepatitis A vaccine is very immunogenic and the patient's diminished immune status due to interferon should not affect the immunogenicity and effectiveness of the vaccine, although there are no data to support that statement. Studies still need to be done to address this issue. Current assays are generally not adequate for hepatitis A postvaccination testing as protective levels of antibody produced by vaccination may be at a level that the test cannot detect. Clearly, if antibody testing is done and the result is positive in a vaccinated patient, that patient is protected.

If the patient is in a group for whom hepatitis B vaccine is recommended, interferon treatment should not preclude hepatitis B vaccination. Postvaccination testing, however, should be done 1–2 months after the last dose of hepatitis B vaccine to assure adequate protection.

I provide travel immunizations to persons who go on extended international leave. Will 1 dose of hepatitis A vaccine protect a person who is unable to receive the second dose at the recommended 6–18 month interval?

Hepatitis A vaccine is very immunogenic; however, there are no data that examine long-term immunogenicity after just one dose of vaccine. Since hepatitis A vaccine is so immunogenic, it is reasonable to not repeat the first vaccine dose, but to give the second dose whenever the person returns from travel/leave. Another option would be for the traveler to consider taking the second dose of hepatitis A vaccine with him/her and having it administered with a sterile syringe and proper technique at the recommended 6–18 month interval in the country to which he/she is traveling.

My patient required IG immunoprophylaxis because of exposure to HAV. Should I have started the hepatitis A vaccine series as well?

Only if your patient is in a group for whom hepatitis A vaccine is routinely recommended. In addition, if your patient lives in a state, county, or community in which routine hepatitis A vaccination should be considered or is recommended (see prior question), giving IG for postexposure immunoprophylaxis represents an opportunity to also begin the hepatitis A vaccine series. ♦

Why does a duck who needs some money come out of the water?

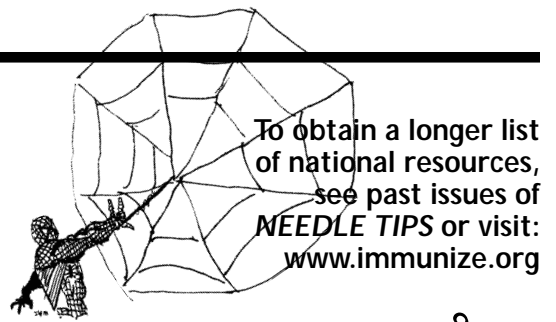


To make a run on the bank!

National Resources

There are many places that can help you!

If you know of other resources, call us at 651/647-9009 or e-mail us at medinfo@immunize.org



The latest resources

NEW! Pink Book—Epidemiology & Prevention of Vaccine-Preventable Diseases (CDC, 1999, 5th ed). Just released! Great resource book on vaccines. It now contains 289 pages. \$25. To order, call 800-418-7246, press 1, then press 4.

NEW! Vaccines (SA Plotkin and WA Orenstein, WB Saunders, 1999, 3rd ed). Greatly expanded from previous issue with 50 chapters and over 2,000 pages of vaccine information. \$225. To order, call 800-544-6678.

NEW! Pocket Guide to Vaccination and Prophylaxis (HB Jenson, WB Saunders, 1999). Summarizes ACIP, AAP, AAFP, ACIP, and IDSA childhood and adult vaccination guidelines. Over 300 pages. \$20. To order, call 800-544-6678.

NEW! Vaccine NewsBriefs (Vaccine Initiative). Sign up for a free e-mail immunization news service and get the news abstracted from 1,400 news sources 3 times a week. Visit: www.idsociety.org/

FREE! National Infant Immunization Week Materials (CDC). Promote infant immunization April 18–24th. Need ideas and materials? To order this NIIW packet, fax your request to Joy Dorsey at 404-639-8555, or call 404-639-8375.

National Immunization Programs' Resource Request List (CDC). Get a complete list of all CDC's free immunization resources. Call 888-232-3299, request document #130011 and you will receive the list by fax or download from www.cdc.gov/nip/publications/resource.pdf

NEW WEBSITE: The Vaccine Page (UniSci). www.vaccines.com To read the latest vaccine news with links to original sources, visit this site.

FREE! Dr. Seuss Posters (CDC). Promote childhood immunization with posters featuring Dr. Seuss' artwork. In English and Spanish. Fax a request to Joy Dorsey at 404-639-8555 or order at: www.cdc.gov/nip/publications/seuss.htm

NEW! Embassy Chart (J Tsotsonis, 1998). A 30" x 40" immunization wall chart in 25 languages that helps you read foreign shot records. \$50. For more information, call 978-459-6331.

NEW VIDEO: Simultaneous Administration—Vaccine Injection Technique (Schnecktady Co. Public Health Services, 1998, 13 min). Shows how to administer multiple injections to an infant or child. Also discusses false contraindications and missed opportunities. To order, call Cynthia Schulte at 518-346-2187. ♦

Organizations with immunization and hepatitis information

Routine Immunization

All Kids Count (www.allkidscount.org) national registry conference 4/28–29 ..	404-687-5615
American Academy of Pediatrics (www.aap.org) ★ ..	800-433-9016
Association of Teachers of Preventive Medicine (www.atpm.org) ..	800-789-6737
CDC's Immunization Information Hotline ..	800-232-2522
CDC's Voice and Fax Immunization Information Line ..	888-232-3228
CDC's Nat'l Immunization Program website ..	www.cdc.gov/nip/
CDC's Vaccine Safety website ..	www.cdc.gov/nip/vacsafe/
CDC's Vaccines For Children website ..	www.cdc.gov/nip/vfc/
CDC's Immunization Registry website ..	www.cdc.gov/nip/registry/
CDC's Travel website ..	www.cdc.gov/travel/
Congress of Nat'l Black Churches ..	202-371-1091
COSSMHO (Nat'l Coalition of Hispanic Health Orgs.) (www.cossmho.org) ★	202-387-5000
Every Child by Two (www.ecbt.org) ..	202-783-7034
Immunization Action Coalition (www.immunize.org) ★ ..	651-647-9009
Immunization Education and Action Committee (www.hmhb.org) ..	703-836-6110
Immunization Gateway website ..	www.immunofacts.com
Nat'l Coalition for Adult Immunization (www.medscape.com/affiliates/ncai)	301-656-0003
Nat'l Council of La Raza (www.nclr.org) ★ ..	202-785-1670
Nat'l Vaccine Injury Compensation Program (www.hrsa.dhhs.gov/bhpr/vicp/)	800-338-2382
Roll Up BOTH Sleeves (a manual on how to vaccinate in middle schools) ..	330-678-1601
Sabin Vaccine Institute (www.sabin.georgetown.edu) ..	202-687-9145
Vaccine Adverse Events Reporting System (www.fda.gov/cber/vaers/vaers.html) ...	800-822-7967
Vaccine Page (for the latest vaccine news, etc., on the web) ..	www.vaccines.com
Your health department's immunization program manager (see next page) ..	_____

Hepatitis Information

American Liver Foundation (www.liverfoundation.org) ★ ..	800-223-0179
CDC's Hepatitis Information Hotline ★ ..	888-443-7232
CDC's Hepatitis website ..	www.cdc.gov/ncidod/diseases/hepatitis/hepatitis.htm
Hepatitis B Coalition (www.immunize.org) ★ ..	651-647-9009
Hepatitis B Foundation (www.hepb.org) ..	215-489-4900
Hepatitis B On-Line Support Group ..	send a blank e-mail to: hepatitis-b-on@mail-list.com
Hepatitis Control Report (www.hepatitiscontrolreport.com) ..	610-664-2793
Hepatitis Foundation International (www.hepfi.org) ★ ..	800-891-0707
Nat'l Task Force on Hepatitis B: Focus on APIA (www.aapihp.com/hepbtf/) ★ ...	614-766-5219
Parents of Kids with Infectious Diseases (www.pkids.org) ..	360-695-0293
PEPLine: 24-hr hotline to advise clinicians re: occupational blood exposures ..	888-448-4911
Plexus Health Group (consultants for hepatitis B community projects) ..	912-638-6705
Your health department's hepatitis coordinator (see next page) ..	_____

Pharmaceutical Companies

Aviron (www.aviron.com) ..	650-919-6500
Chiron Corporation (www.chiron.com) ..	800-244-7668
Merck & Co., Inc. (www.merck.com) ..	800-672-6372
North American Vaccine (www.nava.com) ..	410-309-7100
Pasteur Merieux Connaught, Inc. (www.us.pmc-vacc.com) ..	800-822-2463
SmithKline Beecham (www.sb.com) ..	800-366-8900
Wyeth-Lederle Vaccines & Pediatrics (www.ahp.com) ..	800-358-7443
professional services: ..	800-395-9938

★ materials available in other languages as well as English

Need Help?

Call your immunization, hepatitis, and VFC coordinators

Get to know your governmental resource people. They are there to help you! Find out what kind of patient and provider educational materials they have including posters, brochures, and videos. Call them to register for the excellent immunization conferences that CDC broadcasts by satellite. They may also be able to help you audit your clinic's immunization rates and/or help you develop immunization tracking systems. Give them a call!

State Coordinators

Alabama

Iz: Gary Higginbotham 334-206-5023
Hep B (So. AL): Sue Balsamo 334-947-6206
Hep B (No. AL): Janet Mitchell 256-582-3174
VFC: Cynthia Lesinger 800-469-4599

Alaska

Iz: Laurel Wood 907-269-8000
Hep B: Ken Browning 907-269-8000
VFC: Laurel Wood 907-269-8000

Arizona

Iz: Kathy Fredrickson 602-230-5855
Hep B: Linda Faris 602-230-5858
VFC: Betty Finch 602-230-5832

Arkansas

Iz: Lee Clark (acting) 501-661-2169
Hep B: Sherry Ahring 501-661-2053
VFC: Ruby Jones 501-661-2170

California

Iz: Natalie Smith, MD 510-540-2065
Hep B: Les Burd 510-540-2879
VFC: John Scott 510-704-3750

CA, Los Angeles

Hep B: Bridget Beeman 213-580-9810

Colorado

Iz: Patricia Rotharmel 303-692-2669
Hep B: Amy Warner 303-692-2673
VFC: Rosemary Spence 303-692-2798

Connecticut

Iz: Vincent Sacco 860-509-7929
Hep B: Aaron Roome 860-509-7900
VFC: Richard Carney 860-509-7929

Delaware

Iz: Kathleen Russell 302-739-4746
Hep B: Laura Gannon 302-739-4746
VFC: William Baker 302-739-4746

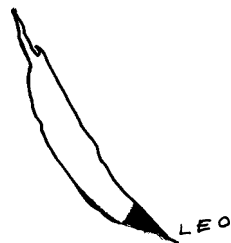
District of Columbia

Iz: James Giandelia 202-576-7130 x25
Hep B: Martin Levy, MD 202-645-5572
VFC: Jacob Mbafor 202-576-7130

Florida

Iz: Henry Janowski 850-487-2755
Hep B: Phillip Gresham 850-487-2755
VFC: Al Sulkes 850-487-2755

What floats but is still down?



A feather!

Georgia

Iz: Michael Chaney 404-657-3158
Hep B: Peggy Monkus 404-657-3158
VFC: Stephanie Boatenreiter 404-657-3158

Hawaii

Iz: Lin Watson 808-586-8330
Hep B: Mits Sugi 808-586-8338
VFC: Charles Miller 808-586-8311

Idaho

Iz: Merlene Fletcher 208-334-5942
Hep B: Susan Williams 208-334-5942
VFC: Bob Salisbury 208-334-4949

Illinois

Iz: Karen McMahon (acting) 217-785-1455
Hep B: Susan Williams 217-785-1455
VFC: Mark Amerson (acting) 217-785-1455

IL, Chicago

Iz: Cheryl Byers 312-746-6120
Hep B: Monty Dobzyn 312-746-7147
VFC: Stan Owens 312-746-5960

Indiana

Iz: Dave Ellsworth 317-233-7010
Hep B: Oakland Fergus 317-233-7004
VFC: Thomas Hicks 317-233-7435

Iowa

Iz: Pamela Lutz 515-281-4917
Hep B: Tina Patterson 515-281-7053
VFC: Don Callaghan 515-281-7301

Kansas

Iz: Monica Mayer 785-296-5591
Hep B: Martha Siemsen 785-296-2774
VFC: Monica Mayer 785-296-5591

Kentucky

Iz: Sandra Gambescia 502-564-4478
Hep B: Vacant 502-564-4478
VFC: Gary Bezill 502-564-4478

Louisiana

Iz: Reuben Tapia 504-483-1900
Hep B: Cathy Scott 318-345-1700
VFC: Patricia Simon 504-483-1900

Maine

Iz: Jude Walsh 207-287-3746
Hep B: Jude Walsh 207-287-3746
VFC: Linda Huff 207-287-3746

Maryland

Iz: Barry Trostel 410-767-6679
Hep B: Vacant 410-767-6679
VFC: Vacant 410-767-6679

MD, Baltimore

Hep B: Kathy Vetter 410-545-3050

Massachusetts

Iz: Bob Goldstein 617-983-6800
Hep B: Linda Keller 617-983-6800
VFC: Pejman Talebian 617-983-6800

Michigan

Iz: Dr. Gillian Stoltman 517-335-8159
Hep B: Nancy Fasano 517-335-8159
VFC: Susan Wright 517-335-8159

MI, Detroit & SE Michigan

Iz: Melinda Dickson 313-876-4720
Hep B: Therese McGratty 313-256-1873

Minnesota

Iz: Alan Lifson, MD 612-676-5237
Hep B: Margo Roddy 612-676-5237
VFC: Barbara Ottis 612-676-5237

Mississippi

Iz: Joy Sennett 601-576-7751
Hep B: Joyce Booth 601-576-7751
VFC: Katy Surkin 601-576-7751

Missouri

Iz: Vic Tomlinson 573-751-6133
Hep B: Ruby McPherson 800-699-2313
VFC: Ruby McPherson 800-699-2313

Montana

Iz: Joyce Burgett, RN 406-444-0065
Hep B: Marci Eckerson 406-444-1805
VFC: Elizabeth Evans 406-444-0277

Nebraska

Iz: T. Grey Bordon 402-471-2937
Hep B: Molly Uden 402-471-2937
VFC: Molly Uden 402-471-2937

NE, Douglas County

Iz: Bonnie Scholting 402-444-3588

NE, Lincoln

Hep B: Sally Cameron 402-441-6215

Nevada

Iz: Robert Salcido (acting) 702-684-5900
Hep B: Robert Salcido 702-684-5900
VFC: Vener Defriez 702-684-5900

NV, Clark County

Hep B: Donna Clark 702-383-1494

NV, Washoe County

Hep B: Vacant 702-328-2487

New Hampshire

Iz: Paula Rosenberg 603-271-4482
Hep B: Sheila Lazzaro 603-271-4634
VFC: Sandra Kelsey 603-271-4634

New Jersey

Iz: Charles O'Donnell 609-588-7512
Hep B: Nancy Borsuk 609-588-7512
VFC: Barbara Giudici 609-588-7512

New Mexico

Iz: Liane Hostler 505-827-2465
Hep B: Liane Hostler 505-827-2465
VFC: Roger Brumley 505-827-2898

New York

Iz: David Lynch 518-473-4437
Hep B: Sharon Thompson 518-271-2728
VFC: Martha Newcomb 518-474-4578

NY, NYC

Iz: Arsenia Delgado 212-676-2259
Hep B: Davis Thanjan 718-520-8245
VFC: Dileep Sarecha 212-676-2298

North Carolina

Iz: Beth Rowe-West (acting) 919-715-6777
Hep B: Sheree Smith 919-715-6760
VFC: Barbara Laymon 919-715-6764

North Dakota

Iz: Patrick Flanagan 701-328-4556
Hep B: Patrick Flanagan 701-328-4556
VFC: Patrick Flanagan 701-328-4556

Ohio

Iz: Joseph Bronowski 614-466-4643
Hep B: Joseph Bronowski 614-466-4643
VFC: Mark Keeler 614-752-1361

Oklahoma

Iz: Don Blose 405-271-4073
Hep B: Leonard Lang 405-271-4073
VFC: Dorothy Cox 405-271-4073

Oregon

Iz: Lorraine Duncan 503-731-4135
Hep B: Amanda Timmons 503-731-4564
VFC: Mimi Luther 503-731-4267

Pennsylvania

Iz: Alice Gray 717-787-5681
Hep B: Phuoc Tran 717-787-5681
VFC: Vickie Petrina 717-787-5681

PA, Philadelphia

Iz: James Lutz 215-685-6748
Hep B: Patricia Witte 215-685-6748
VFC: James Lutz 215-685-6748

Rhode Island

Iz: Susan Shepardson 401-222-4603
Hep B: Patricia Raymond 401-222-5921
VFC: Ron Fielder 401-222-4628

South Carolina

Iz: Jesse Greene 803-898-0460
Hep B: Donna Weaver 803-898-0460
VFC: Jesse Greene 803-898-0460

South Dakota

Iz: Lori Koenecke 605-773-3737
Hep B: Lori Koenecke 605-773-3737
VFC: Lori Koenecke 605-773-3737

Tennessee

Iz: William Narramore 615-741-7343
Hep B: Thomas Finke 615-532-8509
VFC: Diane Bass 615-532-8513

Texas

Iz: Robert Crider 512-458-7284
Hep B: Sharon Duncan 512-458-7284
VFC: Jack Sims 512-458-7284

TX, Houston

Iz: Vacant 713-794-9267
Hep B: Lupe Chronister 713-794-9266

TX, San Antonio

Iz: Mark Ritter 210-207-8794
Hep B: Nancy Walea 210-207-2087
VFC: Vivian Flores 210-207-2868

Utah

Iz: Christine Perfile (acting) 801-538-9450
Hep B: Mary DeFond 801-538-9450
VFC: Kathy Hoenig 801-538-9450

Vermont

Iz: Jerry Harmon 802-863-7638
Hep B: Marilyn Proulx 802-863-7305
VFC: Jerry Harmon 802-863-7638

Virginia

Iz: James Farrell 804-786-6246
Hep B: Marie Krauss 804-786-6246
VFC: Susan Pollard 804-786-6246

Washington

Iz: Margaret Hansen 360-236-3595
Hep B: Trang Kuss 360-236-3555
VFC: Katherine Harris-Wollburg 360-236-3513

West Virginia

Iz: Samuel Crosby Jr. 304-558-2188
Hep B: Beverly Littman 304-558-2188
VFC: Vacant 304-558-2188

Wisconsin

Iz: Dan Hopfensperger 608-266-1339
Hep B: Marjorie Hurie 608-266-8621
VFC: David King 608-266-3128

Wyoming

Iz: C. Phil Caves 307-777-6001
Hep B: David Baran 307-777-7466
VFC: Roberta Smith 307-777-7487

Territories

American Samoa

Iz: Sylvia Tauiliili 011-684-633-4606

Federated States of Micronesia

Iz: Kidsen Iohp 011-691-320-2872
Hep B: Kidsen Iohp 011-691-320-2872

Guam

Iz: Ron Balajadia 671-735-7143
Hep B: Annie Lizama 671-735-7148

Mariana Islands

Iz: Mariana Sablan 011-670-233-8953

Republic of the Marshall Islands

Iz: Nora Kilmaj-Saul 011-692-625-3480
Hep B: Helen Jetnil 011-692-625-3480

Puerto Rico

Iz: Esteban Calderon 787-274-5612
Hep B: Carmen Rodriguez 787-274-5532
VFC: Ivette Gonzales 787-274-5616

Republic of Palau

Iz: Rosemary Kiep 011-680-488-1757

Virgin Islands

Iz: Beverly Blackwell 340-776-8311 x2151
Hep B: Judy Rohan 340-776-8311 x2148

Coalition Catalog

Publications and resources

- All of our materials are camera ready, copyright free, and reviewed by national experts!
- You can order just one of any item and make as many copies as you need (including videos).
- Each item costs \$1 (unless otherwise stated).
- ★ Starred items are available in foreign languages.
- To order materials, see instructions on page 26.
- Join the Coalition for 1999 with a \$50 membership and we will send you ALL of our print materials. See the order form for details on page 27.
- We accept credit cards.



Before you order, REMEMBER...
A \$50 annual membership brings you camera-ready copies of ALL of the Coalition's print materials. See the order form or the back page for information on how to join!

Brochures for your patients

Revised! Immunizations for babies. A picture of the shot schedule (3/99). *Item #P4010*

★ **After the shots...what to do if your child has discomfort.** English, Spanish, Cambodian, Chinese, Farsi, Hmong, Korean, Laotian, Russian, Tagalog, Vietnamese (2/97). *Item #P4015*

Are you 11–19 years old? Then you need to be vaccinated! Covers all vaccinations for teenagers (4/98). *Item #P4020*

Revised! Questions parents ask about baby shots. A brochure about childhood vaccinations (3/99). *Item #P4025*

Vaccinations for adults—you're never too old for shots! A visual table covering all adult vaccinations (10/97). *Item #P4030*

★ **Immunizations...not just kids' stuff.** Adult immunization brochure. English, Spanish, Chinese (2/97). *Item #P4035*

Shots for adults with HIV. A visual table of shots needed for HIV-positive adults (7/97). *Item #P4041*

Vaccinations for adults with hepatitis C. This one-page sheet describes vaccinations that HCV-positive adults need (10/98). *Item #P4042*

Revised! ★ **When do children and teens need shots?** A picture of the shot schedule. English, Spanish (3/99). *Item #P4050*

★ **All kids need hepatitis B shots.** A brochure that tells parents all children 0–18 years old need hepatitis B shots. English, Spanish, Armenian, Cambodian, Chinese, Farsi, Hmong, Japanese, Korean, Laotian, Portuguese, Romanian, Russian, Samoan, Somali, Tagalog, Vietnamese (4/98). *Item #P4055*

★ **Chickenpox isn't just an itchy, contagious rash.** A brochure for all ages. English, Spanish (12/95). *Item #P4070*

★ **Hepatitis A is a serious disease... should you be vaccinated?** A brochure for all ages. English, Spanish (10/97). *Item #P4080*

★ **Questions frequently asked about hepatitis B.** Four pages of commonly asked questions. English, Spanish (9/96). *Item #P4090*

★ **Every week hundreds of teens are infected with hepatitis B.** A brochure for teens and parents. English, Spanish, Cambodian, Chinese, Hmong, Korean, Laotian, Russian, Tagalog, Vietnamese (5/97). *Item #P4100*

★ **Hepatitis B shots recommended for all new babies.** A brochure for parents of newborns. English, Spanish, Cambodian, Chinese, Hmong, Korean, Laotian, Russian, Vietnamese (1/96). *Item #P4110*

★ **Every week thousands of sexually active people get hepatitis B.** A hepatitis B brochure for adults. English and Spanish (4/98). *Item #P4112*

NEW! **If you have sex, read this...and stop a killer STD from sneaking up on you** (reprinted from *Mademoiselle*, 2/99). Use this article to help convince young women to get vaccinated against hepatitis B. *Item #P4113*

Hepatitis B . . . 100 times easier to catch than HIV. A brochure for men who have sex with men (2/97). *Item #P4115*

You don't have to go all the way to get hepatitis A. A brochure for men who have sex with men (7/97). *Item #P4116*

You are not alone! Article for teens with chronic HBV infection. By S.J. Schwarzenberg, MD, U of MN; and K. Wainwright, RN, Alaska Area Native Health Service, Anchorage (10/98). *Item #P4118*

★ **If you are a hepatitis B carrier...** How hepatitis B carriers can take care of themselves and protect others. English, Spanish, Chinese, Hmong (12/95). *Item #P4120*

Packet of hepatitis B adoption information. Includes information from adoption specialists throughout the U.S. *Item #P4152 - \$5*

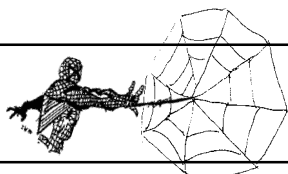
★ **Hepatitis B information for adults and children from endemic areas.** Encourages testing and vaccination. English, Cambodian, Chinese, Hmong, Korean, Laotian, Russian, Tagalog, Vietnamese. *Item #P4170*

Materials for your clinic staff

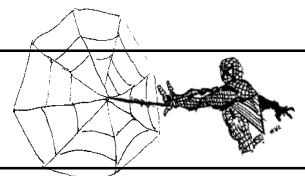
Revised! Summary of rules for childhood immunization. A two-sided reference table on appropriate use, scheduling, and contraindications of vaccines (3/99). *Item #P2010*

Summary of recommendations for adult immunization. A two-sided reference table on appropriate use, scheduling, and contraindications of vaccines (10/98). *Item #P2011*

Pneumococcal vaccine: who needs it and who needs it again. A one-page Q and A with a table about revaccination (4/98). *Item #P2015*



FREE MATERIALS! All of our print items are available free on our website at www.immunize.org



Vaccine handling, storage, and transport. (9/96). *Item #P2020*

Updated! Ask the experts. Written by CDC experts. Questions and answers on routine immunization published in past issues of *NEEDLE TIPS* (3/99). *Item #P2021 - \$5*

Revised! Vaccine administration record for children and teens. Keep children and teens' immunization records on this one-page sheet in the front of their medical charts (3/99). *Item #P2022*

Vaccine administration record for adults. Keep adult patients' immunization records on this one-page sheet in the front of their medical charts (8/98). *Item #P2023*

NEW! It's federal law! You must give your patients current Vaccine Information Statements (VISs) (by Neal A. Halsey, MD, Institute for Vaccine Safety, Johns Hopkins School of Public Health). Everything you *NEED* to know about VISs (10/98). *Item #P2027*

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

NEW! Vaccinate, don't vacillate! Varicella kills 100 people each year in the U.S. What are you waiting for? (by Walter A. Orenstein, MD, Ass't Surgeon General, Director, NIP, CDC). If you aren't yet convinced that it's important to vaccinate for varicella, read this! (10/98) *Item #P2058*

Hospitals & doctors sued for failing to immunize. Seven lawsuits against physicians and hospitals (12/94). *Item #P2060*

Recommended child and adult dosages of the two brands of hepatitis A and B vaccines (10/98). *Item #P2081*

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

Hepatitis B and the health care worker. How to protect health care workers, includes post-exposure prophylaxis guidelines (4/98). *Item #P2109*

Revised! Basic knowledge about hepatitis B. A list of high-risk groups, interpretation of the hepatitis B panel, and tests to diagnose chronic hepatitis B, C, and D (3/99). *Item #P2110*

Revised! Basic facts about adult hepatitis B. A list of adult high-risk groups, interpretation of the hepatitis B panel, and tests to diagnose chronic hepatitis B, C, and D (3/99). *Item #P2112*

Universal prenatal screening for hepatitis B (by D. Freese, MD, Mayo Clinic, Rochester, MN). Reviews neonatal transmission and screening rationale (2/93). *Item #P2120*

Sample hospital perinatal protocols. For HBsAg screening on labor and delivery units and hepatitis B immunization in newborn nurseries (12/95). *Item #P2130*

Revised! Does your patient have chronic hepatitis B? (by C. Smith, MD, Minnesota Gastroenterology, Minneapolis, MN). One-page Q and A plus table on HBV markers and their significance (3/99). *Item #P2162*

Management of chronic hepatitis B in children and/or adults. Four liver experts share their management guidelines for chronic hepatitis B. Authored by H. Conjeevaram, MD, University of Chicago, IL (1/97); C. Smith, MD, Minnesota Gastroenterology, Minneapolis, MN (1/97); B.J. McMahon, MD, Alaska Area Native Health Service, Anchorage, AK (12/95); S.J. Schwarzenberg, MD, University of MN (8/94). *Item #P2164 - \$5*

Tracking hepatitis B patients and household contacts. Manual tracking system for high-risk families (10/98). *Item #P2180*

Kid art. Immunization artwork (babies, bears, balloons, etc.) you can use to make your own brochures, posters, etc. (9/96). *Item #P3015 - \$5*

How to operate a community-based shot clinic. Resource materials to help you run an immunization clinic (10/97). *Item #P3040 - \$5*

★ **Screening questionnaire for child and teen immunization.** A form for the patient's parent/guardian to fill out to help staff evaluate which vaccines can be given at that day's visit (12/95). English, Spanish, Chinese, Hmong. *Item #P4060*

★ **Screening questionnaire for adult immunization.** A form your adult patients fill out to help you evaluate which vaccines can be given at that day's visit. English, Spanish (2/97). *Item #P4065*

Sample letter explaining hepatitis B test results to patients (10/97). *Item #P4140*

Videos for your clinic staff

How to Protect Your Vaccine Supply (Ice, Champagne, and Roses) (CA Dept. of Health, MN Dept. of Health, 1996, 15 min). This "how-to" video also covers varicella and hepatitis A vaccines. Comes with accompanying print material. *Item #V2010 - \$10*

Vaccine Administration Techniques (CA Dept. of Health, 1989, 18 min). A refresher course on the correct techniques for administering vaccines. Comes with accompanying print material. *Item #V2020 - \$10*

When to Immunize, When to Wait (CA Dept. of Health, 1995, 22 min). Features CDC's immunization expert, Dr. William Atkinson. Includes accompanying print materials. *Item #V2030 - \$10*

In Praise of the Public Health Nurse! (IAC, 1994, 31 min). Features Margaret Morrison, MD, MS Dept. of Health, who stresses that immunization is a team effort. Comes with print material. *Item #V2040 - \$10*

Videos for teens and pre-teens

PRICE BREAK! Immunization Day! (UCLA, 1997, 13 min). An attention-holding vaccination video for middle-school students. *Item #V2050 - \$10*

Partnership for Prevention (SKB, 1995, 6 min). A hepatitis B video for 11- and 12-year olds. May not be broadcast on television. *Item #V3012 - \$10*

Get the Facts, Then Get the Vax (ASHA, 1995, 6 min). A hepatitis B video for high school students. *Item #V3015 - \$10*

Resources for Asians and Pacific Islanders

Contact us! We have resources to help you conduct immunization and/or hepatitis B campaigns in Asian and Pacific Islander communities. We have resource manuals, videos (in English, Cambodian, Hmong, Laotian, Vietnamese, and Mien) and materials to train bilingual workers (videos, slides, training manuals, and more). Each item is only \$10! Fax your request for our "API Resource List/Order Form" to 651/647-9131 or call 651/647-9009 for more information.

(continued on page 26)



HELP YOURSELF! All of our materials are copyright free! You can order just one of any item and make as many copies as you need. Use the order form on page 27.



Photos, slides, posters, and more



Teen poster! Roll up your sleeves! Full-color 11" x 17" poster of a diverse trio of kids showing off their hepatitis B shots! *Item #Q2010 - 10 posters for \$1 (order in units of 10)*

Adult poster! Immunization...not just kids' stuff. A two-color 7" x 14" adult poster. Hang this poster up in every exam room. *Item #Q2020 - 10 posters for \$1 (order in units of 10).* The companion brochure is item #P4035.

PRICE BREAK! Immunization Plus (UCLA and CA IZ Branch, 2nd ed., 1998). A middle school curriculum on immunization. Contains a teacher-training video, manual, worksheets, and the upbeat video, **Immunization Day**, to show your students. Music by Coolio. *Item #R2051 - \$25 \$10*

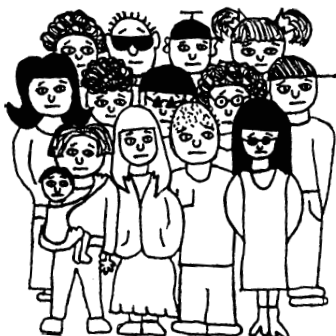
Photo notebook of vaccine-preventable diseases. Includes 20 full-page color photos of children and adults with vaccine-preventable diseases and simple text that describes the diseases. Perfect for taking out into the community to give presentations. Outreach workers love it! (9/97). *Item #R2053 - \$75*

NEW! Unprotected People: Stories of people who have suffered or died from vaccine-preventable diseases. First-person stories, case reports, and newspaper articles that illustrate the tragedies that occurred because someone wasn't immunized. All of these stories previously appeared in *IAC EXPRESS* and/or *NEEDLE TIPS* (8/98-1/99). *Item #R2057 - \$5*

★ **Vaccine-preventable diseases slide set and script.** Includes 30 slides of children and adults with vaccine-preventable diseases. Suitable for use by public health departments, community outreach workers, nursing schools, and medical teaching programs. Comes with English and/or Spanish scripts. Every clinic should have a set of these slides (9/96). *Item #S3010 - \$25*

Unprotected People

Stories of people who died or suffered from vaccine-preventable diseases



First-person stories, case reports, and newspaper articles that illustrate the tragedies that occurred because someone wasn't immunized. All of these stories previously appeared in *IAC EXPRESS* and/or *NEEDLE TIPS* (8/98-1/99). *Item #R2057 - \$5*

Sign up for IAC EXPRESS!

Sign up for *IAC EXPRESS!* and the Immunization Action Coalition will keep sending you these stories and other timely immunization information directly to your e-mail box. To subscribe: send an e-mail to express@immunize.org and place the word SUBSCRIBE in the Subject field. It's free!



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Ordering Information

- All of our materials are camera ready, copyright free, and reviewed by national experts!
- You can order just one of any item and make as many copies as you need (including our videos).
- Minimum order/donation \$10, please.
- We request prepayment by check or credit card. Purchase orders accepted.
- You may fax us your credit card order or your purchase order.
- Checks must be in U.S. dollars.
- Make sure the order form accompanies your order.
- Orders are shipped via fourth class mail. No charge for shipping and handling within the U.S.
- Expect delivery in approximately 3 weeks.



Do you want to keep receiving *NEEDLE TIPS*?

We need your help to clean up our mailing list! Let us know if you want to keep receiving *NEEDLE TIPS* & the Hepatitis B Coalition News.

Please check the appropriate box or boxes and return a copy of this **entire page** by:

- **FAX: 651-647-9131**
- **mail** (envelope enclosed)

Yes!

I want to keep getting *NEEDLE TIPS*!

- My mailing label is correct.**
- I've corrected my mailing label.**

No

I don't need *NEEDLE TIPS* so please remove my name from your mailing list.

Too many copies!

I've been receiving more than one copy. I'm sending you all labels that I receive and I've marked the address that I want you to use for future mailings.

No one here by that name

The person named on the label below is no longer at this address.

The Coalition has over 2,000 members! How about you?

Thank you for your support!

The Coalition receives tremendous support from our readers. Thank you so much.

Thank you to CDC!

The CDC provides invaluable technical support as well as a federal grant.

Thank you for your educational grants!

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- Medical Arts Press
- Merck & Co.
- North American Vaccine
- Pasteur Mérieux Connaught
- SmithKline Beecham
- Wyeth-Lederle Vaccines and Pediatrics

Welcome to the National Certification Board of Pediatric Nurse Practitioners and Nurses!

The IAC receives funding from a variety of sources but has strict editorial independence.

We appreciate and need the membership contributions that over 2,000 members have sent us. We hope that more of you will become new or renewing members for 1999. With a contribution of \$50 or more, we'll send you a complete packet of our print materials which includes many new and revised items. Won't you please join or rejoin today?

Here's my 1999 membership contribution to the Immunization Action Coalition!

Name/Title: _____

Organization: _____

Address: _____

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I'm joining at a \$50 or higher level so please send me your print materials in:

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- Laotian Portuguese Romanian Russian Samoan Somali Tagalog Vietnamese

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Immunization Action Coalition

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