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VACCINATE ADULTS!

A bulletin for adult medicine specialists from the Immunization Action Coalition

Highlighting the latest developments on routine adult immunization and chronic hepatitis B virus infection.

Artwork courtesy of NY State Health Dept.

What's Inside?

Ask the Experts

Editors' note: The Immunization Action Coalition thanks William L. Atkinson, MD, MPH, Linda A. Moyer, RN, and Harold S. Margolis, MD, 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, are CDC liaisons to the Coalition. Ms. Moyer is an epidemiologist at the Hepatitis Branch.

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 (FDA) 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.

Immunization questions?

- Call your state health department
- E-mail: nipinfo@cdc.gov
- Call CDC's Immunization Information Hotline at 800-232-2522

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 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.

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 (Td, pneumococcal, etc.) and live oral vaccines may be given at any time before or after receipt of blood products.

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.

Diphtheria, tetanus, pertussis

by William L. Atkinson, MD, MPH

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.

(continued on page 8)

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VACCINATE ADULTS!

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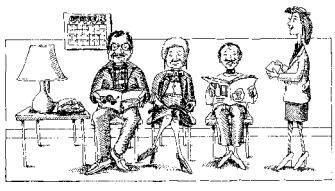
The Immunization Action Coalition (IAC), a 501(c)3 nonprofit organization, works to increase immunization rates and prevent disease. IAC promotes physician, community, and family awareness of, and responsibility for, appropriate immunization of all people of all ages against all vaccine-preventable diseases.

The Hepatitis B Coalition, a program of the IAC, promotes hepatitis B vaccination for all children 0–18 years; HBsAg screening for all pregnant women; testing and vaccination for high-risk groups; and education and treatment for people 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, pneumoccocal, and hepatitis B disease

To All Immunization Action Coalition Members:

While childhood immunization rates in the United States 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 years 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 aged 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 years 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

Letters to the Editor ...

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 die every year 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 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.

—Joe Moakley
Member of United States Congress
House of Representatives
9th District, Massachusetts

"First, Do No Harm"

All of us who are health care providers have special responsibilities to our patients that begin with the timeless Hippocratic admonition: "First, do no harm." I am sure that we all believe this in our hearts and we do our best to minimize the hazards and discomforts of medical care.

Therefore, I am both puzzled and concerned that each autumn I encounter an annual paradox. Our institution provides (at no charge) to all who work in our hospital and clinics the opportunity to be vaccinated against influenza. Substantial efforts are undertaken to make the vaccine available conveniently at diverse locations throughout the institution and at all hours. Yet, barely half of our students, faculty, and staff avail themselves of this preventive service.

Two recent papers emphasize the multifaceted prevention offered by influenza vaccine in the health care setting.

First, the health care workers themselves are protected. Wilde et al. recruited a cadre of health care workers who were randomized to receive either annual influenza immunization or a placebo[1]. Over the subsequent three-year period influenza vaccine was 88 percent successful in preventing serologically defined infection. Further, vaccine recipients had substantially fewer reported days of febrile illness and days absent from work. Thus, there is no doubt that influenza vaccine protected the health care workers themselves.

The second benefit is that influenza immunization of health care workers protects their patients. Potter et al.[2] randomized 12 geriatric long-term care institutions in Scotland so that their workers either received or did not receive influenza vaccine; the institutions' usual vaccination practices of their residents continued unchanged. Although this study design was not perfect (such studies are difficult in the real world), vaccination of workers was associated with a reduction in influenza-like illnesses and mortality among the patients. Thus, influenza vaccine given to workers seems to have a role in interrupting viral transmission to patients.

I would suggest a third benefit as well. Surely many health care workers have older infirm parents and relatives at home or other loved ones who are immunocompromised. I would expect that these individuals also would be protected by the barrier of an immunized caregiver at home.

Returning to first principles: "First, do no harm." I would urge all caregivers to be immunized against influenza annually and to recruit their colleagues in this dedication to prevention each autumn.

—William Schaffner, MD
Professor and Chair
Department of Preventive Medicine
Vanderbilt University School of Medicine

1. Wilde JA, McMillan JA, Serwint J, et al. Effectiveness of influenza vaccine in health care professionals. A randomized trial. *JAMA.* 1999; 281: 908-913.

2. Potter J, Stott DJ, Roberts MA, et al. Influenza vaccination of health care workers in long-term-care hospitals reduces the mortality of elderly patients. *J Infect Dis.* 1997; 175: 1–6.

Vaccine highlights

Latest recommendations and schedules

The next ACIP meetings...

Editors' note: The information on this page is current as of March 17, 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.
- 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)*

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.

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.

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 VIS, 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

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

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

To make a run on the bank!

Vaccine Administration Quiz

Will you get an A+?

(True or False)

1. Subcutaneous injections are generally given perpendicular to the skin.
2. No vaccine should be injected unless epinephrine is immediately available.
3. The recommended needle size for an adult IM injection is 1–1½ inches.
4. Never recap or clip needles prior to disposal.
5. If both hepatitis A and B vaccines are indicated, it is okay to combine them in one syringe.
6. MMR and varicella vaccines are given subcutaneously.
7. A new needle and syringe must be used for each vaccination.
8. For SQ and IM injections, after you insert the needle into the limb, you should always pull back on the plunger before you inject the vaccine.
9. Intramuscular injections should be inserted at a 90° angle to the skin.

Test Answers:

6-T; 7-T; 8-T; 9-T
1-F; 2-T; 3-T; 4-T; 5-F;

Did you get an A+?

If you missed any of these, you can find the answers in previous issues of "Ask the Experts" or ACIP statements.

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.

NOTE:
We publish these stories on IAC EXPRESS, our free Internet news service. To subscribe, send an e-mail to express@immunize.org and place the word SUBSCRIBE in the "Subject:" field.

*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 nursing 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.

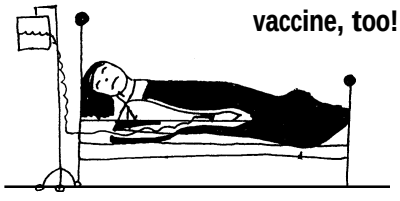
According to Hargrove, she and others on the nursing home staff "were amazed at how quickly TDH brought the outbreak under control."

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 years of age 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 11.

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 tabletops (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.

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)

Protection by Injection

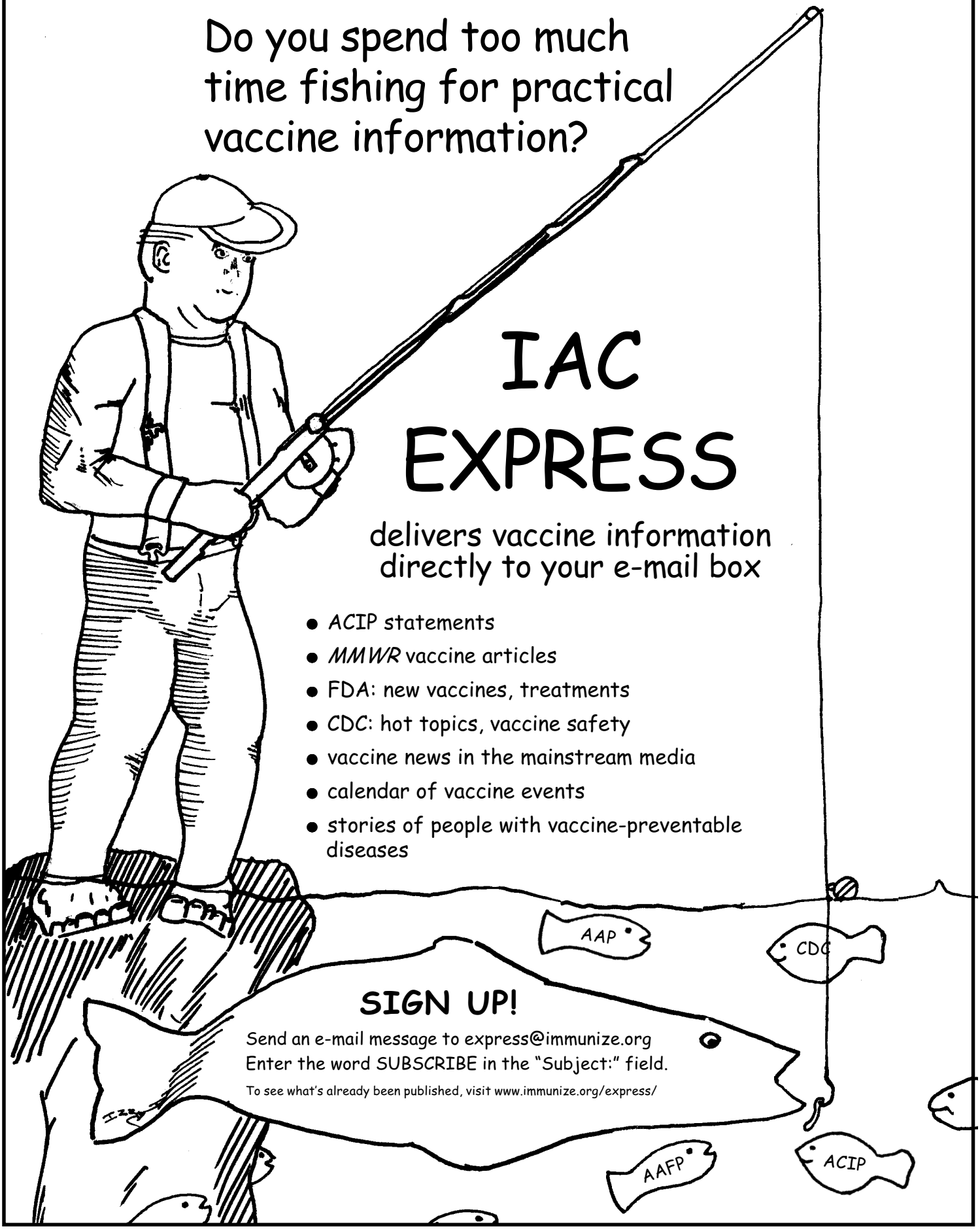
There's reassuring news, however: "Hepatitis B is entirely preventable," says Henry C. Bodenheimer, Jr., MD, medical director of liver diseases at the Recanati Miller Transplantation Institute at Mt. Sinai Medical Center in New York. An effective vaccine can be given in three shots over six months. Some 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." ♦

Item #P4113 (2/99)

Do you spend too much time fishing for practical vaccine information?



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Hib

by William L. Atkinson, MD, MPH

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.

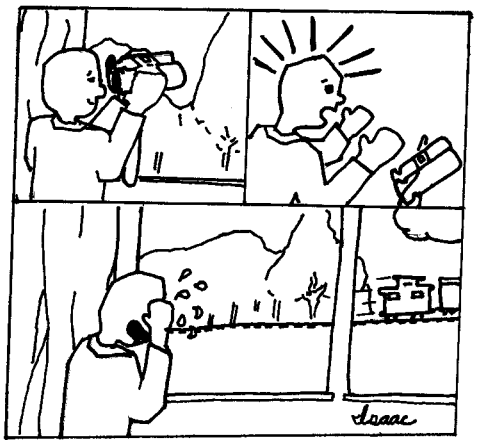
Measles, mumps, rubella

by William L. Atkinson, MD, MPH

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.

What bird is getting run over all the time?



A rail!!

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.

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.

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.

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.

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?

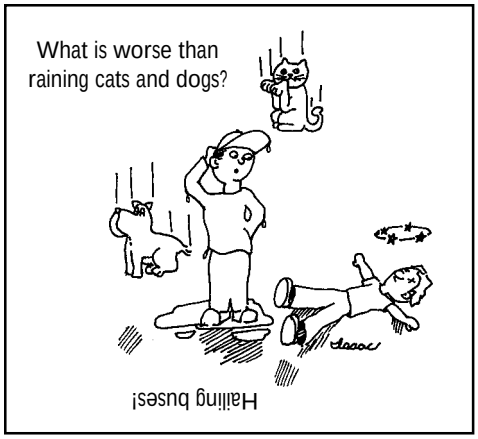
"Human Rabies Prevention—United States, 1999," Recommendations of the Advisory Committee on Immunization Practices, was published in the *MMWR* on January 8, 1999. The 1999 statement contains new information on the following topics: a human rabies vaccine that was FDA-approved for use in the U.S. in 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, column 1.

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 vi-

(continued on page 9)



rus 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 it 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

Should household contacts 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 Linda Moyer, RN, and Harold Margolis, MD

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 mIUs 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 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 (≥10mIU/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

(continued on page 10)

Do you know which vaccines are recommended for health care workers?

Make sure you have the 1997 ACIP statement, *Immunization of Health-Care Workers,* Dec. 26, 1997, Vol. 46, RR-18.

If you need a copy, call your state or local health department.

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.

HBV Clinical Trials

The National Institute of Allergy and Infectious Diseases has information about adult HBV clinical trials being conducted in the U.S. for the treatment of chronic HBV infection.

For information, contact Lanette Sherrill, CRNP, MSN at 205-934-2424.

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.

Hepatitis A

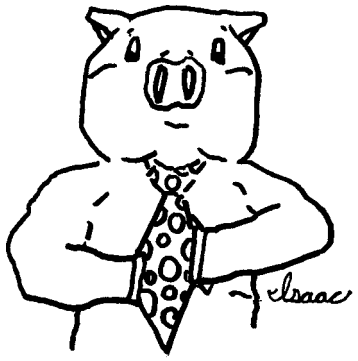
by Linda Moyer, RN, and Harold Margolis, MD

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 hepatitis 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. Post-vaccination testing, however, should be done 1–2 months after the last dose of hepatitis B vaccine to assure adequate protection.

What kind of neckwear would a smart pig choose?



A pigsty!

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. ✦

Where to get adult immunization resources

Contact these organizations for immunization and/or hepatitis B resources:

Centers for Disease Control & Prevention
- Immunization Information Hotline: 800-232-2522
- Immunization website: www.cdc.gov/nip
- Hepatitis Information Hotline: 888-443-7232
- Hepatitis website: www.cdc.gov/ncidod/diseases/hepatitis/index

Immunization Action Coalition
Immunization and hepatitis B treatment information
- 651-647-9009 • www.immunize.org

Hepatitis Foundation International
- 800-891-0707 • www.hepfi.org

Hepatitis B Foundation
- 215-489-4900 • www.hepb.org

Nat'l Coalition for Adult Immunization
- 301-656-0003
- www.medscape.com/affiliates/ncai

Health Care Financing Administration
- 816-426-5233

Vaccine Adverse Event Reporting System
- 800-822-7967 • www.fda.gov/cber/vaers

Adult Resources

Brochures, videos, and more

Before you order, REMEMBER . . .

All of our materials are camera ready, copyright free, and reviewed by national experts! Some are in other languages as well as in English. You can order one of any item and make as many copies as you need (including videos).

Join the Coalition! With a $40 or greater membership contribution for 1999 we'll send you all of the **print and video** materials listed on this page. Your contribution will keep you on our mailing list and help us produce future issues of ***VACCINATE ADULTS!*** Please join us today!

Qty.		Brochures for your patients	Amt.
___	P4030	Vaccinations for adults $1	_____
___	P4035	Immunizations...not just kids' stuff ☐English ☐Spanish ☐Chinese $1/ea	_____
___	P4041	Shots for adults with HIV $1	_____
___	P4042	Vaccinations for adults with hepatitis C $1	_____
___	P4070	Chickenpox isn't just an itchy, contagious rash ☐English ☐Spanish $1/ea	_____
___	P4080	Hepatitis A is serious..should you be vaccinated? ☐English ☐Spanish $1/ea	_____
___	P4090	Questions frequently asked about hepatitis B ☐English ☐Spanish $1/ea	_____
___	P4112	Every week 1000s of sexually active people get hep B ☐English ☐Spanish $1	_____
___	P4113	***NEW!*** If you have sex, read this $1	_____
___	P4115	Hep B....100 times easier to catch than HIV (a brochure for men who have sex with men) $1	_____
___	P4116	You don't have to go all the way to get hepatitis A (a brochure for men who have sex with men) $1	_____
___	P4120	If you are a hepatitis B carrier ☐English ☐Spanish ☐Hmong ☐Chinese $1/ea	_____
___	P4170	Hep B information for adults *&* children from endemic areas ☐English ☐Cambodian ☐Chinese ☐Hmong ☐Korean ☐Laotian ☐Russian ☐Vietnamese $1/ea	_____
		Materials for your clinic staff	
___	P2011	Summary of rules for adult immunization $1	_____
___	P2015	Pneumococcal vaccine: who needs it? $1	_____
___	P2020	Vaccine handling, storage, and transport $1	_____
___	P2021	Ask the experts: compilation of past immunization Q & A $5	_____
___	P2023	Vaccine administration record for adults $1	_____
___	P2027	***NEW!*** It's federal law! You must give VISs $1	_____
___	P2045	Tips to improve your clinic's immunization rates $1	_____
___	P2058	***NEW!*** Vaccinate! Varicella kills $1	_____
___	P2060	Hospitals *&* doctors sued for failing to immunize $1	_____
___	P2081	Recommended dosages of hep A & B vaccines $1	_____
___	P2100	No risk?? No way!! $1	_____
___	P2109	Hepatitis B and the health care worker $1	_____
___	P2110	***REVISED!*** Basic knowledge about hepatitis B $1	_____
___	P2112	***REVISED!*** Basic facts about adult hepatitis B $1	_____
___	P2162	***REVISED!*** Does your patient have chronic hepatitis B? $1	_____
___	P2164	Management of chronic hepatitis B $5	_____
___	P2180	Tracking hepatitis B patients and contacts $1	_____
___	P4065	Screening questionnaire for adult immunization ☐English ☐Spanish $1/ea	_____
___	P4140	Sample letter explaining hep B test results to patients $1	_____
		Videos, posters, and slides for your clinic	
___	V2010	**Video** "How to Protect Your Vaccine Supply" $10	_____
___	V2020	**Video** "Vaccine Administration Techniques" $10	_____
___	Q2020	**Poster** "Immunizations...not just kids' stuff," ..... 10/$1	_____
___	S3010	**Slides** 30 slides of vaccine-preventable diseases—script included ☐English ☐Spanish $25	_____
		Total $	_____

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Vaccinate grown-ups...it's the adult thing to do!

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Thank you to CDC!
CDC provides invaluable technical support to us as well as a substantial federal grant.

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- North American Vaccine
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- SmithKline Beecham
- Wyeth-Lederle Vaccines

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

Dear Colleague:

Please make sure you check your patient's immunization status at every visit. Whether it's an acute care visit, a chronic disease check, a physical, or a hospital visit, every visit, any visit, is an excellent (and often missed) opportunity to vaccinate.

Adult immunization rates are not good. A CDC survey published in October 1998 indicated that in 1997 only 65.5% of adults 65 years of age and older had received a dose of influenza vaccine during the previous year and, worse, only 45.4% of these same adults had ever received a dose of pneumococcal vaccine.

Children's vaccination rates are soaring, and we need to work harder to achieve the same vaccination rates in adults. Two-year olds, who need many more doses of vaccines, are approaching a 90% vaccination rate. There is no reason we can't achieve the same rate for adults. If we roll up our adult patients' sleeves whenever the opportunity arises, we could make the rates soar and, even more importantly, make the number of vaccine-preventable deaths in adults (~45,000/year) plummet.

Remember...many of your patients also need to be vaccinated against hepatitis B. If you need a reminder about who needs hepatitis B vaccine, see "Ask the Experts" on page 10.

Lets redouble our efforts to make each office and hospital visit an opportunity to vaccinate. Our patients are counting on us.

Deborah L. Wexler MD

Deborah L. Wexler, MD
Executive Director

Join the Coalition!

While you're working hard to improve your patients' immunization rates, consider joining the Immunization Action Coalition for 1999. With a contribution of $40 or more, we'll send you a packet of our adult-focused print materials and two vaccination videos (*Vaccine Administration Techniques* and *How to Protect Your Vaccine Supply).* Please join or rejoin today.

Name/Title: _____

Organization: _____

Address: _____

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