Compulsory vaccination for children enrolled in childcare facilities and schools has been a major contributor to the success of the U.S. immunization program. The constitutionality of mandatory vaccination was upheld by the U.S. Supreme Court in 1905 (Jacobson v. Massachusetts, 197 U.S. 11). Although there is no national law requiring the vaccination of school children, all states and the District of Columbia have vaccination requirements for children. All but two states allow exemptions to state mandates for non-medical reasons, and there is no constitutional right that requires states to include such exemptions (Prince v. Massachusetts, 321 U.S. 158 [1944]). Exemptions to school vaccination requirements continue to be an issue for discussion and debate in many state legislatures.

In recent years there has been an increase in the number of parents who have chosen a non-medical, non-religious exemption to state vaccination requirements for their children. For the purposes of this discussion, these exemptions will be termed personal belief exemptions (PBEs). The reasons a parent might request a PBE could include a range of factors, from misinformation about vaccines or disease, vaccine hesitancy, a lack of understanding about disease risk, to simply choosing not to vaccinate as a matter of convenience (e.g., not making time to take one’s child to the doctor before the beginning of the school year).

Each state makes a determination about whether it allows PBEs—20 states allow them—and if PBEs are allowed, each state defines the steps parents must take to exempt their child from vaccination. In some states, exemptions are easy to obtain; very few steps are required of the parent to exempt a child. In other states, exemptions require more effort by the parent.

One of the many activities of the Immunization Action Coalition (IAC) is to monitor state legislation related to exemptions to vaccination requirements. Results of some of IAC’s work were published in the February 14 issue of Journal of the American Medical Association (see JAMA. 2014; 311(6):620–1). IAC found that during the legislative sessions from 2009 through 2012, a total of 36 bills related to exemptions were introduced in 18 states. Of these bills, 5 would strengthen the state’s existing exemption process (i.e., requires more effort by the parent to obtain an exemption), while the remaining 31 would either weaken an existing exemption or add a new PBE. None of the 31 bills that would have weakened the exemption process...
for children younger than age 12 months in any situation.

**Tdap vaccine**

We see many 10-year-olds for middle school entry immunization. Is one brand of Tdap preferred for this age group?

No. In March 2014, FDA lowered the age indication for Adacel brand Tdap vaccine (sanofi) from age 11 years to age 10 years. Both Tdap products, Adacel and Boostrix (GSK), now have the same lower age indication.

Is it acceptable to give breastfeeding mothers Tdap vaccine?

Yes. Women who have never received Tdap and who did not receive it during pregnancy should receive it immediately postpartum or as soon as possible thereafter. Breastfeeding does not decrease the immune response to routine childhood vaccines and is not a contraindication for any vaccine except smallpox. Breastfeeding is a precaution for yellow fever vaccine and the vaccine can be given for travel when indicated.

**HPV vaccine**

Can human papillomavirus (HPV) be transmitted by non-sexual transmission routes, such as clothing, undergarments, sex toys, or surfaces?

Nonsexual HPV transmission is theoretically possible but has not been definitely demonstrated. This is mainly because HPV can’t be cultured and DNA detection from the environment is difficult and likely prone to false negative results.

**Pneumococcal vaccine**

Is pneumococcal polysaccharide vaccine (PPSV23, Pneumovax, Merck) indicated for former smokers?

PPSV23 is currently recommended for people age 19 through 64 years who actively smoke cigarettes (see www.cdc.gov/mmwr/preview/mmwrhtml/ mm5934a3.htm). However, chronic lung disease is an indication for PPSV23, which could be applicable for former smokers.

**Zoster vaccine**

I know that ACIP only recommends zoster vaccine for adults 60 years and older, although it is licensed for use in those 50 years and older. If I choose to vaccinate patients age 50–59 years, are there any criteria as to which patients in this age group might benefit most from zoster vaccination?

CDC had the following to say about your question in a November 11, 2011, issue of MMWR titled “Update on Herpes Zoster Vaccine: Licensure for Persons Aged 50 Through 59 Years” (www.cdc.gov/mmwr/preview/mmwrhtml/mm6044a5.htm): “For vaccination providers who choose to use Zostavax among certain patients aged 50 through 59 years despite the absence of an ACIP recommendation, factors that might be considered include particularly poor anticipated tolerance of herpes zoster or postherpetic neuralgia symptoms (e.g., attributable to preexisting chronic pain, severe depression, or other comorbid conditions; inability to tolerate treatment medications because of hypersensitivity or interactions with other chronic medications; and occupational considerations).”

**Hepatitis B vaccine**

In December 2013, CDC released a new document titled **CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Postexposure Management (MMWR 2013;62(RR-10))** available at www.cdc.gov/mmwr/pdf/rr/rr6210.pdf. Does the content of this document update ACIP recommendations on healthcare personnel vaccination and hepatitis B?

The new guidance published by CDC does not constitute new recommendations of ACIP. The guidance was created based on the opinions of an expert panel convened by CDC. According to the document, the guidance from CDC “augments the 2011 recommendations” of the ACIP document titled **Immunization of Health-Care Personnel** published November 25, 2011 (www.cdc.gov/mmwr/pdf/rr/rr6007.pdf), for evaluating hepatitis B protection among healthcare personnel and administering postexposure prophylaxis.

**Does CDC now recommend routine pre-exposure anti-HBs testing of all healthcare personnel who were previously vaccinated?**

In general, no, but the type of testing (pre-exposure or postexposure) depends on the healthcare worker’s profession and work setting. An expert panel convened by CDC acknowledged that the risk for hepatitis B virus (HBV) infection for vaccinated healthcare personnel (HCP) can vary widely by setting and profession. The risk might be low enough in certain settings that assessment of hepatitis B surface antibody (anti-HBs) status and appropriate follow-up can be done at the time of exposure to potentially infectious blood or body fluids. This approach relies on HCP recognizing and reporting blood and body fluid exposures and might be applied on the basis of documented low risk, implementation, and cost considerations. Trainees, some occupations (such as those with frequent exposure to sharp instruments and blood), and HCP practicing in certain populations are at greater risk of exposure to blood or body fluid exposure from an HBsAg-positive patient. Vaccinated HCP in these settings/occupations would benefit from a pre-exposure approach. Figure 6 on page 13 of the guidance document provides an algorithm for settings where the choice is to use a pre-exposure approach. Table 2, found on page 14 of the document, provides the algorithm when postexposure management is implemented. The document, tables, and figures are available at www.cdc.gov/mmwr/pdf/rr/rr6210.pdf.

If an employee receives both HBIG and hepatitis B vaccine after a needlestick from a patient who is HBsAg positive, how long should one wait to check the employee’s response to the vaccine? Anti-HBs testing for HCP who receive both hepatitis B immune globulin (HBIG) and hepatitis B vaccine can be conducted as soon as 4 months after receipt of the HBIG. However, a new recommendation in the 2013 document is to test for hepatitis B core antibody (anti-HBc) and hepatitis B surface antigen (HBsAg) among certain HCP (those previously unvaccinated, incompletely vaccinated, or revaccinated) with an exposure from an HBsAg-positive or unknown HBsAg-status patient at the time of the exposure and approximately 6 months after the exposure (that is, after the HBV incubation period). The CDC expert panel determined that it would be more efficient to do all the follow-up testing at one time, and recommended testing at 6 months after the exposure. Anti-HBs could be...
measured at a minimum of 4 months after the administration of HBIG, but testing for infection would then follow approximately 2 months later.

At our facility we do routine pre-employment anti-HBs testing regardless of whether the employee has documentation of a hepatitis B vaccination series and consider those who are anti-HBs positive to be immune. Is this the recommended strategy?

No. HCP with written documentation of receipt of a properly spaced 3-dose series of hepatitis B vaccine and a positive anti-HBs can be considered immune to HBV and require no further testing or vaccination. Testing unvaccinated or incompletely vaccinated HCP (including those without written documentation of vaccination) is not necessary and is potentially misleading because anti-HBs of 10 mIU/mL or higher as a correlate of vaccine-induced protection has only been determined for persons who have completed a hepatitis B vaccination series. Persons who cannot provide written documentation of a complete hepatitis B vaccination series should complete the 3-dose series, then be tested for anti-HBs 1 to 2 months after the final dose.

Does CDC still recommend routine anti-HBs testing of HCP who are at risk for occupational blood or body fluid exposure following the hepatitis B vaccination series?

Yes. This recommendation has not changed.

Is there now a recommendation for a routine booster dose of hepatitis B vaccine?

No. HCP who have documentation of receiving a 3-dose series of hepatitis B vaccine and who tested positive for anti-HBs (defined as anti-HBs of 10 mIU/mL or higher) are considered immune to HBV. Immunocompetent persons have long-term protection against HBV and do not need further testing or vaccine doses. Some immunodeficient persons (including those on hemodialysis) may need periodic booster doses of hepatitis B vaccine, as described in the 2006 adult hepatitis B vaccine ACIP recommendations (MMWR 2006;55[RR-16]:26–9). These recommendations have not changed.

Does CDC now recommend restarting the hepatitis B vaccine series in the event the series is interrupted?

No. This recommendation has not changed. The series should not be restarted. Simply continue from where you left off.

Individual state Vaccines For Children (VFC) programs may have different requirements for retaining temperature logs. You should contact your state program for this information. Contact information for state immunization programs is available at www.immunize.org/ coordinators.

General vaccine questions

What do we legally need to record when giving an immunization to a patient?

It is important to know the federal requirements for documenting the vaccines administered to your patients. The requirements are defined in the National Childhood Vaccine Injury Act enacted in 1986. The law applies to all routinely recommended childhood vaccines, regardless of the age of the patient receiving the vaccines. The only vaccines not included in this law are pneumococcal polysaccharide, zoster, and certain infrequently used vaccines, such as rabies and Japanese encephalitis. The following information must be documented on the patient’s paper or electronic medical record or on a permanent office log:

1. The vaccine manufacturer.
2. The lot number of the vaccine.
3. The date the vaccine is administered.
4. The name, office address, and title of the healthcare provider administering the vaccine.

(Editor’s Note: On July 31, 2104, IAC corrected an error in this statement of the “Ask the Experts” answer, which had previously stated that a “signature (electronic is acceptable) of the person administering the vaccine. Initials of the vaccine administrator ...” was required by federal law.)

5. The Vaccine Information Statement (VIS) edition date located in the lower right corner on the back of the VIS. When administering combination vaccines, all applicable VISs should be given and the individual VIS edition dates recorded.
6. The date the VIS is given to the patient, parent, or guardian.

The federally required information should be both permanent and accessible.

Federal law does not require a parent, patient, or guardian to sign a consent form in order to receive a vaccination; providing them with the appropriate VIS(s) and answering their questions is sufficient under federal law.

In updating immunizations for immigration (“green card”) exams, I regularly come across intervals between catch-up vaccine doses that are shorter than ACIP recommendations—most often the last 2 doses of IPV are given less than 6 months apart, but also sometimes the 2 doses of varicella are given less than 3 months apart, and the next-to-last and lastTd are given less than 6 months apart. How significant is this in terms of immunity?

The significance of non-standard intervals probably depends on the vaccine and the dose. This is a complex issue—studies have not been done to examine the effect of various intervals between doses on the immunogenicity of those doses. But ACIP has examined the available data and made recommendations about the minimum acceptable interval between doses for that dose to be considered valid (there is no maximum interval between doses). These minimum intervals are published as Table 1 in ACIP’s General Recommendations on Immunization, available at www.cdc.gov/mmwr/pdfs/rr/rr6002.pdf, pages 36–37. Doses with a minimum interval less than the recommended minimum, as described in Table 1, should not be counted as valid. More details on this topic can be found in the General Recommendations.

Is it standard practice to revaccinate a child who is adopted from another country?

No. According to ACIP, vaccines administered outside the U.S. generally can be accepted as valid if the schedule (i.e., minimum ages and intervals) is similar to that recommended in the U.S. However, with the exception of the influenza vaccine and PPSV23, only written documentation should be accepted as evidence of previous vaccination. In general, if records cannot be located or will definitely not be available anywhere because of the patient’s circumstances, children without adequate documentation should be considered susceptible and should be started on the age-appropriate vaccination schedule. Serologic testing for immunity is an alternative to vaccination for certain antigens. More information is available in the ACIP General Recommendations on Immunization, available at www.cdc.gov/mmwr/pdfs/rr/rr6002.pdf, pages 27–29.

To submit an “Ask the Experts” question . . .

Email your questions to the Immunization Action Coalition (IAC) at admin@immunize.org. We will respond to your inquiry. Because we receive hundreds of email messages each month, we cannot promise that we will use your question in “Ask the Experts.” IAC works with CDC to compile new Q&As for our publications based on commonly asked questions. Most of the questions are thus a composite of several inquiries.

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