



Vaccine update: The latest from ACIP

ACIP has combined 2 vaccine schedules into a single schedule for infants, children, and adolescents. It also recommends the Tdap vaccine for those ≥ 65 years and the pneumococcal conjugate vaccine for adults at high risk.

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The 2013 immunization schedules have been published by the Centers for Disease Control and Prevention (CDC)'s Advisory Committee on Immunization Practices (ACIP).^{1,2} Perhaps the most noticeable change is a single schedule for infants, children, and adolescents, instead of the previous 2 schedules (for those ages 0-6 years, and for those ages 7-18 years). Other major new recommendations include the following:

- tetanus-diphtheria-pertussis (Tdap) vaccine for individuals ≥ 65 years of age
- Tdap for pregnant women during every pregnancy
- meningococcal conjugate vaccine for high-risk infants and children
- pneumococcal conjugate vaccine for high-risk adults.

There are also minor changes in recommendations for the use of measles, mumps, and rubella (MMR) vaccine among those with human immunodeficiency virus (HIV) infection. The new immunization schedules can be found on the CDC's immunization Web site, at <http://www.cdc.gov/vaccines/schedules/index.html>.

Previous Practice Alerts have reported on recommendation changes made throughout 2012, including removal of egg allergy as a contraindication for influenza vaccine for those who experience only hives after eating eggs,³ the addition of a simplified algorithm

for deciding whether children younger than 9 years need one or 2 doses of influenza vaccine,³ and the addition of human papillomavirus vaccine as a routine recommendation for males ages 11 to 21 years.⁴

Tdap: Some recommendations are off label

Given the continuing elevated rates of pertussis in the United States and our understanding about the duration of protection and safety of the Tdap vaccine, ACIP has made new recommendations for the use of Tdap, including some off-label uses. Two Tdap products are available: Boostrix, approved for individuals ≥ 10 years, and Adacel, approved for individuals 11 to 64 years (TABLE 1).⁵ ACIP states that those ≥ 65 years may be vaccinated with Tdap, and that an opportunity for vaccination should not be missed; Adacel can be substituted if it is the only product available. To control the spread of pertussis to the most vulnerable, it is especially important to immunize grandparents, childcare providers, and those who are around infants.

Wound management. If a tetanus booster is indicated for wound management in an individual ≥ 19 years who has never received Tdap, this product is preferred to Td.⁵ There is now no suggested minimum time interval for administering Tdap after Td. Cur-

rently only one dose of Tdap is recommended for adults (except for pregnant women, as described in the next section). But this may change as time passes and we learn more about the duration of protection from the acellular pertussis antigen in the vaccine.

Pregnancy. ACIP first recommended the use of Tdap during pregnancy in October 2011, in an attempt to provide protection for newborns through the transfer of maternal antibodies to the fetus.⁶ Recent evidence indicates that the duration of protective antibody levels wanes between pregnancies and may not be high enough to protect a newborn in subsequent pregnancies.⁷ ACIP voted in October 2012 to recommend Tdap for pregnant women during each pregnancy, at the gestational age of 27 through 36 weeks. If a mother does not receive Tdap during pregnancy and has never received it, she should be vaccinated soon after delivery.

The safety data for serial vaccination with Tdap in pregnant women is sparse, and ACIP considered this concern. In the opinion of ACIP, the potential benefits to the newborn, coupled with the high rate of pertussis, outweigh this concern, and efforts will be made to monitor for safety issues. If the rate of pertussis declines, ACIP will likely revisit this recommendation.

**Meningococcal vaccine:
No routine immunization for infants**

A previous Practice Alert described 3 new products to protect infants and children against meningococcal disease, and identified issues that make recommendations about

When should you use HibMenCY for infants?⁹

Vaccinate infants at increased risk for meningococcal disease with 4 doses of HibMenCY at 2, 4, 6, and 12-15 months. Candidates for vaccination are infants with recognized persistent complement pathway deficiencies and infants who have anatomic or functional asplenia (including sickle cell disease).

HibMenCY can also be used for infants ages 2-18 months in communities with serogroup C and Y meningococcal disease outbreaks for which vaccination is recommended.

ACIP does not recommend routine meningococcal vaccination for infants.

HibMenCY is safe and immunogenic and may be administered to infants to complete the routine Hib vaccination series. If HibMenCY is used to achieve protection against serogroups C and Y, HibMenCY should be used for all 4 doses of Hib vaccine.

their use difficult at a time when rates of meningococcal disease in this age group are very low.⁸ At its October 2012 meeting, ACIP considered one of these products, HibMenCY (MenHibrix), which contains antigens against meningococcal serogroups C and Y and *Haemophilus influenzae* B (Hib).

TABLE 1
Available tetanus-diphtheria-pertussis vaccines⁵

Trade name	Manufacturer	FDA-approved age for use* (y)	Pertussis antigens (mcg)				Diphtheria toxoid (Lf)	Tetanus toxoid (Lf)
			PT	FHA	PRN	FIM		
Boostrix	GlaxoSmithKline Biologicals	≥10	8	8	2.5	—	2.5	5
Adacel	Sanofi Pasteur	11-64	2.5	5	3	5 [†]	2	5

FDA, Food and Drug Administration; FHA, filamentous hemagglutinin; FIM, fimbriae; Lf, limit of flocculation units; PRN, pertactin; PT, pertussis toxin.

*Indicated as a single dose.

[†]Types 2 and 3.

TABLE 2

Indications for using pneumococcal vaccines in adults ≥19 years*¹⁰

Risk group	Underlying medical conditions	PCV13	PPSV23	
		Recommended	Recommended	Revaccination 5 years after first dose
Immunocompetent individuals	Chronic heart disease [†]		✓	
	Chronic lung disease [‡]		✓	
	Diabetes mellitus		✓	
	Cerebrospinal fluid leak	✓	✓	
	Cochlear implant	✓	✓	
	Alcoholism		✓	
	Chronic liver disease, cirrhosis		✓	
	Cigarette smoking		✓	
Individuals with functional or anatomic asplenia	Sickle cell disease/other hemoglobinopathy	✓	✓	✓
	Congenital or acquired asplenia	✓	✓	✓
Immunocompromised individuals	Congenital or acquired immunodeficiency [§]	✓	✓	✓
	Human immunodeficiency virus infection	✓	✓	✓
	Chronic renal failure	✓	✓	✓
	Nephrotic syndrome	✓	✓	✓
	Leukemia	✓	✓	✓
	Lymphoma	✓	✓	✓
	Hodgkin disease	✓	✓	✓
	Generalized malignancy	✓	✓	✓
	Iatrogenic immunosuppression	✓	✓	✓
	Solid organ transplant	✓	✓	✓
	Multiple myeloma	✓	✓	✓

PCV13, 13-valent pneumococcal conjugate vaccine; PPSV23, 23-valent pneumococcal polysaccharide vaccine.

*All adults ≥65 years should receive a dose of PPSV23, regardless of previous history of vaccination with pneumococcal vaccine.

[†]Including congestive heart failure and cardiomyopathies; excluding hypertension.

[‡]Including chronic obstructive pulmonary disease, emphysema, and asthma.

[§]Including B- (humoral) or T-lymphocyte deficiency, complement deficiencies (particularly C1, C2, C3, and C4 deficiencies), and phagocytic disorders (excluding chronic granulomatous disease).

^{||}Diseases requiring treatment with immunosuppressive drugs, including long-term systemic corticosteroids and radiation therapy.

ACIP voted not to recommend routine immunization against meningococcal disease in infants. However, HibMenCY was recommended for high-risk infants, and it was noted that it can be used as an Hib vaccine. The details of the recommendation appear in “When should you use HibMenCY in

infants?” on page 138.⁹ The current recommendation also includes vaccinating high-risk infants ages 9 through 23 months with 2 doses of MenACWY-D (Menactra) with at least 8 weeks between doses. Only one of these products should be used, and ACIP does not cite a preference between them.

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Pneumococcal conjugate vaccine recommended for high-risk adults

There are now 2 products that provide protection for adults against pneumococcal disease: a 23-valent polysaccharide product (PPSV23) and a 13-valent conjugate product (PCV13). PPSV23 is recommended for all adults ≥ 65 years and for those < 65 who are at high risk for pneumococcal disease or complications from pneumococcal disease. While PCV13 is approved by the FDA for all adults ≥ 50 years, ACIP recommends it only for those at higher risk for pneumococcal disease.¹⁰

ACIP also recommends that those at risk should receive both PCV13 and PPSV23. Give PCV13 first, followed by PPSV23 2 months later.¹⁰ However, if PPSV23 is given first, administer PCV13 12 months later. To complicate

matters, for some risk categories it is recommended that patients receive a second dose of PPSV23 5 years after the first one. No more than 2 doses of PPSV23 should be given prior to age 65. This complicated set of recommendations is summarized in TABLE 2.¹⁰

MMR for those with HIV and use of IG for measles prevention

The last set of significant changes to the schedules are updated recommendations for the use of MMR vaccine in those who have HIV infection, and the use of immune globulin to prevent measles in those previously unvaccinated who are exposed to the disease. Details of these recommendations can be found at <http://www.cdc.gov/vaccines/recs/provisional/downloads/mmr-Oct-2012.pdf>. **JFP**

➤ Given current rates of pertussis, it is important to immunize grandparents, childcare providers, and those who are around infants.

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