



ARIZONA DEPARTMENT  
OF HEALTH SERVICES

**Arizona Vaccine News**

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*Health and Wellness for all Arizonans*

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## **VACCINE NEWS**

### **Pertussis Vaccination in Pregnancy Is Good: Early in 3rd Trimester Is Very Good**

- The Centers for Disease Control and Prevention (CDC) has added to their previous recommendation for all pregnant women to receive tetanus-Diphtheria-Pertussis vaccine (Tdap) during each pregnancy, preferably during 27-36 weeks of gestation.
- CDC now says to give all pregnant women a Tdap vaccine ...“preferably during the early part of gestational weeks 27-36, regardless of prior history of receiving Tdap.”

See the “Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2017,” [footnote 2](#).

### **All Infants Need Hepatitis B Vaccine within 24 Hours of Birth**

- CDC now recommends that all children receive their 1<sup>st</sup> dose of hepatitis B vaccine within 24 hours of birth.
- However, the hepatitis B vaccine should still be given *within 12 hours of birth* to infants whose mother is known to be hepatitis B virus infected (hepatitis B surface antigen [HBsAg] positive) or if the mother’s HBsAg status is unknown.
- Hepatitis B Immune Globulin should also be given within 12 hours of birth to all infants whose mother is known to be HBsAg positive, and to infants weighing less than 2 kg whose mother’s HBsAg status is not known.

For more details, see “Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2017,” [footnote 1](#).

### **More Mumps in the United States**

- From January 1- March 25, 2017, there have been 1,965 cases of mumps reported in the United States (U.S.).
- In all of 2016 there were 5,748 reported cases of mumps in the U.S., while in 2012 there were only 229 cases of mumps.

For more details, see the CDC’s Mumps Cases and Outbreaks [web page](#).

### **Update on Measles Outbreaks in the United States**

- From January 1- March 25, 2017, there have been 28 cases of measles reported in the U.S. In 2016 there were 70 reported cases of measles in the U.S.
- The majority of people who got measles were unvaccinated.
- Travelers infected with measles continue to bring the disease into the U.S.
- Measles can rapidly spread when it reaches communities where groups of people are unvaccinated.

For more details, see the CDC’s Measles Cases and Outbreaks [web page](#).



### **Shortage of Yellow Fever Vaccine in the United States**

- The CDC has [announced](#) that Sanofi Pasteur's yellow fever vaccine (YF-VAX) will be unavailable from mid-2017 to mid-2018 because of delays in the production process. YF-VAX is the only yellow fever vaccine licensed in the U.S.
- Sanofi Pasteur manufactures another live-attenuated yellow fever vaccine in [France](#) ([Stamaril](#)<sup>®</sup>). Once current U.S. supplies of YF-VAX are no longer available, *Stamaril*<sup>®</sup> will be available through an extended access investigational new drug program (eIND) to a limited number of clinics in each state.
- The online [CDC map](#) of places to obtain yellow fever vaccine still lists all of the currently certified yellow fever providers in Arizona. These providers may still have some supply of YF-VAX.
- The Arizona Department of Health Services will inform health care providers and the public as to the location of eIND sites for yellow fever vaccine in Arizona once that information becomes available from CDC and Sanofi Pasteur.

For more information, see *Morbidity and Mortality Weekly Report* (MMWR), [April 28, 2017](#).

### **LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES**

#### **Demographic Differences in Pregnant Women Receiving Pertussis Vaccine**

- Among 113,730 women Minnesota in 2013-2014, 58.2% had received  $\geq 1$  Tdap vaccine during pregnancy and 45.9% had received  $\geq 1$  influenza vaccine during pregnancy.
- Tdap and influenza vaccination coverage rates during pregnancy were significantly lower among black and American Indian women when compared with white women, and lower among women born in Africa (particularly Somalia), Eastern Europe, Western Europe, and Canada compared with women born in the U.S.
- In addition, vaccination coverage was lower among Hispanic women than non-Hispanic women (for Tdap only), women with lower levels of education, and women who were receiving medical assistance or were uninsured.

See the article in MMWR, [January 20, 2017](#).

#### **U.S. Males Have Low HPV Vaccine Coverage and High Genital HPV Infection Rates**

- Men ages 18-59 years old were tested for human papillomavirus (HPV) infection: 45.2% had genital HPV infection while 25.1% had high-risk HPV infection.
- The overall rate of HPV vaccination among men ages 18-32 years old was 10.7%.
- Among men ages 18-22 years old, 22.0% reported having received an HPV vaccine and 48.1% of these had completed the HPV vaccine series.
- The mean age at HPV vaccination in the 18-22 year old age group was 17 years old.

See the article in *JAMA Oncology*, [January 19, 2017](#).



### **HPV Vaccine Antibody Persistence 6 Years after Vaccination**

- Adolescent Fijian girls who received quadrivalent human papillomavirus vaccine (4vHPV) were studied six years after vaccination.
- Two doses of 4vHPV produced similar neutralizing titers as 3 doses of 4vHPV.
- A single dose of 4vHPV elicited antibodies that persisted for at least 6 years, and induced immune memory, suggesting possible protection against 4vHPV vaccine types even after a single dose of 4vHPV.

See the article in *Clinical Infectious Diseases* (CID), [April 1, 2017](#).

### **HPV Vaccine Receipt Does Not Increase the Risk of Adverse Pregnancy Outcomes**

- Pregnancy outcomes in 1,665 women who received 4vHPV during pregnancy were compared to outcomes in 6,660 unexposed pregnant women.
- Outcomes that were measure were major birth defects, spontaneous abortion, preterm birth, low birth weight, small size for gestational age, or stillbirth.
- 4vHPV during pregnancy was not associated with a significantly higher risk of adverse pregnancy outcomes than no such exposure.

See the abstract in *New England Journal of Medicine* (NEJM), [March 30, 2017](#).

### **Zoster Vaccine Coverage in Older Adults in the United States, 2007-2013**

- Over 12 million older adults were assessed as to zoster vaccine coverage.
- By 2013, 1.7% of adults aged 50–59 years, 23.9% of adults aged 60–64 years, and 14.5% of adults aged  $\geq 65$  years had received zoster vaccine.
- Adults who were more likely to have received a zoster vaccine were immunocompetent, female, and had more outpatient hospital, doctor office, and pharmacy visits.
- Zoster vaccine receipt was also higher in those who had received influenza vaccine.

See the article in the *American Journal of Preventive Medicine*, [January 2017](#).

### **Mumps Can Occur Even in Fully Vaccinated Patients**

- A mumps outbreak in a university setting showed that mumps outbreaks can occur in even in highly vaccinated groups and among fully immunized patients.
- Herd immunity was important in limiting the spread of mumps in this outbreak.

See the abstract in CID, [February 15, 2017](#).

### **Pneumococcal Bacteremia in Children Plunges with the Use of Conjugate Vaccines**

- The use of pneumococcal conjugate vaccines has resulted in a 95.3% reduction of *Streptococcus pneumoniae* bacteremia, decreasing from 74.5 per 100,000 children prior to use of 7-valent pneumococcal conjugate vaccine (1998) to 3.5 per 100 000 children per year by 2014.

See the abstract in *Pediatrics*, [April 2017](#).



### **Assessing Polio Vaccination Records in Children Born Outside the United States**

- Wild poliovirus type 2 was declared eradicated world-wide in September 2015.
- As of April 1, 2016, countries that used oral poliovirus vaccine (OPV) switched simultaneously from trivalent oral poliovirus vaccine (tOPV) to bivalent OPV (bOPV) that contains only poliovirus types 1 and 3. This was done in order to stop circulation and outbreaks of vaccine-associated type 2 poliovirus.
- All children living in the U.S. (including immigrants and refugees) need to continue to be protected against all three poliovirus types by proper documentation of having received the correct number of valid doses of age-appropriate vaccination with inactivated poliovirus vaccine (IPV) and/or tOPV.
- If a child has documentation of receipt of an OPV dose before April 1, 2016, this represents a tOPV dose and should be counted towards the US vaccination schedule, unless specifically noted that it was administered during a vaccination campaign.
- Doses of OPV given on or after April 1, 2016 are either bOPV or monovalent OPV (mOPV is used in type-specific outbreak responses).
- Persons less than 18 years old whose vaccine record shows that an OPV was given on or after April 1, 2016 but does not specify that the OPV was tOPV should have this OPV dose considered to be an invalid dose. The person should be revaccinated with IPV to complete the age-appropriate number of valid polio vaccine doses according to the U.S. polio vaccination schedule.

For more details, see the article in MMWR, [January 13, 2017](#).

### **WHO Reports Extension of Yellow Fever Areas in Brazil**

- There has been an increase in places in Brazil where yellow fever cases are found.
- Vaccination against yellow fever should be done at least 10 days prior to the travel.
- Travelers with contraindications for yellow fever vaccine (children below nine months, pregnant or breastfeeding women, people with severe hypersensitivity to egg antigens, and severe immunodeficiency) or over 60 years of age should consult their health professional for guidance.

See the disease outbreak news report on the World Health Organization (WHO) [website](#).

### **Little Known History on First Cowpox Vaccination**

- Dr. Edward Jenner is credited with being the first person to vaccinate against smallpox by using cowpox inoculation in 1796.
- However, in 1774, an English farmer, Benjamin Jesty, vaccinated his wife and two sons, and received sharp public criticism for doing so.

For more details, see the article in *Pediatrics*, [April 2017](#).



### **Pictures of Cataracts and Retinopathy Due to Congenital Rubella**

- Universal rubella vaccination prevents pregnant women from becoming infected with rubella which can result in congenital rubella.
- Congenital rubella causes cataracts, retinitis, cardiac malformations, neurologic damage, deafness, and blindness.

See [pictures](#) of cataracts and retinopathy due to congenital rubella in NEJM, October 13, 2016.

### **RESOURCES**

#### **Updated CDC *General Best Practice Guidelines for Immunization* Publication**

- On April 20, 2017, CDC released the [General Best Practice Guidelines for Immunization](#). This document replaces CDC's 2011 *General Recommendations on Immunization*.
- These new guidelines will be a living document which will be quickly updated with new CDC guidance on vaccination practices.
- Topics covering vaccine storage and handling are not covered in this new document but can be found in CDC's 2016 *Vaccine Storage and Handling Toolkit*.
- Continuing education credits for the *General Best Practice Guidelines for Immunization* are available through the CDC Training and Continuing Education Online [site](#).

#### **2017 Supplement to the CDC "Pink Book"**

- An eleven page [supplement](#) to CDC's *Epidemiology and Prevention of Vaccine-Preventable Diseases* is now available.
- Chapters on human papillomavirus, meningococcal disease, and pneumococcal disease have been revised. Other [updates](#) have been added.

#### **Update on Td Vaccine Supply**

- Sanofi Pasteur's tetanus and diphtheria vaccine (Td) [Tenivac®] is temporarily unavailable. This product will likely become available in the second half of 2017.
- Grifols markets and distributes another U.S.-licensed Td vaccine manufactured by MassBiologics. This Td source is expected to provide sufficient supply to address the historical demand for Td vaccine in the U.S. during this time period. See CDC's [webpage](#) on Vaccine Shortages and Delays.
- Grifols sells the MassBiologics vaccine through many different distributors throughout the U.S. Check with individual distributors to see which carry a supply of Td.
- If a patient needs a tetanus vaccine and Td is not available, Tdap can be used instead of Td, even when the patient has previously received a Tdap vaccine. See *Ask the Experts: "Diphtheria, Tetanus, Pertussis"* ([Vaccine Products](#) section) on the Immunization Action Coalition website.



**CDC Guidance Documents on 9vHPV Recommendations**

- Use of a 2-Dose Schedule for 9vHPV Vaccination. MMWR, [December 16, 2017](#).
- CDC [Supplemental Information](#) and Guidance.
- [ACIP-VFC Resolution](#) for 9vHPV (updated October 19, 2016).

**Standing Orders for Pneumococcal and Meningococcal Vaccines: Adults, Teens and Children**

- Pneumococcal and meningococcal vaccination schedules have become more complex. The Immunization Action Coalition has developed the following standing orders for these vaccines.
  - [Pneumococcal Vaccines](#) (PCV13 and PPSV23) to Adults
  - Pneumococcal Conjugate Vaccines to [Children](#)
  - [Meningococcal Vaccine ACWY](#) to Adults
  - Meningococcal ACWY Vaccine to [Children and Teens](#)
  - [Meningococcal B Vaccines](#) to Adolescents and Adults

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