



## ***Division of Public Health Services***

*Office of the Assistant Director  
Public Health Preparedness Services*

150 N. 18<sup>th</sup> Avenue, Suite 120  
Phoenix, Arizona 85007  
(602) 364-3856  
(602) 364-3285 FAX  
Internet: [www.azdhs.gov](http://www.azdhs.gov)

DOUGLAS A. DUCEY, GOVERNOR  
CARA M. CHRIST, MD, DIRECTOR

### **Arizona Vaccine News**

Karen Lewis, M.D.  
Medical Director  
Arizona Immunization Program Office  
July 9, 2015

#### Newsletter Topics

#### **VACCINE NEWS**

- **New CDC Meningococcal Serogroup B Vaccine Recommendation**
- **ACIP Votes for Permissive Use of Meningococcal Serogroup B Vaccine in 16-23 Year Olds**
- **New CDC Recommendations about Nine-Valent Human Papillomavirus Vaccine**
- **Rubella Vaccine Eliminates Endemic Rubella in the Americas**
- **2015 CDC “Pink Book” Available Online and in Print**

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

- **Measles-induced Immune Suppression May Increase Childhood Infectious Disease Deaths**
- **Wild Poliovirus Type 1 Circulation in a Population with 95% Polio Vaccine Coverage**
- **Norovirus Vaccine in the Pipeline**
- **Acellular Pertussis Vaccine Effectiveness in Adolescents Wanes with Time**
- **Strategies to Decrease Pertussis Transmission to Infants**
- **First Dose of Pertussis Vaccine in Infancy Helps to Prevent Infant Mortality**
- **Early, Full Hepatitis B Vaccination Is Protective against Perinatal Transmission**
- **Sustained Decrease in Laboratory Detection of Rotavirus after Implementation of Routine Vaccination — United States, 2000–2014**
- **Vaccine Status of Patients in 2015 United States Measles Outbreak**

#### **INFLUENZA AND INFLUENZA VACCINES**

- **LAIV Is No Longer Preferred over IIV for 2- 8 Year Olds**
- **Afebrile Health Care Workers with Respiratory Symptoms Can Have Influenza**
- **Influenza Vaccine Decreases Medically Attended Influenza Illness in Older Adults**
- **Obesity Raises Complications from Influenza Infection**

## **VACCINE SAFETY**

- **FDA Sentinel Study Finds No Association with 4vHPV Vaccine and Blood Clots**
- **Another Large Study Again Shows No Link between MMR and Autism**

## **RESOURCES**

- **MMR Recipients Are Not Contagious to Other People**
- **Varicella Vaccine Recipients Are Not Potentially Contagious unless They Develop a Rash**
- **Information about International Travel Vaccines**
- **Where to Get International Travel Vaccines in Arizona**
- **Mobile App to Educate Parents about Vaccines**
- **Corrected AAP Policy Statement—Immunization for *Streptococcus pneumoniae* Infections in High-Risk Children.**

## **VACCINE NEWS**

### **New CDC Meningococcal Serogroup B Vaccine Recommendation**

- The Centers for Disease Control and Prevention (CDC) now recommends meningococcal serogroup B vaccine for people ages 10 years and above who are at high risk for invasive meningococcal disease.
  - People with persistent complement component deficiencies or those taking [eculizumab](#).
  - People with anatomic or functional asplenia, including sickle cell disease.
  - Microbiologists who routinely are exposed to isolates of *Neisseria meningitidis*.
  - People identified to be at increased risk because of a meningococcal B outbreak.

For more details, see *Morbidity and Mortality Weekly Report* (MMWR), [June 12, 2015](#).

### **ACIP Votes for Permissive Use of Meningococcal Serogroup B Vaccine in 16-23 Year Olds**

- The Advisory Committee on Immunization Practices (ACIP) of the CDC voted on June 24, 2015 to recommend that meningococcal serogroup B vaccines be given a Category B recommendation for people ages 16 through 23 years. This means that doctors and patients will decide on an individual basis whether to use it.
- The preferred age for meningococcal serogroup B vaccination is 16-18 years old so that the protection will last into the age period with the highest risk.
- ACIP's recommendations become official CDC policy when published in the MMWR.

See *AAP News*, published online [June 24, 2015](#).

### **New CDC Recommendations about Nine-Valent Human Papillomavirus Vaccine (9vHPV)**

- 9vHPV is approved for use in both males and females, and should be given in the same 3-dose schedule as two-valent (2vHPV) and four-valent HPV vaccine (4vHPV).
- If an HPV vaccine series has already been started, any recommended HPV vaccine product may be used to continue or complete the three dose series (except that 2vHPV is not licensed for males).
- As of 6/25/2015, there are no CDC recommendations to give additional doses of 9vHPV if 9vHPV is used to finish a series started with 2vHPV or 4vHPV.
- HPV vaccination should not be delayed pending availability of 9vHPV.

See MMWR, [June 12, 2015](#).

### **Rubella Vaccine Eliminates Endemic Rubella in the Americas**

- The Pan American Health Organization, the CDC, UNICEF, and the United Nations Foundation have announced that rubella (German measles) has been eliminated from the Americas.

For more details, see the *New York Times*, [April 29, 2015](#).

### **2015 CDC “Pink Book” Available Online and in Print**

- The 2015 issue of CDC’s *Epidemiology and Prevention of Vaccine-Preventable Diseases* is now available [online](#). Print copies can be purchased through the [Public Health Foundation](#) online store.

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

### **Measles-induced Immune Suppression May Increase Childhood Infectious Disease Deaths**

- Immunosuppression after measles is known to predispose people to opportunistic infections for a period of several weeks to months after infection.
- National data from England and Wales, Denmark, and the U.S. showed that non-measles infectious disease mortality is tightly coupled to measles incidence in both the pre- and post-vaccine eras, extending over 2 to 3 years after measles infection.
- The researchers postulate that the long-term immunologic effects of measles result in higher numbers of non-measles infectious deaths. Since measles vaccine may be preventing non-measles-associated immune memory loss, measles vaccination could be maintaining polymicrobial herd immunity.

See the abstract in *Science*, [May 8, 2015](#) and an associated [news story](#).

### **Wild Poliovirus Type 1 Circulation in a Population with 95% Polio Vaccine Coverage**

- Surveillance of sewage in Israel in 2013 detected the presence of wild polio type 1, genetically similar to polioviruses that were still circulating in Pakistan and that were also found in Egypt in 2012.
- Inactivated polio vaccine (IPV) gives good individual protection against polio infection. However, when exposed to wild poliovirus, individuals vaccinated with IPV are more likely to shed wild poliovirus in their stool than those vaccinated with oral polio virus (OPV). This is because IPV does not induce a significant mucosal immune response in the intestine, whereas OPV induces both systemic and intestinal mucosal immunity.
- Wild poliovirus can circulate silently in a population that has high levels of IPV vaccine coverage, underlining the importance of keeping high vaccination coverage levels.

See the article in *Clinical Infectious Diseases* (CID), [April 1, 2015](#).

### **Norovirus Vaccine in the Pipeline**

- Norovirus is the leading cause of acute gastroenteritis, contributing to hospitalizations, emergency room visits, and outbreaks in close quarters such as cruise ships.
- After two injections of a viral-like particle (VLP) vaccine for norovirus, participants were challenged with norovirus in a double-blinded study.
- Self-reported cases of severe, moderate, or mild vomiting and/or diarrhea were less frequent in norovirus VLP vaccine recipients.
- The vaccine was immunogenic and well-tolerated.

See the article in *Journal of Infectious Diseases* (JID), [March 15, 2015](#).

### **Acellular Pertussis Vaccine Effectiveness in Adolescents Wanes with Time**

- Among adolescents who received all acellular vaccines, overall Tdap vaccine efficacy (VE) was 63.9%.
- VE within 1 year of vaccination was 73%, while at 2 to 4 years postvaccination, VE declined to 34%.
- Lack of long-term protection after vaccination is likely contributing to increases in pertussis among adolescents.

See the abstract in *Pediatrics*, [June 2015](#).

### **Strategies to Decrease Pertussis Transmission to Infants**

- The Global Pertussis Initiative recommends that giving pertussis vaccination to pregnant women is the most effective strategy to prevent infant deaths from pertussis, since it directly protects through the passive transfer of pertussis antibodies to the infant.
- Cocooning, which involves giving pertussis vaccine to all people having close contact to infants under 6 months old, can also provide protection.

See the article in *Pediatrics*, [June 2015](#).

### **First Dose of Pertussis Vaccine in Infancy Helps to Prevent Infant Mortality**

- Characteristics of fatal and nonfatal infant pertussis cases reported nationally during 1991–2008 were analyzed.
- Pertussis-related deaths occurred among 258 of 45,404 cases. All deaths occurred in infants who became ill before 34 weeks old.
- Sixty-four percent of deaths were in infants who became ill before 6 weeks old.
- Among infants old enough to be eligible to have received pertussis vaccine, receiving  $\geq 1$  doses of vaccine protected against death (adjusted odds ratio [aOR]= 0.28), hospitalization [aOR= 0.69], and pneumonia [aOR= 0.80].

See the abstract in *Pediatrics*, [June 2015](#).

### **Early, Full Hepatitis B Vaccination Is Protective against Perinatal Transmission**

- The risk of hepatitis B virus (HBV) transmission from mother to infant was assessed in 17,951 mother-infant pairs in the U.S. between 2007-2013.
- Hepatitis B (HepB) vaccine and hepatitis B immune globulin were both administered within 12 hours of birth to 10,760 (94.9%) of 11,335 infants with information.
- Among 9252 (51.5%) infants for whom results for hepatitis B surface antigen on the infant were available, 100 (1.1%) acquired perinatal HBV infection.
- Infants at greatest risk of HBV infection were those whose mother was younger, whose mother was hepatitis B e-antigen positive, whose mother had a high hepatitis B viral load, and those infants who received  $< 3$  HepB vaccine doses.

See the article in *Pediatrics*, [May 2015](#).

### **Sustained Decrease in Laboratory Detection of Rotavirus after Implementation of Routine Vaccination — United States, 2000–2014**

- A large and sustained decline in rotavirus activity has been seen in all seven rotavirus reporting years in the United States (U.S.) from 2007 to 2014 following the use of routine rotavirus vaccination of U.S. children. This decline also occurred in unvaccinated older children and even some adult age groups.

See MMWR, [April 10, 2015](#).

### **Vaccine Status of Patients in 2015 U.S. Measles Outbreak**

- Between Jan. 4, 2015 and April 2, 2015, there were 159 cases of measles in the U.S.
- Of the 159 measles patients, 45% were unvaccinated against measles, 38% had unknown vaccination status, and 18% had received measles vaccine.
- Of the 68 U.S. residents who had measles and were unvaccinated, 43% had philosophical or religious objections to vaccination, 40% were ineligible because they were too young to be vaccinated or had a medical contraindication, 4% had missed opportunities for vaccination, and 13% had other reasons for not being vaccinated.

See MMWR, [April 17, 2015](#).

### **INFLUENZA AND INFLUENZA VACCINES**

#### **LAIV Is No Longer Preferred over IIV for 2- 8 Year Olds**

- ACIP voted on February 24, 2015 to no longer have a preference for live-attenuated influenza vaccine (LAIV) over inactivated influenza vaccine (IIV) in ages 2-8 years old.
- Complete influenza vaccine recommendations for the 2015-2016 influenza season will be published soon in the MMWR.

For more information on this ACIP vote, see the CDC Newsroom, [February 26, 2015](#).

#### **Afebrile Health Care Workers with Respiratory Symptoms Can Have Influenza**

- During influenza season, a hospital required that all health care workers (HCWs) with respiratory symptoms be screened by testing nasopharyngeal swabs by polymerase chain reaction for respiratory pathogens including influenza.
- Of 449 HCWs, 54% had a positive test for any respiratory pathogen and 7.6% of HCWs tested positive for influenza.
- Only 21 (51.2%) employees with influenza reported a history of fever or were found to be febrile during evaluation.
- Among influenza-infected HCWs, 20 had previously received influenza vaccination, 18 had declined the vaccine, and 3 had unknown vaccination status.
- Afebrile HCWs with respiratory symptoms could pose a risk of influenza transmission to patients and coworkers.

See the article in CID, [June 2015](#).

#### **Influenza Vaccine Decreases Medically Attended Influenza Illness in Older Adults**

- Over 5 influenza seasons, trivalent inactivated influenza vaccine was 58.4% effective for the prevention of medically attended laboratory-confirmed influenza illness both in adults ages 50-64 years old and in adults ages  $\geq 65$  years old.

See the abstract in JID, [April 1, 2015](#).

#### **Obesity Raises Complications from Influenza Infection**

- Obesity was noted as a risk factor for complications from pandemic H1N1 infection in 2009. Obesity also aggravates the effect of seasonal influenza on respiratory mortality.
- Priority for influenza vaccine should be considered for obese people to decrease the burden of influenza.

See the article in CID, [May 15, 2015](#).

## **VACCINE SAFETY**

### **FDA Sentinel Study Finds No Association with 4vHPV Vaccine and Blood Clots**

- The Food and Drug Administration (FDA) evaluated the risk of venous thromboembolism (VTE) in more than 650,000 females aged 9 through 26 years of age during 2006-2013 following more than 1.4 million doses of four-valent human papillomavirus vaccine (4vHPV).
- The study did not identify any evidence of an increased risk of VTE in the 1–28 days following any of the 3 doses of 4vHPV vaccine.

For more information, see the [FDA website](#).

### **Another Large Study Again Shows No Link between MMR and Autism**

- A retrospective cohort study involving 95,727 children and their older siblings was done to evaluate if there were any relationship between autism and the measles-mumps-rubella (MMR) vaccine.
- Receipt of the MMR vaccine was not associated with a higher risk of autism spectrum disorder (ASD) at any age nor was there evidence that receipt of one or two doses of MMR vaccine was linked to a higher risk of ASD among children whose older siblings had ASD.

See the article in the *Journal of the American Medical Association* (JAMA), [April 21, 2015](#).

## **RESOURCES**

### **MMR Recipients Are Not Contagious to Other People**

- Although MMR viruses are live-attenuated viruses, they are not transmitted from the vaccinated person to other people.

See the CDC Question and Answer Document on Measles under “[Precautions and Possible Reactions](#).”

### **Varicella Vaccine Recipients Are Not Potentially Contagious unless They Develop a Rash**

- Transmission of varicella vaccine virus is a rare event. It appears that transmission occurs mainly and perhaps only when the vaccinee develops a rash.
- If a child develops a rash up to a month after varicella vaccination, the rash could possibly be due to the varicella vaccine. If so, it is recommended that close contact with persons who do not have evidence of varicella immunity and who are at high risk of complications of varicella (such as immunocompromised persons) be avoided until the rash has resolved.

See CDC’s *Epidemiology and Prevention of Vaccine-Preventable Diseases* (The Pink Book), 13th Edition, [page 373](#), under “Transmission of Varicella Vaccine Virus.”

### **Information about International Travel Vaccines**

- Travel-location specific information can be found in the Centers for Disease Control and Prevention’s book on [Health Information for International Travel](#). The current 2014 edition will soon be replaced by the 2016 edition at this same link.
- Travel-related vaccines and other health-related recommendations depend on the [locations](#) where the person will be traveling.

### **Where to Get International Travel Vaccines in Arizona**

- The Centers for Disease Control and Prevention [lists](#) over 200 sites in Arizona that are certified yellow fever vaccination sites. Many of these sites can also provide other travel-related vaccines and travel information.
- The list of certified yellow fever vaccination sites includes travel clinics, private practitioners, pharmacies, occupational health centers, and some county health departments. Call ahead to find out what vaccines and services are available.
- Medical insurances that cover routinely-recommended vaccines may not cover the cost of travel-specific vaccines.
- In addition to the travel-related vaccines, international travelers should receive all of their [routinely recommended vaccines](#).

### **Mobile App to Educate Parents about Vaccines**

- The Children’s Hospital of Philadelphia’s Vaccine Education Center has produced an app for Apple and for Android devices to provide the public with [information](#) about the science, safety, and importance of vaccines.

### **Corrected AAP Policy Statement—Immunization for *Streptococcus pneumoniae* Infections in High-Risk Children**

- An error occurred in the American Academy of Pediatrics (AAP) policy statement “Immunization for *Streptococcus pneumoniae* Infections in High-Risk Children” published in the December 2014 issue of *Pediatrics*.
- In Table 1, the rows were incorrectly formatted. In the Condition column, the row for “Congenital asplenia or splenic dysfunction” should have an X under “Recommended” for PCV13 and should have an X under “1 Dose” and “Repeated Dose” for PPSV23.
- The electronic version of the statement that is posted online has been [corrected](#).

The notice of correction is in *Pediatrics*, [May 2015](#).

- Please feel free to distribute ADHS’ *Arizona Vaccine News* to any of your partners who may be interested. Past issues of *Arizona Vaccine News* can be found at: <http://www.azdhs.gov/phs/immun/vacNews.htm>