



ARIZONA DEPARTMENT  
OF HEALTH SERVICES

**Arizona Vaccine News**

Karen Lewis, M.D.

Medical Director

Arizona Immunization Program Office

January 4, 2017

Douglas A. Ducey | Governor    Cara M. Christ | MD, MS, Director

150 North 18th Avenue, Suite 120, Phoenix, AZ 85007-3247    P | 602-364-3630    F | 602-364-3285    W | azdhs.gov

*Health and Wellness for all Arizonans*

Newsletter Topics

**VACCINE NEWS**

- **Two dose HPV Vaccine Is Now Official CDC Policy for 9-14 Year Olds**
- **Measles Infection Raises the Risk of Late Lethal Measles Brain Disease**
- **Ring Vaccination with Ebola Vaccine Is 100% Effective**

**INFLUENZA AND INFLUENZA VACCINES**

- **Effectiveness of Vaccine in Preventing Hospitalizations in Older Adults, U.S., 2010–11**
- **U.S. Pregnant Women’s Influenza Vaccine Coverage Showing Some Improvement**

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

- **Unvaccinated Adults Cost the U.S. an Estimated \$7 Billion a Year**
- **All HIV-Infected Patients  $\geq$  2 Months Old Need Quadrivalent Meningococcal Vaccines**
- **Worldwide Measles Cases and Deaths Decreasing Due to Measles Vaccination Efforts**
- **Maternal Prenatal Tdap Gives Infants Better Protection than Maternal Postnatal Tdap**
- **Expert Review Article of Pertussis in Young Infants Throughout the World**
- **HPV Vaccine Protects Individuals and Gives Herd Immunity**

**RESOURCES**

- **Pregnant Women and Vaccinations: Resources for Education (CDC)**
- **Vaccines and Vaccine-Preventable Diseases PowerPoint Slide Sets (IAC)**
- **MMR, DTaP and Varicella Vaccine Coverage in U.S. and AZ Kindergarten Children, 2015**
- **Vaccine Coverage in U.S. and AZ Children Ages 19-35 Months, 2015**

**VACCINE SAFETY**

- **Acute Demyelinating Events after Vaccines**
- **National Vaccine Injury Compensation Program**



## **VACCINE NEWS**

### **Two dose HPV Vaccine Is Now Official CDC Policy for 9-14 Year Olds**

- The 2-dose human papillomavirus (HPV) vaccine schedule is now recommended by the Centers for Disease Control and Prevention (CDC) for patients who start HPV vaccination at ages 9-14 years and who are not immunocompromised.
- The 2-dose series should be separated by 6-12 months with a minimum interval between the two doses of 5 months.
- The previously recommended 3-dose series should still be used for 15-26 year olds and for patients 9-26 years old who are immunocompromised.
- 9vHPV may be used to continue or complete a series started with another HPV vaccine.

See the article in *Morbidity and Mortality Weekly Report* (MMWR), [December 16, 2016](#).

### **Measles Infection Raises the Risk of Late Lethal Measles Brain Disease**

- Subacute sclerosing panencephalitis ([SSPE](#)) is a progressive and lethal neurological disorder caused by measles virus infection.
- There is no cure for SSPE. SSPE is prevented by measles vaccination.
- The risk of SSPE is about 1 in 1,700 in children who are under 5 years old when they are infected with measles, and about 1 in 600 in children infected under 1 year old.
- See the [press release](#) describing the study presented during the October 2016 meeting of the Infectious Diseases Society of America.

### **Ring Vaccination with Ebola Vaccine Is 100% Effective**

- A recombinant Ebola vaccine expressing the glycoprotein of a Zaire Ebolavirus (rVSV-ZEBOV) was studied in the west African country of Guinea.
- Contacts of patients with newly confirmed Ebola virus infection, or people who were contacts of these contacts (making a ring of vaccinated contacts around the case), were randomized to receive vaccine immediately after exposure or not until 21 days after exposure.
- In the 3,775 people who were vaccinated immediately after exposure, there were no cases of Ebola virus disease that occurred 10 days or more after vaccination (100% efficacy). In contrast, there were 19 cases of Ebola virus disease in the delayed vaccination group.

For more details, see the article in *Lancet*, [December 22, 2016](#).

## **INFLUENZA AND INFLUENZA VACCINES**

### **Effectiveness of Vaccine in Preventing Hospitalizations in Older Adults, U.S., 2010–11**

- During 2010–2011, seasonal influenza vaccination reduced the risk of influenza-associated hospitalizations among adults aged  $\geq 50$  years by  $>50\%$ .
- Influenza vaccination was effective in preventing influenza-associated hospitalizations even in persons aged  $\geq 75$  years.

See the abstract in *Clinical Infectious Diseases* (CID), [November 15, 2016](#)



### **U.S. Pregnant Women's Influenza Vaccine Coverage Showing Some Improvement**

- Seasonal influenza vaccine is recommended for all women who will be pregnant during influenza season for their own protection and the protection that it provides their infants for several months after birth.
- Maternal influenza vaccine coverage was 17% in the 2005–06 influenza vaccination season. It rose to 41% by the 2013–14 season.
- During the 2015–16 influenza season, influenza vaccine receipt in pregnant women depended on the health care provider's outreach:
  - 63% receipt if the health care provider recommended and offered influenza vaccination.
  - 38% receipt if the provider recommended it but did not provide it.
  - 13% receipt if the provider neither recommended it nor offered it.

See the article in *Morbidity and Mortality Weekly Report* (MMWR), [December 9, 2016](#).

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

#### **Unvaccinated Adults Cost the U.S. an Estimated \$7 Billion a Year**

- Ten vaccine-preventable diseases were analyzed as to their estimated cost in the United States in 2015. The analysis included inpatient and outpatient care, cost of medication and the value of productivity lost from time spent seeking care.
- Influenza was the most costly vaccine-preventable disease, accounting for nearly \$5.8 billion in health care costs and lost productivity.
- Meningococcal and pneumococcal disease was associated with nearly \$1.9 billion in costs, while herpes zoster (shingles) was estimated to have cost about \$782 million.

See the article in *Health Affairs*, [November 2016](#).

#### **All HIV-Infected Patients $\geq$ 2 Months Old Need Quadrivalent Meningococcal Vaccines**

- Human immunodeficiency virus (HIV) infected persons are at increased risk of invasive meningococcal disease. All HIV-infected persons  $\geq$  2 months old need meningococcal quadrivalent conjugated immunization.
- HIV-infected children 2 months-23 months should receive Menveo<sup>®</sup> (MenACWY-CRM) in accordance with the age-appropriate, licensed, multidose [schedule](#).
- Persons  $\geq$  2 years with HIV infection who have:
  - Not been previously received a quadrivalent meningococcal vaccine should receive 2 doses of either Menveo<sup>®</sup> or Menactra<sup>®</sup> (MenACWY-D) at least 8 weeks apart.
  - Previously received one dose of meningococcal conjugate vaccine should receive a second dose at the earliest opportunity, provided at least 8 weeks has passed since the first dose.
- After completion of the initial doses of meningococcal vaccines, HIV-infected persons need [booster doses](#) of meningococcal conjugate vaccine throughout life.

For more details, see *Morbidity and Mortality Weekly Report* (MMWR), [November 4, 2016](#).



### **Worldwide Measles Cases and Deaths Decreasing Due to Measles Vaccination Efforts**

- During 2000–2015, increased measles vaccine coverage worldwide contributed to a 75% decrease in reported measles cases and a 79% reduction in estimated deaths from measles.
- Measles vaccination during this period is estimated to have prevented 20.3 million deaths.
- In 2015, an estimated 134,200 deaths worldwide from measles still occurred.

See the [article](#) in MMWR, November 11, 2016.

### **Maternal Prenatal Tdap Gives Infants Better Protection than Maternal Postnatal Tdap**

- Prenatal tetanus, diphtheria, and acellular pertussis vaccination (Tdap) of pregnant women is 85% more effective than postpartum maternal vaccination at preventing pertussis in infants less than 8 weeks of age.
- Tdap receipt at 27–36 weeks gestation is optimal.

See the article in CID, [January 1, 2017](#).

### **Expert Review Article of Pertussis in Young Infants Throughout the World**

- The source of pertussis in young infants is most often a family member with a cough.
- At first, young infants with pertussis infection will only have a runny nose, sneezing, a mild cough, and no fever.
- The illness progresses with increased coughing spells, worsening severity of coughing, gagging, gasping, eye bulging, bradycardia, cyanosis, vomiting, and apnea.
- Diagnosis is based on culture/polymerase chain reaction and the presence of high white blood cell count with a large predominance of lymphocytes.
- Deaths relate to high white cell counts, pulmonary hypertension, and pneumonia.

See the entire review article by Dr. James D. Cherry in CID, [December 2016](#), supplement 4.

### **HPV Vaccine Protects Individuals and Gives Herd Immunity**

- Sexually experienced, 13 through 26-year-old females were followed for HPV vaccination and HPV prevalence from 2006–2014.
- HPV vaccination rates increased from 0% to 71.3%.
- Vaccine-type HPV prevalence changed from 34.8% to 8.7% (75.0% decline).
  - In vaccinated participants, the vaccine-type HPV prevalence decreased from 34.9% to 3.2% (90.8%), showing high vaccine efficacy.
  - In unvaccinated participants, the vaccine-type HPV prevalence declined from 32.5% to 22.0% (32.3%), suggesting herd protection.

See the [abstract](#) in CID, November 15, 2016.

## **RESOURCES**

### **Pregnant Women and Vaccinations: Resources for Education (CDC)**

- One page [guide](#) to Maternal Vaccination before, during, and after pregnancy.
- [Webpage](#) with fact sheets, infographics, flyers, and posters.



**Vaccines and Vaccine-Preventable Diseases PowerPoint Slide Sets (IAC)**

Immunization Action Coalition (IAC) has developed slide sets on immunization issues and vaccine-preventable diseases. These presentations include:

- Adolescent Immunizations.
- Common Immunizations Myths and Misconceptions.
- A Photo Collection of Vaccine-Preventable Diseases.
- Vaccination Errors and How to Prevent Them.

See the presentations in pdf documents and find links to request the PowerPoint slide sets at [http://www.immunize.org/resources/res\\_powerpoint.asp](http://www.immunize.org/resources/res_powerpoint.asp).

**MMR, DTaP and Varicella Vaccine Coverage in U.S. and AZ Kindergarten Children, 2015**

|           | MMR<br>2 doses | DTaP<br>5 doses | Varicella<br>1 dose |
|-----------|----------------|-----------------|---------------------|
| US Median | 94.6%          | 94.2%           | 96.1%               |
| Arizona   | 94.2%          | 94.2%           | 96.7%               |

See MMWR, [October 7, 2016](#), pp. 1057-1064.

**Vaccine Coverage in U.S. and AZ Children Ages 19-35 Months, 2015**

|         | MMR<br>≥ 1 dose | DTaP<br>≥ 1 Dose | Hepatitis B<br>Birth dose | Hepatitis A<br>≥ 2 doses | Rotavirus | Combined<br>vaccine series |
|---------|-----------------|------------------|---------------------------|--------------------------|-----------|----------------------------|
| US      | 91.9%           | 84.6%            | 72.4%                     | 59.6%                    | 73.2%     | 72.2%                      |
| Arizona | 90.6%           | 83.7%            | 78.0%                     | 58.6%                    | 75.1%     | 72.3%                      |

See MMWR, [October 7, 2016](#), pp. 1065-1071.

VACCINE SAFETY

**Acute Demyelinating Events after Vaccines**

- There have been case reports of transverse myelitis (TM) or acute disseminated encephalomyelitis (ADEM) occurring after vaccination, but a causal association has not been established.
- Using a case-control study to examine all cases of TM and ADEM in the [Vaccine Safety Datalink](#), an excess risk of TM and ADEM was calculated for each vaccine.
- After examining nearly 64 million vaccine doses, only 7 cases of TM and 8 cases of ADEM were vaccinated during a period where the case had received a vaccine 5–28 days prior to their onset of symptoms.
- There was no statistically significant elevated risk of immunization before the onset TM.
- For ADEM, there was no statistically significant increased risk following any vaccine except for Tdap (adolescent and adult tetanus, reduced diphtheria, acellular pertussis) vaccine.
  - This possible association of ADEM with Tdap vaccine is not likely to be more than 1.16 additional cases of ADEM per million vaccines administered.

See the [article](#) in CID, December 1, 2016.



### **National Vaccine Injury Compensation Program**

- The National Childhood Vaccine Injury [Act](#) of 1986 created the National Vaccine Injury Compensation Program (NVICP), a no-fault alternative to the traditional legal tort system. It provides compensation to people found to be injured by certain vaccines.
- The NVICP [covers most vaccines](#) given routinely to children in the US.
- A [Vaccine Injury Table](#) lists the illnesses, disability, injury or conditions covered by the NVICP and the associated time period of the events after vaccination.
- Each health care provider and vaccine manufacturer is [required to report](#) the occurrence of any event set forward in the Vaccine Injury Table within 7 days of administration of any vaccine in the table (or within a longer period that is specified in the table).
- Reporting can be done through a report to the Vaccine Adverse Event Reporting System ([VAERS](#)). (Note: If the online VAERS reporting link does not open, try another browser besides Internet Explorer).
- Any person who received a covered vaccine and believes that he or she was injured as a result, can file a petition to the [NVICP](#).
- In most cases, all [petitions](#) must be filed within 3 years after the first symptom of an alleged vaccine injury, or within 2 years of a death and 4 years after the first symptom of an alleged vaccine injury that resulted in death.
- For more details on VAERS, see [chapter 21](#) of CDC's Manual for Surveillance of Vaccine-Preventable Diseases.

- Please feel free to distribute ADHS' *Arizona Vaccine News* to any of your partners who may be interested. If you wish to unsubscribe, email [karen.lewis@azdhs.gov](mailto:karen.lewis@azdhs.gov). Past issues of *Arizona Vaccine News* and the Arizona Immunization Program Office's *Immunizations* newsletter are at <http://www.azdhs.gov/phs/immun/vacNews.htm> .