



## ***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)

JANICE K. BREWER, GOVERNOR  
WILL HUMBLE, DIRECTOR

### **Arizona Vaccine News**

**Karen Lewis, M.D.**

**Medical Director**

**Arizona Immunization Program Office**

**August 28, 2014**

#### Newsletter Topics

##### **VACCINE NEWS**

- Updated AAP Recommendations on the Use of Meningococcal Vaccines
- New Polio Vaccine Recommendations for International Travelers

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

- Influenza Vaccine Recommendations for 2014-2015 Season
- Influenza Vaccination in Child Care Lowers Pediatric Hospitalizations
- Influenza Vaccination Decreases Life-Threatening Illnesses in Children
- Pregnant Women Protected by Influenza Vaccine

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

- Cost Effectiveness of Vaccines
- Guidelines for Vaccination of the Immunocompromised Host
- *Haemophilus influenzae* type b (Hib) Vaccination in Special Populations
- Vaccine Financing Issues
- Pertussis Vaccines Protect Baboons against Disease but Not Infection and Transmission

##### **ARIZONA DEPARTMENT HEALTH SERVICES (ADHS) UPDATE**

- Arizona Vaccine Coverage and Exemption Rates 2013-2014

##### **VACCINE SAFETY**

- Vaccines Are Not Associated with Autism
- Updated Literature Review Reinforces the Safety of Vaccination
- Amount of Vaccine Antigen Exposure in Early Childhood Not Linked to Adverse Neurological Outcomes

## **RESOURCES**

- **You Are the Key to Cancer Prevention: On-line CDC CME course on HPV Vaccine**
- **American Academy of Pediatrics (AAP) Provides Refusal to Vaccinate Documents**
- **Reminder to Report Serious Adverse Events after Vaccines**

## **VACCINE NEWS**

### **Updated AAP Recommendations on the Use of Meningococcal Vaccines**

- The American Academy of Pediatrics (AAP) has updated its meningococcal vaccine recommendations to include guidance on use of meningococcal vaccines in infants.

See [Pediatrics](#), August 2014.

### **New Polio Vaccine Recommendations for International Travelers**

- The World Health Organization (WHO) has declared four countries to be infected with wild polio virus (WPV) and exporting WPV (Pakistan, Syria, Equatorial Guinea and Cameroon). An additional six countries have been declared by WHO to be infected with wild polio (Afghanistan, Ethiopia, Iraq, Israel, Nigeria, and Somalia).
- U.S. resident patients who will travel to or reside in affected countries for >4 weeks may need to show evidence of recent polio vaccine (within 12 months of travel) when they depart from countries with active poliovirus transmission.
- Polio vaccine receipt should be documented on WHO's [International Certificate of Vaccination or Prophylaxis](#).

For more in-depth details as to the impact of WHO's new travel recommendations, see *Morbidity and Mortality Weekly Report* ([MMWR](#)), July 11, 2014.

## **INFLUENZA AND INFLUENZA VACCINES**

### **Influenza Vaccine Recommendations for 2014-2015 Season**

- The 2014-2015 influenza vaccine will contain the same strains as the 2013-2014 vaccine, but everyone six months and over still needs annual influenza vaccination.
- The use of live-attenuated influenza vaccine (LAIV) in healthy children 2-8 years old is preferred if it does not delay vaccination.
- The article contains updated algorithms for the number of vaccine doses needed for children 6 months-8 years old, and influenza vaccination in egg-allergic patients.

For more details, see [MMWR](#), August 15, 2014.

### **Influenza Vaccination in Child Care Lowers Pediatric Hospitalizations**

- In September 2010, Connecticut (CT) implemented regulations that children 6-59 months must receive at least 1 dose of influenza vaccine each year to attend a licensed child care program.
- Influenza vaccination rates in CT children 6-59 months increased from 67.8% in the 2009-10 influenza season to 84.1% in the 2012-13 season.
- CT had a 12% decrease in hospitalizations in children  $\leq 4$  years old between the 2007-08 influenza season to the 2012-13 influenza season.

See [MMWR](#), March 7, 2014.

### **Influenza Vaccination Decreases Life-Threatening Illnesses in Children**

- Compared to unvaccinated children, children who were fully vaccinated were 74% less likely to be admitted to a pediatric intensive care unit (PICU) for influenza.
- One dose of influenza vaccine among children for whom 2 doses were recommended was not protective against PICU admission for influenza.

For more details, see the abstract at [Journal of Infectious Diseases](#), September 1, 2014.

### **Pregnant Women Protected by Influenza Vaccine**

- Influenza vaccination reduced the risk of acute respiratory illness associated with laboratory-confirmed influenza among pregnant women by one-half during the 2010–2011 and 2011–2012 seasons, similar to influenza vaccine effectiveness among all adults during these seasons.

See the abstract in [Clinical Infectious Diseases](#) (CID), February 15, 2014.

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

### **Cost Effectiveness of Vaccines**

- Routine childhood immunization among members of the 2009 U.S. birth cohort is projected to prevent ~42,000 early deaths and 20 million cases of disease.
- The net savings of vaccination is projected to be \$13.5 billion in direct costs and \$68.8 billion in total societal costs, respectively.

See the full article in [Pediatrics](#), May 2014.

### **Guidelines for Vaccination of the Immunocompromised Host**

- The Infectious Disease Society of America (IDSA) has published extensive clinical practice guidelines for the vaccination of immune compromised patients.

For full details, see the article in [CID](#), February 1, 2014.

### ***Haemophilus influenzae* type b (Hib) Vaccination in Special Populations**

- The Centers for Disease Control and Prevention (CDC) has updated its recommendations for use of Hib vaccines in special populations including:
  - Asplenia
  - Elective splenectomy
  - Chemotherapy
  - Radiation therapy
  - Hematopoietic stem cell transplant
  - HIV
  - American Indians/Alaska Natives
  - Children < 24 months with invasive disease
  - Preterm infants
  - Immunoglobulin deficiency
  - Early complement deficiency

For full details, see [Morbidity and Mortality Weekly Report](#) (Recommendations and Reports), February 28, 2014.

## **Vaccine Financing Issues**

- Most primary care physicians are dissatisfied with payment from third-party payers for vaccine purchase and administration.
- 10% of primary care physicians have seriously considered not providing any pediatric vaccines to privately insured patients.
- Some providers are telling parents that will have to pay the difference between what insurers pay and what the vaccine-related costs are to the provider.

See the abstract in [Pediatrics](#), March 2014.

## **Pertussis Vaccines Protect Baboons against Disease but Not Infection and Transmission**

- Baboons were placed in four groups to study their immune response to *Bordetella pertussis* (BP) and pertussis vaccines:
  1. Unvaccinated and uninfected;
  2. BP infected and recovered;
  3. Immunized at 2, 4 and 6 months of age with whole cell pertussis vaccine (DTwP),
  4. Immunized at 2, 4, and 6 months of age with acellular pertussis vaccine (DTaP).
- At 7 months, all four groups had BP inoculated into their noses.
  1. The unvaccinated baboons became sick and had nasal shedding of BP for 30 days.
  2. The previously BP-infected baboons did not become ill and did not shed BP.
  3. The DTwP-vaccinated baboons did not get sick, but shed BP for 18 days.
  4. The DTaP-vaccinated baboons did not get sick, but shed BP for 35 days, and readily transmitted BP to unvaccinated baboons.
- Pertussis vaccination prevented symptoms of BP infection, but did not stop colonization and transmission. It is possible that the switch from DTwP to DTaP in the U.S. may be contributing to the current increase of BP infections.

For the abstract and figures, see [Proceedings of the National Academy of Sciences of the United States](#), January 14, 2014.

## **ARIZONA DEPARTMENT HEALTH SERVICES (ADHS) UPDATE**

### **Arizona Vaccine Coverage and Exemption Rates 2013-2014**

- Vaccine coverage rates and exemption rates for child care facilities, kindergarten, and 6<sup>th</sup> grade for the 2013-2014 school year have been [posted](#) on the ADHS website.
- Vaccine coverage rates remain high. However, rates vary by vaccine and by county.
- Arizona continues to have increasing religious and personal belief vaccine exemptions: [Child care](#): 4.1%; [Kindergarten](#): 4.7%; [6<sup>th</sup> grade](#): 4.7%

## **VACCINE SAFETY**

### **Vaccines Are Not Associated with Autism**

- Australian researchers performed meta-analysis of five cohort studies and five case-control studies.
- Their results indicated that vaccinations are not associated with the development of either autism or autism spectrum disorder.
- Neither components of vaccines (thimerosal or mercury) nor the receipt of multiple vaccines (MMR) were associated with the development of either autism or autism spectrum disorder.

For the full article, see [Vaccine](#), June 17, 2014.

### **Updated Literature Review Reinforces the Safety of Vaccination**

- The evidence continues to be strong that MMR vaccine is not associated with autism.
- There is no link of childhood leukemia with MMR, DTaP, Td (tetanus), Hib and hepatitis B vaccines.
- Diabetes mellitus is not associated with the diphtheria, tetanus, and acellular pertussis vaccine.
- Multiple sclerosis is not associated with the hepatitis B vaccine.
- Varicella vaccine can cause complications in immune compromised patients.
- Rare serious adverse events after immunization include intussusception after rotavirus vaccine and febrile seizures after MMR vaccine.

For full details, see [Pediatrics](#), August 2014.

### **Amount of Vaccine Antigen Exposure in Early Childhood Not Linked to Adverse Neurological Outcomes**

- No adverse associations were found between the number of vaccine antigens in the first two years of life and later neurological disorders.
- Children between 7–10 years old were tested for neuropsychological problems related to intellectual function, speech and language, verbal memory, attention, achievement and behavior regulation.
- On average, children received 7,266, 8,127, and 10,341 vaccine antigens by ages 7, 12, and 24 months respectively. The number of vaccine antigens was not associated with any neuropsychological outcomes. However, children who had received higher vaccine antigen counts up to 24 months performed better on attention and executive function tests.

For the abstract, see [Pharmacoepidemiology & Drug Safety](#), December 2013.

## **RESOURCES**

### **You Are the Key to Cancer Prevention: On-line CDC CME course on HPV Vaccine**

- Low human papillomavirus (HPV) vaccination rates in the U.S. are leaving boys and girls vulnerable to HPV-related cancers. HPV vaccination could prevent most of these cancers.
- The CDC asks health care providers to make a strong recommendation for HPV vaccination when children are 11 and 12 years old.
- This Continuing Medical Education (CME) presentation has up-to-date information on HPV infection/disease, HPV vaccine, and ways to successfully communicate with patients and their parents about HPV vaccination.

CME credit for [this course](#) is available through 2/26/2016.

### **American Academy of Pediatrics (AAP) Provides Refusal to Vaccinate Documents**

- The AAP form, "Documenting Parental Refusal to Have Their Children Vaccinated," was developed as a resource for pediatricians when talking with parents who are hesitant or refuse to have their children fully vaccinated.
- The documents can be found on the AAP Immunization website in [English](#) and [Spanish](#).
- The English refusal to vaccinate form is also available in [Word](#) format that can be used as a template.

### **Reminder to Report Serious Adverse Events after Vaccines**

- Remember to report to the Vaccine Adverse Event Reporting System (VAERS) about any significant adverse event that occurs after giving a U.S. licensed vaccine, even if you are not sure whether the vaccine caused the adverse event.
  - If a significant adverse event happens after a vaccine, it does not mean there was a cause and effect relationship. However, VAERS reporting provides a national mechanism to look for patterns of unusual or rare adverse events.
  - Report the adverse event by going to the [VAERS website](#) and submitting an electronic report. If you prefer to report by paper, a [VAERS reporting form](#) can be faxed or mailed.
  - The National Childhood Vaccine Injury Act requires healthcare providers to report:
    - Any adverse event listed by the vaccine manufacturer as a contraindication to further doses of the vaccine, or
    - Any adverse event listed in the [VAERS Table of Reportable Events Following Vaccination](#) that occurs within the specified time period after vaccination.
- 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>