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Arizona Vaccine News

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Newsletter Topics

VACCINE NEWS

- **Current Circulating Influenza Viruses Are Similar to 2015-2016 Influenza Vaccines**
- **Rubella Cases Have Decreased Worldwide by 95% Due to Vaccination**

INFLUENZA AND INFLUENZA VACCINES

- **Pregnant Women and Influenza Vaccination in the U.S., 2014-2015**
- **Healthcare Providers and Influenza Vaccination in the U.S., 2014-2015**
- **AAP 2015-2016 Recommendations on Prevention and Control of Influenza**
- **Influenza Vaccination Should Remain Mandatory for All Healthcare Providers**

LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

- **Siblings Increasingly a Source of Pertussis for Infants**
- **Good Antibody Response with MCV4, Tdap, and 9vHPV Given at Same Time**
- **Immunodeficient Patient Still Sheds Oral Polio Vaccine Virus after 28 Years**
- **Israeli Public Health Response Re-eliminated Circulation of Wild Polio**
- **Invasive Pneumococcal Disease Decreases Following Use of PCV13 in Children**

VACCINE SAFETY

- **Vaccinated Infant Rhesus Macaques Show No Behavioral Changes or Neuropathology Consistent with Autism**
- **Deaths Reported to Vaccine Adverse Events Reporting System (VAERS), 1997-2013**
- **No Increase in Febrile Seizures in Children Following Flu Vaccine and/or PCV13**

RESOURCES

- **Free Continuing Medical Education Available through CDC Online Modules**
- **CDC Revamps Vaccine Safety Website**
- **Corrections for the 2015 Edition of CDC's *Epidemiology and Prevention of Vaccine Preventable Diseases***

VACCINE NEWS

Current Circulating Influenza Viruses Are Similar to 2015-2016 Influenza Vaccines

- During May 24–September 5, 2015, a total of 199 viruses collected from the United States and worldwide were antigenically and/or genetically characterized by the Centers for Disease Control and Prevention (CDC).
- The influenza A (H1N1) pdm09 viruses, the influenza A (H3N2) viruses, the B/Yamagata lineage and the B/Victoria lineage influenza B viruses were all antigenically similar to the viral components of the 2015-2016 influenza vaccines.
- The similarity of circulating influenza viruses to the seasonal vaccine antigens suggests that this season's influenza vaccine will be able to produce a good immune response against the upcoming seasonal influenza viruses. However, the effectiveness of each seasonal vaccine cannot be known until actual community protection is measured.

See *Morbidity and Mortality Weekly Report* (MMWR), September 18, 2015.

Rubella Cases Have Decreased Worldwide by 95% Due to Vaccination

- During 2000–2014, reported rubella cases worldwide declined 95%, from 670,894 cases reported in 2000 in 102 countries to 33,068 cases reported in 2014 in 162 countries.
- As of December 2014, countries in the WHO Western Pacific Region, Region of the Americas, European Region, and South-East Asia Region had met rubella control and elimination goals.
- In order to achieve rubella elimination, all countries need a strong commitment achieving and maintaining high rubella vaccine coverage in routine immunization services, and conduct high-quality rubella and congenital rubella syndrome surveillance.

See MMWR, September 25, 2015.

INFLUENZA AND INFLUENZA VACCINES

Pregnant Women and Influenza Vaccination in the U.S., 2014-2015

- During the 2014–15 influenza season, 50.3% of pregnant women were vaccinated before or during pregnancy.
- Women who received a provider offer of vaccination had substantially higher vaccination coverage than those women whose provider did not offer influenza vaccine.
- Barriers to vaccination included women's negative attitudes about the safety and efficacy of influenza vaccination and unfounded concerns that vaccination would cause influenza.

See MMWR, September 18, 2015.

Healthcare Providers and Influenza Vaccination in the U.S., 2014-2015

- Influenza vaccination coverage among healthcare providers (HCPs) during the 2014–15 influenza season was 77.3%.
- Vaccination coverage was highest among physicians, pharmacists, nurse practitioners, physician assistants, nurses, and HCPs working in hospital settings.
- Coverage was lowest among assistants/aides and HCPs working in long-term care settings.
- Offering vaccination at the workplace at no cost was associated with higher vaccination coverage.

See MMWR, September 18, 2015.

AAP 2015-2016 Recommendations on Prevention and Control of Influenza

- The American Academy of Pediatrics (AAP) has published its annual recommendations on influenza vaccination and treatment.

See the article in *Pediatrics*, October 2015.

Influenza Vaccination Should Remain Mandatory for All Healthcare Providers

- Influenza vaccination coverage of healthcare providers (HCPs) has gradually improved in recent years, reaching a high of 75% during the 2013 to 2014 season, but it still remains below the Healthy People 2020 objective of 90%.
- Healthcare–associated influenza creates a financial burden on health care systems and contributes to patient morbidity and mortality.
- Voluntary influenza vaccination programs for HCPs have failed to increase immunization rates to acceptable levels.
- Mandatory influenza immunization programs for HCPs benefit the health of employees, their patients, and members of the community.

See the article in *Pediatrics*, October 2015.

LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

Siblings Increasingly a Source of Pertussis for Infants

- In previous studies, the source of infection for an infant's pertussis was most likely to be the mother. However, this more current study showed that siblings were most likely to be the source of pertussis for infants.
- When a source of infection could be identified, infants were infected 66% of the time by immediate family members: Siblings (35.5%), mothers (20.6%), and fathers (10.0%).
- Waning immunity in older children and adolescents may explain this finding, underlying the importance of maternal immunization during pregnancy.

See the article in *Pediatrics*, October 2015.

Good Antibody Response with MCV4, Tdap, and 9vHPV Given at Same Time

- Giving nine-valent human papillomavirus (9vHPV) vaccine, quadrivalent meningococcal vacccine (MCV4), and adolescent/adult tetanus-diphtheria-and pertussis vaccine (Tdap) at the same time did not interfere with the antibody response to any of these vaccines.
- Injection-site swelling occurred more frequently in the group given the three vaccines all at one time.

See the abstract in *Pediatrics*, September 2015.

Immunodeficient Patient Still Sheds Oral Polio Vaccine Virus after 28 Years

- Immunodeficient individuals are at higher risk of paralysis from oral polio vaccine, and of prolonged shedding of the virus.
- Of 73 cases in immunodeficient patients with vaccine-derived polio virus infection described between 1962 and 2014, only seven involved persisting infections.
- The rare occurrence of people with chronic shedding of oral polio vaccine virus complicates the current efforts to completely eradicate polio virus.

See the article in *PLoS Pathogens*, August 27, 2015. and a National Public Radio article.

Israeli Public Health Response Re-eliminated Circulating Wild Polio

- Wild poliovirus type 1 importation and sustained transmission was detected in Israel in 2013.
- In order to prevent clinical poliomyelitis and achieve polio re-elimination, the public health response included intensified clinical and environmental surveillance activities, an increase in inactivated polio vaccine coverage, and supplemental immunization with a bivalent oral polio vaccine against wild poliovirus types 1 and 3 for children less than 10 years old.
- Environmental surveillance documented a gradual disappearance of wild poliovirus type 1 in the country. No paralytic poliomyelitis cases were detected.
- On April 28, 2015, the World Health Organization again declared Israel as a polio-free country.

See the abstract in *Lancet Infectious Diseases*, October 2015.

Invasive Pneumococcal Disease Decreases Following Use of PCV13 in Children

- The incidence of invasive pneumococcal disease (IPD) in New York City in children younger than 5 years decreased by 69.9% by the end of 2012 following the 2010 introduction of 13-valent pneumococcal conjugate vaccine (PCV13) into the routine childhood vaccine schedule.
- The decrease of IPD was seen in all racial/ethnic groups and among all ages, especially in infants under 12 months old.
- Vaccine-specific serotypes decreased by 82.5%.

See the abstract in *JAMA Pediatrics*, July 2015.

VACCINE SAFETY

Vaccinated Infant Rhesus Macaques Show No Behavioral Changes or Neuropathology Consistent with Autism

- To study whether thimerosal-containing vaccines (TCVs) and/or the measles, mumps, rubella (MMR) vaccine could be involved in the etiology of autism, researchers gave nonhuman primate infants these vaccines.
- No neuronal cellular or protein changes in the cerebellum, hippocampus, or amygdala were observed in animals following the 1990s or 2008 vaccine schedules.
- Analysis of social behavior in juvenile animals indicated that there were no significant differences in negative behaviors between animals in the control and vaccinated groups.
- The study's data indicate that administration of TCVs and/or the MMR vaccine to infant rhesus macaques does not result in neuropathological abnormalities or aberrant behaviors like those found in children with Autism Syndrome Disorder.

See *Proceedings of the National Academy of Science*, October 6, 2015, and a previous review article in *Autism Research and Treatment*, Volume 2013, Article ID 731935.

Deaths Reported to Vaccine Adverse Events Reporting System (VAERS), 1997-2013

- There have been 2,149 deaths after vaccination reported to VAERS between 1997-2013.
- The main causes of death reported after vaccination were consistent with the most common causes of death in the U.S. No concerning safety patterns were noted.

For the article, see CID, September 15, 2015.

No Increase in Febrile Seizures in Children Following Influenza Vaccine and/or PCV13

- No statistically significant increased risk of febrile seizures (FS) was found for the 2010–2011 season trivalent influenza vaccine (TIV) or the 13-valent pneumococcal conjugate vaccine (PCV13), when adjusting for concomitant vaccines.
- A same-day administration of TIV and PCV13 vaccination was not associated with more FS compared with separate-day vaccination of these vaccines.

See the abstract in *Pediatrics*, October 2015.

RESOURCES

Free Continuing Medical Education Available through CDC Online Modules

- CDC online educational modules called "You Call the Shots" that deal with influenza, polio, and diphtheria, tetanus and pertussis vaccines have been recently updated.
- After viewing each module, participants can go to CDC's online learning system to register for and obtain free continuing medical education credit.

CDC Revamps Vaccine Safety Website

- CDC has overhauled its vaccine safety website to ensure a better user experience, no matter what electronic device is being used.
- Parents and consumers can get answers to questions, learn about the safety profile of specific vaccines, and read about systems that ensure vaccine safety.
- Healthcare professionals can get information on how to report adverse events after vaccination, how to talk to patients about vaccine safety, and how to find additional vaccine safety resources.
- Check out the revised and redesigned website.

Corrections for the 2015 Edition of CDC's *Epidemiology and Prevention of Vaccine Preventable Diseases*

- Corrections and clarifications for the 2015 Pink Book can be found on the CDC website.

- Please feel free to distribute ADHS' *Arizona Vaccine News* to any of your partners who may be interested.

- Past issues of *Arizona Vaccine News* and the Arizona Immunization Program Office's *Immunications* newsletter can be found at: http://www.azdhs.gov/phs/immun/vacNews.htm