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Arizona Vaccine News

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VACCINE NEWS

Hastening Efforts to Develop Ebola Vaccines

- Two candidate Ebola vaccines will be available for phase 1 clinical trials soon.
- Both vaccines have demonstrated 100% efficacy in studies in nonhuman primates.
- Even if adequate safety and immunogenicity are demonstrated in the phase 1 studies, vaccines are not expected to be available in substantial quantity until the first quarter of 2015 at the earliest.

See *New England Journal of Medicine* (NEJM), [October 9, 2014](#).

Recommendations to Give Both PCV-13 and PPSV-23 to Adults \geq 65 years old.

- The Centers for Disease Control and Prevention (CDC) recommends that adults 65 years of age or older receive pneumococcal conjugated vaccine (PCV13) *in addition to* the pneumococcal polysaccharide vaccine (PPSV23) that has been recommended for many years for adults over 64 years of age.
- Adults \geq 65 years old who have previously received one or more doses of PPSV23 but have not previously received PCV13 should receive a dose of PCV13. This dose of PCV13 should be given at least 1 year after the previous dose of PPSV23.
- Adults \geq 65 years old who have not previously received pneumococcal vaccine or whose previous vaccination history is unknown should first receive a dose of PCV13, followed in 6-12 months by a dose of PPSV23.
- PCV13 and PPSV23 should not be given at the same time.

See *Morbidity and Mortality Weekly Report* (MMWR), [September 19, 2014](#).

Meningococcal Serogroup B Conjugate Vaccine Wins FDA Approval

- The Food and Drug Administration (FDA) has approved [Trumenba[®]](#), the first *Neisseria meningitidis* serogroup B vaccine, for use in ages 10-25 years old.
- The vaccine is licensed to be given in a three dose series at months 0, 2 and 6.
- It is expected that CDC's Advisory Committee on Immunizations (ACIP) will issue recommendations on the use of Trumenba[®] at its February 2015 meeting.
- Another meningococcal serogroup B conjugate vaccine, Bexero[®], which does not yet have FDA licensure, was used in the United States (US) in 2014 under an Investigational New Drug protocol during meningococcal serogroup B [outbreaks](#) at Princeton University and University of California, Santa Barbara.

Expansion of VariZIG Distribution in the US

- Varicella Zoster Immune Globulin (VariZIG) is recommended for postexposure prophylaxis of varicella in people at high risk for severe disease who lack evidence of immunity to varicella and for whom varicella vaccine is contraindicated.
- There are now two distributors in the US for VariZIG: FFE Enterprises and ASD Healthcare.

See MMWR, [November 21, 2014](#) for telephone numbers and emails.

Arizona Vaccine News, December 15, 2014

INFLUENZA AND INFLUENZA VACCINES

Strong Recommendations from ACOG for Influenza Vaccine in Pregnancy

- The American College of Obstetricians and Gynecologists (ACOG) supports influenza vaccination as an essential element of preconception, prenatal, and postpartum care because pregnant women are at an increased risk of serious illness due to influenza.
- It is particularly important that women who are or will be pregnant during influenza season receive an inactivated influenza vaccine as soon as it is available.

For the complete ACOG committee report, see *Obstetrics and Gynecology*, [September 2014](#).

LAIV Has a Shorter Expiration Date than IIV

- Inactivated influenza vaccine (IIV) has a standard expiration date of June 30 for any given influenza season (July 1 through June 30 of the following year).
- Live attenuated influenza vaccine (LAIV) generally has an 18 week shelf life.
- Health care providers need to be aware of the short shelf life of LAIV and implement measures to avoid administering expired LAIV.
- Giving expired LAIV appears to be more common from November and onward.
- Although the data do not show a health risk from receiving expired LAIV, the expired dose is not valid, so influenza revaccination is advised. A dose of IIV could be given immediately, or LAIV could be given 28 days or more after the dose of expired LAIV.

See MMWR, [September 5, 2014](#).

LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

Possible Worldwide Eradication of Wild Poliovirus Type 3

- Wild poliovirus type 3 has not been identified in a patient or from environmental samples since November 2012.
- Wild poliovirus type 2 was last identified in a patient in 1999.
- Wild poliovirus type 1 is still being identified and has never been eradicated from the endemic countries of Nigeria, Afghanistan, and Pakistan.

For more information, see MMWR, [November 14, 2014](#).

Protective Effects of Rotavirus Vaccines

- Rotavirus is the most common cause of severe diarrhea among children in the world.
- A review of the literature shows that use of rotavirus vaccines throughout the world has:
 - Reduced all-cause diarrhea by 17%-55%
 - Reduced rotavirus hospitalizations by 49-92%
 - Reduced all-cause diarrheal deaths by 22-50%.

See the abstract in *Clinical Infectious Diseases*, [November 1, 2014](#).

Vaccine Effectiveness from Acellular Pertussis Vaccine (Tdap) Decreases Rapidly

- Tdap vaccine efficacy (VE) was assessed during a pertussis outbreak in 2012.
- VE was 75.3% for Tdap received in 2012, 68.2% for Tdap received in 2011, 34.5% for Tdap received in 2010, and 11.9% for Tdap received during 2008-2009.
- Tdap efficacy decreases with increasing time since receipt.

See the abstract in *Journal of Infectious Diseases*, [September 15, 2014](#).

Tdap Immunization of Parents Protects Infants from Whooping Cough

- Maternal vaccination before pregnancy and a father receiving Tdap \geq 4 weeks before his infant's birth reduced the risk of pertussis in infants < 4 months old by 51%.

See *Pediatrics*, [October 2014](#).

Parents Are More Receptive to MMR Messaging Focused on Benefits to Their Child

- Parents were randomly assigned to four groups to receive:
 1. The CDC's Vaccine Information Statement (VIS) on the Measles/Mumps/Rubella vaccine (MMR).
 2. The MMR VIS and information emphasizing the MMR vaccine's benefits *to their child*.
 3. The MMR VIS and information emphasizing the MMR vaccine's benefits *to society*.
 4. The MMR VIS and information emphasizing benefits *both to their child and to society*.
- Parents reported an increased intent to give their infants an MMR vaccine when they received additional information emphasizing the MMR vaccine's benefits either directly to their child or benefits to both their child and society.
- Emphasizing the MMR vaccine's benefits only to society did not increase parental intentions to give MMR vaccine to their infant.

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

The Importance of Focusing on Measles Control

- Between January and August 2014, more measles has been reported in the US than in the preceding 2 decades.
- Community vaccine coverage needs to be at least 92%-94% to prevent sustained spread of measles because measles is one of the most contagious of the vaccine-preventable diseases.
- A single measles patient infects an average of 12-18 people.

For more information, see NEJM, [October 30, 2014](#).

Prior Zoster Vaccination Protects Adults against Shingles during Chemotherapy

- Approximately 40% of adults develop invasive cancer during their lifetimes, many of whom require chemotherapy.
- Patients aged \geq 60 years who received chemotherapy were studied as to their risk of developing shingles based on past receipt of zoster vaccine.
- The patients' thirty-month cumulative incidence of shingles was 3.28% in the vaccinated group and 5.34% in the unvaccinated group ($p < 0.05$).
- Hospitalization for shingles occurred in 6 unvaccinated patients but not in any vaccinated patients.
- Zoster vaccine has a protective effect against shingles even if vaccine recipients later undergo chemotherapy.

See the [full article](#) and [editorial](#) comments in *Clinical Infectious Diseases*, October 1, 2014.

CDC Reaffirms One Dose of Zoster Vaccine ≥ 60 Years Old

- CDC maintains its current recommendation that herpes zoster vaccine be routinely recommended for adults ≥ 60 years old.
- Although the herpes zoster vaccine in the US is licensed for use among adults ≥ 50 years old, CDC has concerns about its waning efficacy with time. Therefore, adults who receive the zoster vaccine before age 60 years might not be as well-protected at older ages when their risks for shingles and its complications are highest.

See MMWR, [August 22, 2014](#).

Oral Adenovirus Vaccine for Type 4 and Type 7 Now Being Used in the US Military

- From [1971 to 1996](#), an oral adenoviral vaccine was given to US military recruits to protect them from adenoviral infection, pneumonia, and death. The previous manufacturer ceased production of the vaccine, with resurgence in illness due to adenovirus.
- In 2011, the FDA approved a new oral, live-attenuated vaccine for use in military personnel ages 17-50 years old. The [package insert](#) says that there is no data to assess whether this adenoviral vaccine interferes with the immune response to other vaccines.
- [Guidance](#) given by the Military Vaccine Agency says that adenoviruses vaccine types 4 and 7 can be administered simultaneously or at any interval before or after other vaccines, including live vaccines.
- The [package insert](#) also says that people receiving adenovirus vaccine should use proper personal hygiene because *the vaccine viruses can be shed in the stool for up to 28 days*. It instructs vaccine recipients to exercise caution when around children 7 years of age and younger, immunocompromised individuals, and pregnant women during the 28 days after vaccination.

Fewer Adenoviral Respiratory Infections after Restarting Use of Adenoviral Vaccine

- During the 2 years after reintroduction of the adenoviral vaccine, military trainees had a 100-fold decline in adenovirus infections.
- It is estimated that the US military use of adenovirus vaccine prevents about one death, 1100 to 2700 hospitalizations, and 13,000 febrile respiratory illnesses every year due to adenovirus.

See the abstract in *Clinical Infectious Diseases*, [October 1, 2014](#).

Clinical Management of Pediatric Anthrax

- Since *Bacillus anthracis* could potentially be used as a biological weapon, updated guidance has been published on the presentation, diagnosis, therapy and prophylaxis of anthrax.
- In the event of exposure to aerosolized anthrax, antibiotic prophylaxis and a three dose anthrax vaccine series would be used together to prevent infection in potentially exposed people.
- The anthrax vaccine is not approved by the FDA for under 18 years of age. Therefore, if anthrax vaccine were to be needed, children would receive vaccine under an expedited investigational drug process.

See *Pediatrics*, [May 2014](#).

Etiologies of Epilepsy after Vaccinations

- In most cases, genetic or structural defects were the underlying cause of epilepsy in children who developed seizures after vaccination.

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

Strong Provider Recommendations for HPV Vaccine Improves HPV Vaccination Rates

- Effective and ineffective provider-patient conversations about Human Papillomavirus (HPV) vaccination were analyzed with the goal to provide practical tools to improve communication regarding HPV vaccines.
- Strong provider recommendation of HPV vaccine is the key to improving HPV vaccination rates.

See *Pediatrics*, [September 2014](#).

Updated CDC Recommendations on HPV Vaccination

- This report summarizes the epidemiology of HPV and associated diseases, describes the licensed HPV vaccines, provides updated data from clinical trials and postlicensure safety studies, and compiles recommendations from CDC's Advisory Committee on Immunization Practices (ACIP) for use of HPV vaccines.

See MMWR, [August 29, 2014](#).

VACCINE SAFETY

Safety of Vaccines Used for Routine Immunization of US Children

- The US Department of Health and Human Services' Agency for Healthcare Research and Quality requested a literature review to assess the safety of vaccines recommended for routine immunization of children 6 years old and less.
- Literature on the following vaccines were analyzed: DTaP (diphtheria, tetanus, and acellular pertussis), hepatitis A, hepatitis B, *Haemophilus influenzae* type b (Hib), influenza (live attenuated and inactivated), meningococcal (conjugate or polysaccharide), MMR, pneumococcal (conjugate or polysaccharide), and rotavirus.
- The report found that:
 - Measles/mumps/rubella vaccine (MMR) is linked to an increased risk of febrile seizures. However, there is strong evidence that MMR vaccine is not associated with autism.
 - Varicella vaccine can result in complications in immunodeficient people.
 - There is moderate evidence that rotavirus vaccines are associated with intussusception.
- The study concluded that serious adverse events after vaccines are extremely rare and must be weighed against the protective benefits that vaccines provide.

See *Pediatrics*, [August 1, 2014](#).

VACCINE RESOURCES

AAP Spanish and English Refusal to Vaccinate Forms

- The American Academy of Pediatrics has its "Refusal to Vaccinate" form available in both [English](#) and [Spanish](#) for healthcare providers who wish to document parental refusal of vaccines.

Personal Belief Exemptions for Vaccination Put People at Risk

- The Immunization Action Coalition has added to its list of research [articles](#) that show how disease outbreaks occur due to pockets of unvaccinated children in states that allow personal belief exemptions.

Guidance for When a Vaccine Injection Is Given by the Wrong Route

What do you do when an injectable vaccine has been given by the wrong route?

- CDC’s Advisory Committee on Immunization Practices recommends that if injectable vaccines are given by the wrong route that they be counted as *valid* with two exceptions:
 - **Hepatitis B** or **rabies** vaccines that are given by any route other than IM should not be counted as valid and should be repeated.
- In addition, CDC and the manufacturers recommend that a dose of **HPV** vaccine that is given by any route other than IM should be repeated.
- A vaccine that is given intradermally should not be counted as valid and should be repeated—with the exception of intradermal influenza vaccine.

For more information vaccine administration and vaccine errors, see the Immunization Action Coalition “[Ask the Experts](#)” site under “Vaccine Administration Errors.” Additional guidance about vaccine administration errors are discussed in CDC’s *General Recommendations on Immunization*, in the [January 28, 2011](#) issue of the MMWR.

- 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>