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Arizona Vaccine News

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VACCINE NEWS

PCV13 and PPSV23 Needed for Everyone \geq 65 Years Old

- For many years, all adults \geq 65 years old were recommended to receive the twenty-three valent pneumococcal polysaccharide vaccine (Pneumovax[®]23; PPSV23).
- All adults \geq 65 years old now are recommended to also receive the thirteen-valent conjugated pneumococcal vaccine (Prenar[®]13; PCV13) in addition to PPSV23. PCV13 is not recommended for patients \geq 65 years old if the patient has already previously received a dose of PCV13.
- PCV13 is more immunogenic than PPSV23. Therefore, when possible, first give PCV13 and then give PPSV23 after a minimal interval of \geq 8 weeks.
- If PPSV23 has already been given to a patient \geq 65 years old, then the minimal interval between PPSV23 until PCV13 is given should be \geq 1 year.
- Patients \geq 65 years old who have received PPSV23 for some reason before age 65 years need to have a minimum interval of \geq 5 years between the previous PPSV23 and the subsequent final PPSV23 that is recommended for all patients \geq 65 years of age.
- PCV13 and PPSV23 should not be given at the same time.

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

Dengue Vaccine Study Shows Efficacy

- An investigational dengue vaccine made by Sanofi Pasteur was developed by using a yellow fever vaccine, and substituting genes encoding the premembrane and envelope proteins of the yellow fever 17D vaccine virus with those from dengue serotypes 1-4.
- This recombinant, live-attenuated dengue vaccine was tested on children ages 9-16 years old in a three dose series (0, 6 months, 12 months) to assess its protection against symptomatic, virologically confirmed dengue.
- The overall efficacy against any symptomatic dengue disease was 60.8 % in children who received three doses of the vaccine.
- Vaccine recipients had 95.5 % protection against severe dengue and 80.3 % reduction in the risk of hospitalization..

See the [article](#) and [editorial](#) in *New England Journal of Medicine*, January 8, 2015.

Pertussis Epidemic in California in 2014

- The last pertussis epidemic in California occurred in 2010, when approximately 9,000 cases were reported, including 808 hospitalizations and 10 infant deaths.
- During January 1–November 26, 2014, a total of 9,935 cases of pertussis with onset in 2014 were reported, representing the most pertussis cases reported in California in nearly 70 years. As of 1/7/15, there had been 10,831 pertussis cases reported in 2014.
- Of the California infants with pertussis aged $<$ 4 months whose mothers' Tdap immunization histories were known, only 35 (17%) had mothers who reported receiving the recommended tetanus/diphtheria/acellular pertussis vaccine (Tdap) at 27–36 weeks' gestation during their most recent pregnancy.
- Arizona had 498 cases of pertussis in 2014, compared with 1440 cases in 2013.

For more information, see MMWR, [December 5, 2014](#); the California Department of Public Health's [website](#); and the Arizona Department of Health Services' [website](#).

FDA Approves GARDASIL[®] 9 Vaccine

- The Food and Drug Administration (FDA) has licensed the vaccine GARDASIL[®] 9 (HPV9), which contains the same four Human Papillomavirus (HPV) types (6, 11, 16, 18) found in GARDASIL[®] (HPV4), as well as HPV types 31, 33, 45, 52, and 58.
- HPV9 is indicated in girls and women **9 through 26 years** of age for the prevention of cervical, vulvar, vaginal, and anal cancer and precancerous lesions caused by HPV as well as for prevention of genital warts.
- HPV9 is indicated in boys **9 through 15 years** of age for the prevention of anal cancer and for prevention of genital warts.
- HPV4 is still indicated for males 16-26 years old.

See the [FDA news release](#) and the [GARDASIL[®]9 package insert](#).

- There will be a transition period from HPV4 use and HPV9 implementation, pending future recommendations of the Advisory Committee on Immunization Practices (ACIP) and insurance coverage for this new vaccine. The next [ACIP meeting](#) is scheduled for February 25-26, 2015.
- Continue to give HPV4 on schedule while awaiting ACIP recommendations about making the transition from HPV4 to HPV 9, in order to avoid missed HPV vaccination opportunities.

INFLUENZA AND INFLUENZA VACCINES

Estimated Illnesses and Hospitalizations Prevented by Influenza Vaccine in U.S., 2013-14 Season

- In spite of fewer than half of persons ≥ 6 months old being vaccinated against influenza during the 2013-2014 season, the Centers for Disease Control and Prevention (CDC) estimates that influenza vaccination during the 2013-2014 season prevented about 7.2 million illnesses, 3.1 million medically attended illnesses, and 90,000 hospitalizations associated with influenza in the United States (U.S.).
- If the U.S. influenza vaccine coverage had been 70%, the CDC estimates that vaccination would have prevented an additional 5.9 million illnesses, 2.3 million medically attended illnesses, and 42,000 hospitalizations.

See the article in MMWR, [December 12, 2014](#).

School-Located Influenza Vaccinations Reduce Community Risk for Influenza

- The effectiveness of an ongoing “opt in” school-located influenza vaccination program in Alachua County, Florida was evaluated for the prevention of influenza-like illness (ILI) outpatient visits at emergency departments and urgent care centers.
- Influenza vaccination of approximately 50% of 5-17 year-olds in Alachua County reduced their risk of ILI-associated visits, by 79% in 2011-12 and 71% in 2012-13.
- Among all non-school age residents, the estimated indirect effectiveness for preventing ILI was 60% and 36% for 2011-12 and 2012-13, respectively.
- The greatest indirect effectiveness of vaccinating 5-17 year-olds was seen in 0-4 year-olds, reducing their ILI attack rates by 89% in 2011-12 and by 84% in 2012-13.
- The overall effectiveness in preventing ILI among all age-groups was 65% and 46% for 2011-12 and 2012-13, respectively.
- Wider implementation of school-located influenza vaccination programs could significantly reduce the influenza-associated public health burden in communities.

See the article in *PLoS One*, [December 9, 2014](#).

Early Estimates of 2014-2015 Influenza Vaccine Effectiveness

- Laboratory testing in the fall of 2014 showed that most influenza A (H3N2) viruses circulating in the U.S. were antigenically and genetically different from the A (H3N2) component of the 2014–15 Northern Hemisphere influenza vaccine.
- As of January 2, 2015, estimated influenza vaccine efficacy against a medically-attended acute respiratory illness attributable to influenza A and B virus infections was 23%.
- CDC continues to recommend influenza vaccination because the vaccine can still prevent some infections with the circulating A (H3N2) viruses and might prevent serious complications requiring hospitalization. Also, influenza vaccine might protect against other influenza viruses that could circulate later in the season.
- These early vaccine efficacy estimates show the importance of antiviral use in patients with influenza-like illnesses, especially among persons aged ≥ 65 years, young children, and other persons at higher risk for serious influenza-associated complications, regardless of their vaccination status.

See the article in MMWR, [January 16, 2015](#).

LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

Measles Outbreak in California, December 2014-February 2015

- As of February 11, a total of 125 measles cases had been confirmed in U.S. residents connected with a measles outbreak linked to two Disney theme parks. Of these, 110 patients were California residents.
- Among the 110 California patients, 45% were unvaccinated and 43% had unknown or undocumented vaccination status.
- Twelve of the unvaccinated patients were infants too young to be vaccinated.
- Among the 37 vaccine-eligible patients, 67% were intentionally unvaccinated because of personal beliefs, and one was on an alternative plan for vaccination.
- Patients ranged in age from 6 weeks to 70 years with a median age of 22 years.
- Among the 84 patients with known hospitalization status, 20% were hospitalized.
- This outbreak illustrates the continued importance of ensuring high measles vaccination coverage in the United States.

For more details, see the article in MMWR, [February 20, 2015](#).

Vaccine Refusals Cluster Geographically

- Electronic health records among 154,424 children in 13 northern California counties were examined to identify clusters of underimmunization (having missed 1 or more vaccines by 36 months of age) and clusters of vaccine refusal. Five statistically significant clusters of underimmunization among children were identified and mapped.
- The underimmunization rate within clusters ranged from 18% to 23%, and the rate outside them was 11%. Underimmunization with measles, mumps, rubella vaccine and varicella vaccines clustered in similar geographic areas.
- Vaccine refusal also clustered, with rates of 5.5% to 13.5% within clusters, compared with 2.6% outside them.
- Geographic clustering of underimmunized and unimmunized children allows for an increased risk of vaccine-preventable disease outbreaks, as well as increasing barriers for some physician groups to achieve national quality benchmarks for vaccination.

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

Less Childhood Sinusitis and Pneumonia with PCV7 and PCV13 Vaccine Use

- Use of seven-valent (PCV7) and thirteen-valent (PCV13) pneumococcal conjugated vaccines has led to a 66% lower risk of hospitalization for sinusitis and 19% lower risk of hospitalization for pneumonia in children aged 0 to < 2 years when comparing 4 years before and 4 years after vaccine introduction.

See the article in *Pediatrics*, [December 2014](#).

Pneumococcal Vaccine Recommendations for High-Risk Children

- If not previously received, a single dose of PCV 13 should be given to children 6 through 18 years of age who have immunocompromising conditions (including HIV infection), functional or anatomic asplenia (including sickle cell disease), cerebrospinal fluid leaks, or cochlear implants.
 - High-risk children ages 6-18 years old who have been previously immunized with PPSV23 but not PCV13 need a single dose of PCV13 \geq 8 weeks after the preceding PPSV23 dose.
 - High-risk children ages 6-18 years old who have not previously been immunized with PPSV23 should receive a dose of PPSV23 \geq 8 weeks after their previous dose of PCV13.

For more details, see the article in *Pediatrics*, [December 2014](#).

How the World's Pediatricians Can Stop Polio Forever

- Wild-type 1 poliovirus has never been eliminated from Nigeria, Pakistan, and Afghanistan, and it has recently been exported to some surrounding countries.
- No wild-type 2 poliovirus has been detected in the world since 1999, and no wild-type 3 poliovirus has been detected since 2012.
- However, circulating vaccine-derived poliovirus can sometimes cause paralysis and paralysis.
- Oral polio vaccines (OPV) will need to be stopped eventually to stop the circulation of vaccine-associated poliovirus and to protect against vaccine-associated paralysis.
- The World Health Organization recommends that at least one dose of Inactivated Polio Vaccine (IPV) be added to the 3-4 dose OPV schedule in developing countries to allow for safe narrowing of trivalent OPV to bivalent OPV, then to monovalent OPV, and eventually to the discontinuation of OPV use world-wide.

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

VACCINE SAFETY

Childhood Vaccines Do Not Increase Risk of Kawasaki Disease

- Using data from the [Vaccine Safety Datalink](#), a total of 1,721,186 U.S. children aged 0-6 years from seven managed care organizations were followed for a combined 4,417,766 person-years to assess the occurrence of Kawasaki disease after childhood vaccines.
- The rate of verified Kawasaki disease was significantly lower during the 1-42 days after vaccination and 8-42 days after vaccination compared to rates during unexposed periods.
- Analyzing by vaccination category did not identify a subset of vaccines which was solely responsible for this association.
- Childhood vaccinations studied did not increase the risk of Kawasaki disease; conversely, vaccination was associated with a transient decrease in Kawasaki disease incidence.

See the [abstract](#) in *Vaccine*, January 3, 2015.

Influenza A (H1N1) Pandemic 2009 Vaccine Not Associated with Narcolepsy in U.S.

- [Vaccine Safety Datalink](#) data in U.S. patients under 30 years old were examined to see if recipients of the influenza A (H1N1) pandemic 2009 vaccine had an increased risk for narcolepsy. There were 650,995 vaccine recipients analyzed from the 2009-2010 influenza season, and 870,530 analyzed from the 2010-2011 influenza season.
- Influenza vaccines containing the A(H1N1) pandemic 2009 virus strain used in the U.S. were not associated with an increased risk of narcolepsy.

See the [abstract](#) in *Neurology*, November 11, 2014.

RESOURCES

List of Events Following Vaccination that Must Be Reported to VAERS

- Federal law ([42 US Code § 300aa-25](#)) requires health care providers to report to the Vaccine Adverse Event Reporting System ([VAERS](#)) all events that occur after vaccination that are found in the [Reportable Events Table](#) (RET). The following events and associated time periods following vaccination are found in the RET. By law, these events should be reported to VAERS.
 1. Anaphylaxis or anaphylactic shock within 7 days of vaccination
 2. Tetanus-containing vaccine: Brachial neuritis within 28 days
 3. Pertussis-containing vaccine: Encephalopathy or encephalitis within 7 days
 4. Measles, mumps and rubella in any combination: Encephalopathy or encephalitis within 15 days
 5. Rubella containing vaccine: Chronic arthritis starting within 42 days
 6. Measles-containing vaccine:
 - a. Thrombocytopenic purpura within 7-30 days
 - b. Vaccine-strain measles virus infection in an immune deficient recipient within 6 months
 7. Oral Polio Vaccine: *Paralytic* polio in a non-immunodeficient recipient within 30 days, in an immune deficient recipient within 6 months, or in a vaccine-associated community case ((interval after vaccination is not applicable).
 8. Vaccine-strain polio viral *infection*: Occurring in a non-immunodeficient recipient within 30 days, in an immune deficient recipient within 6 months, or in a vaccine-associated community case (interval after vaccination is not applicable).
 9. Inactivated polio-containing vaccine: Anaphylaxis or anaphylactic shock within 7 days
 10. Hepatitis B-containing vaccine: Anaphylaxis or anaphylactic shock within 7 days
 11. Any acute complications or sequelae of above events, including death (interval after vaccination is not applicable).
 12. Any vaccine: Events described in manufacturer's package insert as contraindications to additional doses of vaccine

In addition, healthcare professionals are encouraged to report to [VAERS](#) about any clinically significant or unexpected event (even if it is uncertain that the vaccine caused the event) following any vaccine, whether or not it is an event that is listed on the [RET](#).

IAC Charts Show which Patients Need PCV13 and/or PPSV23

- The Immunization Action Coalition (IAC) has produced charts (reviewed by the CDC) showing recommendations for pneumococcal vaccines based on age and/or risk factors.
 - [Children and adults](#)
 - [Children and adolescents](#)

New CMS Policy Regarding Payment for Medicare Part B Pneumococcal Vaccines

- In the past, the Centers for Medicare Services (CMS) has reimbursed providers for one polysaccharide pneumococcal vaccine (PPSV23) for Medicare B patients ≥ 65 years old.
- In light of ACIP recommendations that adults \geq [65 years old](#) should receive **both** thirteen-valent conjugated pneumococcal vaccine (PCV13) and PPSV23, CMS has made modifications to its Medicare Part B Coverage of Pneumococcal Vaccinations. The policy says:
 - Give an initial pneumococcal vaccine if not previously received under Medicare Part B.
 - A different, second pneumococcal vaccine will also be reimbursed if scheduled **at least one year after the initial Medicare B covered pneumococcal vaccine** (i.e. *at least 11 full months have passed following the month in which the last pneumococcal vaccine was given*).
 - Prior pneumococcal vaccine receipt should be taken into account when choosing which pneumococcal vaccine to begin with under Medicare Part B.
 - This new modified policy is effective for patients who received care on or after September 19, 2014.

For more details, see the CMS website for [downloads](#) on the new policy. Also see Pub. 100-02, Medicare Benefit Policy Manual, chapter 15, section 50.4.4.2 for [complete coverage requirements](#) for Medicare Part B coverage of pneumococcal vaccines.

- 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>