



ARIZONA DEPARTMENT OF HEALTH SERVICES

Arizona Vaccine News

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Health and Wellness for all Arizonans

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VACCINE AND VACCINE-PREVENTABLE DISEASE NEWS

Live-Attenuated Influenza Vaccine and Hepatitis A Vaccine Votes by ACIP

- The Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC) issued new recommendations on vaccines for influenza and hepatitis A during its February 2018 meeting.
 - These [recommendations](#) have been adopted by the Director of the CDC and will become official once they are published in *Morbidity and Mortality Weekly Report* ([MMWR](#)).
- **Influenza vaccine:** For the 2018-2019 influenza season, immunization providers may use live-attenuated influenza vaccine (LAIV) as an option for influenza vaccination for persons for whom it is otherwise appropriate.
- **Hepatitis A vaccine:**
 - Hepatitis A vaccine should be administered to infants aged 6-11 months traveling outside the United States when protection against hepatitis A is recommended.
 - The children will need 2 additional doses of hepatitis A vaccine once they are at least 12 months old.
 - Hepatitis A vaccines should be administered for post-exposure prophylaxis for all persons aged 12 months and older.
 - In addition to hepatitis A vaccine, immune globulin may be administered to persons aged 40 years and older for post-exposure prophylaxis depending on the providers' risk assessment.

New Two Dose Adjuvanted Hepatitis B Vaccine

- Hepelisav-B is a new hepatitis B vaccine with an adjuvant. It is given to adults 18 years and older as a 2-dose series at least 4 weeks apart.
 - However, in the situation where a hepatitis B vaccine series includes a combination of one dose of Hepelisav-B and a hepatitis B vaccine from a different manufacturer, the vaccine series would need a total of three doses of hepatitis B vaccines using appropriate minimum intervals for hepatitis B vaccine three dose schedules.
- CDC has not expressed a preference for any brand of hepatitis B vaccine.

See the article in MMWR, [April 20, 2018](#).



LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

Recombinant Zoster Vaccine (RZV) Preferentially Recommended over Zoster Vaccine Live (ZVL)

- CDC's recommendations on the use of RZV (Shingrix) include:
 - RZV is recommended for immunocompetent adults 50 years and older for the prevention of herpes zoster.
 - Previous recipients of ZVL (Zostavax) can receive RZV. There needs to be a minimum interval of at least 8 weeks between a previous dose of ZVL and the first dose of RZV.
 - RZV is preferred over ZVL due to better efficacy and longer lasting protection.
- RZV is administered intramuscularly as a two dose series, with the 2nd dose at 2-6 months from the first dose.
- RZV causes more local and systemic reactions than ZVL.

For more details, see MMWR, [January 26, 2018](#) and the RZV [package insert](#).

How to Avoid Administration Errors with New Recombinant Zoster Vaccine

- The CDC has received many reports of administration errors with RZV.
- RZV should be refrigerated, given intramuscularly, needs two doses at least 6 months apart, and is recommended for ages 50 years and older.
- In contrast, recommendations for ZVL were that it should be frozen, given subcutaneously, given as a single dose, and not given until age 60 years and older.
- Reconstitution and handling for RZV and ZVL are different.

To avoid errors, see the details in MMWR, [May 25, 2017](#).

Measles in Europe Increased by 400% in 2017

- There were at least 35 deaths and 21,315 cases of measles in Europe in 2017.
- The CDC has issued [travel watches](#) for measles for travelers to England, Greece, Italy, Romania, Serbia, the Ukraine, the Democratic Republic of the Congo, Indonesia, France and the Philippines.
- Before departure from the United States, infants (6 months through 11 months of age) should have 1 dose of MMR vaccine, and adults and children over 1 year of age should have 2 doses of MMR vaccine separated by at least 28 days.
- Measles vaccine coverage rates in Europe are lower than in the United States due to some long-standing anti-vaccine movements.

See the article in the *New York Times*, [February 23, 2018](#).

Third Mumps Vaccine Can Be Used in Outbreaks according to CDC

- Persons previously vaccinated with 2 doses of a mumps virus-containing vaccine who are identified by public health authorities as being part of a group or population at increased risk for acquiring mumps because of an outbreak should receive a 3rd dose of a mumps virus-containing vaccine to improve protection against mumps disease and its related complications.

For more details, see MMWR, [January 12, 2018](#).



Fewer Hospitalizations for Febrile Seizures after Use of Rotavirus Vaccines

- Hospitalizations for febrile seizures in children under 5 years old decreased by 1%–8% after implementation of rotavirus vaccination in the United States.
- The greatest decrease was seen in age groups with a high rotavirus-associated disease burden and during rotavirus infection season.

See the abstract in *Journal of Infectious Diseases* (JID), [February 15, 2018](#).

Current Recommendations on Use of DTaP and Tdap

- The CDC has issued a document that provides:
 - Historical and current epidemiology of pertussis, tetanus, and diphtheria.
 - Current recommendations for use of pertussis, tetanus, and diphtheria vaccines.

For more details, see MMWR, [April 27, 2018](#) (RR-2).

Prevention of Hepatitis B Virus Infections in the United States

- The CDC has issued a report that consolidates previous recommendations on hepatitis B vaccination (pre-exposure and post-exposure dosing) and gives guidance on who needs hepatitis B virus serologic testing.
- The report also gives new guidance for perinatal hepatitis B virus prevention.

For in-depth details on hepatitis B vaccine updated recommendations for all ages, see the article in MMWR, [January 12, 2018](#) (RR-1).

Mandatory Parental Counseling Lowers Vaccine Exemptions

- After Washington State implemented a law requiring parental counseling about the benefits and risks of immunizations and a signed form from a licensed health care provider to obtain a vaccine exemption:
 - There was a 40% relative decrease in exemption rates equating to an absolute reduction of 2.9% in exemptions.
 - Increases in vaccine coverage for all school entrance required vaccines occurred for all vaccines except for hepatitis B vaccine.
 - There was a decline in geographic clustering of vaccine exemptors.

See the article in *Pediatrics*, [January 2018](#).

Children with Autism and Their Siblings Have Lower Vaccine Coverage Rates

- Children with Autism Spectrum Disease (ASD) were significantly less likely to be fully vaccinated compared with children without ASD for vaccines recommended between ages 4 and 6 years.
- Within each age category, vaccination rates were significantly lower among younger siblings of children with ASD compared with younger siblings of children without ASD.
- Parents who had a child with ASD were more likely to refuse at least one recommended vaccine for the child's younger sibling and to limit the number of vaccines administered during the younger sibling's first year of life.

See the article in *JAMA Pediatrics*, [May 2018](#).



Pregnant Women’s Hesitancy to Post-Exposure Rabies Vaccine Leads to Preventable Deaths

- Six deaths due to probable rabies were reported among pregnant and breastfeeding women in Vietnam during 2015-2016.
- None of these six women sought post-exposure prophylaxis (PEP) after dog bites due to the fear of risk to the fetus or breastfed child from PEP.
- Rabies PEP is safe for use among pregnant and breastfeeding women, and should be given to women who have had a possible exposure to rabies.

See the article in MMWR, [March 2, 2018](#).

Historical Reviews of Smallpox Vaccine Development

- Two recent articles describe aspects of the history of the development of smallpox vaccine.
 - “The Myth of the Milkmaid” in NEJM, [February 1, 2018](#).
 - “Revisiting Jenner’s mysteries, the role of the Beaugency lymph in the evolutionary path of ancient smallpox vaccines” in *Lancet Infectious Diseases*, [February 2018](#).

Fatal Yellow Fever in Unvaccinated Travelers to Brazil

- Due to an upsurge of yellow fever in Brazil, [the World Health Organization](#) and the [CDC](#) have broadened guidance for the geographic areas where international visitors need to receive yellow fever vaccine before travel.
- Since January 2018, 10 travel-related cases of yellow fever, including 4 deaths, have been reported in international travelers returning from Brazil. None of the 10 travelers had received yellow fever vaccination.
- Travelers needing yellow fever vaccine should check the CDC website to find which [clinics](#) currently have supplies of yellow fever vaccine.

For more details on the 2018 travel-related cases, see MMWR, [March 23, 2018](#).

HPV Vaccination Decreases Genital Warts in Both Females and Males

- HPV vaccination was begun in females in Sweden in late 2006. Between 2007 and 2011, partial subsidies for the HPV vaccines were given to 13–17 year-old girls resulting in an estimated HPV vaccine coverage of 30% of females but virtually no coverage in males.
- The uptake of HPV vaccine in Sweden allowed for analysis of the incidence of genital warts between 2007-2012 among 15-19 year old, 20-24 year old, and 25-29 year old cohorts.
- Decreases in genital warts occurred in both females and males, with the greatest declines of 19% in females and 17% in males being seen in the youngest cohort (15–19 years old).
- Decreases of genital warts in males lagged 1-2 years after decreases in females, consistent with an indirect protective effect of female HPV vaccination.

See the article in *Vaccine*, [April 5, 2018](#).

Ways to Raise HPV Vaccine Coverage Rates

- A CDC-sponsored supplement of *Academic Pediatrics* discusses aspects of the 10 years of human papillomavirus (HPV) vaccine use in the United States and ways to improve HPV vaccine coverage.

See the many articles dealing with HPV vaccine in *Academic Pediatrics*, [March 2018](#).



INFLUENZA AND INFLUENZA VACCINES

Influenza Increases the Risk of Acute Myocardial Infarction

- Hospital admission for acute myocardial infarction was six times higher during the seven days after laboratory confirmation of influenza infection than in patients who had not recently had influenza infection.
- The incidence of acute myocardial infarction was also elevated (though to a lesser extent than for influenza) after infection with non-influenza respiratory viruses and illnesses that led to testing for respiratory viruses but in which no respiratory virus was identified.

See the article in *New England Journal of Medicine* (NEJM), [January 25, 2018](#).

Influenza Vaccination May Decrease the Risk of Active Tuberculosis in the Elderly

- In a study of 99,982 elderly persons in Taiwan (64,290 vaccinated against influenza and 35,692 unvaccinated) from 2005-2015, there were 1,141 (1.14%) persons who developed active tuberculosis (TB).
- The cumulative incidences of TB were 175.5 cases/100,000 person-years among unvaccinated elderly persons compared to 145.2 cases/100,000 person-years among vaccinated elderly persons.
- The authors postulate that this lower risk of incident tuberculosis among influenza-vaccinated people is likely related to activation of T-cell-mediated immunity.

See the article in *Emerging Infectious Diseases Journal*, [March 2018](#).

High Dose Influenza Vaccine Is More Effective in Senior Patients than Standard Dose Vaccine

- When compared to standard influenza vaccine, high dose influenza vaccine was:
 - 25% better protection against influenza- or pneumonia-associated hospitalization
 - 14% better protection against influenza- or pneumonia-associated outpatient visits
 - 38% better protection against laboratory-confirmed influenza

See the article in JID, [June 1, 2018](#).

Influenza Vaccination of Pregnant Women and Postpartum Women Protects Newborn Infants

- During the 2013-2014 influenza season, maternal influenza vaccination was 58% effective in preventing pediatrician-diagnosed influenza in infants and 73% effective for preventing influenza-related hospitalization in infants.
- Prenatal maternal influenza vaccination was more effective in protecting infants from influenza (61%), while maternal postpartum vaccination still gave protection with an efficacy of 53%.

See the article in JID, [March 15, 2018](#).

How Many Health Care Personnel Still Work while Sick?

- During the 2014-2015 influenza season, 22% of 1,914 health care personnel (HCP) reported an influenza-like illness (ILI) defined as fever and cough or sore throat. Of these, 41% reported working with ILI symptoms (which would put their patients at risk of infection).
- Pharmacists, physicians, and hospital-based HCP had the highest frequency of working while having ILI symptoms.

See the article in the *American Journal of Infection Control*, [November 1, 2017](#).



Influenza Vaccination during Pregnancy—New Official Statement of ACOG

- The American College of Obstetricians and Gynecologists (ACOG) recently updated its recommendations on influenza vaccination in pregnancy.
- In addition to stressing that influenza vaccine is essential for pregnant women, the document provides recommendations for influenza treatment and post-exposure antiviral prophylaxis.

See the ACOG [Committee Opinion](#) from April 2018 for more details.

DO YOU KNOW?

Which Vaccines Can Arizona Pharmacists Give without a Prescription and to Whom?

- Arizona Revised Statutes [§32-1974](#) describe the vaccination authority of certified pharmacists. They must follow official vaccine recommendations of the CDC.
- Pharmacists do not need a prescription to give:
 - All CDC-recommended vaccines to persons 18 years and older unless the vaccine is listed in Arizona Administrative Code [R9-6-1301](#).
 - Influenza vaccine to persons ≥ 3 years old.
 - Booster doses recommended by the CDC for the primary adolescent vaccine series for persons ≥ 13 years old.
 - Vaccines to any person regardless of age during a public health emergency response.
- Pharmacists need a prescription to give the following vaccines:
 - The first dose of vaccines in the primary adolescent vaccine series.
 - CDC-recommended vaccines to children ≥ 6 years old but < 13 years old.
 - Vaccines listed in Arizona Administrative Code [R9-6-1301](#): Japanese encephalitis, rabies, typhoid, yellow fever, and cholera vaccines.

Individual health insurance plans may have restrictions on which pharmacy-administered vaccines they will reimburse for.

RESOURCES

ADHS 2018 Perinatal Hepatitis B Prevention Program Manual

- The Arizona Department of Health Services (ADHS) has updated its Perinatal Hepatitis B Prevention Program [Manual](#) to include electronic reporting mechanisms.
- The manual spells out the responsibilities of obstetricians, hospitals, pediatricians, county health departments, and Arizona Department of Health Services in preventing perinatal hepatitis B infections. It also incorporates new CDC perinatal hepatitis B virus prevention recommendations from the [January 12, 2018](#) issue of MMWR, *Prevention of Hepatitis B Virus Infection in the United States*.

2018 ACIP Recommended Schedules for Children and Adults

- The CDC has published the 2018 ACIP Recommended Immunization Schedule for [children and adolescents](#) 18 years and younger, and for [adults](#).

These schedules were published in MMWR, [February 9, 2018](#).

- Please feel free to distribute ADHS' *Arizona Vaccine News* to any of your partners who may be interested. If you wish to subscribe or unsubscribe, email karen.lewis@azdhs.gov. Past issues of *Arizona Vaccine News* are found at <https://www.azdhs.gov/preparedness/epidemiology-disease-control/immunization/index.php#news>.