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VACCINE NEWS

California Ends Personal-Belief Exemptions for Vaccines

- On June 25, 2015, California becomes the third state to disallow vaccine exemptions based on both religious and philosophical beliefs, allowing for only medical exemptions (West Virginia and Mississippi are the other two states).
- Although individuals are generally permitted to decline medical treatment when it conflicts with their religious beliefs, the First Amendment of the United States Constitution does not require a state to exempt believers from generally applicable laws that protect the health of others.

For more of the legal history of vaccine exemption cases, see the article in *New England Journal of Medicine*, [July 23, 2015](#).

Proposed Revisions to the Vaccine Injury Table of the National Vaccine Injury Compensation Program

- The Secretary of Health and Human Services proposes to amend the Vaccine Injury Table by regulation.
- The Secretary is seeking public comment on the proposed revisions to the Table. Written comments must be submitted on or before January 25, 2016.
- The revisions include additional description of possible side effects from vaccines (primarily live attenuated vaccines), syncope, and a new category called “Shoulder Injury Related to Vaccination.”
- The notice of proposed rule change was printed in the Federal Register, Volume 80, No. 145, July 29, 2015, pp. 45132-45154. The full notice is available [online](#).

Now Available: *CDC Health Information for International Travel, 2016 Edition*

- *CDC Health Information for International Travel* (commonly called the Yellow Book) is published every two years by the Centers for Disease Control and Prevention (CDC) as a reference for those who advise international travelers about health risks.
- The Yellow Book is written primarily for health professionals, but is a useful resource for anyone interested in healthy international travel.
- The Yellow Book is available free [online](#). Copies in book form are available for sale from [Oxford University Press](#) and other major online booksellers (ISBN# 978-0-19-937915-6).

LITERATURE ON VACCINES AND VACCINE-PREVENTABLE DISEASES

California Personal Belief Exemption Clustered in Higher Income Areas

- California schools were mapped to define areas to classify personal belief exemptions (PBE) as high, medium, and low.
- Schools in where there are clusters of high PBE are spatially buffered from schools in low PBE areas by medium PBE schools.
- PBE rates are positively associated with schools that have a higher percentage of white students, charter schools, and private schools.

See the article and the maps in *Pediatrics*, [July 2015](#).

Updated CDC Recommendations for Minimum Intervals between PCV13 and PPSV23

- For immune competent adults ≥ 65 year olds, the minimal interval between a dose of PCV13 and a dose PPSV23 is ≥ 1 year, irrespective of which is given first, although giving PCV13 first is preferable.
- For high risk adults ≥ 65 years old, the minimum interval from a dose of PCV13 until a dose of PPSV23 should be ≥ 8 weeks. The high risk adults are those with:
 - Cerebrospinal fluid leak or cochlear implant.
 - Immune compromise.
 - Anatomical or functional asplenia.
- For high risk adults ≥ 65 years old, the minimum interval from a dose of PPSV23 until a dose of PCV13 remains at ≥ 1 year.

See the article and a table for minimum intervals between PCV13 and PPSV23 based on age group and underlying condition in *Morbidity and Mortality Weekly Report* (MMWR), [September 3, 2015](#).

Many Perinatally HIV-Infected Children Do Not Have Antibodies to MMR Vaccines

- When comparing 428 perinatally HIV-infected children (PHIV) and 221 perinatally HIV-exposed but uninfected children (HEU) who were 7-15 years old and who had received previous MMR vaccination, antibody levels against measles, mumps, and rubella were significantly lower in PHIV children.
- Fifty-seven percent of the PHIV children had measles seroprotection compared with 99% of HEU. Sixty-five percent of PHIV had rubella seroprotection compared with 98% HEU. Fifty-nine percent of PHIV had mumps seroprotection compared with 97% HEU.
- PHIV who received effective combined antiretroviral therapy before measles-mumps-rubella (MMR) immunization were much more likely to have adequate seroprotection.

See the abstract in *Clinical Infectious Diseases* (CID), [September 15, 2015](#).

Pertussis Vaccination Recommendations of the Global Pertussis Initiative (GPI)

- The GPI recommends maternal immunization during pregnancy as the primary strategy to protect infants against pertussis.
- If maternal immunization is not possible, or if families desire additional protective measures for their newborns, then it is recommended that all individuals having close contact with infants < 6 months old be immunized consistent with local health authority guidelines with a high priority on achieving a complete cocoon.
- If a complete cocoon is not possible, then the next priority is vaccination of both parents, followed by the mother only.

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

Additional CDC Guidance for Providers Regarding 9-Valent HPV Vaccine

- In the [March 27, 2015](#) issue of the MMWR, the CDC recommended 9-valent Human Papillomavirus (HPV) vaccine as one of three HPV vaccines that can be used for routine vaccination of females and one of two HPV vaccines for routine vaccination of males.
- CDC has since posted additional information on their website to provide guidance on issues that were not addressed in the March 27, 2015 issue of MMWR but are likely to arise during the transition to 9-valent HPV vaccine use.

See the link to this additional guidance in MMWR, [July 31, 2015](#).

Efficacy and Effectiveness of an Ebola Vaccine in Guinea, West Africa

- The experimental Ebola vaccine was a recombinant, replication-competent vesicular stomatitis virus-based vaccine expressing a surface glycoprotein of Zaire Ebolavirus (rVSV-ZEBOV) given intramuscularly.
- After laboratory confirmation of a new Ebola virus case, clusters of all contacts and contacts of contacts were defined and randomly allocated 1:1 to immediate vaccination or delayed vaccination (21 days later).
- In 90 clusters with a total population of 7651 people, 48 of these clusters (4123 people) were randomly assigned to immediate vaccination with rVSV-ZEBOV, and 42 clusters (3528 people) were randomly assigned to delayed vaccination with rVSV-ZEBOV.
- No new cases of Ebola virus disease were diagnosed in vaccinees from the immediate or delayed groups after 6 days post-vaccination.
- Forty-three serious adverse events were reported after vaccination. One serious adverse event was judged to be causally related to vaccination (a febrile episode in a vaccinated participant, which resolved without sequelae).

For more details, see the [article](#) and an [editorial](#) published in *Lancet*, August 29, 2015..

Trial of Single Dose Tetravalent Live-Attenuated Dengue Vaccine

- Dengue is a rapidly expanding mosquito borne [viral disease](#) which is found in the Western Pacific, Southern and South-east Asia, Africa, and the Americas.
- Symptoms of dengue infection can range from asymptomatic to a non-specific febrile illness to hemorrhage, shock, and organ failure.
- There is currently no licensed vaccine for dengue.
- In a vaccine trial of a live-attenuated dengue vaccine, a single subcutaneous dose was immunogenic for all four dengue serotypes, while a second dose did not provide a significant antibody boost.
- Adverse events following immunization were mild.

See the [article](#) and associated [editorial](#) in *Journal of Infectious Diseases*, September 1, 2015.

World Health Organization (WHO) Position Paper on Use of Hepatitis E Vaccine

- Hepatitis E virus (HEV) is a leading cause of acute viral hepatitis in humans in developing countries due to fecal contamination of drinking water.
- A hepatitis E vaccine (HEV 239 vaccine, Hecolin®) was licensed in China in December 2011 as a 3-dose series for ages ≥ 16 years old, but is not yet available in the United States (U.S.).
- The manufacturer recommends the vaccine for people at high risk of HEV infection, including those involved in animal husbandry, food handlers, students, members of the armed forces, women of childbearing age, as well as travelers to endemic areas.
- At the present time, the [WHO](#) has not made a recommendation on the introduction of the HEV vaccine for routine use in national programs. However, national authorities may decide to use the vaccine based on the local epidemiology.

For more information, see *Weekly Epidemiological Record*, [May 1, 2015](#).

International Strategy to Eliminate Polio Caused by Vaccine-Derived Virus

- No polio cases caused by wild polio virus type 2 (WPV2) have been identified since 1999. Wild polio virus type 3 has not been detected since November 11, 2012.
- Progress in polio control has been assisted through the widespread use of oral poliovirus vaccine (OPV), most commonly trivalent OPV (tOPV), which contains types 1, 2, and 3 live, attenuated polioviruses.
- OPV polioviruses can undergo genetic changes during intestinal replication. Rarely, genetic changes can result in vaccine-derived polioviruses (VDPVs) that are capable of causing paralytic polio. Most of these cases have been due to VDPV2.
- In order to eliminate the risk of paralysis caused by circulating VDPVs (cVDPVs), OPV use will eventually need to be stopped throughout the world.
- The plan is to have OPV serotype 2 be withdrawn from all immunization programs through a global, synchronized replacement of all tOPV with bivalent OPV (bOPV) containing only types 1 and 3 polioviruses. This switch from tOPV to bOPV is scheduled for April 2016.
- In addition, injectable trivalent inactivated poliovirus vaccine (IPV) is being introduced into routine immunization schedules in all countries to reduce the risk for cVDPV2 outbreaks.

See MMWR, [July 3, 2015](#) and WHO's *Weekly Epidemiologic Review*, [July 3, 2015](#).

RESOURCES

Which Vaccines Have to Be Repeated if Given by the Wrong Route?

- Hepatitis B vaccine administered by any route other than the intramuscular route (IM), or in adults at any site other than the deltoid or anterolateral thigh, should not be counted as valid and should be repeated.
- Doses of rabies vaccine administered in the gluteal site should not be counted as valid doses and should be repeated.
- Revaccination is recommended when HPV vaccine is administered by any route other than IM.
- Vaccines should always be given by the recommended route, and steps should be taken to make sure that vaccine administration errors are not repeated, but there are no ACIP recommendations to repeat doses of other vaccines administered by another route. .

See the 2015 *Epidemiology and Prevention of Vaccine-Preventable Diseases* (the Pink Book) under Nonstandard Administration ([pp. 99-100](#)), and MMWR, [January 28, 2011](#) (RR-2), p. 17.

***Immunications* Reports Monthly from the Arizona Immunization Program Office (AIPO)**

- [*Immunications*](#) is a newsletter that provides regular updates from the AIPO. Previously, it was sent out quarterly. It will be changing to monthly in order to give providers more timely information.
- Sign up [here](#) to receive monthly e-mail issues of *Immunications*.

- 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 *Immunications* can be found at: <http://www.azdhs.gov/phs/immun/vacNews.htm>

INFLUENZA VACCINES AVAILABLE IN THE UNITED STATES Summary by Karen Lewis, MD, 8/7/2015						
Manufacturer	Formulation and Number of Strains [§]	Trade name	Ages	How to Give	Grown in chicken eggs	OK to use if egg allergy
Medimmune	LAIV4	FluMist® Quadrivalent	2-49 yo	Intranasal	Yes	No
GSK	IIV4	Fluarix® Quadrivalent	≥ 3 yo	IM	Yes	See note [¶]
GSK (distributor)	IIV4	FluLaval® Quadrivalent	≥ 3 yo	IM	Yes	See note [¶]
Sanofi Pasteur	IIV4	Fluzone® Quadrivalent	≥ 6 mo	IM	Yes	See note [¶]
Sanofi Pasteur	IIV4	Fluzone® Intradermal	18-64 yo	Intradermal	Yes	See note [¶]
BioCSL	IIV3	Afluria®	≥ 9 yo ^Δ	IM	Yes	See note [¶]
			18-64 yo	Jet injector or IM	Yes	See note [¶]
Novartis	IIV3	Fluvirin®	≥ 4 yo	IM	Yes	See note [¶]
Sanofi Pasteur	IIV3	Fluzone®	≥ 6 mo	IM	Yes	See note [¶]
Sanofi Pasteur	IIV3	Fluzone® High Dose	≥ 65 yo	IM	Yes	See note [¶]
Novartis	ccIIV3	Flucelvax®	≥ 18 yo	IM	No*	See note [¶]
Protein Sciences	RIV3	FluBlok®	≥ 18 yo	IM	No [°]	Yes

[§]Abbreviations: LAIV: Live attenuated influenza vaccine. IIV: Inactivated influenza vaccine. ccIIV: Cell culture inactivated influenza vaccine. RIV: Recombinant influenza vaccine. The number in the abbreviation shows how many influenza A and B strains (3=2A,1B; 4=2A,2B). IM: Intramuscular.

[¶] Permitted if patient experienced ONLY hives after eating eggs or egg-containing food; observe for reaction to vaccine at least 30 minutes after influenza vaccination. If previous anaphylactic reaction to eggs or egg-containing food, use RIV3 (if ≥ 18 yo) or use IIV given by a physician with experience in the recognition and management of severe allergic conditions; observe for reaction to vaccine for at least 30 minutes after vaccination. See MMWR article referenced below for more details.

^ΔMay be given at age ≥ 5 years old If there is no other age-appropriate, licensed inactivated seasonal influenza vaccine available for a child aged 5-through-8 years who has a medical condition that increases the child's risk for complications from influenza.

*Influenza virus grown in dog kidney cells (cell culture) but may not be completely free of egg protein.

[°]Manufactured with recombinant DNA technology.

➤ For more details, see "Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP), United States, 2015-2016 Influenza Season.." *Morbidity and Mortality Weekly Report (MMWR)*, August 7, 2015; pp. 818-825. <http://www.cdc.gov/mmwr/pdf/wk/mm6430.pdf>