

Adult Immunization Schedule Update



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September 6, 2018

Herpes Zoster
Hepatitis B
Mumps
Influenza
Adult Standards

Herpes Zoster

Background

Herpes Zoster (HZ): Clinical Manifestations



Courtesy of NIAID



Courtesy of CDC



Courtesy of CDC/Robert Sumpter

HZ and Postherpetic Neuralgia (PHN): Clinical Manifestations

HZ

- About 90% of HZ episodes associated with pain
- Treatment: antivirals reduce duration of rash and pain¹

PHN

- Pain at least 90 days following resolution of rash
- Treatment: minimal or no efficacy
- Side effects likely, especially in elderly²

¹Cohen et al, NEJM 2013

²Johnson et al, NEJM 2014

HZ and PHN Epidemiology, United States

- There are about 1 million cases annually.^{1,2}
- Incidence increases with age, ranging from less than one case/1000 children to greater than 15 cases/1000 population 80 years and older.^{2,3,4}
- For adults 50 years and older with HZ, 10–18% will go on to develop PHN. Similar to HZ, the incidence increases with age.³

¹Jumaanet al., JID, 2005, 191:2002–7

²Yawn, et al., Mayo ClinProc. 2007; 82:1341–9

³Insingaet al., J Gen Intern Med. 2005, 20:748–53

⁴Harpaz et al, IDWeek2015

Zoster Vaccine Live (ZVL) Zostavax

- This is a live virus vaccine with 16 times the amount of VZV of pediatric varicella vaccine.
- ZVL was approved by the FDA in 2006 for use in persons 60 years of age and older.
- In 2011, FDA-approved label change to include persons 50–59 years.
- Advisory Committee on Immunization Practices (ACIP) recommendation to continue to vaccinate individuals aged 60 years and older with a single dose.

Recombinant Zoster Vaccine (RZV): Shingrix

- This is an adjuvanted recombinant protein subunit vaccine.
- It was licensed by the FDA on October 20, 2017.
- Efficacy and safety were evaluated in a two-part phase III random controlled trial, with over 30,000 subjects.
 - ◆ Subjects aged 50 years or older
 - ◆ Subjects aged 70 years or older

2018 ACIP Recommendations

HZ

ACIP Recommendations

- RZV is recommended for the prevention of HZ and related complications for immunocompetent adults aged 50 years and older.

RZV Benefits

- High vaccine efficacy against HZ
 - ◆ **97%** (50–69 years of age)
 - ◆ **91%** (greater than 70 years of age)
- High vaccine efficacy against PHN (91% for those greater than 50 years of age)
- Maintained efficacy for at least **85%** for four years following vaccination in those aged 70 years or older

RZV Adverse Events

- No differences detected between vaccinated and comparison populations for serious adverse events
- Grade 3 reactions more commonly reported in vaccinated groups (17%) compared to placebo (3%)

ACIP Recommendations

- RZV is recommended for the prevention of HZ and related complications for immunocompetent adults who previously received ZVL.

ACIP Recommendations

- RZV is preferred over ZVL for the prevention of HZ and related complications.

RZV (Shingrix) is preferred over ZVL (Zostavax)

Note: The two vaccines have not been studied in a head-to-head efficacy trial.

Efficacy

- RZV estimates of efficacy are significantly higher than ZVL estimates across all age groups:
 - ◆ 60–69 years: 97% vs. 64%
 - ◆ 70–79 years: 91% vs. 41%
 - ◆ >80 years 91% vs. 18%
- RZV appears to wane at a slower rate than ZVL over the first four years, and RZV is more reactogenic than ZVL.

Clinical Guidance

HZ

RZV (Shingrix)

Recommended for immunocompetent adults aged 50 years and older, including:

- Adults with chronic medical conditions
- Adults taking low-dose immunosuppressive therapy or anticipating or having recovered from immunosuppression
- Adults with a prior history of receipt of varicella vaccine, ZVL, or an episode of HZ

Contraindications and Precautions

Contraindications

Allergy—do not administer to individuals with a history of severe allergic reaction (for example, anaphylaxis) to any component of the vaccine.

Precautions

- Current HZ infection
- Pregnancy and breastfeeding

Schedule

- Two doses are needed for protection.
- These should be administered 2–6 months apart.
- There is no need to restart the series if more than six months have elapsed.
- For adults who have previously received ZVL, recommend administration 5 years after ZVL.
- A shorter interval can be considered in certain instances.
- There must be a minimum of eight weeks between ZVL and RZV.

Important Patient Information

- It's important to let patients know about the expected systemic and local reactogenicity.
- One in six recipients had reactions that prevented regular activities (grade 3).
- Reactions to the first dose do not necessarily predict reactions to the second dose.
- Completion of the series needs to be encouraged, even if the patient experiences a grade 1–3 reaction.

Hepatitis B

ACIP Recommendations

Hepatitis B Vaccine Recommendations

- Persons at risk for infection by percutaneous or mucosal exposure to blood, including:
 - ◆ Household contacts of HBsAg-positive persons
 - ◆ Residents and staff of facilities for developmentally disabled persons
 - ◆ Health care and public safety personnel with reasonably anticipated exposure to blood.
 - ◆ Hemodialysis patients
 - ◆ Persons with diabetes aged less than 60 years and those greater than 60 years at the discretion of clinician

Hepatitis B Vaccine Recommendations

- Persons at risk for infection through sexual exposure
- Persons with a history of current or recent injection drug use
- International travelers to countries with high or intermediate levels of endemic HBV infection
- Persons with hepatitis C infection

Hepatitis B Vaccine Recommendations

- Persons with chronic liver disease (including, but not limited to, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, and an ALT or AST level greater than twice the upper limit of normal)
- Persons with human immunodeficiency virus infection
- Incarcerated persons
- Others seeking protection, even without a specific risk factor

Hepatitis B Vaccines

Engerix-B (GlaxoSmithKline) and Recombivax HB (Merck)

- Both are recombinant HBs-Ag.
- Efficacy is 95%.
- Schedule includes three doses administered at zero, one, and six months.

There is also a Recombivax HB formulation for those on dialysis.

Heplisav

Hepatitis B

New Hepatitis B Vaccine

Hepelisav B (HepB-CpG) manufactured by Dynavax

- Single antigen hepatitis B vaccine
- Contains yeast-derived recombinant HBsAg with Cytosine-phosphate-Guanine (CpG) adjuvant

Heplisav

- FDA-approved for use in persons aged greater than 18 years
- Available in single-dose 0.5 mL vials
- Administered intramuscularly
- Administered as a two-dose series (zero, one month)
- ACIP recommendations published in April 2018

Seroprotection

- Seroprotective antibody to HBsAg level was achieved in 90–100% of subjects receiving two doses of Heplisav.
- This is compared with 70.5–90.2% of subjects receiving three doses of Engerix-B (GSK).

Safety

	Mild Adverse Event	Serious Adverse Event	Cardiovascular Event
Hepelisav 2 or 3 doses	45.6%	5.4%	0.27%
Engerix-B 3 or 4 doses	45.7%	6.3%	0.14%

Terminology Change

- HepB: Hepatitis B vaccine
- HepB-CpG: Cytosine-phosphate-Guanine adjuvanted HepB (Heplisav)
- HepB-alum: aluminum-adjuvanted HepB (that is, Engerix-B or Recombivax HB)

Recommendations

- No preferential recommendation is given for use of Heplisav over HepB-alum.
- A dose of Heplisav may be used in the three-dose series of HepB-alum.

Post-Vaccination Serologic Testing (PVST)

- **Reminder:** Some individuals should receive PVST one to two months after the final dose of vaccine.
- Individuals for testing include hemodialysis patients, HIV-infected and other immunocompromised persons, health care personnel, and sex partners of HBsAg-positive persons.

Measles, Mumps, and Rubella Vaccine (MMR)

Mumps Background

Mumps

- In 1977, ACIP recommended one dose of mumps for all children.
- In 1989, ACIP recommended routine administration of two doses of MMR.
- The first dose would be given at 12–15 months and the second at 4–6 years of age.

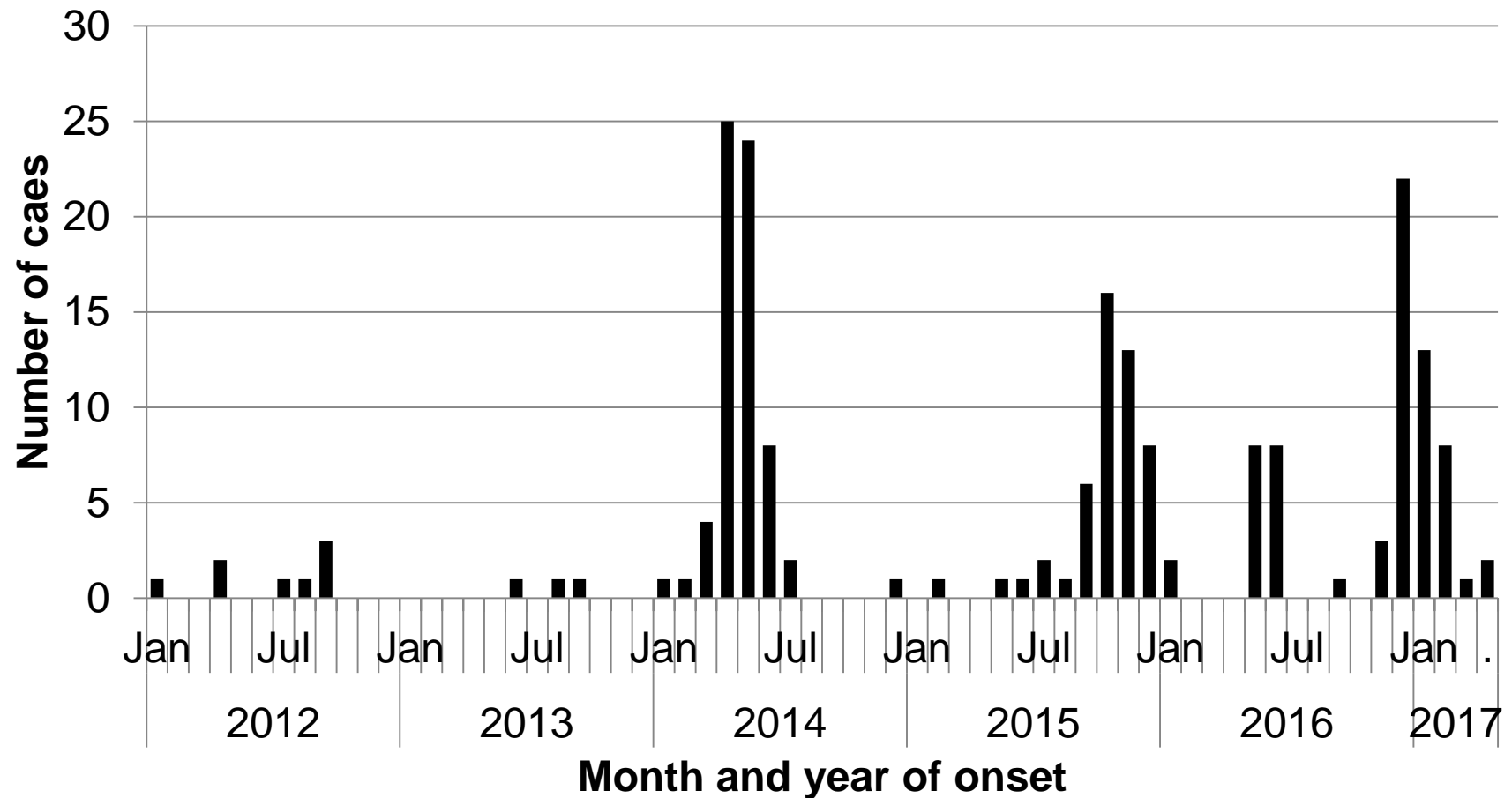
Mumps

- In 2006, mumps outbreaks in the U.S. Midwest prompted ACIP to recommend a routine two-dose MMR schedule for:
 - ◆ School-aged children.
 - ◆ Adults at high risk, such as:
 - Adults at post-high school institutions.
 - Health care personnel.
 - International travelers.

Mumps Outbreaks

- There have been a substantial number of mumps outbreaks that have occurred in the U.S. since 2015, including in Wisconsin.
- Many of these outbreaks have been in highly (two-dose) vaccinated populations.

Mumps Cases in Wisconsin 2012–2017



ACIP Recommendations

- ACIP reviewed available evidence and determined that a third dose of MMR vaccine may help reduce outbreak-related cases.
- New ACIP guidance published in January 2018.

www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm

Third-Dose Effectiveness

- Three epidemiological studies provided evidence.
- Incremental vaccine effectiveness of a third dose ranged from 61%–88%, with only one estimate being statistically significant.
- Students who received two doses of MMR vaccine more than 13 years before the outbreak had nine or more times the risk for contracting mumps compared to those who received the second dose within the two years preceding the outbreak.

New Recommendation

ACIP statement:

“Persons previously vaccinated with two 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 third dose of a mumps virus-containing vaccine to improve protection against mumps disease and related complications.”

Individuals at Increased Risk

Persons at increased risk for acquiring mumps are those who are more likely to have prolonged or intense exposure to droplets or saliva, such as through close contact or sharing of drinks or utensils, from a person infected with mumps.

Influenza



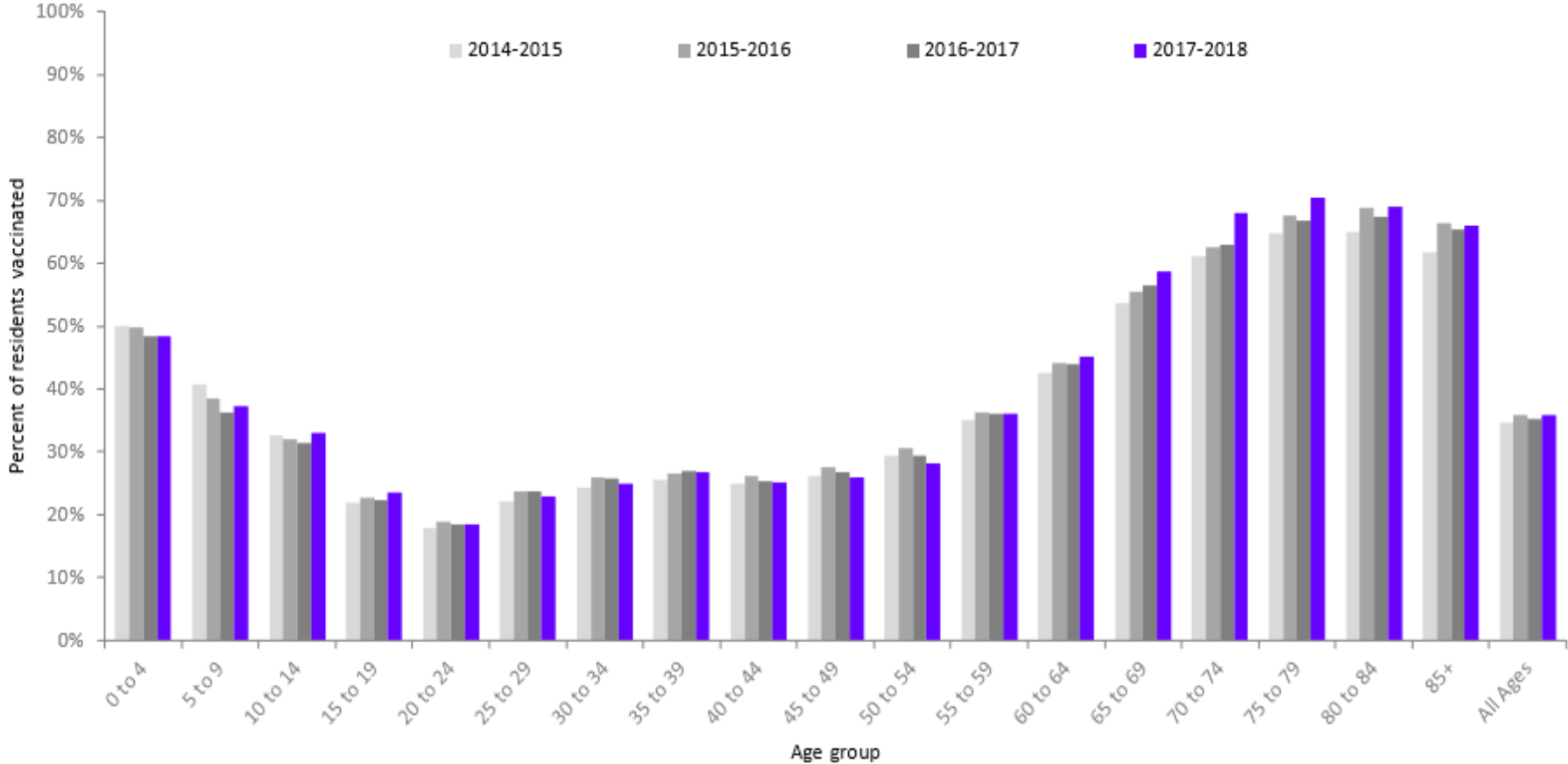
Influenza

Recommendations

- Everyone aged 6 months and older (who do not have contraindications) should be vaccinated against influenza, annually.

SEASONAL INFLUENZA VACCINATION

Percentage of Wisconsin residents who received one or more doses of influenza vaccine, by age group and influenza season



Adult Standards



Key Adult Immunization Facts

Challenges

- Vaccine coverage among adults is unacceptably low.
- There is limited patient awareness about the need for vaccines among adults.
- Adult vaccinations are less integrated into clinical practice.
- Insurance coverage varies by provider type.

Key Adult Immunization Facts

Opportunities

- Most patients are willing to get vaccinated when medical providers recommend them.
- Primary care providers believe that immunizations are an important part of the services they provide to patients.
- Systematic offering and recommendations from clinicians result in a higher uptake.

Key Components of Standards

Call to action for health care professionals:

- **Assess** immunization status of all patients in every clinical encounter.
- Strongly **recommend** vaccines that patients need.
- **Administer** needed vaccines or **refer** to a provider who can immunize.
- **Document** vaccines received by patients, including entering immunizations in the WIR.

Adult Immunization Practice Standards

- Stresses that all providers, including those who don't provide vaccine services, have a role in ensuring patients are up to date on vaccines
- Acknowledges that:
 - ◆ Adult patients may see many different health care providers, some of whom do not stock some or all vaccines
 - ◆ Adults may get vaccinated in a medical home, at work, or in a retail setting

www.publichealthreports.org/

Adult Immunization Practice Standards (cont.)

- Aims to avoid missed opportunities and keep adult patients protected from vaccine-preventable diseases

Thank you!

Contact

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Acknowledgements

- HZ slides/content based on webinar from Dr. Kathleen Dooling, Centers for Disease Control and Prevention, available at:
https://emergency.cdc.gov/coca/calls/2018/callinfo_051018.asp