



Adult Immunization Update 2018

Lansing, MI November 13, 2018

Dearborn, MI November 15, 2018

Troy, MI November 16, 2018

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Immunization Services Division

Disclosures

- **The speaker is a federal government employee with no financial interest in or conflict with the manufacturer of any product named in this presentation**
- **The speaker will not discuss a vaccine not currently licensed by the FDA**
- **The speaker will discuss the off-label use of hepatitis A, HPV, influenza, and Tdap vaccines**

Disclosures

- The recommendations to be discussed are primarily those of the Advisory Committee on Immunization Practices (ACIP):
 - Composed of 15 nongovernment experts in clinical medicine and public health
 - Provides guidance on use of vaccines and other biologic products to DHHS, CDC, and the U.S. Public Health Service
- Watch the live webcast
 - <https://www.cdc.gov/vaccines/acip/meetings/webcast-instructions.html>

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Recommendations +

Meetings +

Committee Information +

About

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Vaccines & Immunizations

Immunization Schedules

Instant Childhood Immunization Schedule

WHO (VB) vaccines and diseases ?

VFC Resolutions

Status of Licensure and Recommendations for New Vaccines ?

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What's this?

ACIP Home

ACIP

The Advisory Committee on Immunization Practices (ACIP) is a group of medical and public health experts that develop recommendations on use of vaccines in the civilian population of the United States.

More >

Register for upcoming June ACIP meeting

June 21-22, 2017

Deadline for registration:

Non-US Citizens: May 22, 2017, 5:00pm ET (No exceptions)

US Citizens: June 7, 2017, 5:00pm ET

Registration is NOT required to watch the live meeting webcast or to listen via telephone.

Public Comment Instructions (1 page)

ACIP Meetings

- Meeting Information Recent ACIP meeting agendas, detailed meeting minutes, live meetings, and presentation slides.
- Upcoming Meetings List of scheduled ACIP meeting dates.
- Register for a Meeting Next meeting's registration details including deadline, driving directions and hotel choices.

Immunization Schedules

View current schedules for children, teens, and adults.

**Next ACIP meeting
February 27-28, 2019**

Hepatitis A Outbreaks

United States Hepatitis A Cases 2018

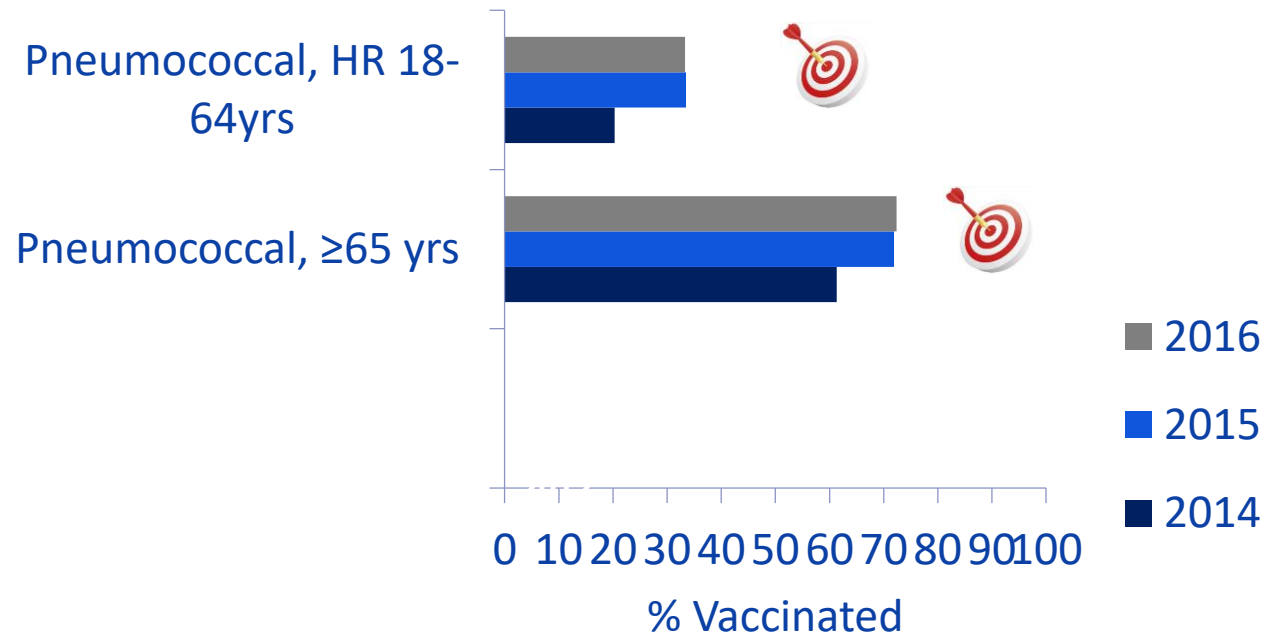
- CDC and state health departments are investigating hepatitis A outbreaks in multiple states among persons reporting drug use and/or homelessness and their contacts
- Recent increases in the number of hepatitis A infections in persons who report:
 - Drug use
 - Homelessness
 - Recent incarceration and
 - Men who have sex with men
- High rates of drug use, drug-related overdose, drug treatment admission, or drug arrests
- High rates of homelessness

Recommendations for Health Care Providers

- **Consider hepatitis A diagnosis in anyone with jaundice and clinically compatible symptoms**
- **Report all persons diagnosed with hepatitis A to the health department**
- **Administer 1 dose of single-component HepA vaccine and/or immune globulin (IG) to previously unvaccinated persons who have been exposed to HAV**
 - Vaccinate as soon as possible—within 2 weeks of exposure
 - Guidelines for the use of IG and/or vaccination vary by age and health status
- **Encourage hepatitis A vaccination for:**
 - Homeless individuals in areas where hepatitis A outbreaks are occurring
 - Persons who report drug use or other risk factors for hepatitis A

Vaccination Coverage Rates

Adult Immunization Coverage, Selected Vaccines by Age and High-risk Status, United States



HP2020 Targets: 90% PPV ≥65 yrs, 60% PPV HR 19-64 yrs,
Data BRFSS

Influenza Immunization Coverage – Health Care Providers - 2017-2018 Season

Specialty	Coverage
Total	78%
Physicians	96%
Nurse Practitioners, PAs	88%
Nurses	90%
Pharmacists	92%
Assistants, Aides	71%
Dentists, Nutritionists Technicians	81%
Administrative, Custodial	73%
Long Term Care	67%

Vaccine Supply Update

Adult Vaccine Supply: Recombivax HB

- Merck is not currently distributing its adult hepatitis B vaccine and does not expect to be distributing adult hepatitis B vaccine throughout the remainder of 2018
- GSK has sufficient supplies of adult hepatitis B vaccines to address the anticipated gap in Merck's supply of adult hepatitis B vaccine during this period
- In addition, Dynavax makes an adult hepatitis B vaccine (Heplisav-B) that is available for use

Adult Vaccine Supply: Shingrix

- Due to high levels of demand for GSK's Shingrix vaccine, GSK has implemented order limits and providers have experienced shipping delays
- Order limits and shipping delays will continue throughout 2018
- GSK has increased the U.S. supply available for 2018 and plans to release doses to all customer types on a consistent and predictable schedule for the rest of 2018
- Overall, the supply of Shingrix during 2018 is sufficient to support the vaccination of more patients during 2018 than were vaccinated against shingles during 2017

ACIP Immunization Recommendation: Seasonal Influenza Vaccine

Influenza Vaccines

■ IIV:

- Contain inactivated virus, split or subunit
 - High dose or standard dose
 - Trivalent or quadrivalent
 - Unadjuvanted or adjuvanted
 - Egg- or cell-culture-based
- Many brands, some approved for those as young as 6 months of age

■ LAIV

- Live, attenuated virus with Slovenia strain – which is Michigan-like.

■ RIV

- Recombinant influenza vaccine

Inactivated Influenza Vaccine Efficacy

- About 60% effective among healthy persons younger than 65 years of age
- 50%-60% effective in preventing medically attended illness and hospitalization among elderly persons
- 60% or greater effectiveness in preventing medically attended illness in children, with either IIV or LAIV

Groups Recommended for Vaccination

- Routine annual influenza vaccination is recommended for all persons ≥ 6 months of age who do not have contraindications
- While vaccination is recommended for everyone in this age group, there are some for whom it is particularly important:
 - People age ≥ 6 months who are at high risk of complications and severe illness
 - Contacts and caregivers of these people, and of infants under age 6 months (because there is no vaccine approved for children this age)

Groups at Increased Risk for Influenza Complications and Severe Illness

- Children aged 6 through 59 months and adults aged ≥ 50 years (children under 6 months of age are also at high risk, but cannot be vaccinated);
- Persons with chronic pulmonary (including asthma) or cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus);
- Immunocompromised persons;
- Women who are or will be pregnant during the influenza season;
- Children and adolescents (aged 6 months–18 years) who are receiving aspirin therapy and who might be at risk for experiencing Reye syndrome after influenza virus infection;
- Residents of nursing homes and other long-term care facilities;
- American Indians/Alaska Natives; and
- Persons who are extremely obese (BMI ≥ 40).

ALL HEALTHCARE WORKERS NEED FLU SHOTS

VACCINATING HEALTHCARE WORKERS



**REDUCES
FLU AMONG
WORKERS**



**REDUCES
WORK ABSENCES**



**PROTECTS
PATIENTS**

3 OF 4 HEALTHCARE WORKERS GET FLU SHOTS

**HIGHEST WHEN
EMPLOYER REQUIRED SHOT
OR GAVE ONSITE**



**LOWEST FOR
LONG-TERM CARE WORKERS**

WORKPLACE STRATEGIES CAN HELP!



**PROMOTE
ON-SITE
VACCINATION**



**OFFER
LOW OR NO
COST SHOTS**



**REMEMBER
NON-CLINICAL
STAFF**

Timing of Vaccination

- Vaccination should occur before onset of influenza activity. Health care providers should offer vaccination by the end of October, if possible
- Children aged 6 months through 8 years who require 2 doses should receive their first dose as soon as possible after vaccine becomes available, and the second dose ≥ 4 weeks later
- Vaccination should continue to be offered as long as influenza viruses are circulating and unexpired vaccine is available

Inactivated Influenza Vaccine (IIV) and RIV

Contraindications and Precautions




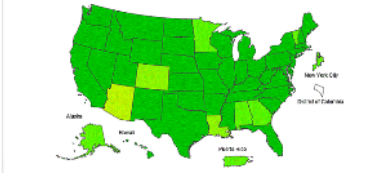
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or following a prior dose of inactivated influenza vaccine
- Moderate or severe acute illness
- History of Guillain-Barré syndrome (GBS) within 6 weeks following a previous dose of influenza vaccine


Who Shouldn't Receive LAIV4 (Contraindications)

- Persons aged <2 years or >49 years
- **Labeled contraindications in package insert:**
 - History of severe allergic reaction to any vaccine component* or to a previous dose of influenza vaccine (like other flu vaccines)
 - Note though that ACIP recommends vaccination of persons with egg allergy
 - Concomitant aspirin- or salicylate-containing therapy in children or adolescents (risk of Reye syndrome)
- **In addition, ACIP recommends LAIV not be used for**
 - Pregnant women
 - Immunocompromised persons
 - Children <5 with asthma or wheezing
 - Caregivers and contacts of persons requirement a protected environment
 - Persons who have received influenza antivirals within previous 48 hours

CDC website on influenza:


<https://www.cdc.gov/flu/index.htm>

			
PREVENT FLU	SYMPTOMS & DIAGNOSIS	TREATMENT	FLU ACTIVITY & SURVEILLANCE
Everyone 6 months & older should receive a yearly flu vaccine.	Flu can cause mild to severe illness. Learn the symptoms of flu.	Prescription medications called antiviral drugs can be used to treat flu.	The 2016-2017 flu season is over. Flu activity is low in the U.S.
More >	More >	More >	More >

 **ABOUT FLU**
Learn about flu season and get answers to questions.

 **COMMUNICATION RESOURCES**
Find resources to promote flu prevention.

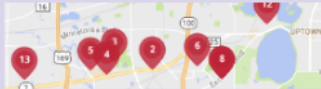
 **FLU SEASON**
Find information about current and past flu seasons.

 **HEALTH PROFESSIONALS**
Learn what CDC recommends this season.

 **PEOPLE AT HIGH RISK**
Understand who is at high risk from flu.

 **FLU NEWS & SPOTLIGHTS**
Read about CDC's work with flu.

Flu Vaccine Finder



Everyone **six months of age or older** needs a flu vaccine.

Find the flu shot near you.

Enter Your Zip Code

[GO](#)

Herpes Zoster Vaccines



Courtesy of NIAID



Courtesy of CDC



Courtesy of CDC/Robert Sumpter

Varicella-containing Vaccines for Prevention of Zoster

Product	FDA Age Indications	ACIP Abbreviation
Zostavax	50 years and older	ZVL
Shingrix	50 years and older	RZV

Vaccine Immunogenicity and Efficacy

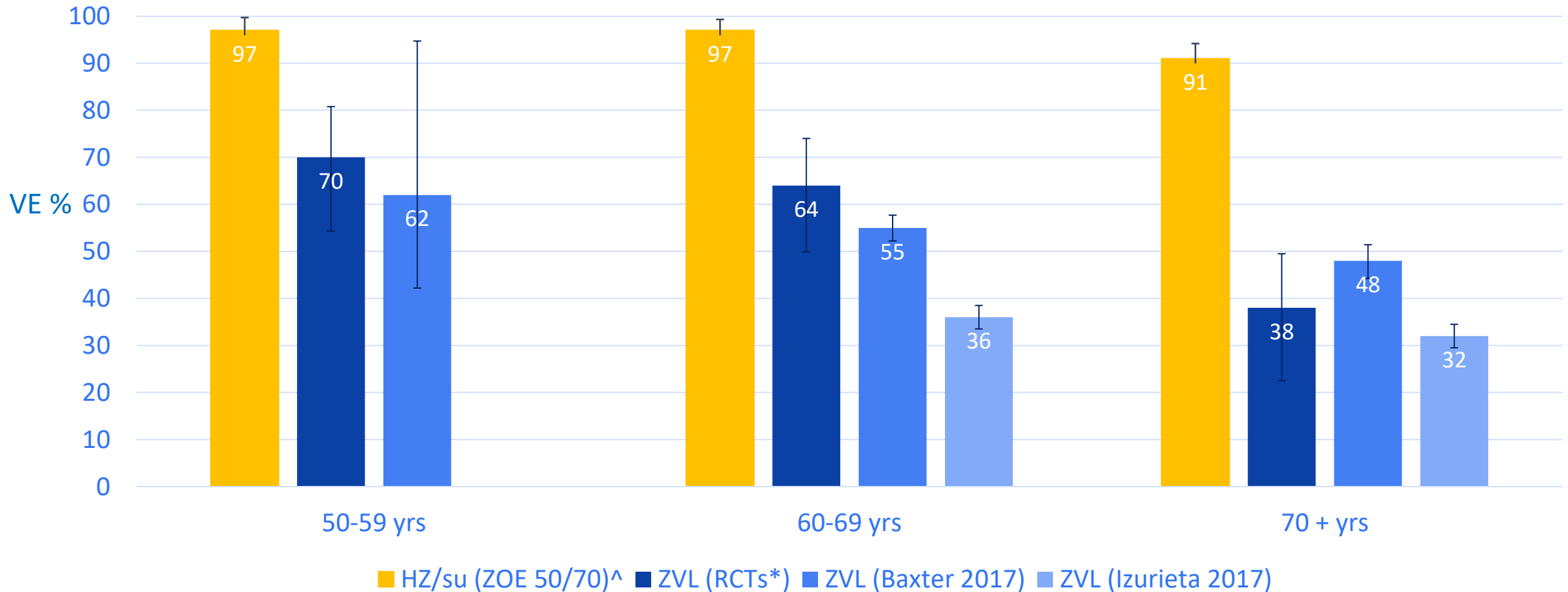
- **RZV**

- Vaccine recipients 50 – 59 years old and older had 97% fewer episodes of zoster
- Vaccine recipients 60 years old and older had 91% fewer episodes of zoster
- Significantly reduces the risk of postherpetic neuralgia (89%)

- **ZVL**

- Vaccine recipients 60 to 80 years of age had 51% fewer episodes of zoster
- Significantly reduces the risk of postherpetic neuralgia (66% efficacy)

Vaccine Efficacy and Effectiveness against HZ for HZ/su and ZVL, by Age Group, During the First 4[‡] Years Following Vaccination



‡ Median follow-up may be less than 3 yrs: Schmäder 2012= 1.3 yrs
 ^ ZOE 50/70= 50-59 and 60-69yr: Lal 2015, 70+yr: Cunningham 2016
 * RCTs= 50-59 yrs: Schmäder 2012, 60-69 and 70+ yrs: Oxman 2005,

Zoster Vaccine



- **Persons 50 years of age and older who are immunocompetent should receive 2 doses of Shingrix separated by 2 months (minimum interval 4 weeks)**
- **Regardless of previous history of varicella, zoster**
- **Shingrix can be administered to someone who has already received Zostavax (recommended interval at least 8 weeks)**
- **Zostavax is not recommended for persons 50 through 59 years**
- **Shingrix is preferred to Zostavax for persons 60 years and older**

Zoster Vaccine and Varicella Immunity

- Persons 50 years old and older have presumptive evidence of varicella immunity
- Do not screen persons 50 years old and older for varicella immunity
- Administer zoster vaccine

Varicella Vaccine and Varicella Immunity: Health Care Personnel

- Health care should be screened for VZV immunity
- Criteria for VZV immunity (need only one)
 - History of chickenpox disease
 - Documented varicella vaccination
 - Laboratory evidence of varicella vaccination or chickenpox disease
 - History of zoster
- If a provider meets none of the criteria they require vaccination

Zoster Vaccine After Varicella Vaccine

- Only Shingrix is recommended after varicella vaccination
- Minimum age is 50 years
- An 8 week minimum interval is recommended between the 2nd dose of varicella vaccine and the first dose of Shingrix.
- If this interval is violated, do not need to repeat either dose

Vaccine Administration

- **Preparation:**
 - Zoster vaccine: reconstitute just prior to administration
 - Use the diluent supplied by the manufacturer
- **Zostavax**
 - Route: subcut injection
 - Site: upper outer triceps of the arm or the thigh may be used if necessary
 - Needle gauge: 23 – 25 gauge
 - Needle length: 5/8 inch
- **Shingrix**
 - Route: IM injection
 - Site: deltoid or the thigh may be used if necessary
 - Needle gauge: 22-25 gauge
 - Needle length: varies by age/weight

Ensure Your Patients Get Both Doses!

- **There are currently ordering limits and intermittent shipping delays for Glaxo Shingrix vaccine**
- **Use proven strategies to help patients complete the series including:**
 - Use a reminder and recall system to contact patients when you have Shingrix
 - Give first consideration to patients due for their second dose of Shingrix
 - If you are out of Shingrix and a patient needs a second dose, refer the patient to another provider in the community that has Shingrix
 - Be sure to enter your patients' current vaccination information into your state's immunization information system (IIS)
 - As supply becomes less constrained, be sure to notify eligible patients so they can come in to get their first dose of Shingrix

Shingrix after Zostavax

- Shingrix is recommended for patients who have already received Zostavax
- The dose of Shingrix should be administered 5 years (minimum 8 weeks) after the dose of Zostavax.
- If the 8 week interval is violated, the dose is still valid
- Administer the second dose of Shingrix 2 months (aka 8 weeks) after the first dose of Shingrix

Vaccine Administration Errors

- **Minimum interval between two doses of Shingrix vaccine is 4 weeks (can apply the grace period)**
- **If this interval is violated, the repeat dose of Shingrix should be administered 8 weeks after the invalid dose**
- **As long as the dose is administered 4 weeks after the invalid dose, it can be considered valid**

RZV (Shingrix) Adverse Reactions

Local reactions	49%
Local reactions – Grade 3	9.4%
Systemic reactions (headache, malaise, fatigue)	45-78%
Systemic reactions (headache, malaise, fatigue) – Grade 3	11%

CDC Clinical Resources for Health Care Personnel: Zoster

- Shingles (Herpes Zoster) Vaccination Information for Healthcare Providers www.cdc.gov/vaccines/vpd/shingles/hcp/index.html
- Shingrix Fact Sheet
www.cdc.gov/shingles/downloads/shingles-factsheet-hcp.pdf
- FAQs on Shingrix
www.cdc.gov/vaccines/vpd/shingles/hcp/shingrix/faqs.html
- Everything You Need to Know About Shingrix video
www.medscape.com/viewarticle/895228?src=par_cdc_stm_mscpedt&faf=1



Hepatitis A Recommendations

ACIP Vote - Hepatitis A Vaccine Change to Adult Schedule

- Healthy persons 12 months and older who have recently been exposed to hepatitis A virus should receive HepA; adults older than age 40 years may receive IG in addition to HepA at the discretion of the provider

Groups who Benefit from IG in Addition to HepA

- **Chronic Liver Disease**
- **Altered Immunocompetence**
- **Pregnancy**
- **Those older than forty years at discretion of provider**



New Hepatitis Recommendations

New Hepatitis B Vaccine

- HEPLISAV-B
- Administered by intramuscular injection
- Available in single-dose 0.5 mL vials. Each dose contains:
 - 20 micrograms HBsAg
 - 3000 micrograms 1018 adjuvant (Toll-like Receptor 9 molecule consists of cytosine and guanine DNA moieties connected by phosphorus compound)
 - Trade name abbreviation is: HepB-CpG
- Formulated without preservative

Heplisav-B

- Non-preferential recommendation
- HEPLISAV-B is a Hepatitis B vaccine that may be used to vaccinate persons aged 18 years and older against infection caused by all known subtypes of HBV.

Updates – Hepatitis B Vaccination¹



- **Recommended HepB-CpG use – 2 doses 1 month apart for persons aged ≥18y (not in 2018 adult immunization schedule)**
- **No preferential recommendation for use of HepB-CpG over HepB (e.g. Engerix-B, Recombivax)**
- **HepB-CpG may be used in HepB series**
 - 3 doses of HepB-containing vaccine (Engerix, Recombivax, Twinrix) or 4 doses of HepB-containing vaccine (Twinrix expedited) are needed unless 2 doses of HepB-CpG is administered 1 month apart



Meningococcal Recommendations

New Meningococcal Conjugate Vaccine Recommendations

Meningococcal ACWY Recommendations for HIV-infected Persons

- Accumulating evidence indicates that HIV infection increases the risk of invasive meningococcal disease
- At the June 2016 meeting ACIP voted to recommend routine MenACWY vaccination for all HIV-infected persons age 2 months and older
- **Number of doses depends on age**
 - Persons 2 years and older should receive 2 doses separated by 8 weeks
 - Booster doses every 5 years

Morbidity and Mortality Weekly Report

Recommendations for Use of Meningococcal Conjugate Vaccines in HIV-Infected Persons — Advisory Committee on Immunization Practices, 2016

Serogroup B Meningococcal Vaccine

ACIP MenB Recommendations

- MenB should be administered as either a 2-dose series of MenB-4C or a 2-dose or 3-dose series of MenB-FHbp
- The same vaccine product should be used for all doses
- MenB-4C and MenB-FHbp may be administered concomitantly with other vaccines indicated for this age, but at a different anatomic site, if feasible
- No product preference to be stated

MenB Vaccine Brand Error

- **If a dose of MenB vaccine is administered and found to be a different brand from a dose previously administered:**
 - Pick the brand with which you want to continue the series
 - Invalidate the dose of the other brand
 - Continue the series
 - Need a four week minimum interval from any invalid doses
 - Need to follow the minimum intervals between doses of the chosen brand

Meningococcal B Recommendations

- Recommendation for use in adolescents and young adults not at increased risk for disease
- Recommendation for use in individuals ≥ 10 years of age at increased risk of disease

MenB for Adolescents and Young Adults



- A MenB vaccine series **MAY** be administered to adolescents and young adults aged 16–23 years to provide short-term protection against most strains of serogroup B meningococcal disease*
- The preferred age for MenB vaccination is 16–18 years

* Recommendation (Category B)

MMWR October 23, 2015 / 64(41);1171-6

ACIP MenB Recommendations

- **Certain persons aged ≥ 10 years* who are at increased risk for meningococcal disease should receive MenB vaccine. These persons include:**
 - Persons with persistent complement component deficiencies
 - Persons taking eculizumab
 - Persons with anatomic or functional asplenia**
 - Microbiologists routinely exposed to isolates of *Neisseria meningitidis*
 - Persons identified as at increased risk because of a serogroup B meningococcal disease outbreak

*ACIP off-label recommendation

**Including sickle cell disease

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6422a3.htm?s_cid=mm6422a3_w

ACIP MenB Recommendations

- **Certain other groups included in MenACWY (MCV4) recommendations for persons at increased risk, are not in this recommendation**
- **MenB – NOT currently recommended for:**
 - Children aged 2 months – 9 years of age
 - Persons who travel to or reside in countries where meningococcal disease is hyperendemic or epidemic because risk is generally not caused by serogroup B
 - Patients with HIV
 - Routine use in first-year college students living in residence halls, military recruits, or all adolescents

Use of 2- and 3-Dose Schedules of Meningococcal Serogroup B Vaccine

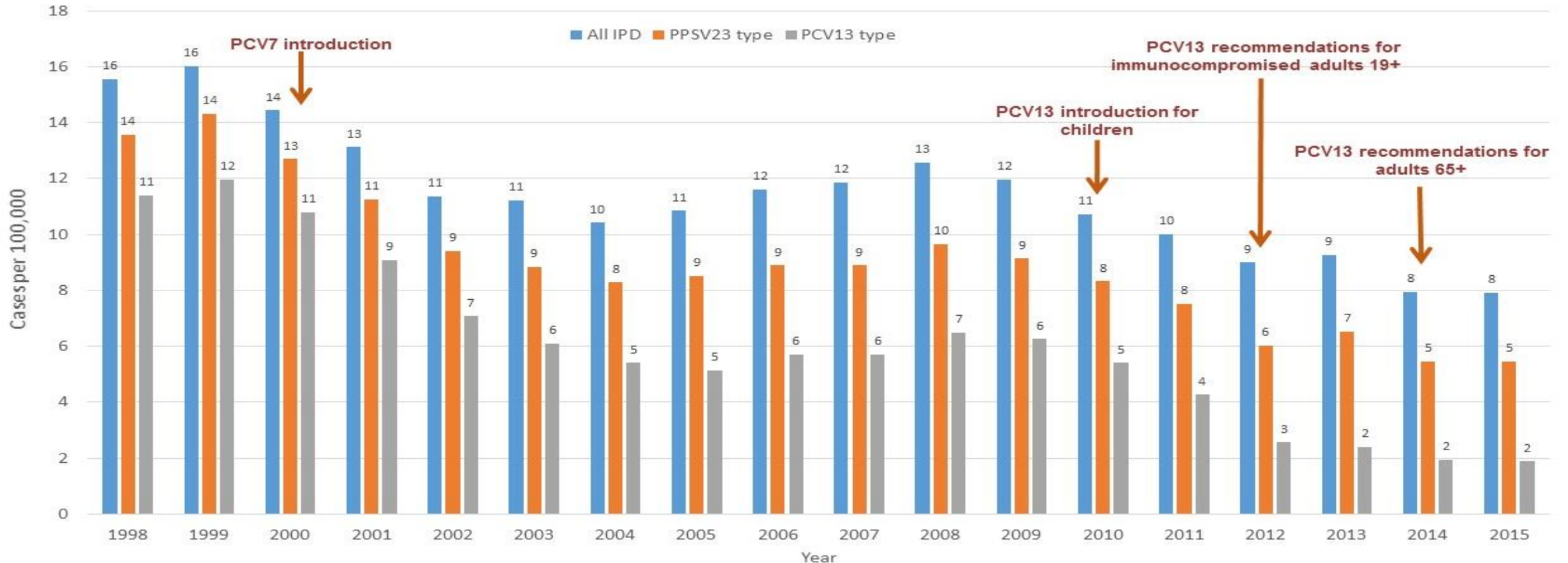
- When given to healthy adolescents who are not at increased risk for meningococcal B disease, 2 doses of MenB-FHbp should be administered at 0 and 6 months, or 2 doses of MenB-4C at 0, 1-6 months
- For persons at increased risk for meningococcal B disease, for use during serogroup B outbreaks, and for patients with HIV, 3 doses of MenB-FHbp should be administered at 0, 1-2, 6 months, or 2 doses of MenB-4c should be administered at 0, 1-6 months.

Trumenba Timing and Spacing Errors

- If a patient is recommended for three doses of Trumenba, but the second dose is delayed beyond a six month interval, a third dose is NOT necessary
- If a patient is recommended for two doses of Trumenba, and the second dose is given less than 6 months after the first dose, then a repeat (third) dose must be administered four months after the second dose.

Pneumococcal Conjugate Vaccine

Trends in Invasive Pneumococcal Disease Among Adults 19–64 Years of Age, 1998–2015

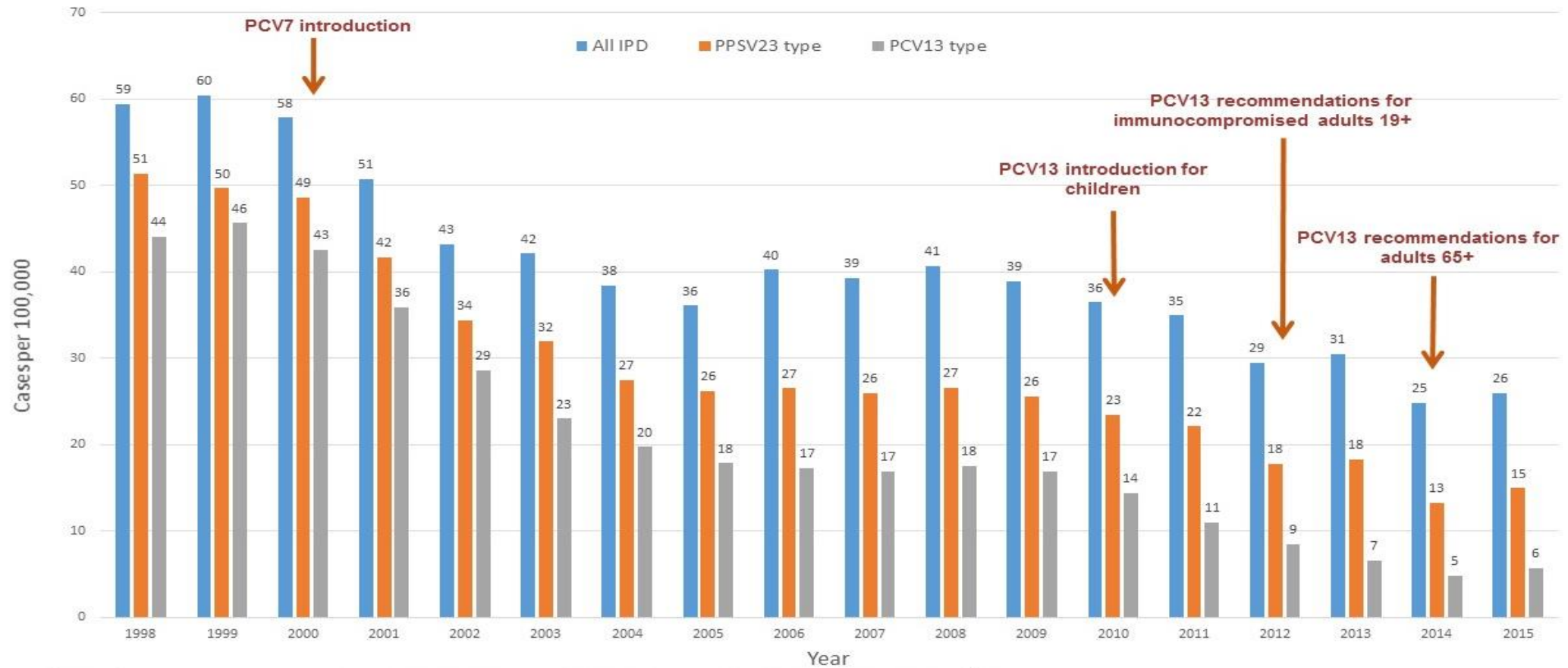


*PPSV23 serotypes: 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, and 33F

*PCV13 serotype: 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F

Active Bacterial Core surveillance data, 1998–2015, unpublished

Trends in Invasive Pneumococcal Disease Among Adults 65 Years of Age and Older, 1998–2015



*PPSV23 serotypes: 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, and 33F

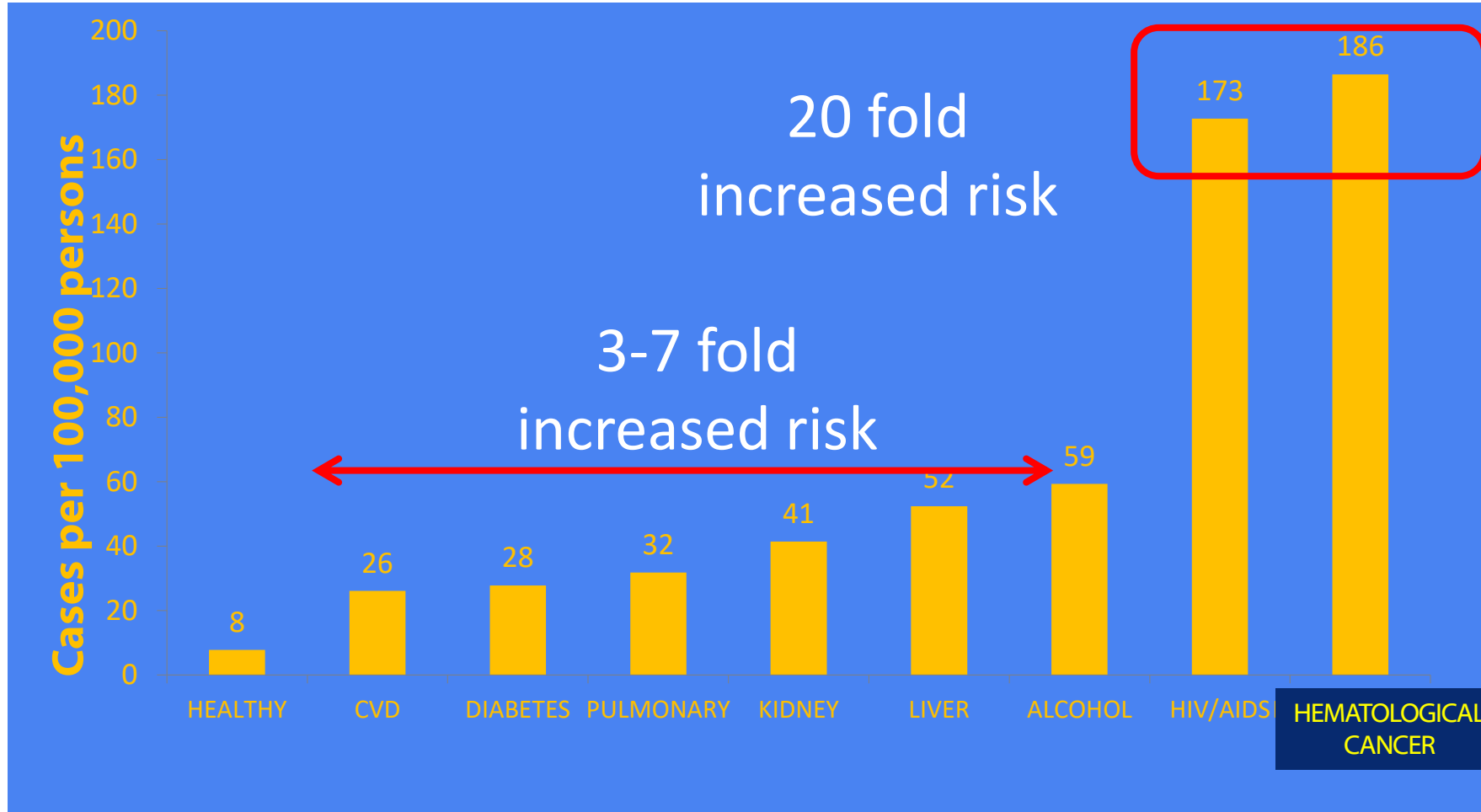
*PCV13 serotype: 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F

Active Bacterial Core surveillance data, 1998–2015, unpublished

PCV13 for Adults

- Licensed for use among adults ≥ 50 years old on 12/30/11
- FDA approved under the Accelerated Approval Pathway
- Based on noninferior immunogenicity compared to PPSV23
- Postapproval condition of licensure:
 - Randomized controlled trial of PCV13 against pneumococcal pneumonia among adults >65 years old in the Netherlands

Incidence of IPD in Adults Aged 18-64 Years with Selected Underlying Conditions, United States, 2009



Unpublished data, Active Bacterial Core surveillance, 2009

PCV13 for Immunocompromised Adults*

- **Adults 19 years of age or older with:**
 - Immunocompromising conditions
 - Functional or anatomic asplenia
 - CSF leaks
 - Cochlear implants
- **Those who have not previously received PCV13 or PPSV23 should receive a single dose of PCV13 followed by a dose of PPSV23 at least 8 weeks later, with a booster dose of PPSV23 5 or more years later**

PCV13 for Adults (2014)



- **ACIP now recommends PCV13 for unvaccinated adults 65 years old and older**
- **Some adults have received PCV13 already**

Administering PCV13 and PPSV23 Vaccines

General Rules



- **PCV13 and PPSV23 should not be administered during the same clinic visit**
 - Either vaccine may be administered simultaneously with influenza vaccine
- **Administer PCV13 before PPSV23 whenever possible**

Pneumococcal Vaccine Timing for Adults

Make sure your patients are up to date with pneumococcal vaccination.

Two pneumococcal vaccines are recommended for adults:

- 13-valent pneumococcal conjugate vaccine (PCV13, Prevnar13®)
- 23-valent pneumococcal polysaccharide vaccine (PPSV23, Pneumovax®23)

PCV13 and PPSV23 should not be administered during the same office visit.

When both are indicated, PCV13 should be given before PPSV23 whenever possible.

If either vaccine is inadvertently given earlier than the recommended window, do not repeat the dose.

One dose of PCV13 is recommended for adults:

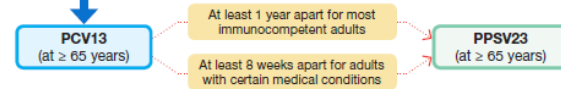
- 65 years or older who have not previously received PCV13.
- 19 years or older with certain medical conditions and who have not previously received PCV13. *See Table 1 for specific guidance.*

One dose of PPSV23 is recommended for adults:

- 65 years or older, regardless of previous history of vaccination with pneumococcal vaccines.
 - Once a dose of PPSV23 is given at age 65 years or older, no additional doses of PPSV23 should be administered.
- 19 through 64 years with certain medical conditions.
 - A second dose may be indicated depending on the medical condition. *See Table 1 for specific guidance.*

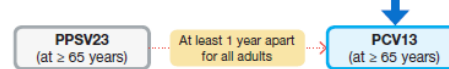
Pneumococcal vaccine timing for adults 65 years or older

For those who have not received any pneumococcal vaccines, or those with unknown vaccination history



- Administer 1 dose of PCV13.
- Administer 1 dose of PPSV23 **at least 1 year** later for most *immunocompetent* adults or **at least 8 weeks** later for adults with *immunocompromising* conditions, cerebrospinal fluid leaks, or cochlear implants. *See Table 1 for specific guidance.*

For those who have previously received 1 dose of PPSV23 at ≥ 65 years and no doses of PCV13



- Administer 1 dose of PCV13 **at least 1 year** after the dose of PPSV23 for all adults, regardless of medical conditions.

NCIRDig410 | 11.30.2015

www.cdc.gov/pneumococcal/vaccination.html



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CDC Pneumococcal Vaccine Timing For Adults

ACIP Recommendation: Tdap Vaccine

ACIP Recommendations for Pregnant Women



■ Pregnant women:

- Administer Tdap during each pregnancy, preferably at 27 through 36 weeks' gestation
- If not administered during pregnancy, Tdap should be administered immediately postpartum for women **not previously vaccinated** with Tdap
- Additional doses of Tdap is not indicated for previously vaccinated postpartum women
 - History of an adolescent dose (or Tdap given at another time) = previously vaccinated

Tdap Vaccination and Pregnant Women

■ Tdap vaccination rates for pregnant women:

- 2010 and earlier <1%
- 2013 28%
- 2015 53%

■ 96% of Tdap vaccinations were administered in physicians' offices or clinics

Maternal Vaccination



Resources for healthcare professionals

Vaccines help keep your pregnant patients and their growing families healthy.

Last Updated September, 2016

Vaccine	Before pregnancy	During pregnancy	After pregnancy	Type of vaccine
Influenza	Yes	Yes, during flu season	Yes	Inactivated
Tdap	May be recommended; it is better to vaccinate during pregnancy when possible	Yes, during each pregnancy	Yes, immediately postpartum, if Tdap never received in lifetime; it is better to vaccinate during pregnancy	Toxoid/ Inactivated
Td	May be recommended	May be recommended, but Tdap is preferred	May be recommended	Toxoid
Hepatitis A	May be recommended	May be recommended	May be recommended	Inactivated
Hepatitis B	May be recommended	May be recommended	May be recommended	Inactivated
Meningococcal	May be recommended	Base decision on risk vs. benefit; inadequate data for specific recommendation	May be recommended	Inactivated
Pneumococcal	May be recommended	Base decision on risk vs. benefit; inadequate data for specific recommendation	May be recommended	Inactivated
HPV	May be recommended (through 26 years of age)	No	May be recommended (through 26 years of age)	Inactivated
MMR	May be recommended; once received, avoid conception for 4 weeks	No	May be recommended	Live
Varicella	May be recommended; once received, avoid conception for 4 weeks	No	May be recommended	Live

For more information, visit: www.cdc.gov/vaccines/pregnancy
Get an answer to your specific question by e-mailing cdcinfo@cdc.gov or calling 800-CDC-INFO (232-4636)



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CS140701-000-104 08/27/2016

Update: FDA approval of expanded age indications for HPV vaccine

NEW: FDA approved Expanded Age Indications for HPV Vaccine*

- 10/5/2018: Gardasil 9 approved for women, men 27--45 years.
- Study: ~3,200 women 27--45 years of age, followed for average of 3.5 years: Gardasil [4 valent] 88% effective preventing combined endpoint of persistent infection, genital warts, vulvar and vaginal precancerous lesions, cervical precancerous lesions, and cervical cancer related to HPV types in the vaccine. FDA's approval of Gardasil 9 in women 27 through 45 years of age based on these results and long term follow-up from this study.
- Gardasil 9 effectiveness in men 27 through 45 years inferred from data above in women, efficacy data from Gardasil in younger men (16 through 26 years of age), and immunogenicity data from a clinical trial in which 150 men, 27 through 45 years of age, received 3-dose regimen of Gardasil over 6 months.
- Safety of Gardasil 9 evaluated in ~13,000 males and females:
 - Most commonly reported adverse reactions: injection site pain, swelling, redness and headaches.
- ACIP to discuss recommendations for this age group on October 25, 2018

[*https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/UCM622715.htm?utm_campaign=10052018_PR_FDA%20ap%20proves%20expanded%20use%20of%20Gardasil%209%20to%20include%20individuals%2027%20through%2045%20years%20old&utm_medium=email&utm_source=Eloqua](https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/UCM622715.htm?utm_campaign=10052018_PR_FDA%20ap%20proves%20expanded%20use%20of%20Gardasil%209%20to%20include%20individuals%2027%20through%2045%20years%20old&utm_medium=email&utm_source=Eloqua)

CDC Vaccine and Immunization Resources

Questions? Email CDC

- Providers

nipinfo@cdc.gov

- Parents and patients

www.cdc.gov/cdcinfo

Website

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Questions??

For more information, contact CDC
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