

Adult Immunizations An Overview

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AMERICAN ACADEMY OF
FAMILY PHYSICIANS

Learning Objectives

- Know the immunizations routinely recommended for adults.
- Understand the burden of vaccine-preventable diseases.
- Identify resources to increase adult immunization rates.

Figure 1. Recommended immunization schedule for adults aged 19 years or older by age group, United States, 2018

This figure should be reviewed with the accompanying footnotes. This figure and the footnotes describe indications for which vaccines, if not previously administered, should be administered unless noted otherwise.

Vaccine	19–21 years	22–26 years	27–49 years	50–64 years	≥65 years
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Tdap ² or Td ²	1 dose Tdap, then Td booster every 10 yrs				
MMR ³	1 or 2 doses depending on indication (if born in 1957 or later)				
VAR ⁴	2 doses				
RZV ⁵ (preferred)				2 doses RZV (preferred)	
or					
ZVL ⁵					1 dose ZVL
HPV–Female ⁶	2 or 3 doses depending on age at series initiation				
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PCV13 ⁷	1 dose				
PPSV23 ⁷	1 or 2 doses depending on indication				1 dose
HepA ⁸	2 or 3 doses depending on vaccine				
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MenACWY ¹⁰	1 or 2 doses depending on indication, then booster every 5 yrs if risk remains				
MenB ¹⁰	2 or 3 doses depending on vaccine				
Hib ¹¹	1 or 3 doses depending on indication				



Recommended for adults who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection



Recommended for adults with other indications



No recommendation

<https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>

Measles, Mumps, Rubella

- Most adults born before 1957 considered immune
- Immunity established if
 - 1 documented MMR after 12 months old if born after 1957
 - Titer
 - Born prior to 1957 (and not a HCW)

Measles, Mumps, Rubella

- High Risk:
 - Pregnancy
 - Immunosuppression
 - Healthcare worker
- Contraindications:
 - Pregnancy
 - Severe immunosuppression

Varicella (Chicken Pox)

- Immune to varicella if
 - Born before 1966
 - Confirmed infection '66-'97
 - Received vaccine
 - History of shingles
 - Varicella titer

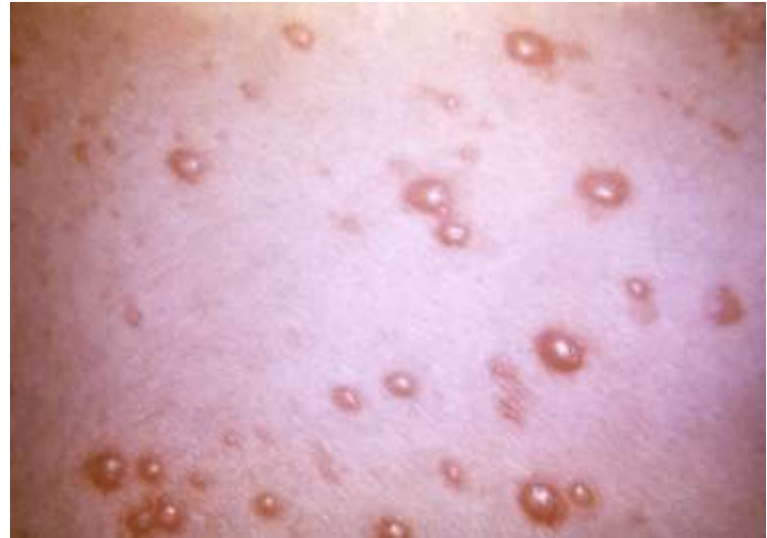
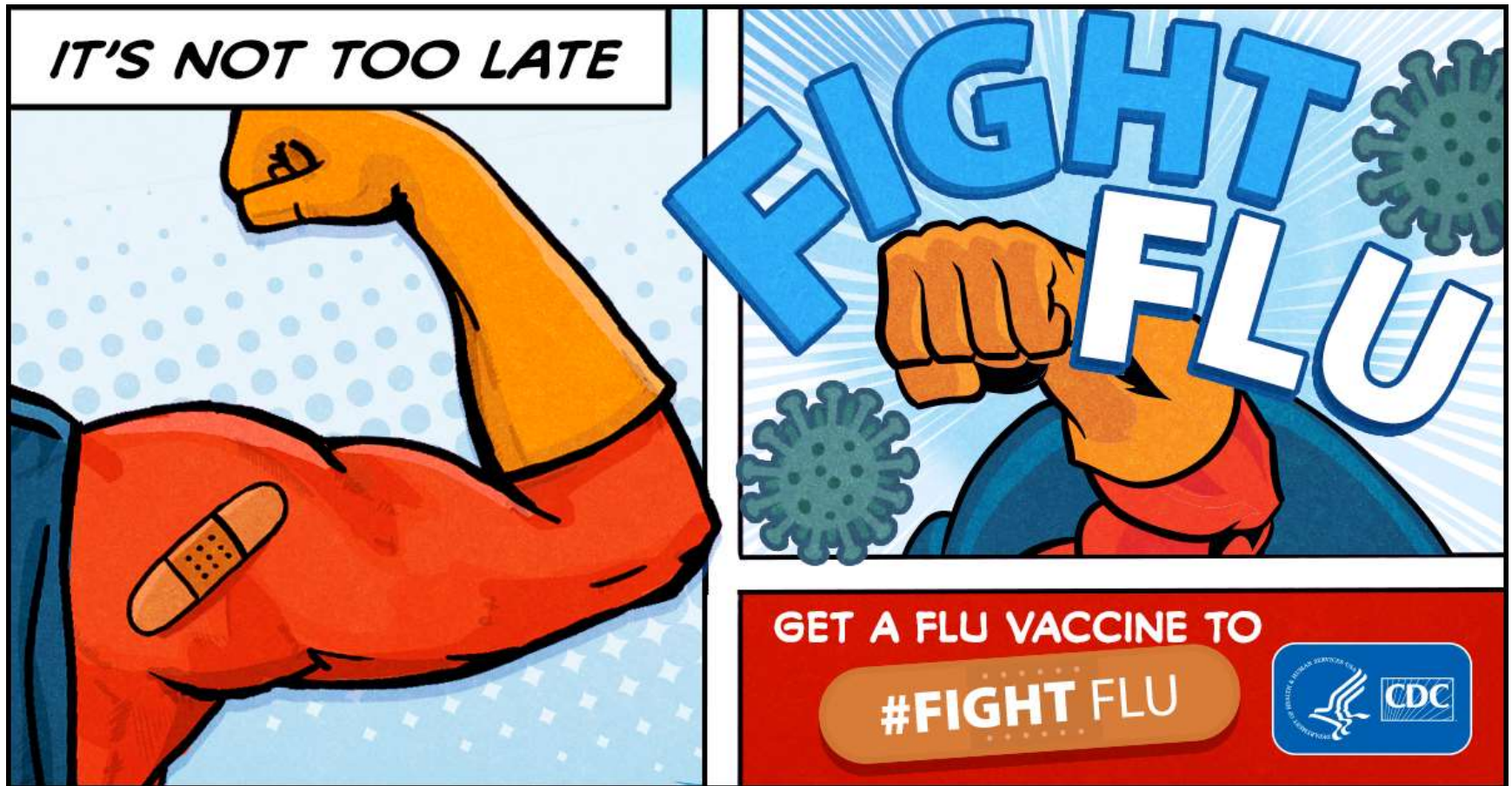


Photo from www.cdc.gov. Image in public domain

Varicella

- High Risk:
 - Pregnancy
 - HIV
 - Healthcare workers
- Contraindications:
 - Severe Immunodeficiency
 - Pregnancy

Influenza



Influenza

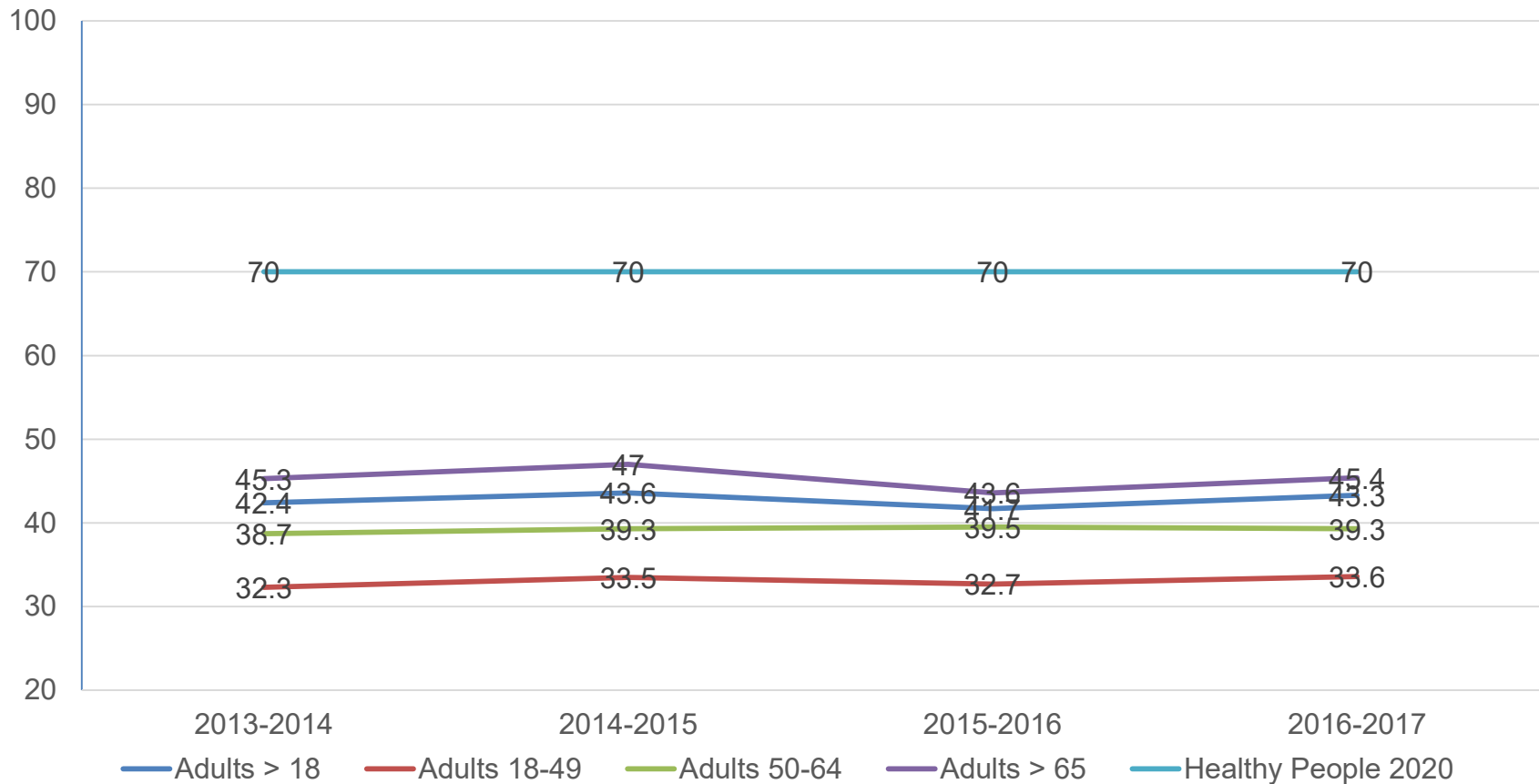
Recommendation

- Universal seasonal vaccination for ALL persons ≥ 6 months of age
- High Risk Individuals include:
 - Age ≥ 50 years
 - Pregnancy
 - Chronic disease
- Effectiveness
 - Variable



Influenza Vaccination

Percent vaccinated



www.cdc.gov/flu/fluview/index.htm

Influenza

Why Vaccinate

On average each year:

- 9.2 - 35.6 million illnesses
- 4.3 – 16.6 million medical visits
- 140,000 - 710,000 hospitalizations
- 12,000 - 56,000 deaths

www.cdc.gov/flu/about/disease/burden.htm

Influenza

Why Vaccinate

During the 2015-2016 flu season, the influenza vaccine prevented:

- > 5 million illnesses
- 2.5 million medical visits
- 71,000 hospitalizations
- 3,000 deaths

www.cdc.gov/flu/about/disease/2015-16.htm

Influenza

Vaccines for older adults

- High dose trivalent (Fluzone high-dose)
- Trivalent with adjuvant (Fluad)
- LAIV only up to age 49 years



Influenza

Vaccine Contraindications

- Severe hypersensitivity reaction to previous dose
- LAIV:
 - Severe egg allergy
 - Pregnancy
 - Immunosuppression

Influenza

Myths

- The flu shot gives you the flu
- The flu shot doesn't work
- The flu shot isn't safe in pregnancy

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Tetanus/Diphtheria/Pertussis

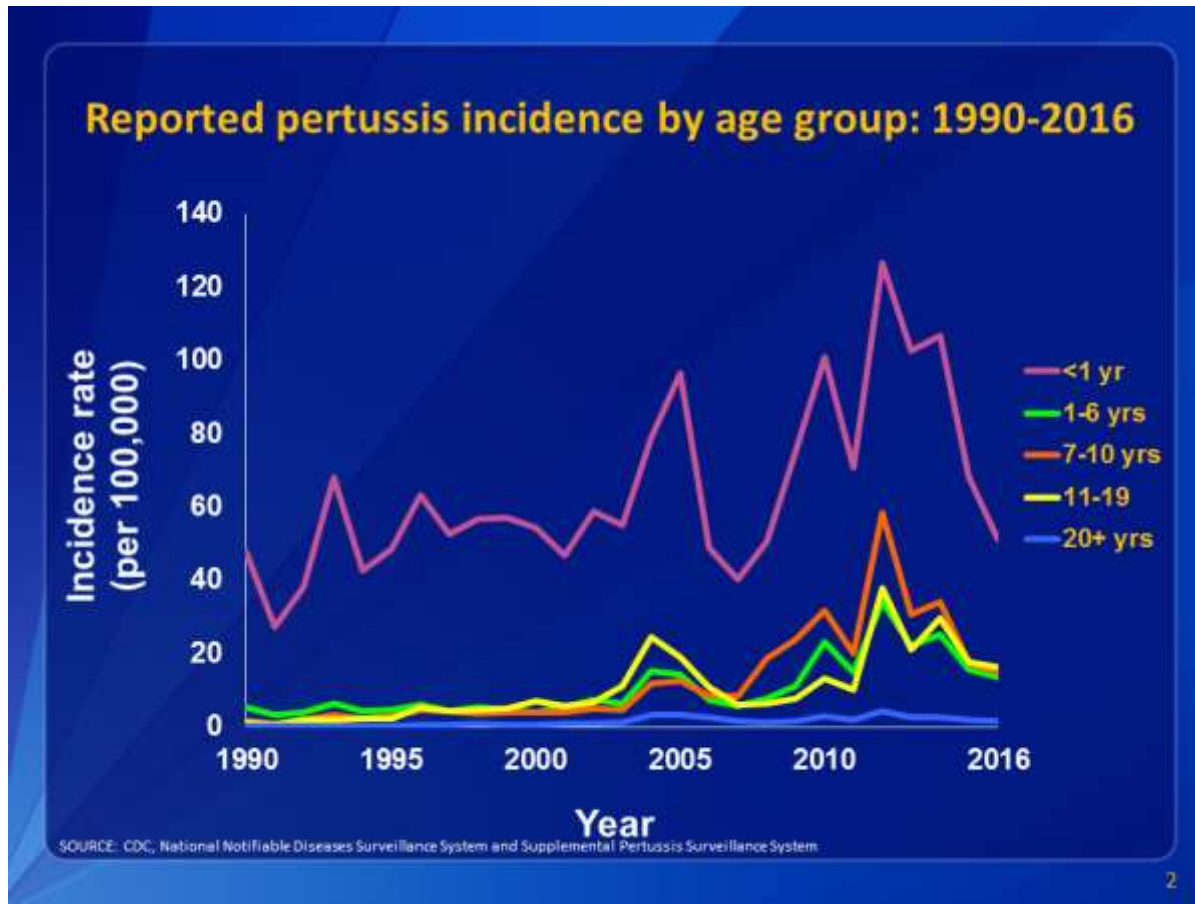
Recommendation

- One lifetime dose of Tdap for all individuals ≥ 10 years of age
- Td every 10 years
- *One dose of Tdap during every pregnancy*

Tetanus/Diphtheria

- Tetanus
 - Rare in U.S.
 - High Risk:
 - Adults \geq 65 years
 - Using I.V. drugs
- Diphtheria

Pertussis



www.cdc.gov/pertussis/surv-reporting.html

Pertussis

Immunize adults
who have contact
with infants



Tdap

- Children get five doses of DTaP before age 7, one dose Tdap age 11-12
- Adacel ®
aged 11 to 64 years
- Boostrix ®
aged 10 or older

Tdap

Vaccine Contraindications

- Severe hypersensitivity reaction to previous dose
- Severe latex allergy
- History of encephalopathy (coma, decreased level of consciousness, or prolonged seizures) not attributable to another identifiable cause within 7 days of a dose of pertussis vaccine

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Human Papillomavirus

Recommendation

- Gardasil-9
- Routine vaccination age 11-12 (2 doses)
- Give up to age 26 if not previously vaccinated (3 doses if given age 15-26)
- Approved by FDA up to age 45
- High Risk: Sex

Human Papillomavirus

Why Vaccinate?

- Every year there are ~12,000 cases of cervical cancer and ~ 4,000 deaths from cervical cancer
- Gardasil protects against the most common causes of cervical cancer
- HPV also causes oral, vaginal, anal, penile cancer

Human Papillomavirus

Vaccine Contraindications

- Severe hypersensitivity reaction to previous dose
- History of severe hypersensitivity to yeast

Human Papillomavirus

Myths

- HPV vaccination does not promote sexual activity
- HPV vaccination should be given regardless of whether sexually active
- HPV vaccination should be given even if history of HPV infection

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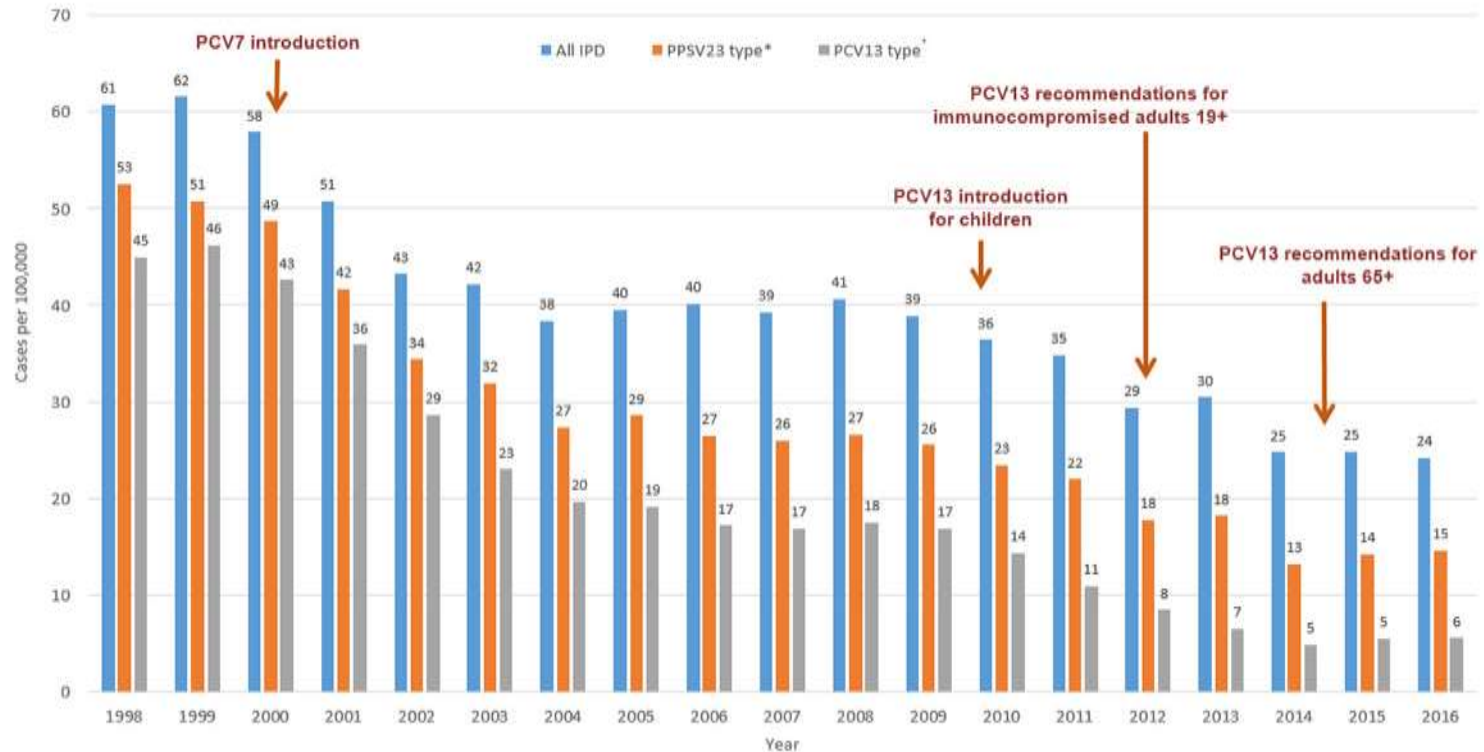
Pneumococcus

- Most common cause of pneumonia, ear infections, and meningitis in young children
- Pneumococcal pneumonia is most common pneumococcal disease in adults
- 90% of cases of invasive pneumococcal disease in adults ≥ 65



Pneumococcus

Trends in invasive pneumococcal disease among adults aged ≥ 65 years old, 1998–2016



*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

www.cdc.gov/pneumococcal/surveillance.html

Pneumococcal Vaccine

Adult indications

Age 65 and older

Immunosuppression

Lung disease

Asplenia

CV disease

Liver disease

Resident of long-term
care facility

Diabetes

CSF leak

Tobacco

Chronic alcoholism

Cochlear Implants

Pneumococcal Vaccine

Recommendation

- Two vaccines recommended
 - PCV13
 - Children < 2 years
 - Adults \geq 65 years
 - PPSV23
 - One year after PCV13

Pneumococcus

Vaccine Contraindications

- Severe hypersensitivity reaction to previous dose

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Herpes Zoster

Recommendation

- 2 vaccines now available
 - Zoster Live Vaccine (Zostavax)
 - One dose adults ≥ 60 years of age
 - Recombinant Zoster Vaccine (Shingrix)
 - 2 dose 2-6 months apart for adults ≥ 50 years of age
 - Preferred
 - Current shortage

Herpes Zoster

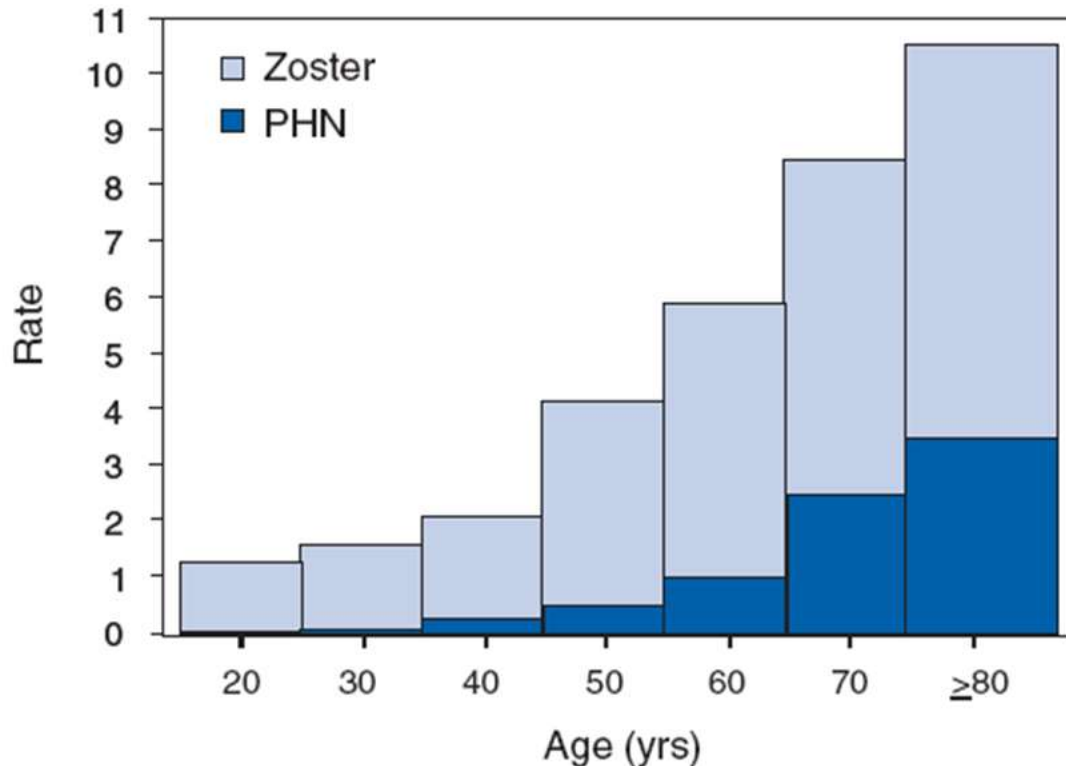
Why Vaccinate

- ~1 million cases of shingles every year
- 32% of Americans will experience a Zoster outbreak during their lifetime
- 1 out of 5 patients with Zoster get post-herpetic neuralgia



Herpes Zoster

FIGURE 3. Rate* of zoster and postherpetic neuralgia (PHN)[†], by age — United States



www.cdc.gov/mmwr/preview/mmwrhtml/rr5705a1.htm?s_cid=rr5705a1_e#fig3

Herpes Zoster

Effects of Postherpetic Neuralgia

Physical	Psychological
<ul style="list-style-type: none">• Chronic fatigue• Anorexia & weight loss• Physical inactivity• Insomnia	<ul style="list-style-type: none">• Anxiety• Difficulty concentrating• Depression, suicidal ideation
Social	Functional
<ul style="list-style-type: none">• Fewer social gatherings• Change in social role	<ul style="list-style-type: none">• Interferes with activities of daily living: dressing, bathing, eating, travel, cooking, shopping

Schmader KE. Clin Infect Dis2001;32(10):1481-6

Schmader KE. Clin Infect Dis2001;32(10):1481-6

Herpes Zoster

Vaccine Contraindications

- Severe hypersensitivity reaction to previous dose
- Current shingles
- Pregnancy or breastfeeding

Herpes zoster

Myths

- The shingles vaccine can cause shingles
- I don't need the shingles vaccine if I haven't had chicken pox

Barriers

- Many adults don't realize they need them
- We get distracted by chronic illnesses during busy visits
- Adult recommendations are often risk-based (more complicated)
- Coverage/Cost

STRONG RECOMMENDATION Strong

Recommendation *Strong Recommendation*

STRONG RECOMMENDATION

Strong Recommendation STRONG

RECOMMENDATION STRONG RECOMMENDATION

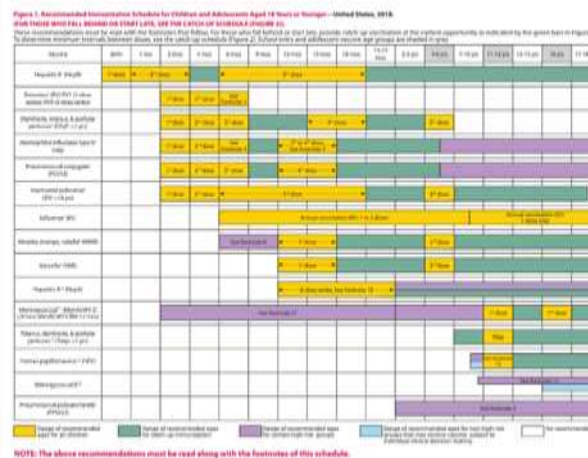
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Increase adult immunization rates

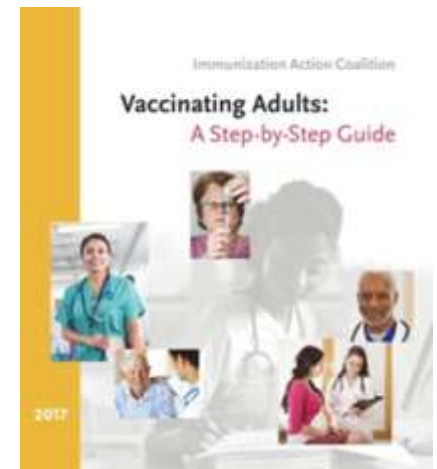
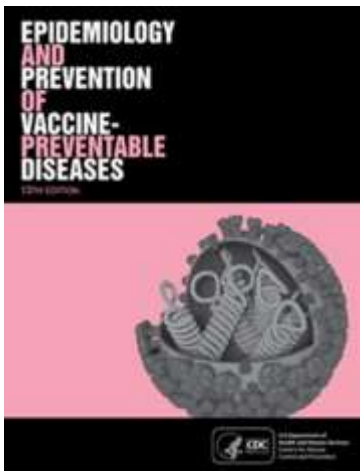
- Easy access to immunization schedules



Increase adult immunization rates

Resources for providers

- <http://www.immunize.org/guide/>
- <https://www.cdc.gov/vaccines/pubs/pinkbook/index.html>
- <https://www.cdc.gov/vaccines/hcp/adults/for-practice/standards/index.html>



Increase adult immunization rates

Resources for patients

- AAFP's FamilyDoctor.org
 - <https://familydoctor.org/immunizations/>
- CDC website
 - <https://www.cdc.gov/vaccines/index.html>
- Immunization Action Coalition
 - <http://www.immunize.org/handouts/>



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