Brigham and Women's Hospital
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Adult Immunization

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  - Clinical focus: HIV, General ID
  - Education focus: Undergraduate Medical Education
  - Research focus: One Health + Medical Education

DISCLOSURES

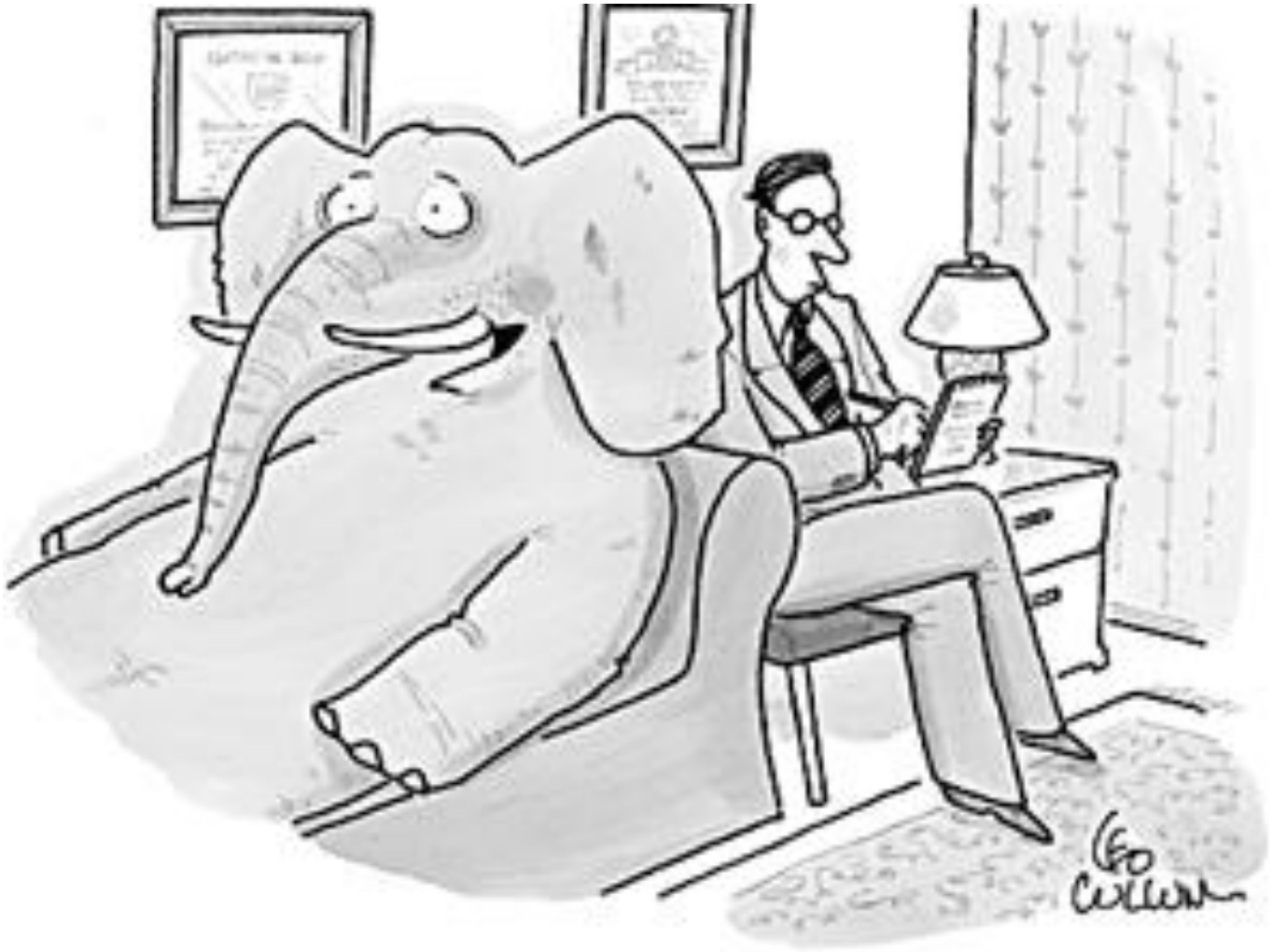
I have no financial disclosures

I LOVE vaccines

OBJECTIVES

Upon completion of this activity, participants will be able to:

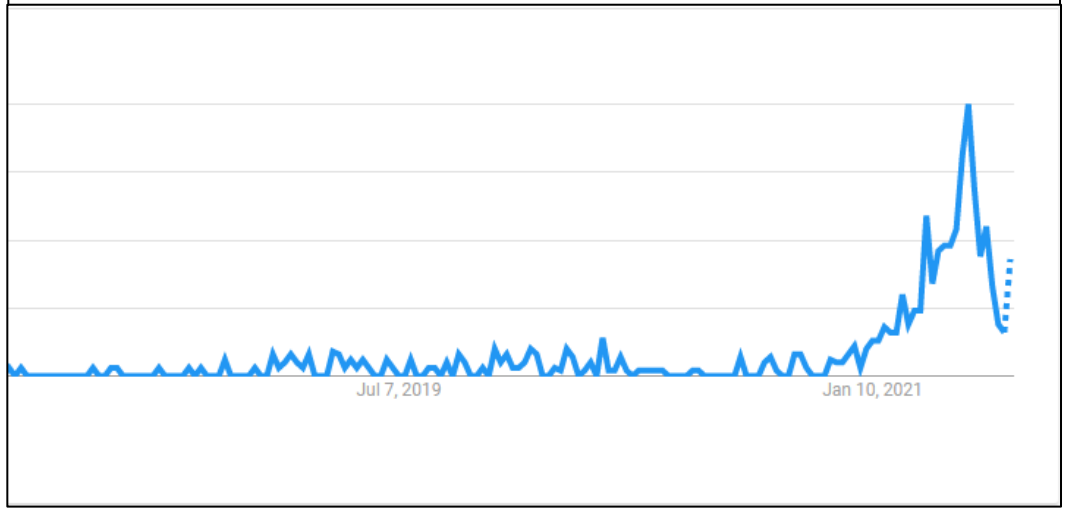
- Advise patients regarding vaccine recommendations
- Explain the reasoning behind changes
- Evaluate data behind recent changes in vaccine guidelines
- Assess areas of controversy



"I'm right there in the room, and no one even acknowledges me."

Not everyone loves vaccines as much as I do

“Vaccine hesitancy”



Survey reveals low trust in US public health agency information amid pandemic

Mary Van Beusekom, MS, March 7, 2023

Topics: COVID-19

“Those who do not remember the past are condemned to repeat it.”

The Washington Post

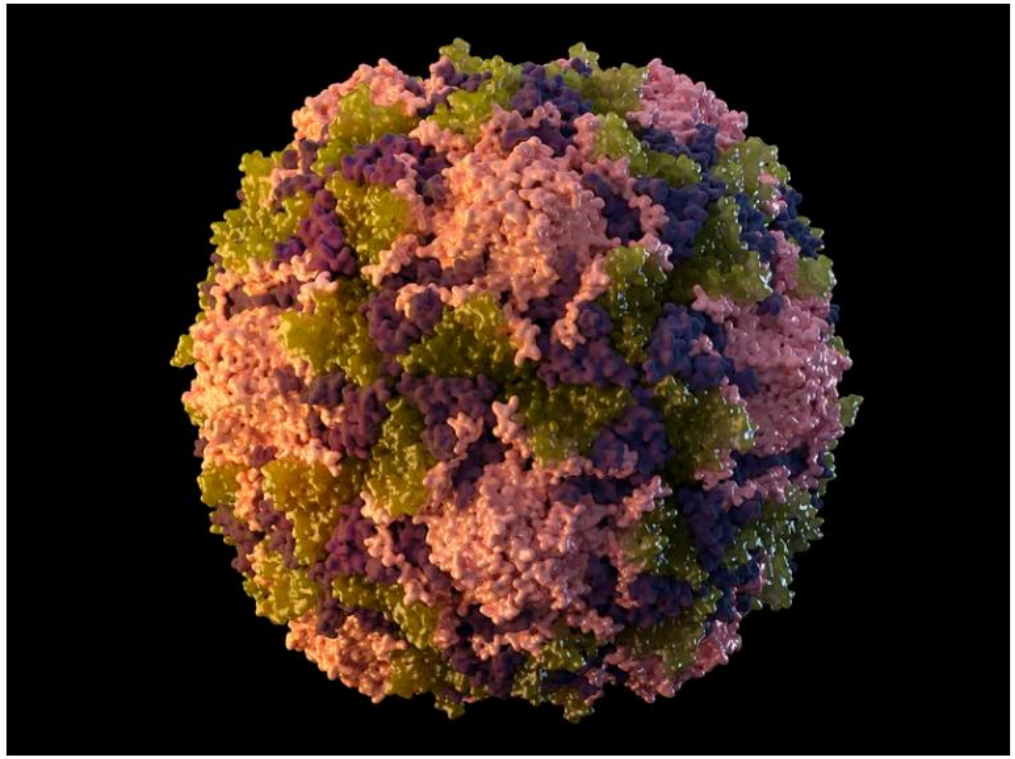
[U.S. measles cases reach 33-year record high as outbreaks spread]

HEALTH

Poliovirus detected in more wastewater near New York City

September 10, 2022 · 5:17 AM ET

THE ASSOCIATED PRESS



Kennedy Removes All C.D.C. Vaccine Panel Experts

The U.S. health secretary chose to "retire" members of a committee that makes significant decisions about who receives immunizations, including the vaccines for children.

Listen to this article · 8:38 min Learn more

Share full article

1.8K

Robert F. Kennedy Jr., the health secretary, in April. Pete Kiehart for The New York Times

By Apoorva Mandavilli

June 9, 2025

Vaccines in 2025: Promise and Perils

Vaccine development is happening at the fastest pace in history
Vaccines continue to be the most impactful tool for disease prevention worldwide

- Trust in public health agencies is tenuous
- The anti-vaccine and anti-science movement in the United States is stronger than ever

Road Map

Zoster/VZV
Tdap
MMR
Pneumococcus
RSV
COVID
Hepatitis B

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID–19	1 or more doses of 2024–2025 vaccine (See Notes)			2 or more doses of 2024-2025 vaccine (See Notes)
Influenza inactivated (IIV3, ccIIV3) **Influenza recombinant** (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) **Influenza recombinant** (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory syncytial virus (RSV)	Seasonal administration during pregnancy (See Notes)		60 through 74 years (See Notes)	≥75 years
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (See Notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			For health care personnel (See Notes)
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (See Notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23)			See Notes	See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)		
***Haemophilus influenzae* type b** (Hib)	1 or 3 doses depending on indication			
Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3-dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of immunity

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision–making

No Guidance/ Not Applicable

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2025

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count: <15% or <200/mm³	HIV infection CD4 percentage and count: ≥15% and ≥200/mm³	Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End–stage renal disease or on dialysis	Chronic liver disease; alcoholism[a]	Diabetes	Health care Personnel[b]
COVID–19		See Notes									
Influenza inactivated Influenza recombinant		Solid organ transplant (See Notes)	1 dose annually								
LAIV3					1 dose annually if age 19–49 years		1 dose annually if age 19–49 years				
RSV	Seasonal administration (See Notes)	See Notes				See Notes			Liver disease (See Notes)	See Notes	
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	*										
VAR	*			See Notes							
RZV		See Notes									
HPV	*	3-dose series if indicated									
Pneumococcal											
HepA											
Hep B	See Notes									Age ≥ 60 years	
MenACWY											
MenB											
Hib		HSCT: 3 doses[c]				Asplenia: 1 dose					
Mpox	See Notes				See Notes						See Notes
IPV		Complete 3-dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)									

- Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity
- Not recommended for all adults, but recommended for some adults based on either age **OR** increased risk for or severe outcomes from disease
- Recommended vaccination based on shared clinical decision–making
- Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.
- Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction
- Contraindicated or not recommended *Vaccinate after pregnancy, if indicated
- No Guidance/ Not Applicable

a. Precaution for LAIV3 does not apply to alcoholism.

b. See Notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations.

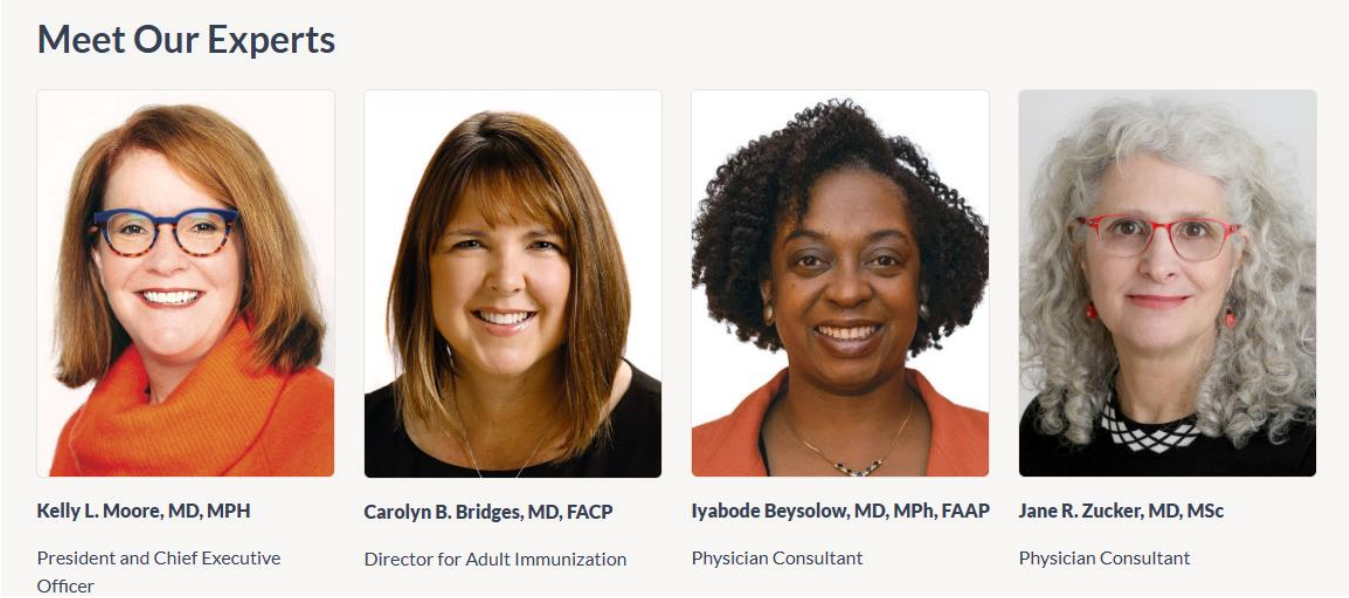
c. Hematopoietic stem cell transplant.


AMERICAN MISTRESS
RAMBLERS
THE SHELF PHYLLIS ROSE
CRAZY BLOOD
Alchemy of Beautiful Things
BEFORE VERSAILLES
MORTAL FIRE
METEORITE HUNTER
Sweetness #9 STEPHAN EIRIK CLARK
Room to Be King
ALL BETTER NOW
HOODOO
TARIQ ALI
THE LEGEND OF JESSE SMOKE ROBERT BAUSCH
The Whole World Over
I AM SCOUT
ROAM ALAN LAZAR
NANCY DREW
THE GHOST OF KINGS
JOSÉ SARAMAGO
IT WASN'T ALWAYS LIKE THIS JOY PREBLE
The Violet Hour
The Bright Continent
truest
lost stars
WILHELM ROPKE
A Bitter Magic
KAYLA Chronicles
Health and Economic Growth
Soundings
A Wolf Called ROMEO
LEO BRADY The Hollywood Sign
BEST SEAT IN THE HOUSE

Your Color-Coding Experts

CDC ACIP: https://www.cdc.gov/vaccines/schedules/hcp/adult.html

Ask the Experts: http://www.immunize.org/askexperts/



Before they e

DOSES of VACCINES for U.S. CHILDREN from BIRTH-18 YEARS (CDC)

1983

DTP (2 months)
OPV (2 months)
DTP (4 months)
OPV (4 months)
DTP (6 months)
MMR (15 months)
DTP (18 months)
OPV (18 months)
DTP (4 years)
OPV (4 years)
Td (15 years)

*1986:
Pharmaceutical manufacturers producing vaccines were freed from ALL liability resulting from vaccine injury or death by the Childhood Vaccine Injury Act.

2016

Influenza (Pregnancy)
TdaP (Pregnancy)
Hep B (birth)
Hep B (2 months)
Rotavirus (2 months)
DTaP (2 months)
HIB (2 months)
PCV (2 months)
IPV (2 months)
Rotavirus (4 months)
DTaP (4 months)
HIB (4 months)
PCV (4 months)
IPV (4 months)
Hep B (6 months)
Rotavirus (6 months)
DTaP (6 months)
HIB (6 months)
PCV (6 months)
IPV (6 months)
Influenza (6 months)
Influenza (7 months)
HIB (12 months)
PCV (12 months)
MMR (12 months)
Varicella (12 months)
Hep A (12 months)
DTaP (18 months)
Influenza (18 months)
Hep A (18 months)
Influenza (30 months)
Influenza (42 months)
DTaP (4 years)
IPV (4 years)
MMR (4 years)
Varicella (4 years)
Influenza (5 years)
Influenza (6 years)
Influenza (7 years)
Influenza (8 years)
Influenza (9 years)
Influenza (10 years)
HPV (11 years)
HPV (11 years)
HPV (11 years)
Influenza (11 years)
TdaP (12 years)
Influenza (12 years)
Meningococcal (12 yrs)
Influenza (13 years)
Influenza (14 years)
Influenza (15 years)
Influenza (16 years)
Meningococcal (16 yrs)
Influenza (17 years)
Influenza (18 years)

2016
TOTAL DOSES: 70
Injections: 51
(3 Doses of Rotavirus are liquid)
**Total Doses without the Flu shot= 51*

1983
TOTAL DOSES: 24
Injections: 7
(4 Doses of Polio were liquid)

(SOURCE: www.CDC.gov)

DTP- Diphtheria, Tetanus, Pertussis (whole cell)
OPV- Oral Polio Virus
MMR- Measles, Mumps, Rubella
Hep B- Hepatitis B
DTaP- Diphtheria, Tenatus, Pertussis (acellular)
HIB- Haemophilus influenzae Type B
PCV- Pneumococcal
IPV- Inactivated Polio Virus
Varicella- Chicken Pox
Td- Tetanus, Diphtheria
Tdap- Tetanus, Diphtheria, and Pertussis
HPV- Human papillomavirus (Gardasil)

Brought to you by: IMMUNITY EDUCATION group

RZV

Recombinant Zoster Vaccine

Herpes Zoster

Question 1

Case 1

45-year-old man presents one month after an episode of shingles. Does he need to have the RZV vaccine? If so, when?

A. Yes, give it now
B. Yes, but wait until acute symptoms abate
C. Yes, but he has to wait until age 50
D. No, he is now immune

Efficacy of Shingles Vaccines

Age group	Zostavax (ZVL) Efficacy*^
50-59	70%
60-69	64%
70+	38%

***Protection declines to <35% after 6 years**

^Do not give live vaccine if immunocompromised

NEJM 2015

What about in immunocompromised hosts <50?

Immunocompromised group	Vaccine efficacy
Autologous stem cell transplant recipient	68.2%
Hematologic malignancies	87.2%
Immune mediated diseases (not on immunosuppression)	90.5%

Anderson TA et al. *MMWR.* January 21, 2022

Recombinant Zoster Vaccine (RZV) Highlights

- Approved for patients 50 years and older + immunocompromised pts ≥18-49
- Two dose series, separated by at least 8 weeks
- High immunogenicity
- Subunit (not live) vaccine

If second dose delayed from shortages there is no need to restart the series. Just give #2

Special Populations

Condition	Recommended?
Received ZVL in past	
No known history of chicken pox	
On suppressive valacyclovir for HSV	
Age >50 and history of shingles	
Age <50 and history of shingles	
Pregnant	
Breast feeding	

Question 1 Answer

Case 1

45-year-old man presents one month after an episode of shingles. Does he need to have the RZV vaccine? If so, when?

A. Yes, give it now

B. Yes, but wait until acute symptoms abate

C. Yes, but he has to wait until age 50

D. No, he is now immune

2 Quick questions

- 56 year old woman never recalls having chickenpox. Should we check her varicella ab prior to giving RZV?

No

- What if her varicella ab was checked for some reason and was negative. She receives 2 doses of varicella vaccine. Does she still need RZV?

ACIP says "Sure"

Can you get Zoster after VZV vaccine?

- Yes, rarely the live varicella vaccine can establish latent infection and then shingles

What will the future of RZV be in 2045?

Most pts turning 50 in that year will have received the VZV vaccine since it became mandatory in 1995

Hambleton et al., JID 2008

Tdap

Tetanus
Diphtheria
Pertussis

Question 2

Case 2

- 67-year-old male had his last tetanus shot 10 years ago. What do you give him as a booster?
  A. Tdap today and Tdap q10 years
  B. Td today and Td q10 years
  C. Tdap today and then Td q10 years

Tdap indications

- Adults should receive at least **one Tdap**
- Subsequent every-10-year doses can be with Tdap or Td (update as of October 26, 2019)
  - Make sure those around children, healthcare workers and college students get it

Exceptions

- Pregnant women—must receive dose Tdap with every pregnancy
- Close contacts of newborns
- Anyone traveling internationally due to pertussis outbreaks need Tdap within 10 years

Question 2 Answer

Case 2

- 67-year-old male had his last tetanus shot 10 years ago. What do you give him as a booster?
  - **A. Tdap today and Tdap q10 years**
  - B. Td today and Td q10 years
  - **C. Tdap today and then Td q10 years**

MMR

Measles
Mumps
Rubella

Question 3

Case 3

My patient was born in 1986. He is going to a new graduate program, so I checked a measles titer which was negative. His immunization record shows that he had one dose of MMR in childhood. What do you advise?

A. Give booster MMR
B. Give booster MMR then recheck titer 1-2 months later
C. Documentation of 1 vaccine supersedes negative titers, no need for another shot

What counts as presumptive immunity?

ANY of the following

- Birth before 1957
- Laboratory confirmation of measles
  (verbal history does not count)
- Laboratory evidence of immunity
- Written documentation of adequate vaccination*

https://www.medinaction.com/your-immune-system-vaccines-and-traveling/

Adults – One Dose or Two?

- 1957-1989: one dose
- 1989: changed to two dose series

Number of doses	Seroprotection
1	93%
2	97%

<u>One dose is considered sufficient, except for:</u>

- Healthcare personnel
- International travelers
- Persons attending college or other post-high school institution
- Those at increased risk during measles outbreak

Question 3 Answer

My patient was born in 1986. He is going to a new graduate program, so I checked a measles titer which was negative. His immunization record shows that he had one dose of MMR in childhood. What do you advise?

A. Give booster MMR

B. Give booster MMR then recheck titer 1-2 months later

C. Documentation of 1 vaccine supersedes negative titers, no need for another sh

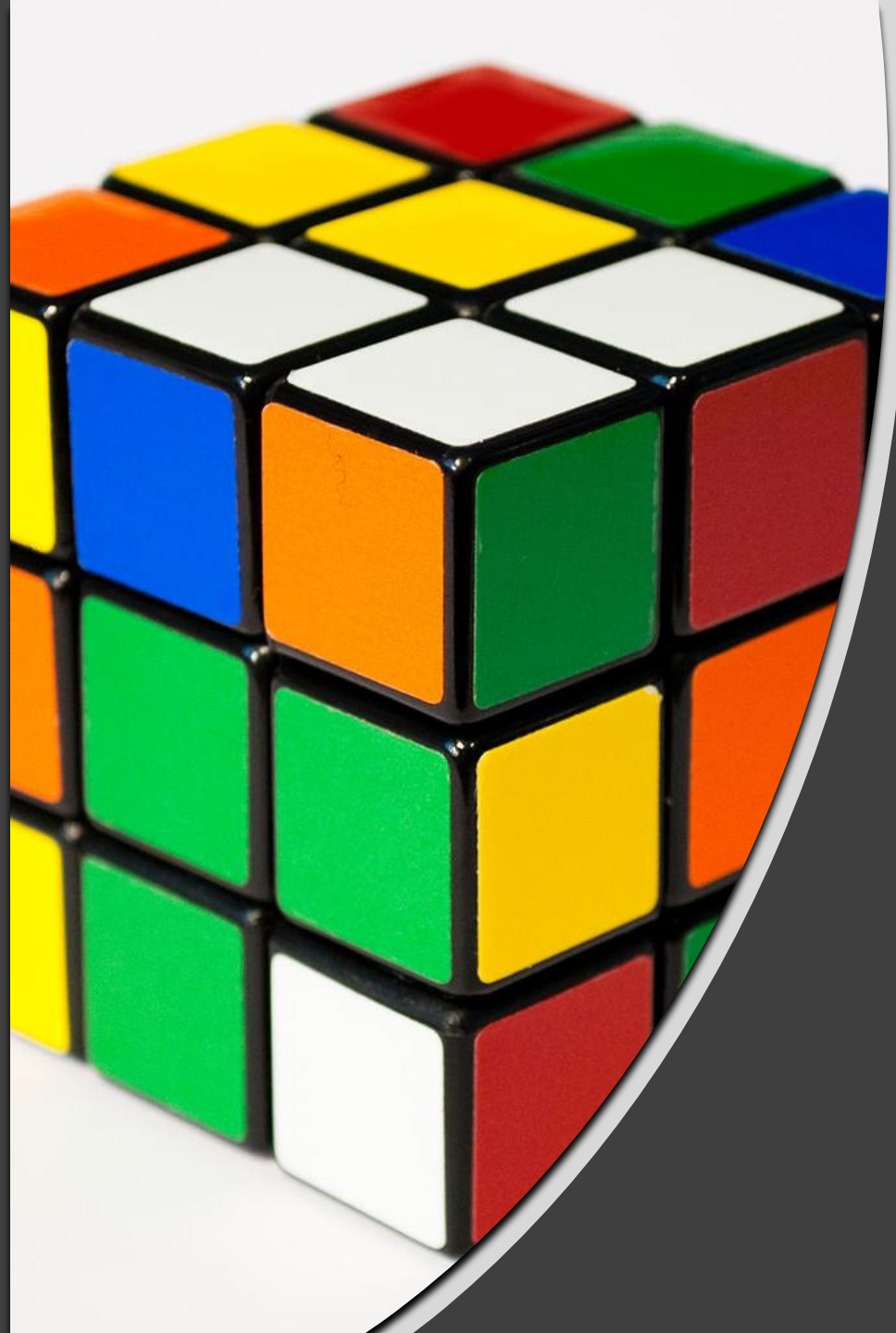
Camille Nelson Kotton @KottonNelson · Mar 8

Time to consider getting a second dose of MMR if you were born between 1957 and approximately 1980 and never had a second dose of measles vaccine. Not for moderate to severely Immunocompromised as it's a live viral vaccine.

What to do with negative serologies?

http://mylifepath.info/

- Sensitivity of serology only ~80%
- Probably less sensitive to detect vaccine-induced immunity
- Age-appropriate documented vaccination, trumps post-vaccination titers



Pneumococcal

Pneumococcal vaccine Case series

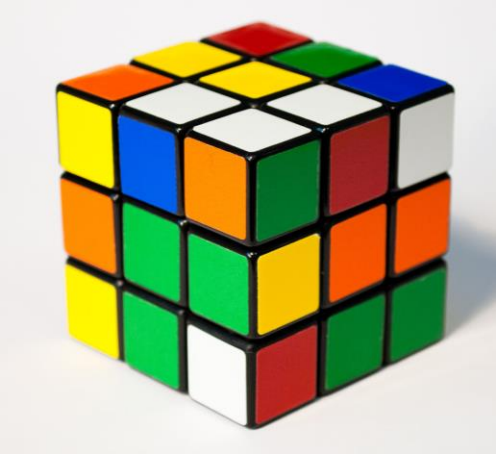
What pneumococcal series, including booster, does each patient need?

65-year-old with no medical problems.

52-year-old with no medical problems.

20-year-old with cochlear implants

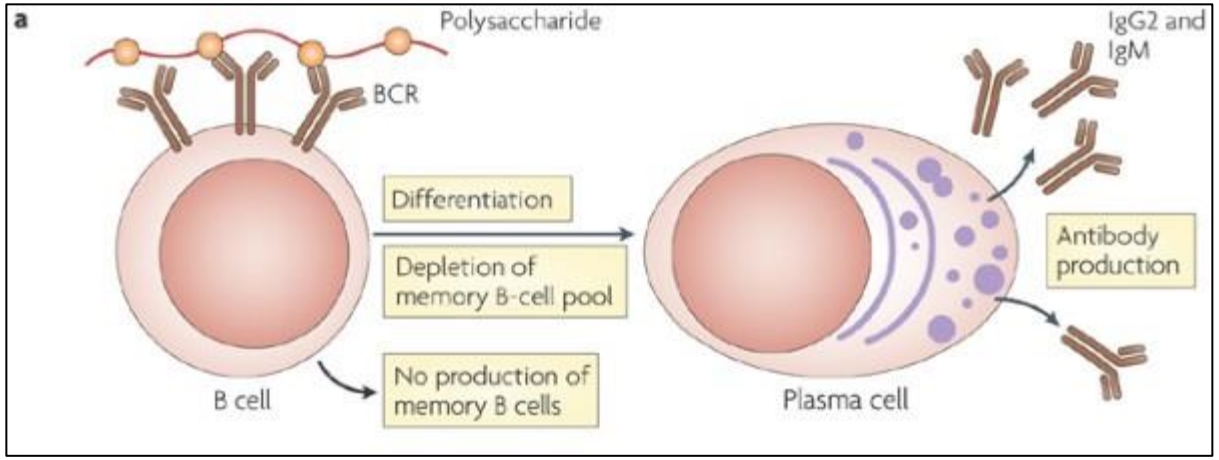
26-year-old with sickle cell disease and functional asplenia

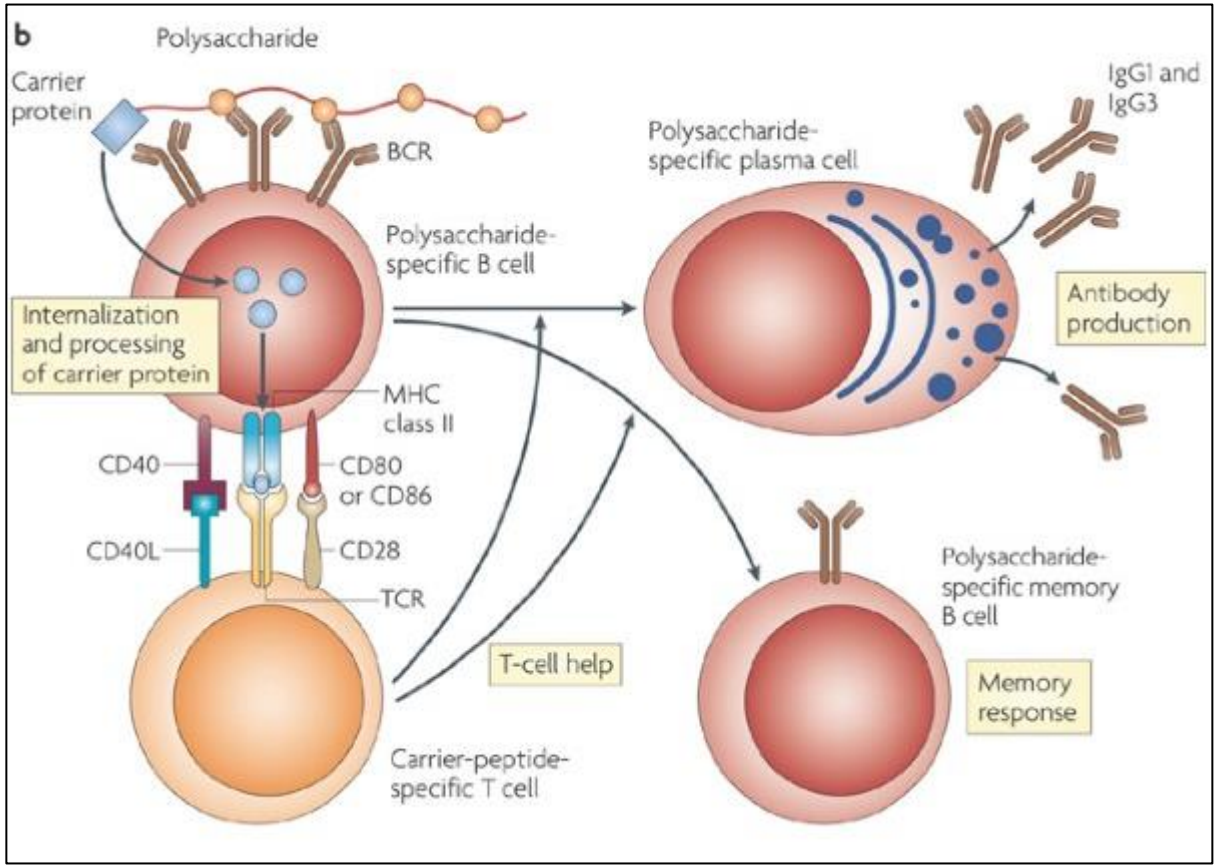


26-year-old with multiple sclerosis on ocrelizumab

Polysaccharide vaccines (eg PPSV)
composed of polysaccharides that resemble pneumococcal serotypes, produce Abs

Conjugated vaccines (eg PCV)
joins protein to polysaccharide chain. Protein brings in T cell help & leads to memory B cells





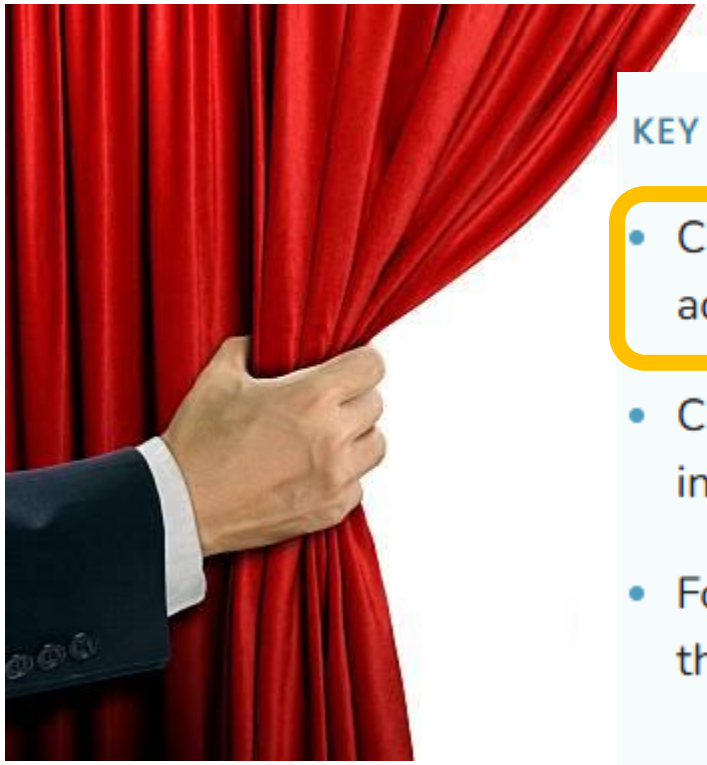
New Pneumococcal Vaccines

- Pneumococcal 15-valent conjugative vaccine (PCV15, Merck)
  - Studied as a series, followed by PPSV-23 (pneumovax)
- Pneumococcal 20-valent conjugate vaccine (PCV20, Pfizer)
  - Studied as a single, stand-alone pneumococcal vaccine
- Pneumococcal 21-valent conjugate vaccine (PCV21, Merck)
  - Studied as a single, stand-alone pneumococcal vaccine

UPDATE

October, 2024

ACIP October 2024



KEY POINTS

- CDC recommends pneumococcal vaccination for children younger than 5 years and adults 50 years or older.
- CDC also recommends pneumococcal vaccination for children and adults at increased risk for pneumococcal disease.
- Follow the recommended immunization schedule to ensure that your patients get the pneumococcal vaccines that they need.

CDC Pneumococcal Recommendations:

PCV20/PCV21 alone

OR

PCV15 + PPSV23 one year later

- All patients ≥50 years old

AND

- Patients 19-49 years old with underlying medical condition or risk factors*

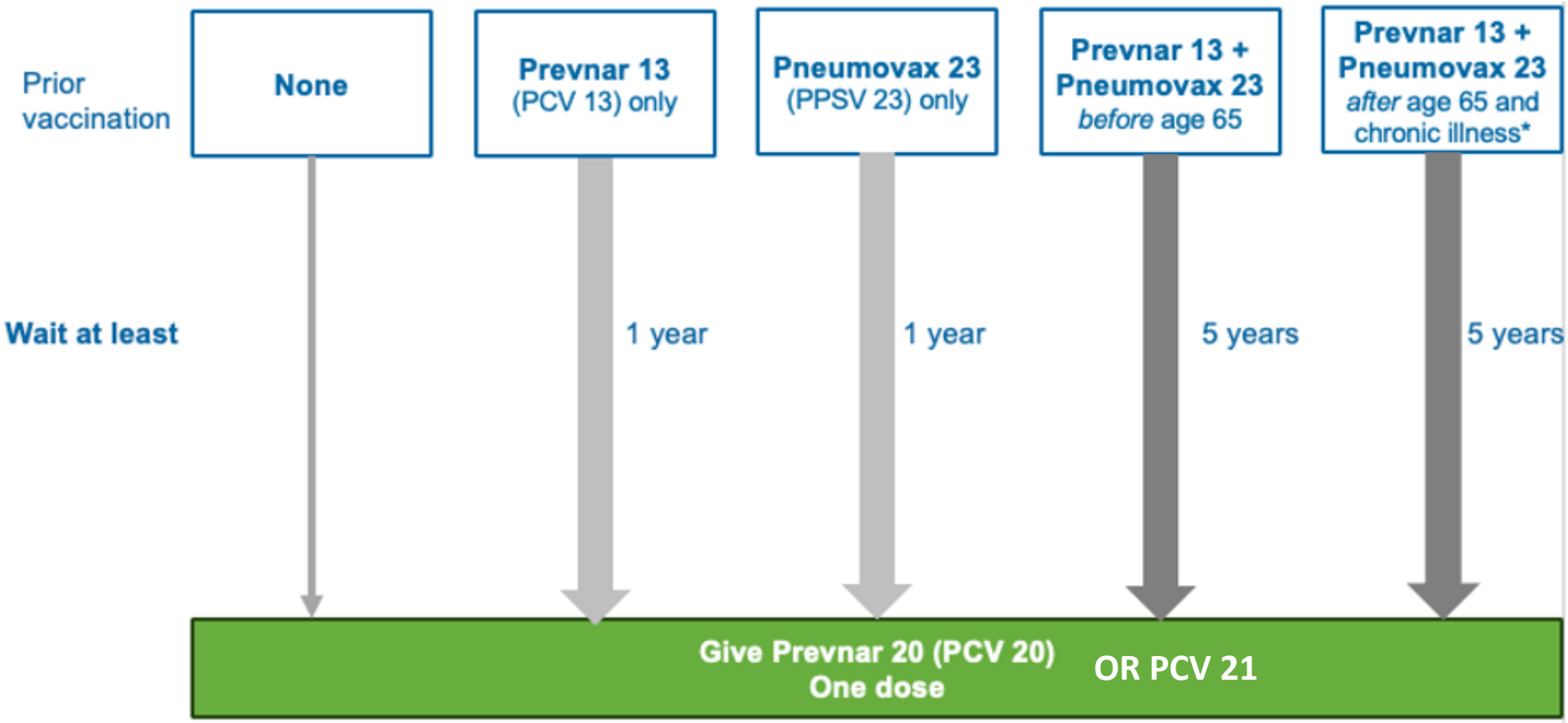
No boosters.

https://www.cdc.gov/pneumococcal/hcp/vaccine-recommendations/index.html

*Conditions

Alcohol use disorder
Heart disease
Liver disease
Lung disease
CKD
Cigarette smoking
Cochlear implant
Asplenia
CSF leak
Diabetes
Malignancy
HIV
Hodgkin disease
Immunodeficiency
Immunosuppression
Solid organ transplant
Sickle cell disease

“But I already started…”



PCV-21 is not just PCV-20 + 1

21-valent pneumococcal conjugate vaccine (CAPVAXIVE™, Merck):

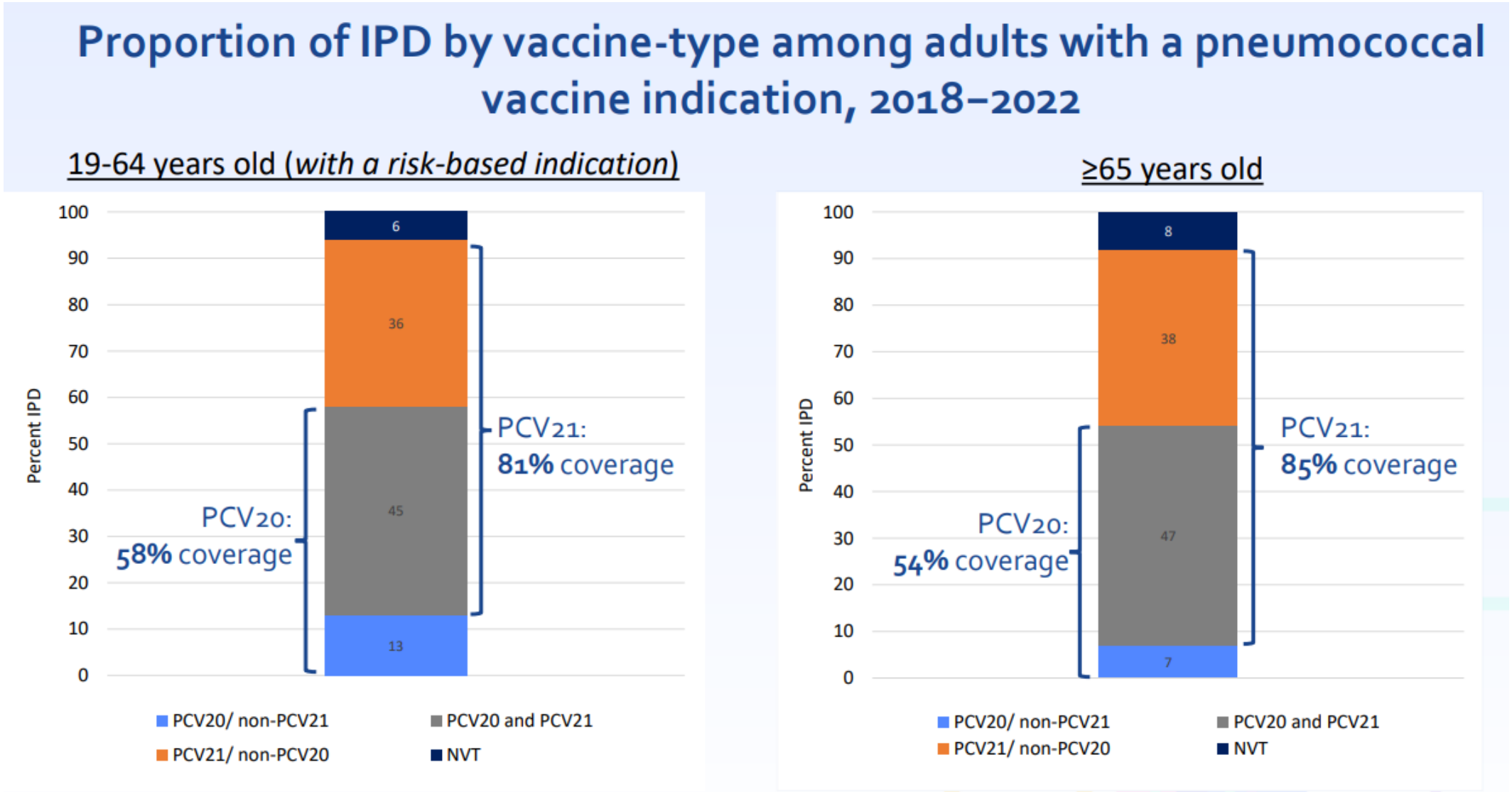
- **Approved by the FDA for adults aged ≥18 years on June 17, 2024[1]**

	1	3	4	5	6A	6B	7F	9V	14	18C	19A	19F	23F	22F	33F	8	10A	11A	12F	15B	2	9N	17F	20	15A	15C	16F	23A	23B	24F	31	35B
PCV15	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■																	
PCV20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■												
PPSV23	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
PCV21		■			■		■				■			■	■	■	■	■	■			■	■	■	■	■	■	■	■	■	■	■

PCV-21 doesn't include serotype 4 (responsible for IPD in patients with homelessness + Alaska/Colorado/Navajo Nation/New Mexico/Oregon

https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/01-Pneumococcal-Loehr-508.pdf

PCV-21 is not just PCV-20 + 1



https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/01-Pneumococcal-Loehr-508.pdf

Pneumococcal vaccine Case series

What pneumococcal series, including booster, does each patient need?

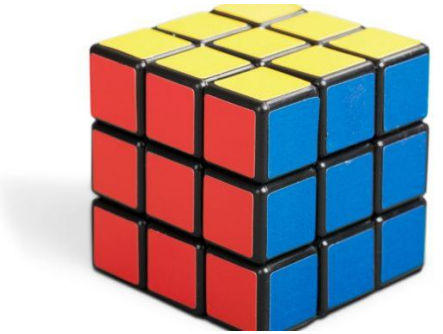
PCV-20 or 21 x1*

PCV-20 or 21 x1*

PCV-20 or 21 x1*

PCV-20 or 21 x1*

PCV-20 or 21 x1*



*OR PCV-15 + PPSV-23

But wait…there's more

New Adult Pneumococcal Vaccines in Advanced Stages of Development

	1	3	4	5	6A	6B	7F	9V	14	18C	19A	19F	23F	22F	33F	8	10A	11A	12F	15B	2	9N	17F	20	15A	15C	16F	23A	23B	24F	31	35B	16F	7C
PCV15	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■																			
PCV20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■														
PPSV23	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
PCV21		■			■		■				■			■	■	■	■	■	■			■	■	■	■	■	■	■	■	■	■	■		
Pn-MAPS24v	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
VAX-24	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
VAX-31	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■		■	■	■	■

24-valent pneumococcal vaccines:

- **Pn-MAPS24v (GSK):** Completed phase 1/2 study for adults; Breakthrough Therapy Designation granted and Phase 3 study in preparation; undergoing phase 2 studies in infants[1]
- **VAX-24 (Vaxcyte):** Completed phase 1/2 studies for adults, completed enrollment for phase 2 studies in infants[2]

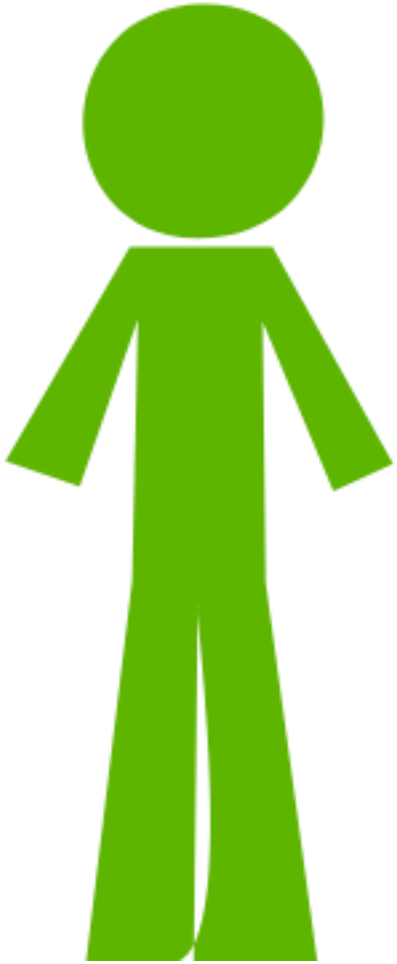
31-valent pneumococcal vaccine (VAX-31, Vaxcyte):

- Completed enrollment of phase 1/2 study in adults aged ≥50 years[3]

https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/01-Pneumococcal-Loehr-508.pdf

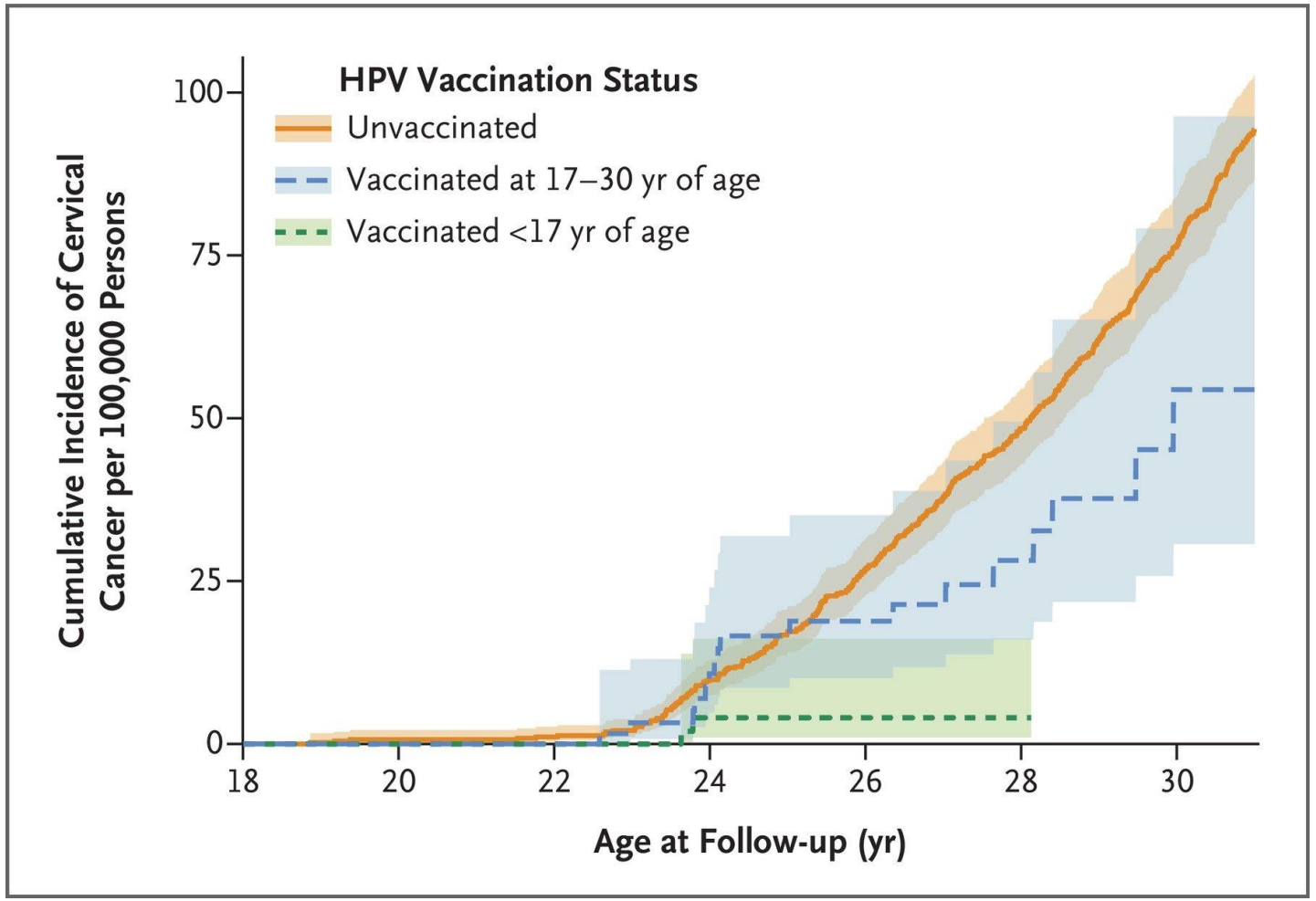
Predictions…

- Polysaccharide vaccine (PPSV-23) will be phased out very soon
- Rolling approval of conjugate vaccines with broader serotype coverage
- Will people previously vaccinated with PCV-20 need broader serotype boosters when available?
- We have to watch for incidence of Invasive pneumococcal disease caused by serotype 4 (this one not covered in PCV21)



HPV

The greatest anti-cancer innovation of all time?



Lei J et al. NEJM Oct 1, 2020

July 2019 HPV Change

- HPV recommended for children and adults aged 9-26 years.
- There is **no** difference between males + females
- Ok to give to adults btw 27-45yo who might benefit (shared decision making)
- Not licensed for those >45 yo

Which 27-45yo patients should receive HPV vaccine?

- Not yet sexually active or minimal partners to date
- Ongoing new sex partners

Probably not needed for those in long term, mutually monogamous sexual partnerships

RSV

Question 4

Case 4

- 51-year-old woman with history of moderate-severe asthma asks about the RSV vaccine. What do you recommend?
  A. Wait till she is 60
  B. Wait till she is 75
  C. Give RSV vaccine x 1

June, 2025

UPDATE

ACIP June 2025

ACIP Advisory panel vote:

1. One dose RECOMMENDED for anyone age 75 and older

2. One dose RECOMMENDED for **50**-74 who are at high risk for severe RSV disease

3. For people **50-**74 who are NOT at risk for severe RSV disease, RSV vaccine is NOT RECOMMENDED.

RSV vaccination will have the most benefit if given in late summer or early fall.

Adults who have already received a dose of RSV vaccine DO NOT need to receive another dose this year.

Who is at high risk of serious RSV disease?

- Patients who live in congregate living situations (eg, assisted living or skilled nursing facility).

- Patients with cardiopulmonary disease, kidney disease, liver disease, diabetes mellitus, chronic or progressive neurologic or neuromuscular conditions, and hematologic disorders.

- Patients with moderate to severe immunocompromise

Sept 2023

For pregnant women, CDC and ACOG *recommend*:

Seasonal administration of one dose of RSV vaccine for pregnant people during weeks 32 through 36 of pregnancy between September to January.

Immunizations to Protect Against Severe RSV

Who Does It Protect?	Type of Product	Who Is It Recommended For?	When Is It Available?
 Adults 60 and over	RSV vaccine	Adults ages 60-74 who are at increased risk of severe RSV AND Everyone ages 75 and older	Available any time, but best time to get vaccinated is late summer and early fall
 Babies	RSV antibody (nirsevimab) given to baby	All infants whose mother did not receive RSV vaccine during pregnancy, and some children ages 8-19 months who are at increased risk for severe RSV	October through March*
	OR		
 Babies	RSV vaccine (Pfizer's ABRYSVO) given to mother during pregnancy	All pregnant women during weeks 32-36 of their pregnancy	September through January

www.cdc.gov/rsv

*Recommended timing of administration in most of the continental United States. Recommended timing of administration may differ in some areas, based on state, local, or territorial guidance.

CDC

Immunizations to Protect Against Severe RSV

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CDC

Question 4 Answer

Case 4

- 51-year-old woman with history of moderate-severe asthma asks about the RSV vaccine. What do you recommend?
  A. Wait till she is 60
  B. Wait till she is 75
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COVID

Question 5

Case 5

A healthy 33-year-old woman who is 20 weeks pregnant comes for her yearly primary care visit. She asks whether she should get the COVID vaccine while pregnant either here in primary care or at her upcoming OB appointment

A. Yes
B. No
C. Not sure, defer to OB

Updates to COVID vaccines

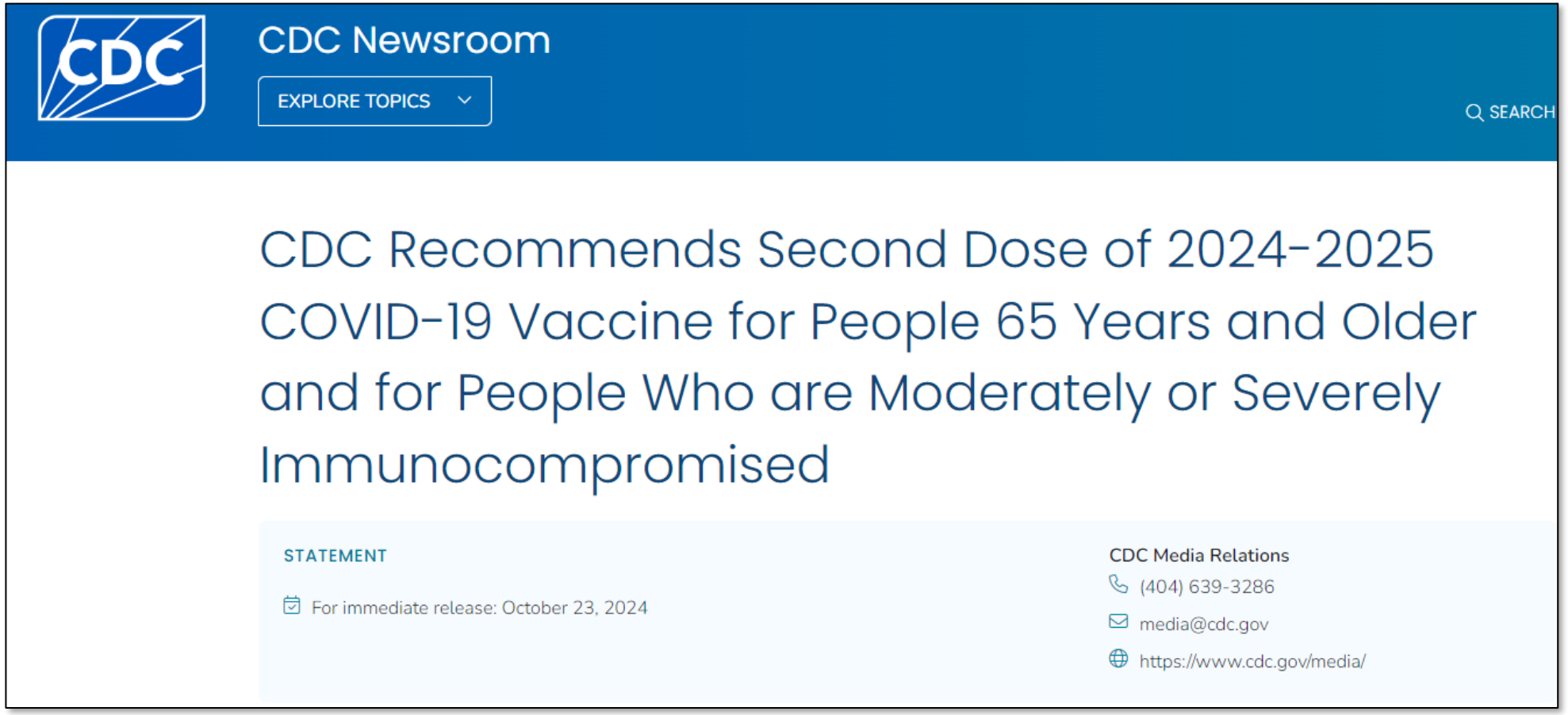
- **May 27th, 2025-** Robert Kennedy announced COVID vaccines no longer recommended for pregnant women. Also, for healthy children it should now be shared decision making with the parents.
- **July 7th, 2025-** AAP, ACP, APHA, IDSA, MA Public Health Alliance, Society for MFM and an unnamed pregnant doctor are suing US Health and Human Services Secretary Robert Kennedy, US FDA Commissioner, NIH Director and Chief of Staff of CDC for limiting who can get Covid-19 vaccines and for undermining overall vaccine confidence.

CDC Currently Recommends

- A 2024-2025 COVID-19 vaccine for most adults ages 18 and older. Parents of children ages 6 months to 17 years should discuss the benefits of vaccination with a healthcare provider.

- It is especially important to get your 2024–2025 COVID-19 vaccine if you are ages 65 and older, are at high risk for severe COVID-19, or have never received a COVID-19 vaccine.

October 23, 2024



CDC Newsroom

EXPLORE TOPICS

SEARCH

CDC Recommends Second Dose of 2024-2025 COVID-19 Vaccine for People 65 Years and Older and for People Who are Moderately or Severely Immunocompromised

STATEMENT

For immediate release: October 23, 2024

CDC Media Relations
(404) 639-3286
media@cdc.gov
https://www.cdc.gov/media/

Current evidence of COVID vaccines in pregnant patients

- 2024 systematic review (177 studies involving over 630,000 participants from 41 countries), vaccination was associated with **no differences** in all assessed maternal and infant safety outcomes compared to no vaccination regardless of the trimester of exposure and type of vaccine.
- Pregnancy is risk factor for severe COVID outcomes and vaccinated pregnant person are less likely to be hospitalized for COVID
- Risk of stillbirth is lower in the vaccinated cohort of pregnant persons
- Infants born to mothers who had COVID vaccine during pregnancy were less likely to be hospitalized for COVID when <6 months old.

https://pubmed.ncbi.nlm.nih.gov/39009928/
https://pubmed.ncbi.nlm.nih.gov/39009928/
https://pubmed.ncbi.nlm.nih.gov/35731908/

Boosters for young healthy individuals: Considerations

- No clinical data on effectiveness – inferred from neutralizing antibody response
- Antibody titers wane after 60-90 days
- Risk of severe outcome is very low in young healthy individuals who have been previously vaccinated and/or infected (hybrid immunity)
- Vaccine is very safe

Question 5 Answer

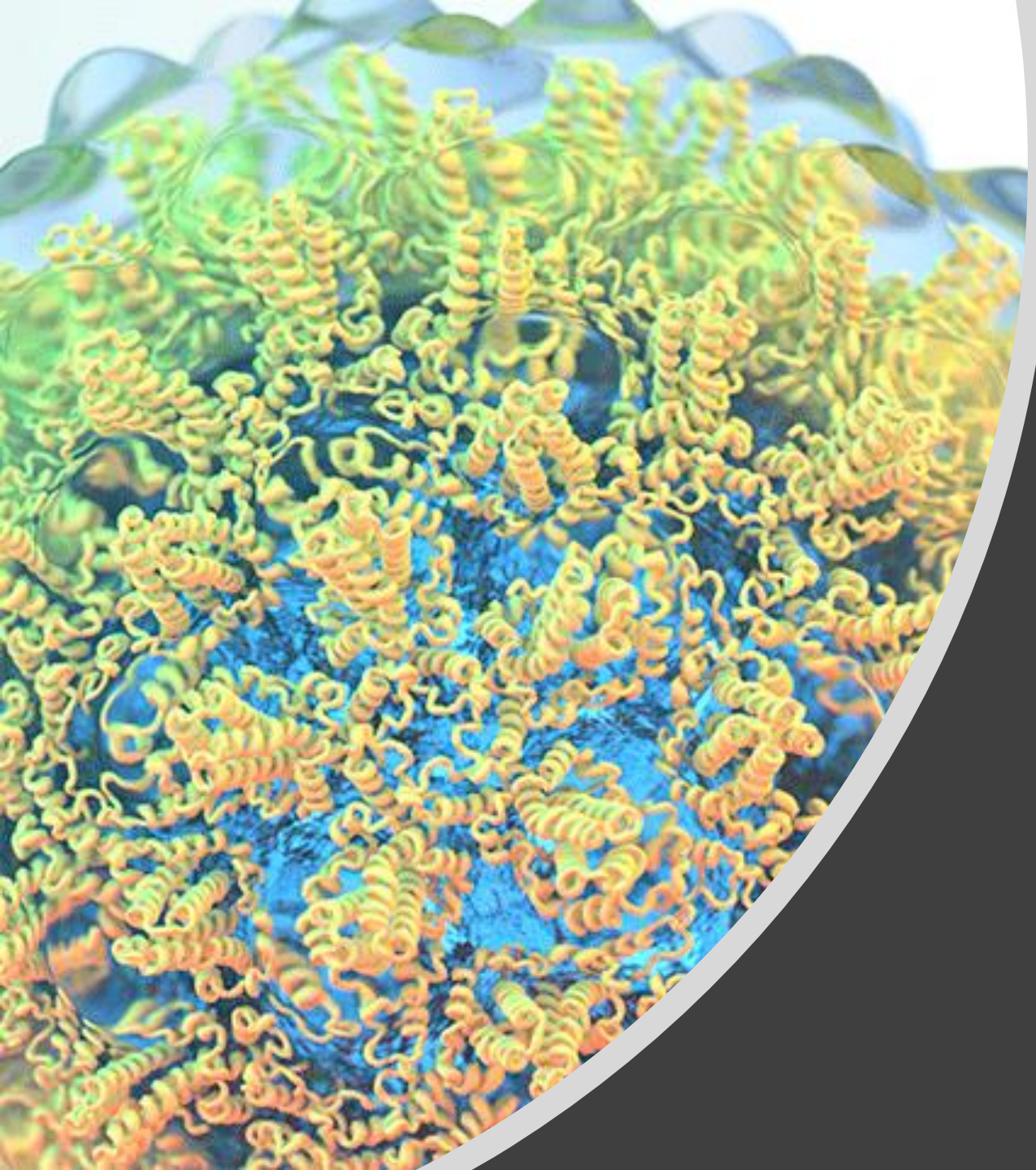
Case 5

A healthy 33-year-old woman who is 20 weeks pregnant comes for her yearly primary care visit. She asks whether she should get the COVID vaccine while pregnant either here in primary care or at her upcoming OB appointment

A. Yes

B. No

C. Not sure, defer to OB



Hepatitis B

Question 6

Case 6

45-year-old healthy woman who is transferring hospitals to take a new job as a hospitalist. She previously had 3 doses of Hep B vaccine and had Titer >10 mIU/mL during her pre-residency testing. Now her Hep B titer is 3mIU/mL (negative) on repeat check. What do you recommend?

A. Do nothing
B. Restart the 3 shot series of the standard HBV vaccine
C. Restart the 2 shot series with Heplisav-B
D. Give one shot of standard vaccine and repeat titer 4-8 weeks later. If negative, rinse and repeat.

Strategy to eliminate HBV transmission in US

- Universal vaccination of all infants beginning at birth
- Routine vaccination of previously unvaccinated children <19
- Vaccination of ALL adults <60 and anyone over 60 who wants it or has risk factors

Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos
1st dose	2nd dose			←3rd dose→			

If there is a delay, there is no need to restart the vaccine series. Just pick up where you left off!

Who needs titers after vaccination?

- Infants born to HBsAg-positive women
- Healthcare professionals, public safety works with exposure to blood
- Patients on hemodialysis
- HIV-infection or other immunocompromised
- Sex partners or needle sharing partners of HBsAg-positive persons

Perform titers 1-2 months after last dose. Provide booster if non-immune.

Titers may wane over time, but will boost with re-exposure. Any positive hep B titer in the past counts as immunity.

Heplisav-B

- Contains novel immunostimulatory adjuvant to boost immune response
- Approved by FDA November 2017
- ACIP included as option for HBV vaccination in adults ≥18*

Parameter	Engerix-B	Heplisav-B
Schedule	3 doses (0, 1 mo, 6 mo)	2 doses (0, 1 mo)
Efficacy (% achieving seroprotection)	65-81%	90-95%
Side effects	No significant difference	No significant difference
Covered by insurance?	Yes	Yes (including medicare)

Question 6 Answer

Case 6

45-year-old healthy woman who is transferring hospitals to take a new job as a hospitalist. She previously had 3 doses of Hep B vaccine and had Titer >10 mIU/mL during her pre-residency testing. Now her Hep B titer is 3mIU/mL (negative) on repeat check. What do you recommend?

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D. Give one shot of standard vaccine and repeat titer 4-8 weeks later. If negative, rinse and repeat.

All vaccines can be given together (no upper limit) except in the following situations

1. PCV 15 + PCV23 must be spaced out (1 year for non immunosuppressed, 8 weeks ok for immunosuppressed)
2. **If 2 Lives vaccines are not given on the same day then you have to wait to give the second live vaccines 4 weeks later**

What about Medicare coverage for these vaccines?

- **Vaccines covered by Part B**
  - Flu shot
  - PCV21
  - COVID vaccine
  - Hepatitis B if medium to high risk
  - Tetanus vaccine or Rabies vaccine if have acute bite/wound

- **Vaccines only covered by Part D**
  - Shingles vaccine
  - RSV
  - MMR
  - Hep A/B for low risk patients
  - Meningococcal
  - Tdap

MOC REFLECTIVE STATEMENT (BRIEF TAKE HOME POINTS)

- RZV (Shingrix) for immunocompromised 18-49 and everyone ≥ 50
- Anyone who will have close contact with a newborn needs to be up to date on Tdap
- PCV-21 for those ≥ 50 + anyone 19-49 with medical conditions
- RSV for those ≥ 75 + anyone 50-74 who is at risk of severe RSV
- HPV vaccine for everyone up to 26 and for some btw 27-45
- Data supports Pregnant women getting the COVID vaccine
- Hep B sAB + titer in the past counts as immunity

Key References

1) CDC Ask the Experts:

http://www.immunize.org/askexperts/

2) CDC Vaccine Schedules

https://www.cdc.gov/vaccines/hcp/imz-schedules/index.html