Vaccine Updates for the Older Adult Population

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Ascension

This speaker has no conflict of interest to disclose

Kacey Carroll, PharmD, BCACP, BCGP, is an Ambulatory Care Clinical Pharmacist and an Assistant Professor of Pharmacy Practice at Butler University. She received her Doctor of Pharmacy from Butler University. She went on to complete a PGY-1 residency at Community Health Network in Indianapolis and a PGY-2 residency in geriatrics and academia at Midwestern University in Glendale, AZ. Her interests include geriatrics, eliminating potentially inappropriate medications, and diabetes management. She currently works with a geriatric interdisciplinary team providing medication assessments in older adults at the Center for Healthy Aging as well as providing disease state management through a collaborative practice agreement.

Objective

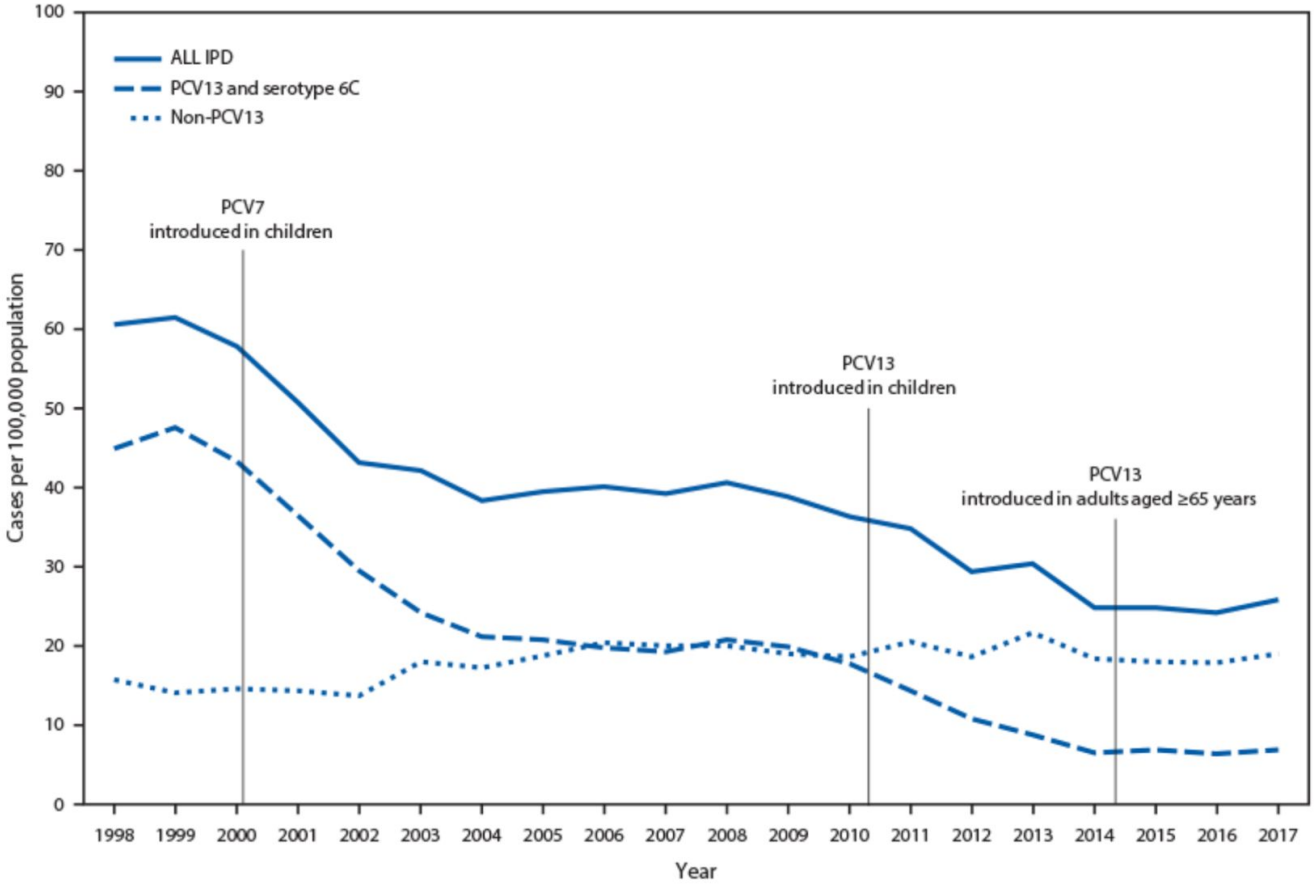
1. Describe recent updates for vaccines recommended for older adults

Change in Recommendations for Pneumonia Vaccines

- PCV13 no longer routinely recommended for all adults aged ≥65 years
  - Shared clinical decision-making recommended
  - Immunocompromising condition, CSF leak, or cochlear implant would qualify
- Recommends routine single dose of PPSV23 for adults aged ≥65 years
- If PCV13 is appropriate, administer PCV13, then PPSV23 at least 1 year later
  - PPSV23 given at least five years from previous dose

MMWR. 2019;68(46);1069–1075.

Invasive pneumococcal disease (IPD) incidence among adults aged ≥65 years, by pneumococcal serotype* — United States, 1998–2017



Source: Active Bacterial Core Surveillance, unpublished data, 2019.

Update on Different Formulations Available

High Dose

- Quadrivalent
- 0.7ml dose in 2020-2021
- Previously Trivalent
- Produces higher antibody levels

Adjuvanted

- Quadrivalent and Trivalent
- Contains an adjuvant (MF59) which helps create a stronger immune response
- Comparable antibody levels but less hospitalizations

Standard dose

- Many formulations- avoid live nasal spray and jet injector

https://www.cdc.gov/flu/prevent/different-flu-vaccines.htm

Influenza

Unadjusted Outcome Rates and RVEs Using All Vaccine Cohorts in 2018–2019 Season

Outcome Type	Cohort	No. of Outcomes	Total Person Time[a]	Outcome Rate[b]	95% CI
Flu Hospital Encounters	Egg-based quadrivalent	4582	1793	2.56	2.48–2.63
	Cell-cultured quadrivalent	2330	925	2.52	2.42–2.62
	Egg-based adjuvanted	4847	2558	1.90	1.84–1.95
	Egg-based high-dose trivalent	20 883	9838	2.12	2.09–2.15
	Egg-based standard-dose trivalent	1020	384	2.66	2.50–2.82
	Recombinant	612	312	1.96	1.81–2.12
Flu Inpatient Stays	Egg-based quadrivalent	2790	1794	1.55	1.50–1.61
	Cell-cultured quadrivalent	1426	926	1.54	1.46–1.62
	Egg-based adjuvanted	2874	2559	1.12	1.08–1.16
	Egg-based high-dose trivalent	12 382	9844	1.26	1.24–1.28
	Egg-based standard-dose trivalent	622	384	1.62	1.49–1.75
	Recombinant	352	312	1.13	1.01–1.25

Abbreviation: CI, confidence interval; RVE, relative vaccine effectiveness.

J Infect Dis. 2020;222(2):278-287.

What do we know now?

- 2 vaccines granted emergency use authorization (EUA) in United states
- mRNA technology
  - Gives cells “instructions” (mRNA) to make a spike protein
  - The spike protein is found on the surface of the virus that causes COVID-19.
  - Body produces antibodies to fight spike protein
  - Body destroys instructions
- Pfizer vaccine
  - 2 shots given 21 days apart
- Moderna vaccine
  - 2 shots given 28 days apart
- Side effects:
  - Chills, fever, arm soreness, headache, fatigue
  - More extreme after second dose

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html

Vaccine Efficacy

Pfizer

Efficacy End-Point Subgroup	BNT162b2, 30 μg (N=21,669)		Placebo (N=21,686)		VE (95% CI)
	No. of participants	Surveillance time *person-yr (no. at risk)*	No. of participants	Surveillance time *person-yr (no. at risk)*	*percent*
Covid-19 occurrence					
After dose 1	50	4.015 (21,314)	275	3.982 (21,258)	82.0 (75.6–86.9)
After dose 1 to before dose 2	39		82		52.4 (29.5–68.4)
Dose 2 to 7 days after dose 2	2		21		90.5 (61.0–98.9)
≥7 Days after dose 2	9		172		94.8 (89.8–97.6)

Moderna

Covid-19 Onset	Placebo (N=14,598)	mRNA-1273 (N=14,550)
Randomization to 14 days after dose 1	11	5
14 Days after dose 1 to dose 2	35	2
Dose 2 to 14 days after dose 2	19	0
Starting 14 days after dose 2	204	12
Total (any time after randomization)	269	19

N Engl J Med 2020; 383:2603-2615
N Engl J Med online ahead of print; DOI: 10.1056/NEJMoa2035389

Vaccine Pipeline

- As of December 28, 2020, Phase 3 clinical trials are in progress or being planned in the US:
  - AstraZeneca's COVID-19 vaccine
    - Authorized for emergency use in UK 12/30/2020
    - Viral vector vaccine
  - Janssen's COVID-19 vaccine
    - Viral vector vaccine
    - Studying 1 or 2 doses
  - Novavax's COVID-19 vaccine
    - Adjuvanted spike protein vaccine

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html

What's new

New information to be added in prior to presentation as it becomes available

Other ACIP Updates

- Tdap
  - Either tetanus and diphtheria toxoids (Td) vaccine or Tdap to be used for the decennial Td booster or tetanus prophylaxis for wound management
- Shingles
  - Zostavax is no longer available for use in the United States, as of November 18, 2020
  - Shingrix preferred vaccination

MMWR, January 24, 2020, Vol 69(3);77-83.
https://www.immunize.org/askexperts/experts_zos.asp

Questions?

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