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Impact of Prevnar (PCV13) vaccine recommendations in pediatric and immunocompetent adults 65 years and older: What are the benefits and risks?

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BACKGROUND

- ***2000***: **PCV7** becomes the first FDA approved pneumococcal vaccine for pediatrics
- ***2010***: **PCV13** recommended in ***pediatrics***
- ***2014***: **PCV13** recommended in ***immunocompetent adults 65+***
- ***2018***: CDC looked at ***data*** since ***2014 recommendation***
- ***2019***: **PCV13** now ***shared clinical decision-making***

CONTEXT

Immunocompetent

- Chronic heart disease
- Chronic lung disease
- Chronic liver disease
- Poorly controlled diabetes
- Current cigarette smoker
- Alcohol used disorder

Immunocompromised

- Chronic renal failure
- Nephrotic syndrome
- Iatrogenic immunosuppression
- HIV
- Cochlear implants
- CSF leaks
- Generalized malignancy
- Hodgkin Disease
- Leukemia, lymphoma, multiple myeloma
- Solid organ transplant
- Congenital or acquired asplenia
- Sickle cell disease

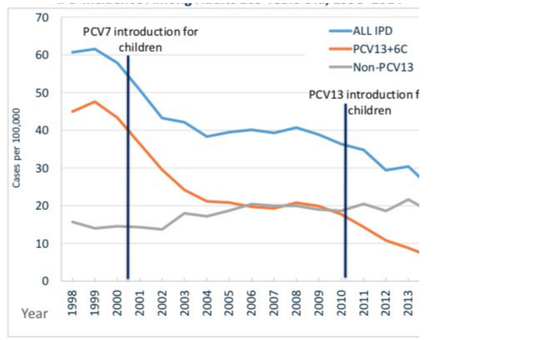
KEY QUESTIONS

1. How much did the ***IPD incidence*** change among adults 65+ since the ***2010 pediatric PCV13 recommendation?***
2. How much did the ***IPD incidence*** change among adults 65+ since the ***2014 adult PCV13 recommendation?***
3. How much was ***mortality*** impacted among adults 65+ since the ***2014 PCV13 recommendation*** ?
4. How much does ***PCV13-type*** pneumonia ***account for all-cause pneumonia?***

~4% OF ALL-CAUSE PNEUMONIA IS CAUSED BY THE PCV13-TYPE

KEY QUESTION #1

How much did the ***IPD incidence*** change among adults 65+ since the ***2010 pediatric PCV13 recommendation?***

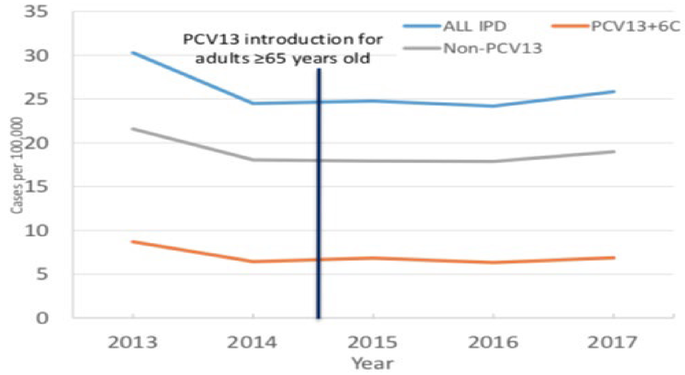


Key Point: *Three-fold reduction in PCV13-type IPD after PCV13 introduction for children*

IPD: Invasive Pneumococcal Disease

KEY QUESTION #2

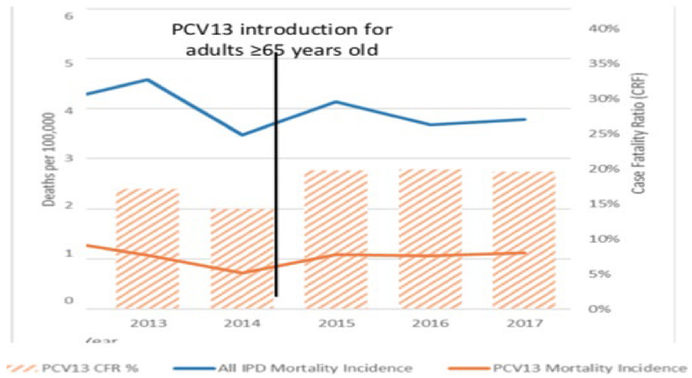
How much did the ***IPD incidence*** change among adults 65+ since the ***2014 PCV13 recommendation?***



Key Point: *No change in IPD incidence since 2014*

KEY QUESTION #3

How much was ***mortality*** impacted among adults 65+ since the ***2014 adult PCV13 recommendation?***



Key Point: *No changes in case fatality ratio*

KEY QUESTION #4

How much does ***PCV13-type*** pneumonia ***account for all-cause pneumonia?***

	June 2014—May 2015 Incidence per 100,000 (95% CI)	June 2015—May 2016 Incidence per 100,000 (95% CI)
All-Cause CAP	2412 (2317, 2511)	2080 (1992, 2172)
PCV13-Type CAP	112 (93, 135)	76 (61, 96)
% of CAP Caused by PCV13 Serotype	**4.6%**	**4.7%**

Key Point: *PCV13-type pneumonia accounts for ~4% of all-cause pneumonia*

DISCUSSION

ANNUAL NUMBER NEEDED TO VACCINATE *(NNV)* AMONG ADULTS 65+

IPD:

- **PCV13** prevents ***1 case for every 26,300*** *healthy seniors* immunized per year

OUTPATIENT PNEUMONIA:

- **PCV13** prevents ***1 case for every 2,600*** *healthy seniors* immunized per year

SHARED DECISION-MAKING

SAFETY:

- ***NO*** safety concerns with **PCV13**
- Doesn't seem to provide much benefit

HERD IMMUNITY:

- Infections prevented by **PCV13** are now less common
- Likely due to years of vaccinating children with **PCV13**

OTHER WAYS TO PROTECT PATIENTS:

- Recommend annual influenza vaccines
- Reinforce good hand hygiene
- Maintain healthy lungs

GENERAL VACCINE SCHEDULE

INFANTS:

- **PCV13** as *4-dose* series at *2, 4, 6,* and *12-15* months

AGES 19-64:

- ***Healthy:*** Vaccine ***NOT*** recommended until 65
- ***Increased risk of pneumococcal disease:*** *1 dose* of **PPSV23**
- ***Increased risk for meningitis:*** **PCV13,** then **PPS23** *8 weeks* later
- ***Immunocompromised:*** **PCV13,** then **PPSV23** *8 weeks* later

ADULTS 65+:

- ***Immunocompetent:*** Shared Decision-Making
- ***Immunocompromised:*** **PCV13,** then **PPSV23** *8 weeks* later

REFERENCES

1. Centers for Disease Control (CDC) and Prevention. Recommended adult immunization schedule for ages 19 years or older. https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf Accessed November 10, 2019
2. Matanock MD, A. Considerations for PCV13 use among adults >65 years old and a summary of the evidence to recommendations framework. Lecture presented at: Advisory Committee on Immunization Practices (ACIP); June 2019; Atlanta, GA