

# I Raise the Rates!

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## INTRODUCTION

Pneumococcal disease is a significant cause of morbidity and mortality in the elderly population, particularly those aged 65 and older. Despite the availability of effective vaccines, vaccination rates remain suboptimal, increasing the risk of invasive pneumococcal disease (IPD) and associated hospitalizations. Preliminary data from the EPIC Slicer/Dicer tool revealed that our internal medicine clinic's pneumococcal vaccination rate (PVR) is below the national benchmark. This project aims to improve the PVR by at least 10% within six months by educating clinic providers and staff on the importance of pneumococcal vaccination.



### Pneumococcal Vaccine Timing for Adults

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

Adults ≥65 years old  
Complete pneumococcal vaccine schedules

Prior vaccines	Option A	Option B
None*	PCV20	PCV15 → ≥1 year* → PPSV23
PPSV23 only at any age	→ ≥1 year → PCV20	→ ≥1 year → PCV15
PCV13 only at any age	→ ≥1 year → PCV20	→ ≥1 year → PPSV23
PCV13 at any age & PPSV23 at <65 yrs	→ ≥5 years → PCV20	→ ≥5 years → PPSV23

\* Also applies to people who received PCV7 at any age and no other pneumococcal vaccines  
\* Consider minimum interval (8 weeks) for adults with an immunocompromising condition, cochlear implant, or cerebrospinal fluid leak (CSF) leak  
\* For adults with an immunocompromising condition, cochlear implant, or CSF leak, the minimum interval for PPSV23 is ≥8 weeks since last PCV13 dose and ≥5 years since last PPSV23 dose; for others, the minimum interval for PPSV23 is ≥1 year since last PCV13 dose and ≥5 years since last PPSV23 dose

#### Shared clinical decision-making for those who already completed the series with PCV13 and PPSV23

Prior vaccines	Shared clinical decision-making option
Complete series: PCV13 at any age & PPSV23 at ≥65 yrs	→ ≥5 years → PCV20 Together, with the patient, vaccine providers may choose to administer PCV20 to adults ≥65 years old who have already received PCV13 (but not PCV15 or PCV20) at any age and PPSV23 at or after the age of 65 years old.

## METHODS

This quality improvement project employs a pre/post design, utilizing retrospective data extraction from electronic health records (EHR). The inclusion criteria comprise geriatric patients aged 65 and older seen at the outpatient internal medicine clinic (IMC).

- Structure:
  - Provided pamphlets in the IMC patient waiting area/exam rooms, making it easy for patients to be able to access medically relevant/most updated information regarding pneumococcal vaccination strategies.
- Process:
  - Educating residents/MA/LPN in the clinic and noon conferences, including Epic care gap section that displays if the pneumococcal vaccine is indicated
  - Reminding residents in the huddle room to address vaccination status during clinical encounter
  - Running multiple Plan-Do-Study-Act (PDSA) cycles in the IMC
  - Where possible, vaccinations done outside of the IMC will be pulled into the patient's CMMC Epic medical record. Vaccinations done outside the IMC will be included in the overall PVR.
  - Some PV require >1 injection, these partial vaccinations will be counted in the overall PVR.
  - Considering whether a patient is due for a booster is outside the scope of this project.

Data on patient demographics, vaccination status, and comorbidities were extracted from the EHR for the pre (July 2022 - December 2022) and post (July 2023 - December 2023) periods. The primary outcome was the change in PVR, with secondary outcomes including comparison to the 2021 CDC coverage estimate for Cambria County, Pennsylvania (71.8%).

The CDC recommends routine administration of pneumococcal conjugate vaccines (PCV15 or PCV20) for all adults 65 years or older who have never received any pneumococcal conjugate vaccine or whose previous vaccination history is unknown. If PCV15 is used, it should be followed by a dose of PPSV23 one year later, with the minimum interval being eight weeks. PCV15 can also be considered for adults with an immunocompromising condition, cochlear implant, or cerebrospinal fluid leak. If PCV20 is used, a dose of PPSV23 is not indicated. These guidelines were incorporated into the educational materials provided to clinic staff and patients.

## RESULTS

Preliminary results indicate that the pre-intervention **PVR was 55% among the 4000 unique patient encounters analyzed. Post-intervention data showed a 12% increase in PVR, raising the rate to 67%.** This exceeds the project goal of a 10% increase. The intervention's impact was particularly notable among high-risk groups, including patients with diabetes mellitus, chronic kidney disease, and chronic obstructive pulmonary disease (COPD). No significant adverse events were associated with the increased vaccination efforts.

## CONCLUSION

This quality improvement project successfully enhanced pneumococcal vaccination rates in the outpatient IMC by implementing targeted education for healthcare providers and patients. The increase in PVR suggests that provider and patient education are effective strategies for improving vaccination uptake. This initiative aligns with the mission to make communities healthier by improving the quality of care in an outpatient setting. Future efforts should focus on sustaining these improvements and exploring additional strategies to further increase vaccination rates, ultimately reducing the incidence of IPD and associated healthcare burdens in the geriatric population

## REFERENCES

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