

# Implementing a Pneumococcal Polysaccharide Vaccine Screening Tool for Adults with Diabetes

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## Problem Statement

- Adults with comorbidities such as asthma or diabetes mellitus are more susceptible to morbidity and mortality from vaccine-preventable illnesses, particularly pneumococcal disease.
- Data obtained between 2007-2010 from a population study found that adults aged 19-64 with diabetes have a significantly high risk of all-cause pneumonia than their healthy counterparts (IRR = 3.7 [95% CI 3.6-3.7]), with corresponding increase in healthcare costs.
- The CDC recommends a one-time pneumococcal polysaccharide (PPSV23) vaccination for these at-risk adults between the ages of 19-64.
- At this primary care clinic, a knowledge gap was identified where staff were only screening patients aged  $\geq 65$  years for PPSV23 vaccine need.

## Purpose of the Project

- To implement a vaccine screening algorithm and patient education pamphlet as visual provider prompts in an effort to increase the proportion of adult patients with diabetes who receive the PPSV23 vaccination at a primary care clinic.

### Short-term Goals:

- At least 50% of patients eligible to receive the PPSV23 vaccine will be identified by nursing staff or providers.
- At least 75% of identified patients will obtain the PPSV23 vaccination prior to leaving the clinic.

### Long-term Goals:

- All adult patients with diabetes who present for primary care appointments will be screened for pneumococcal and hepatitis B vaccine needs.
- All adult patients with diabetes will obtain their PPSV23 vaccination within one year of diagnosis or identification of vaccine need

## Methods

This project was implemented at a military primary care clinic in Maryland that sees Active Duty, dependent family members, and retirees across the lifespan.

- Adult patients aged 19 – 64 years with a diagnosis of diabetes without contraindication to the vaccine were included
- The project was implemented over a 13 week timespan
- Staff education and training on algorithm use
- Screening algorithms were provided to all staff at the start of the implementation period
- Staff education related to anti-glycemic medications to improve identification of adults with diabetes emailed at week 5, and patient education pamphlets placed in exam rooms at week 6

## Figures

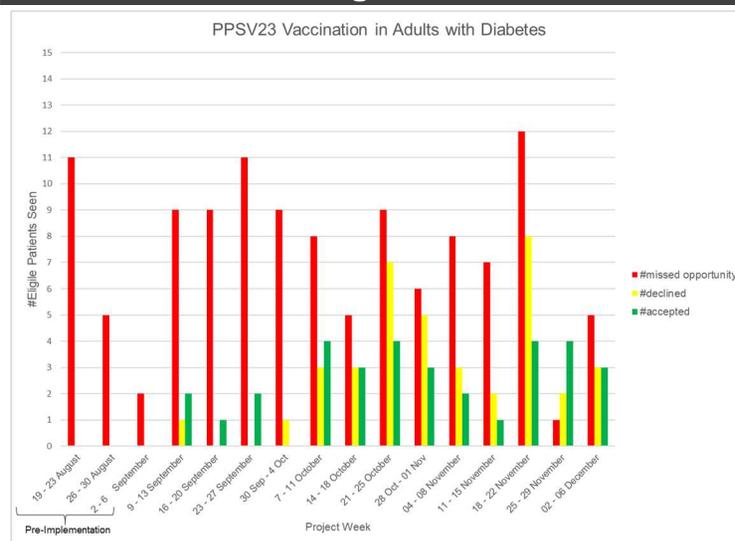


Figure 1. Weekly results of identifying eligible adults during pre- and implementation period

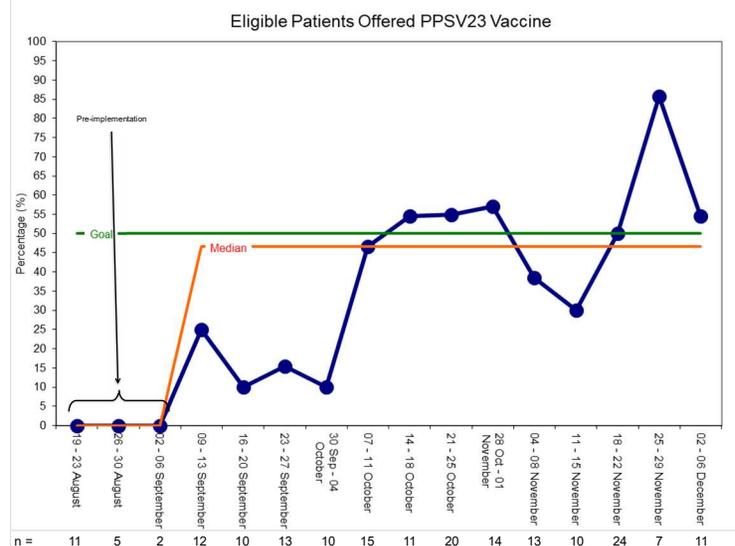


Figure 2. Weekly rates of screening eligible patients for PPSV23 vaccine need

## Results

- A total of 170 eligible patients were seen during the implementation period, 48.23% were male (n=82) and 51.56% were female (n=88). Median age was 57 years.
- Weekly screening rates of eligible patients ranged from 10 – 86%. Vaccine need was identified for 41.76% of these patients (n=71). PPSV23 vaccines were obtained by 46.48% of identified, eligible patients (n=33).
- A Fisher's exact test showed the intervention was effective at improving vaccination rates (p=.046), and a chi-square test for independence determined there was a relationship between screening the patient and the patient obtaining the PPSV23 vaccine ( $\chi^2 = 57.10$ , p<.001)

## Discussion

- Visual prompts and educational pamphlets can increase patient and provider awareness of adult vaccine needs.
- The findings in this project were comparable to other studies that found provider prompts increased vaccination rates, particularly for at- and high-risk adults.
- This project was conducted at a small primary care clinic and the results cannot be generalized to other settings.

## Conclusions

- This project supports the need for implementing provider prompts related to adult vaccination needs.
- Recommendation for integration of prompts within the EHR with drop-down options to improve workflow.
- Overlapping projects or multiple organizational changes in a short time-frame can negatively impact QI projects by spreading resources thin and provoking apathy among staff.
- Use of change champions are a critical component to influencing organizational culture for staff buy-in.
- Future projects at larger primary care practices would add validity to the results.

## References

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