Evaluation of Pneumococcal Conjugate Vaccine 13-Valent (PCV13, Prevnar 13) Utilization in Adults Over 65 Years of Age

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Background

- In 2014, the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommended PCV13 for all adults over 65 years of age.
  - Saint Luke's Health System implemented a protocol and standing orderset to reflect the ACIP's recommendations
  - A decision tree was built into the electronic medical record (Epic) admission navigator. Using the immunization navigator, nurses screen patients for indicated pneumococcal vaccines and implement the appropriate standing order set.
- In June of 2019, the ACIP conducted a planned review of invasive pneumococcal disease burden.
  - They subsequently voted to make PCV13 vaccination among adults aged ≥65 years without an immunocompromising condition (Table 1), a cochlear implant, or CSF leak a shared decision making process with their immunization provider.[1]

Table 1. Immunocompromising Conditions as defined by the CDC[2]

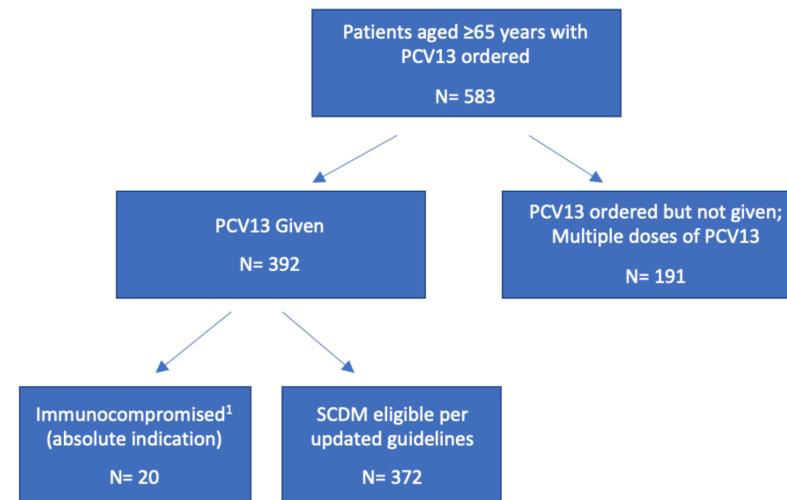|	
• B- and T-lymphocyte deficiency	• Lymphoma
• Complement deficiency	• Hodgkin Disease
• Phagocytic disorders	• Generalized malignancy
• Chronic renal failure	• Iatrogenic immunosuppression
• Nephrotic syndrome	• Solid organ transplant
• HIV infection	• Multiple myeloma
• Leukemia	• Asplenia

Objectives

- To determine the fiscal impact of implementing the revised PCV13 recommendations
- To re-evaluate the current PCV13 vaccination protocol

Endpoints

- Primary Outcome
  - Number of patients with an order for PCV13 who would now be referred to a SCDM process
- Secondary Outcomes
  - Costs associated with vaccinating those patients (see above)
  - Number of patents who would still require PCV13 per updated guidelines

Study Design

Patients aged ≥65 years with PCV13 ordered
N= 583

PCV13 Given
N= 392

PCV13 ordered but not given; Multiple doses of PCV13
N= 191

Immunocompromised[1] (absolute indication)
N= 20

SCDM eligible per updated guidelines
N= 372

Results

	PCV13 cost per dose (SLHS acquisition cost)	Number of vaccines administered (%)	Total cost of vaccines administered	Cost avoidance over study period of 6 months	Estimated cost avoidance over 12 months
• SCDM eligible (n= 548)	$174.25	372 (94.9%)	$64,821		
• Absolute indication for PCV13 (n= 35)	$174.25	20 (5.1%)	$3,485		
Total (n= 583)		392 (67.2%)	$68,306	$64,821	$129,642

Resources

1. Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine Among Adults Aged ≥65 Years: Updated Recommendations of the Advisory Committee on Immunization Practices.

2. Adult Immunization Schedule by Vaccine and Age Group. Centers for Disease Control and Prevention. https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html.

Discussion

- A retrospective analysis of 583 patients aged 65 years or older admitted to Saint Luke's Health System with an order for PCV13 from January 2019 to June 2019 was performed.
- Of the patients who received PCV13 during the study period, 94.9% of those patients would now be eligible for SCDM process per the revised guidelines
- Only 5.1% (35) of patients would have an absolute indication for PCV13
- Approximately $130,000 cost avoidance is estimated over a 12-month period
- The best place to carry out a SCDM process is likely not in an inpatient setting
- The current admission navigator directs nurses to screen thousands of admissions, which results in relatively few (n= 20) vaccinations with an absolute indication

Conclusion

- The EMR Admission Navigator for PCV13 needs to be deactivated in order to reflect the updated guidelines

Limitations

- Some vaccinations were documented as "deferred" rather than given to the patient, which could have had a positive or negative impact on the results

Disclosures

The authors of this presentation have no financial or nonfinancial relationships with commercial entities that may have an interest in this subject matter.

Abbreviations

PCV13: Pneumococcal conjugate vaccine
EMR: electronic medical record
SCDM: shared clinical decision-making