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## BACKGROUND AND SIGNIFICANCE

- Each year, approximately 18,000 older adults die from pneumococcal disease in the United States (CDC, 2015). It kills more people in the United States than all other vaccine-preventable diseases combined (AAP, 2012).
- Data from the National Health Interview Survey (NHIS) from 2013 revealed that in adults aged >65 years, pneumococcal vaccination coverage was 59.7% overall, short of the 90% goal set by the Department of Health and Human Services Healthy People 2020 report (CDC, 2012).
- An estimated 73 million adults who have an indication for the pneumococcal vaccination have not received it (NFID, 2012).
- In August 2014, the Advisory Committee on Immunization Practices (ACIP) recommended the use of 13-valent pneumococcal conjugate vaccine (PCV13) in addition to 23-valent pneumococcal polysaccharide vaccine (PPSV23) among adults 65 years and older to prevent pneumococcal disease.

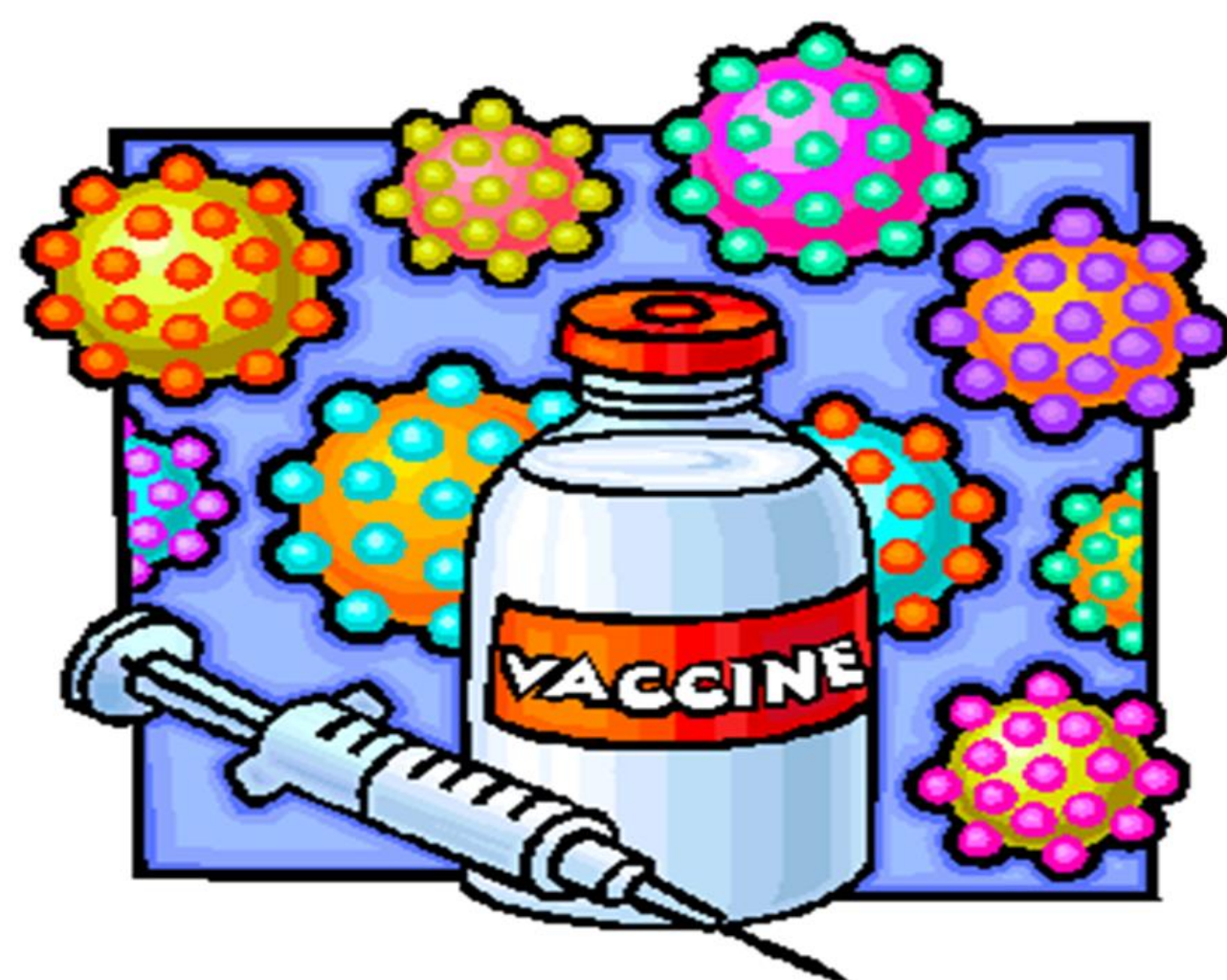
## PROBLEM STATEMENT

- Provider education regarding the appropriate vaccine guidelines is essential in order for providers to recommend immunizations appropriately (NVAC, 2014).
- Few articles and little information are available to verify the effect of provider education on vaccination rates.



## OBJECTIVE

- The purpose of this project was to determine if a provider education session in conjunction with an informational handout given to outpatient providers and office staff would improve the immunization rates of any pneumococcal vaccine (PCV13 & PPSV23) among patients 65 years and older.



## METHODS

- The study utilized a quasi-experimental, one group pre and post-intervention design.
- A 20-minute educational PowerPoint presentation regarding pneumococcal vaccines and 2014 ACIP guidelines were presented by the Director of Infectious Disease, a physician, at a routine monthly "provider" meeting of an outpatient medical group. An informational handout was also distributed to all outpatient clinics.
- Meeting participants consisted of all physicians, nurse practitioners, physician assistants, and practice managers, from 10 outpatient primary care clinics. Out of a possible 85 staff members, 21 providers and practice managers were present at the educational meeting.
- Within a week of the presentation, handouts from the session were distributed and posted to all 10 outpatient offices and staff.
- The percentage of patients 65 years and older who had ever received a pneumococcal immunization was measured as a cumulative rolling vaccination rate for the previous 18 months.
- The pre-intervention rate measured on October 6, 2014 (baseline) reflects April 2013 through September 2014. The post-intervention percentage recorded on April 1, 2015 reflects the percentage from October 2013 through March 2015.

Pneumococcal Immunization Guidelines/Schedule

Vaccine	Age Group	19-21 years	22-26 years	27-49 years	50-59 years	60-64 years	≥ 65 years
Pneumococcal 13-valent conjugate (PCV13)		1 dose depending on indication					1 dose
Pneumococcal polysaccharide (PPSV23)		1 or 2 doses depending on indication					1 dose

## FINDINGS

- As can be seen in Table 1, all clinics showed improvement in pneumococcal immunization rates post intervention.
- The percentage of patients at or over 65 years old receiving a pneumococcal immunization (PCV13 or PPSV23) increased from 77.35% to 80.02% after the educational intervention.
- This was a significant improvement in the overall percentage of patients vaccinated against pneumococcal disease over this six month period ( $t=-2.336$ ,  $df=9$ , or  $p=.02$  (1 tailed)).

Table 1  
Pneumococcal Immunization Rates Pre and Post Intervention

	10/6/2014			4/1/2015		
	Numerator	Denominator	Percent	Numerator	Denominator	Percent
Clinic A	286	339	84.37%	192	223	86.10%
Clinic B	813	969	83.90%	781	886	88.15%
Clinic C	1317	1632	80.70%	1315	1599	82.24%
Clinic D	897	1126	79.66%	927	1125	82.40%
Clinic E	1879	2386	78.75%	1692	2135	79.25%
Clinic F	1553	1962	79.15%	1570	1962	80.02%
Clinic G	577	746	77.35%	457	556	82.19%
Clinic H	3301	4458	74.05%	2882	3770	76.45%
Clinic I	93	131	70.99%	98	124	79.03%
Clinic J	196	358	54.75%	305	391	78.01%
<b>Total</b>	<b>10912</b>	<b>14107</b>	<b>77.35%</b>	<b>10219</b>	<b>12771</b>	<b>80.02%</b>

- The data reflects immunization rates of "active" patients 65 years and older who had ever received a pneumococcal immunization (PCV13 or PPSV23) during their lifetime. In order to be considered "active", a patient must have been seen for an appointment in the medical group in the past eighteen months.

## CONCLUSION

- Although not meeting the Year 2020 Goal of 90%, the 3% increase is both statistically and clinically meaningful.
- As in any large medical group, several initiatives were in motion at the time of this study, so the change may be attributable to several factors.
- A brief provider education session and handouts are simple interventions with positive outcomes.

## RECOMMENDATIONS

- Staff training, grand rounds, or continuing education should consider immunizations an important topic to address.
- Regularly scheduled education sessions and handouts regarding ACIP recommendations and best practice would help disseminate timely immunization updates.
- Further research is needed on the impact of provider education on patient outcomes and which type of adult learning style is best. This further supports nursing education at the institutional, state, and national level.
- Further research is also needed regarding the ever-changing barriers to vaccination, especially adult vaccinations which are often less emphasized than pediatric vaccines.

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