



Electronic Medical Record-Based Best Practice Alert using Ancillary Staff Improved Pneumococcal Vaccination and Documentation Among Immunosuppressed Rheumatoid Arthritis Patients



Heena Sheth, MD MPH, Siamak Moghadam-Kia, MD, Hilary Peterson, BA, Larry Moreland, MD, Rohit Aggarwal, MD MS
University of Pittsburgh, Pittsburgh, PA

INTRODUCTION

- Pneumococcal disease is one of the leading causes of vaccine-preventable illness and death in the United States.
- Rheumatoid Arthritis (RA) patients taking Immunosuppressive agents are at a greater risk for pneumococcal infection
- Prior studies have shown low compliance with this recommendation
- The Centers for Disease Control and American College of Rheumatology recommend pneumococcal vaccination for all immunosuppressed patients, specifically those taking disease modifying antirheumatic drugs (DMARDs) or biologic agents

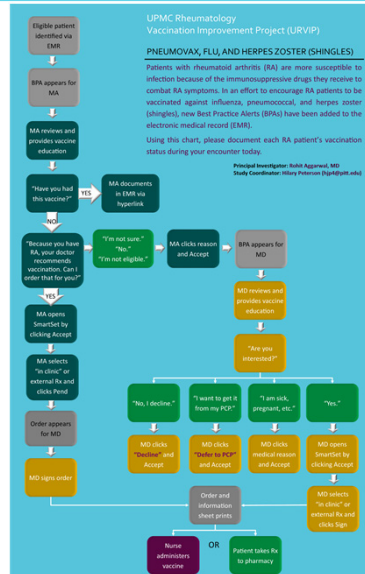
METHODS

- Study design:** Pre- and Post-intervention comparison
 - Pre-intervention period: 1/1/2013 – 12/31/2013
 - Post-intervention period: 2/1/2014 – 8/1/2014
- Inclusion criteria:**
 - All RA patients age \geq 65 years regardless of immunotherapy status.
 - All RA patients < 65 years if currently on or going to start DMARD or biological or steroid agents (\geq 10mg prednisone for 3 months)
- Exclusion criteria:** RA patients with prior documented pneumococcal vaccination
- Process:** Best Practice Alert (BPA) identified eligible patients from electronic records and alerted Medical assistants (MA) at the time of rooming process during the patient visit .
- MA verified eligibility and address BPA**
 - Order the pneumococcal vaccine
 - Document prior vaccination in EMR
 - Refusal by patient
 - Defer the vaccine until after discussion with the physician
 - MD will receive BPA if deferred or missed by MA**
 - MD could order or defer or document vaccination on BPA
- All outcomes were documented in the e-record by MA and the physicians.
- Data Analysis:** Vaccination and documentation rates were compared between pre-intervention and intervention periods using Chi square test.

OBJECTIVE

To improve the rates of pneumococcal vaccination and electronic medical record (EMR) documentation in immunosuppressed RA patients taking DMARDs and biologic agents at university affiliated rheumatology clinics using EMR based best practice alert (BPA) and ancillary staff.

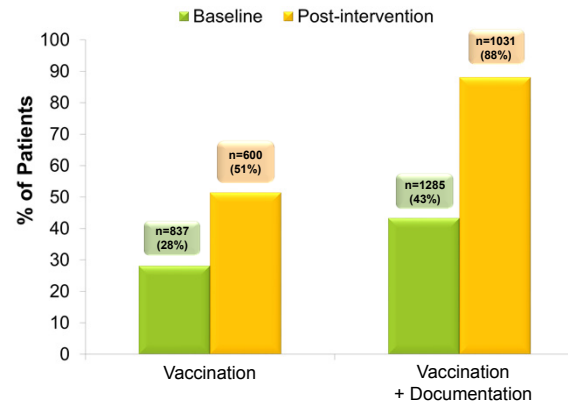
CLINIC FLOW



RESULTS

Pneumococcal Vaccination & Documentation Rates

Baseline n = 2990; Intervention n = 1167



- Overall vaccination rate increased from 28.1% to 51.4% ($p < 0.00001$)
- Overall captured rate increased from 43.2% to 88.8% ($p < 0.0001$)

MD Best Practice Alert for Pneumococcal Vaccine

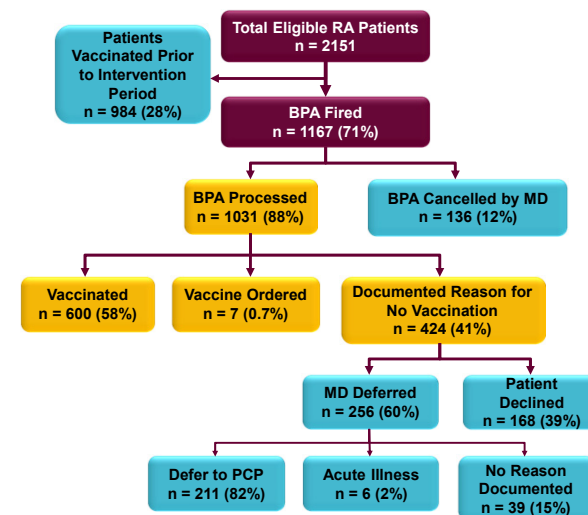
(2757)
This patient is at high risk for pneumonia infection and related complications due to diagnosis of rheumatoid arthritis and is receiving immunosuppressive medication or age \geq 65. He/She may be eligible for pneumonia vaccine. Click Accept to open the smartset. Use the buttons to document reason

Acknowledge reason:

Pt declined Acute illness/fever Regnan/lactating Defer to MD

Open SmartSet: RHEUM PNEUMOCOCCAL VACCINE [preview](#)

[Click here to document historical Pneumovax shot](#)



CONCLUSIONS

- Implementation of a BPA and ancillary-staff based intervention improved both vaccination and documentation rates.
- Key components in improving compliance included electronic eligible patient identification, BPA, ancillary staff review, education and physician communication.
- Ancillary staff, nursing, and physician workload was not noticeably increased.

Acknowledgements

This Quality Improvement project was funded by Pfizer Pharmaceutical.