

UPMC Rheumatology Vaccine Improvement Project (URVIP)

Rohit Aggarwal, MD, MS
and
Larry Moreland, MD

Rohit Aggarwal, MD, MS
Medical Director, Arthritis and Autoimmunity Center (Falk)
Associate Professor of Medicine
University of Pittsburgh



Background

- Rheumatoid arthritis (RA) patients on immunosuppressed therapy are at greater risk for Herpes Zoster (HZ), pneumococcal, influenza and hepatitis B infection and related complications.
- The rate of vaccination is low in this population in spite of proven safety.
- The Centers for Disease Control and American College of Rheumatology guidelines recommend vaccination for immunosuppressed RA patients taking disease modifying anti-rheumatic drugs (DMARDs) or biologic agents.
- Most rheumatologist agree that we should vaccinate our RA patients but has several barriers like who is responsible for vaccination (PCP or specialist), time crunch, lack of knowledge, difficulty in understanding orders and diagnosis codes, etc.

Objectives

Improve vaccination rates and electronic medical record (EMR) documentation of

Herpes zoster

Pneumococcal

Influenza

Hepatitis B

For all rheumatoid arthritis (RA) patients in UPMC outpatient clinics, with an emphasis on those receiving **immunomodulatory medications**.

SPECIFIC AIMS



1. To educate providers, staff, and patients on the current vaccination recommendations for immunosuppressed RA patients
2. Create Best Practice Alerts (BPAs) in EMR for each vaccine
3. Develop clinic workflow changes to facilitate vaccination on regular basis

Methods

1. Best Practice Alert (BPA) for EMR

PREVENTIVE HEALTH (1 Advisory)

(2550)
This patient is at high risk for Herpes Zoster infection, he/she may be eligible for HZ vaccine. Open smartset to order vaccine, document reason not given or document historical vaccine given. Then click Accept.

Acknowledge reason:  

Open SmartSet: ZOSTER VACCINE [preview](#)
[Click here to document historical Zoster shot.](#)

2. Education and training on vaccination

- **Physician:** Rheumatology grand rounds and faculty meetings and feedback discussions
- **Staff:** Clinic manager and staff meetings
- **Patient education:** Clinic interactions and pamphlets

Methods

Clinic Work Flow for Medical Assistant (MA)

Clinic Work Flow for MD

Feedback to Physician: Quarterly vaccination improvement data with comparison to peer were shown to MDs



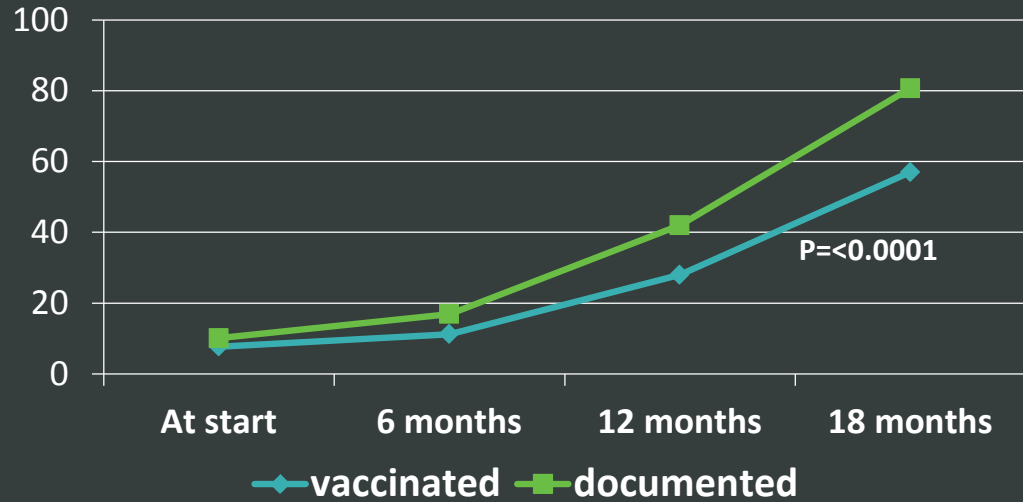
- BPAs are deferred for different lengths of time (1 year, next visit, etc.) depending on the reason for deferral.
- BPA will continue to appear in patient's record until the patient is vaccinated.

RESULTS

Herpes Zoster Vaccination

52 % Improvement

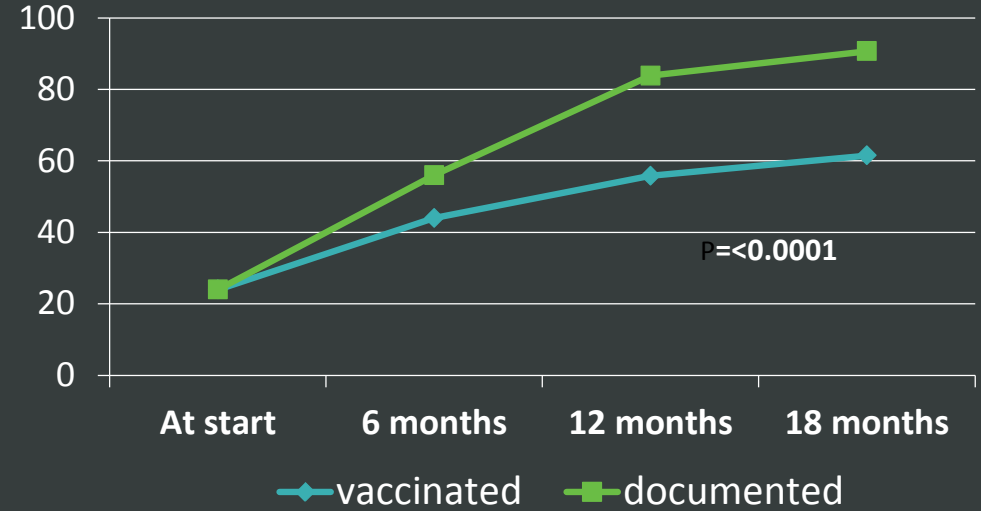
% patients



Pneumococcal Vaccination

37.5 % Improvement

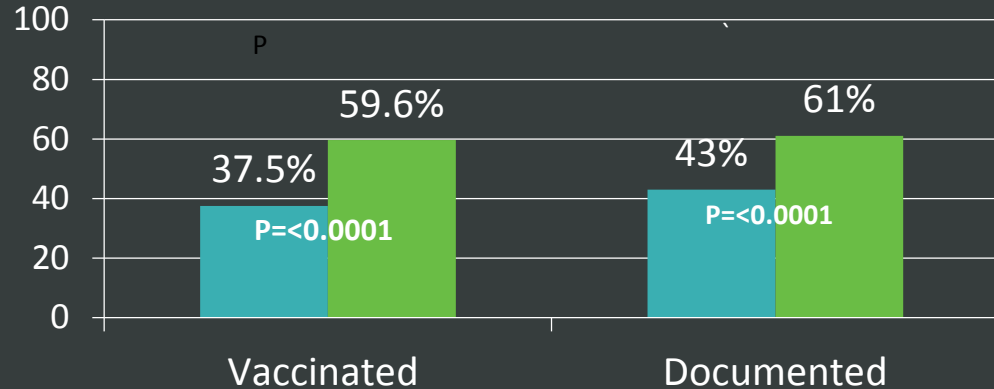
% Patients



Influenza Vaccination

22 % Improvement

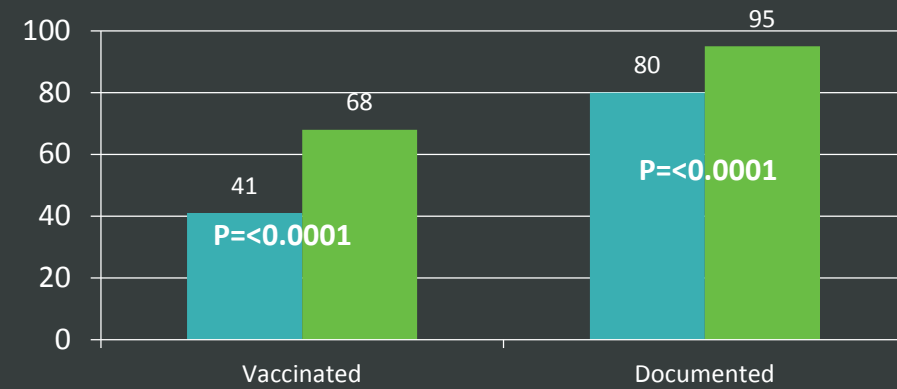
% patients



Hepatitis B Vaccination

27% Improvement

% Patients



■ Baseline ■ Intervention

■ Baseline ■ Intervention

Conclusions

- Implementation of a Best Practice Alert (BPA) and clinic staff based intervention using EMR improved vaccination and documentation.
- Key features were:
 - Automated patient identification in EMR for who needed vaccine
 - BPA notification to staff and MDs
 - Ancillary staff review of vaccination through BPA
 - Ordering, documentation and refusal through BPA
 - Education & Physician feedback using comparative data to peers
- Staff, nursing, and physician workload was not noticeably increased.
- Interventions were generalizable and sustainable through any EMR