

# Increasing Senior Immunization Rates, A Multipronged Approach

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## Abstract

Increasing vaccination rates in the elderly is an important part of preventative medicine and may decrease the cost of healthcare. This project focused on our local elderly population. The goal was to increase the pneumococcal and influenza vaccination rates for patients over age 65 in St Mark's Family Medicine Residency Clinic by 25%. Vaccination rate increase was calculated from the 2013-14 flu season to the 2014-15 flu season. We proposed a multipronged approach to achieve this goal. See objectives below. We did not reach our goal of a 25% increase in vaccination rates, but did achieve a 22% increase.

## Objectives

- Use our EMR to establish baseline data, track progress, and implement changes to ensure up to date vaccination records on every elderly patient
- Create a workflow that will decrease costs and improve workflow to facilitate data collection and improve immunizations rates
- Establish a program for vaccination sustainability
- Use this established immunization program as a model that will help initiate and encourage other resident practice management projects related to underserved population quality improvement opportunities

## Action Plans

- Utilize an EMR tool called MERIDIOS to collect data, create a baseline and track progress
- Contact all clinic patients > 65 yrs
- Obtain vaccination records from local pharmacies, hospitals, and assisted living facilities and encourage USIIS (Utah Statewide Immunization Information System) compliance
- Create a clinic policy to check the accuracy of the flowsheet at every patient visit
- Create a smart text that the MA uses on every patient over age 65
- Create a new employee/resident orientation program to introduce our immunization program and provide ongoing education
- Add a section for immunization status to the discharge summaries of our hospital patients
- Continue biannual Diabetes Day. This is an opportunity to ensure accurate vaccination status and provide vaccinations if needed.
- Quarterly chart audits
- Community based project to increase vaccination education

## Outcomes

- Pneumococcal and influenza vaccination rates for patients over age 65 in our clinic increased from the 2013--14 flu season to the 2014--15 flu season.
- Our goal of a 25% increase was not obtained.
- Influenza vaccination rate increased by 12% and the pneumococcal vaccination rate increased by 10%. The total combined vaccination rate increase was 22%.
- Pneumonia related hospitalization rates from the 2013--14 flu season to the 2014--15 flu season decreased from 3 to 2 for community acquired pneumonia and from 24 to 20 for pneumococcal related pneumonia.

Axial T1 post contrast with fat saturation

## Discussion

Though we did not meet our goal of a 25% increase in the pneumococcal and influenza vaccination rates for patients over age 65 in St Mark's Family Medicine Residency Clinic, we did accomplish several important objectives. Project successes included EMR use, new quick text, the new employee/resident orientation program, and Diabetes Day. Project pitfalls were barriers to communication with patients and community agencies, patient refusal of vaccines, and being unable to complete a community project. While we were close to reaching our goal, the above pitfalls highlight the need for further education, outreach, and increased use of USIIS and sustainable vaccination documentation programs.



## Acknowledgments

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## 2014-15 Senior Immunization Grant Awards FINAL REPORT FORM for RESULTS & FINDINGS

### Instructions

- The information requested, including Appendix 1-3, should be included in your Final Report.
  - Your Final Report is due by May 1, 2015.
  - Please include any attachments, graphs, pictures (jpg, if possible) or other items that capture the essence of the outcomes realized by your project.
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### Name of Family Medicine Residency Program

### Contact Information

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### Title of Project: **St Mark's Family Medicine Residency Program – AAFP Senior Immunization Improvement Program**

**Statement of Goal(s):** Our goal was to increase pneumococcal and influenza vaccination rates in our senior citizens 65 and older by 25%. We proposed accomplishing this goal by using a multipronged approach.

- Using our EMR to establish baseline data, track progress, and implement changes to ensure up to date vaccination records on every elderly patient
- Creating a workflow that will decrease costs and improve workflow to facilitate data collection and improve immunizations rates.
- Establishing a program for vaccination sustainability.
- Using this established immunization program as a model that will help to initiate and encourage other resident practice management projects related to other underserved population quality improvement project opportunities.

### Impact on Target Population

1. PATIENT DATA – Complete information in Appendix 1.
2. KEY OUTCOMES (Bullet points)
  - The pneumococcal and influenza vaccination rates for patients over age 65 in our clinic increased from the 2013-14 flu season to the 2014-15 flu season.
  - Our goal of a 25% increase was not obtained.
  - The influenza vaccination rate increased by 12% and the pneumococcal vaccination rate increased by 10%. The total combined vaccination rate increase was 22%.
  - Our pneumonia related hospitalization rates from the 2013- 14 flu season to the 2014-15 flu season decreased from 3 to 2 for community acquired pneumonia and from 24 to 20 for pneumococcal related pneumonia.

### 3. KEY PROGRAM COMPONENTS

We utilized an EMR tool called MERIDIOS to collect data, create a baseline and track progress throughout this project period. This software, along with other EMR tools also assisted with identification and ongoing sustainability. We updated current vaccination records to our EMR's flowsheet so vaccination status can easily be tracked. We created a clinic policy to check the accuracy of the flowsheet at every patient visit, ensuring the patient's vaccination status stays updated. We also created a smart text that the MA uses on every patient over age 65. This smart text says when their last shot was given.

This project and its updated progress was presented several times at all staff training meetings and resident noon conferences. This ensured all staff was aware of the above EMR changes and how to check each patient's vaccination status.

We created a new employee/resident orientation program to introduce them to our immunization program and provide education on how to utilize EMR templates, tools, pop ups, and other resources to capture and document immunization information.

We added a section for immunization status to the discharge summaries of our hospital patients. This will hopefully improve accurate vaccination documentation wherever these patients go for outpatient follow up care.

Our clinic hosts biannual Diabetes Day. The focus of Diabetes Day includes ensuring accurate current vaccination status, and providing vaccinations if needed.

Anne Anderson is creating the Project Poster Presentation and will present this at the AAFP 2015 national conference. She will also present the project and its outcomes at a resident noon conference.

There were 4 action plans in our detailed project outline that were not achieved. We did not contact each of the original 945 patients identified via secured email and or phone. This was not accomplished secondary to lack of personnel and significantly decreased use of email in this population. In addition, we were not very successful in reaching out to other settings such as pharmacies, hospitals, assisted living facilities, USIIS, etc. that administer these vaccines to obtain records. We wanted to encourage collaborative communication via uploading all vaccines administered to **USIIS (Utah Statewide Immunization Information System)**. Communication with these community agencies proved challenging.

We were not able to participate in a community-based project as originally planned. This was mostly due to lack of vaccines. Our pneumococcal and influenza vaccination order was cut in half by the manufacturer. We ran out of vaccines and had to wait for a second shipment. No extras vaccines were available for community events.

Quarterly chart audits were not performed due to lack of personnel.

### 4. THINGS THAT WORKED BEST (to accomplish your activities)

Implementing our EMR to track vaccination status was highly successful. We were able to easily identify those who needed vaccinations versus those previously vaccinated. We were able implement a sustainable method via EMR to track vaccination records. The quick text we developed ensures that vaccination status is addressed at every patient visit. The new employee/resident orientation program provides consistent training clinic wide on how to address vaccination status at every visit. Our biannual Diabetes Day was successful in addressing vaccination status and providing vaccinations if indicated. This provides a safety net for those patients who may miss regular appointments and are not properly vaccinated as a result. We added a section for immunization status in the discharge summaries for our hospital patients. This helped ensure accurate vaccination documentation in our clinic and hopefully in any outpatient clinic these patients follow up in.

## 5. LESSONS LEARNED

We experienced several barriers of communication during this project. First, it was hard to contact patients directly. Many didn't return our phone calls. Email is a cost effective way to communicate with large population, however email use in this population was very low. Second, we reached out to several community agencies including pharmacies and assisted living facilities and found communication difficult. Agencies either didn't return phone calls or took a long time to return calls. Letters were sent to pharmacies requested updated vaccination records, but the response was low. IHC and St Marks/HCA were contacted in the hopes of establishing a policy to regularly upload all hospital-administered vaccinations to USIIS. Again, communication was poor and this was not accomplished.

Another significant barrier was the large number of patients who refused the vaccines. Continuing to provide patient education materials on the importance of vaccination is a way to decrease this barrier in the future. Our clinic now has CDC vaccination education materials available.

We were not able to complete a community-based project, which would have increased awareness, education and hopefully vaccination rates. As noted above, our vaccine shortage was the biggest barrier. Better planning in the future may avoid similar problems.

## 6. PERSONAL STORY:

We have an elderly diabetic clinic patient who regularly misses appointments, partly due to financial issues. When she does come to her appointments her provider tries to get as much done as possible, since it is unlikely she will make another appointment soon. At her last visit in March, the quick text phrase reminded her resident provider that she was due for the pneumococcal vaccine. Without the quick text reminder the resident confided she would likely have forgotten to address vaccination status. For this patient who has financial hardship, does not regularly come to her appointments, and significant comorbidities not receiving the pneumococcal vaccine could have especially serious effects on her health. This example shows how consistent reminders are effective.

## 7. IMPACT OF INTERVENTIONS - Complete information in Appendix 2.

Our highest impact was seen in our clinic. We can easily track vaccination records with our EMR. Our quick text ensures patient vaccination status is reviewed at every visit. The biannual Diabetes Day provides a safety net for those patients who do not come to regular appointments. The new employee/resident training program provides consistent training clinic wide. Provider education and reminders increased with the quick text and regular updates at staff meetings and resident noon conferences. Our clinic regularly uploads to USIIS (Utah Statewide Immunization Information System).

The lowest impact was the community. Our community outreach to pharmacies, long term care facilities, and hospitals were not very effective in establishing a standardized process vaccination reporting. However, hopefully our letters and phone calls to these community agencies have at least raised awareness of this important issue.

### **Impact on Residents and Team Members**

1. Provide a general description of those who worked on the quality improvement and/or community based project:

The personnel who worked on this project included: One faculty physician, 2 residents, the clinic manager (RN), one clinic employee, and one IT person.

2. Address the current and future impacts of this project on the residents &/or members of the team.

Our team was able to see first hand how critical communication was in accomplishing our goal. We saw how effective our EMR and clinic policies were at creating a sustainable model for tracking immunization records and ensuring they are up to date. Overall we see the continued importance of increasing vaccination rates. We remain committed to this goal and plan to continue community outreach and patient education in clinic.

Other residents have seen how our project unfolded through updates at resident noon conferences and all staff meetings. Hopefully seeing the strengths and weaknesses of our project will help residents as they develop future practice management projects.

3. If applicable, describe the impact (on your project) of the new ACIP pneumococcal recommendation issued on September 19, 2014 (Both PCV13 and PPSV23 should be administered routinely in series to all adults aged ≥65 years.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6337a4.htm#box> )

Not applicable.

## **Education and Outreach**

### 1. Summary of accomplishments

The pneumococcal and influenza vaccination rates for senior citizens 65 and older in our clinic increased by 22%. Though we did not meet our goal of a 25% increase, we did accomplish several important objectives. We created a sustainable model for tracking vaccination records and ensuring they are up to date through our EMR and clinic policies. Our employees and residents are trained on how to use these tools. Adding a section for immunization status to our hospital discharge summaries has increased vaccine documentation accuracy in our clinic, and hopefully in any outpatient clinic these patients follow up in. Local pharmacies, long term care facilities, IHC and St Marks/HCA are more aware of the need to have a standardized process of vaccination reporting/ regularly upload facility administered vaccinations to USIIS. Our failure to meet the goal of a 25% increase in pneumococcal and influenza vaccination rates in adults 65 and older in our clinic highlights the need for further education, outreach, increased use of USIIS and sustainable vaccination documentation programs.

### 2. List of clinical & patient education and outreach materials produced or used in this project.

- Letter to pharmacies
- New employee/resident orientation program
- All staff meeting minutes
- Pneumococcal and influenza vaccine patient education handouts

### 3. List of presentations with the date(s) and brief description of the audience.

- All staff meetings. 9/11/2014, 1/21/2015, 3/4/2015. Audience: clinic staff, residents, and faculty
- Resident noon conference. 12/19/2015, 1/2/2015. Audience: residents, attending physician

### 4. Include the materials developed and implemented as an attachment (in a jpg or pdf format) or provide the web address where they can be accessed.

## **Sustainability**

Discuss how the FMRP and residents will carry the best practices and gains into the future.

Through this project our program and residents learned how effective we can be at implementing sustainable change. Through our EMR, clinic policies and trainings, and workflow we increased the pneumococcal and influenza vaccination rates for adults 65 and older by 22%. Our challenges communicating with community agencies is an obvious area for improvement. Hopefully residents will learn from this as they go through training and start their own practice management project. As residents graduate and go on to work in hospitals or clinics, they will ideally implement what they have learned about sustainable vaccination documentation.

## **Project Impact Statement for Donors**

What would you like the donors who supported this project to know about this project and the benefit you derived from receiving this grant?

We successfully created a sustainable vaccination documentation program in our clinic. Residents

were updated throughout the project and learned from our strengths and weaknesses. Receiving this grant allowed employees and residents to work together and create lasting change. We appreciate this opportunity and plan to continue our efforts in community outreach and patient education.

**Budget Update** – Complete information in Appendix 3

## Appendix 1: PATIENT DATA for 2014-15 Senior Immunization Grant Award

### I. INFLUENZA VACCINE INFORMATION: 2014-15 Flu Season

1a. Total # of seniors (adults aged ≥65) served by your residency who were **eligible** for an *influenza* vaccine from 9/1/14 -3/31/15: **598**

1b. Total # of seniors who **received** an *influenza vaccine* from 9/1/14 - 3/31/15: **391**

1c. Historical Data – Enter data in the table by clicking on the box and typing in the numbers

Seniors (age 65 and older)	2012-2013 Flu Season (Sep 2012-Mar 2013)	2013-2014 Flu Season (Sep 2013-Mar 2014)	2014-2015 Flu Season (Sep 2014-Mar 2015)
Influenza Vaccine Rate (%)	52%	53%	65%
Numerator/Denominator (absolute numbers used to calculate rate)	473/905	413/777	391/598

1d. Summary of methodology used to obtain the data and information:

Finding gaps within our EMR reporting we queried a new reporting system called Crystal Reports to pull an accurate real time report.

### II. PNEUMOCOCCAL VACCINE INFORMATION: 2014-15 Flu Season

\*Note: New ACIP recommendations for PCV13 and PPSV23 use in adults aged ≥65 were issued on Sep 19, 2014 during the course of this grant. They were NOT required to be implemented by grant recipients.

2a. Total # of seniors who were **eligible** for a *PPSV23* vaccine who were served by your residency from 9/1/14 - 3/31/15: **598**

2b. Total # of seniors who **received** a *PPSV23* vaccine from 9/1/14 – 3/31/15: **271**

2c. Historical Data – Enter data in the table by clicking on the box and typing in the numbers

Seniors (age 65 and older)	2012-2013 Flu Season (Sep 2012-Mar 2013)	2013-2014 Flu Season (Sep 2013-Mar 2014)	2014-2015 Flu Season (Sep 2014-Mar 2015)
PPSV23 Pneumococcal Vaccine Rate (%)	33%	35%	45%
PPSV23 Numerator/Denominator (numbers used to calculate rate)	302/905	275/777	271/598
*Number of seniors who received <b>PCV13</b> during specific time period			

2d. Summary of methodology used to obtain the data and information:

Finding gaps within our EMR reporting we queried a new reporting system called Crystal reports to pull an accurate real time report.

### III. COMMUNITY-BASED PROJECTS ONLY: INFLUENZA & PNEUMOCOCCAL INFORMATION: 2014-15

influenza season [\*Note: New ACIP recommendations for PCV13 and PPSV23 use in adults aged ≥65 were issued on Sep 19, 2014 during the course of this grant. They were NOT required to be implemented by grant recipients]

3a. Total # of seniors served by this project through community outreach from 9/1/14 – 3/31/15: NA

3b. Total # of seniors served through community outreach who **received** an *influenza* vaccine from 9/1/14– 3/31/15: Not applicable. Is this data included in the data presented in question 1b and 1c? NA

3c. Total # of seniors served through community outreach who **received** a *PPSV23* vaccine from 9/1/14-3/31/15: NA Is this data included in the data presented in question 2b and 2c? NA

3d. Total # of seniors who **received** a *PCV13* vaccine\* from 9/1/14 – 3/31/15: NA Is this data included in data presented in 2c? NA

3e. Summary of methodology used to obtain the data and information:

NA

#### IV. PNEUMONIA-RELATED HOSPITALIZATION RATES FOR AGE ≥ 65, Reported Over 2 Flu Seasons

4a. Historical Data – Enter data in the table by clicking on the box and typing in the numbers

<b>PNEUMONIA-RELATED HOSPITALIZATION RATES FOR SENIORS AGE ≥ 65</b>		
<b>Patients 65 and older</b>	<b>2013-2014 Flu Season (Sep 2013-Mar 2014)</b>	<b>2014-2015 Flu Season (Sep 2014-Mar 2015)</b>
<b>Community Acquired</b> Pneumonia	3	2
<b>Pneumococcal</b> Pneumonia	24	20
<b>Influenza-Related</b> Pneumonia	Unknown	Unknown

4b. Summary of methodology used to obtain the data and information:

We are not integrated with St. Marks Hospital and trying to access their diagnosis codes and admission rates have been a particular challenge for our clinic. We are continuing to work with hospital to create a meaningful, accessible report to better access our admissions data and also to create a streamline process for appropriate coding for different types of Pneumonia. These rates only are reflective of PRIMARY DIAGNOSIS codes.