

Improving SIU-QFM Influenza and Pneumococcal Vaccination Rates for Seniors

Priyanka Costa, MD * Deena Jacob, MD * Ravi Mehta, MD * Thomas Miller, MD * Timothy T. Ott, DO * Diane M. Hughes, MBA * Jill Zwick, RN, BSN
 Southern Illinois University School of Medicine

ABSTRACT

Our goal was to increase vaccine rates by integrating preventative care with influenza and pneumococcal immunizations for persons 65 years and older during the 2014-2015 season. We corresponded through letters, telephone calls, and automated messaging system to increase vaccination rates by attending "walk-in" vaccination clinics or Medicare Wellness exams. Despite barriers, SIU-QFM accomplished our goal by achieving a 61% (10% increase) influenza vaccination rate and a 56% (14% increase) pneumococcal vaccination rate. Our project helped us to identify barriers that impeded our prior vaccination rates. In the future, we would like to encourage transparency among healthcare facilities to allow collaborative care to our patients.



CONTACT:

Priyanka Costa, MD
 SIU Quincy Family Medicine Residency
 Email: pcosta@siumed.edu

Phone: 217-224-9484

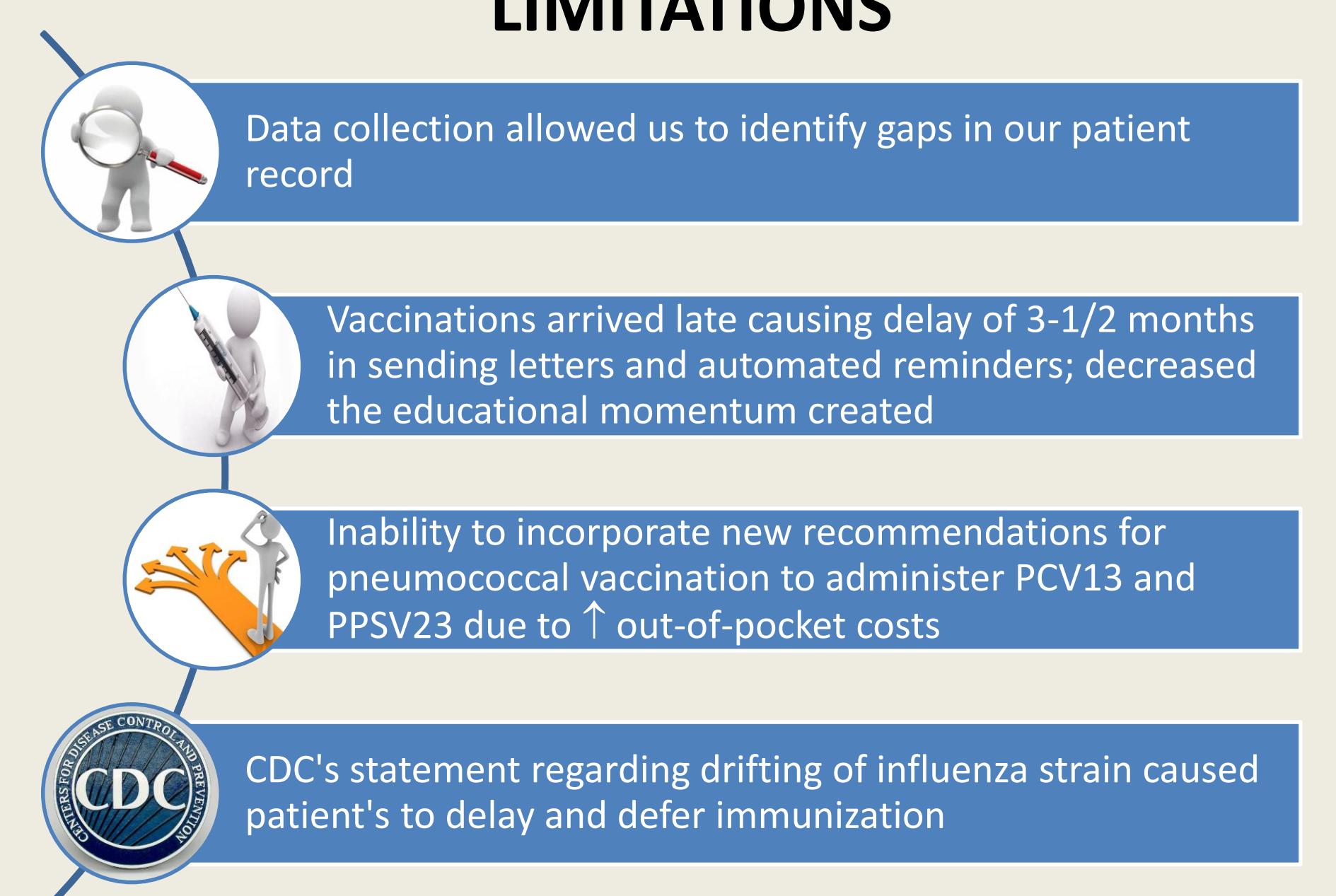
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Special thanks to Nicole Kuhlman for her dedication in gathering data for this project and to Linda Savage for her assistance in the creation of this poster.

INTRODUCTION

- Influenza and pneumococcus remain significant causes of M&M in high-risk populations like adults >65 years
- U.S. CDC, in collaboration with WHO, track the flu virus isolates globally and predict the appropriate components for the annual influenza vaccine
- Pneumococcal infections may cause pneumonia as well as bacteremia which can increase M&M in adults 65 years with comorbidities
- Streptococcus pneumoniae* may precipitate:
 - Bacteremia
 - Extrapulmonary infections
 - Acute cardiac events
 - Complications like endocarditis, septic arthritis, peritonitis, pericarditis and meningitis precede the antibiotic era and are relatively uncommon.
- The U.S. Advisory Committee on Immunization Practices (ACIP) recommends that **BOTH** PCV13 and PPSV23 be given sequentially to all adults aged 65 years
- Although both these diseases are preventable, vaccination rates remain low

LIMITATIONS



METHODS AND MATERIALS

Definition of Quality Measure

Goal 1: Achieve influenza vaccination rate of 81%
 Goal 2: Achieve pneumococcal vaccination rate of 59%
(A 25% increase from the 2012-2013 Flu Season)

Patient Selection

Pre- and post-test study using EMR to review all active patients aged > 65 yrs with an encounter within last 2 yrs

- Influenza: 927 patients
- Pneumococcal: 676 patients

Design

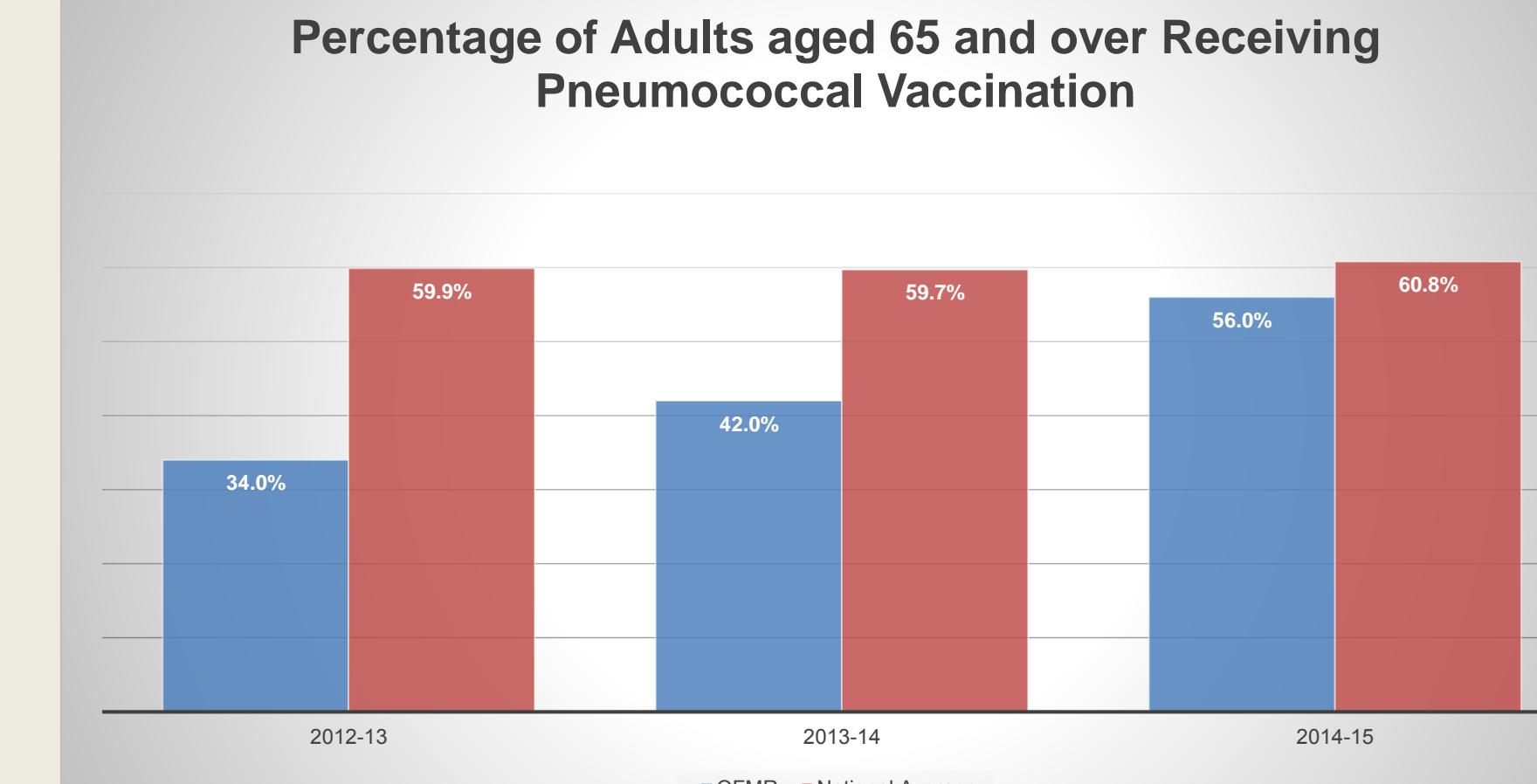
- Determined that if patient had at least 1 indication (and no contraindications), patient was eligible for influenza vaccination.
- Determined that if patient had at least 1 indication, had not received pneumococcal vaccination in past 5 years (and no contraindications), was eligible for pneumococcal vaccination.

* Unvaccinated patients in our EMR were cross-referenced with Department of Public Health's Illinois Comprehensive Automated Immunization Registry (I-CARE).

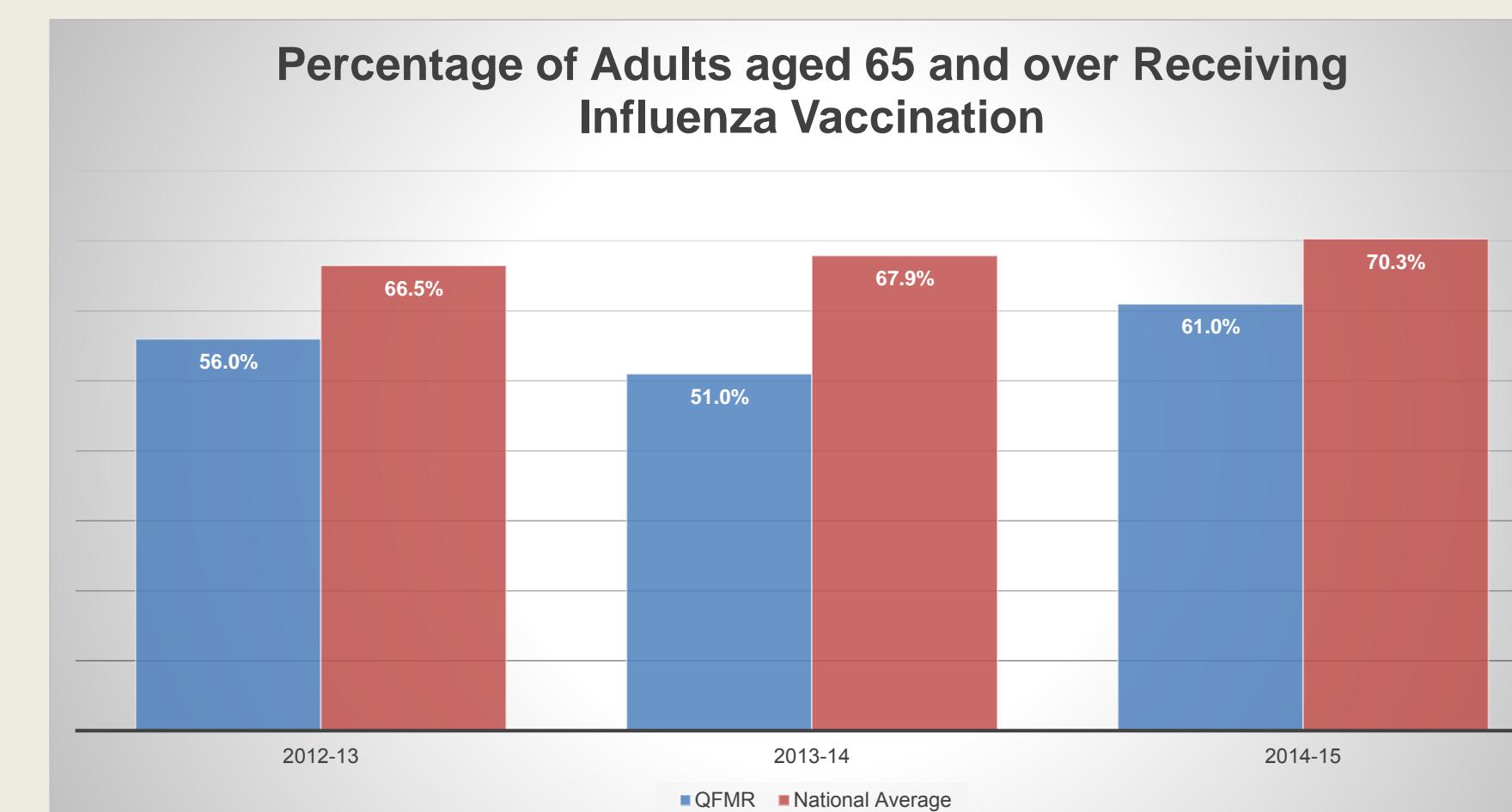
Tools

- ✓ ID patients indicating immunization status on vitals sheet
- ✓ Free Medicare Wellness Exam letter and vaccination flyer mailed to patients
- ✓ Automated reminders of walk-in vaccination times
- ✓ Nursing and provider education
- ✓ Local TV news broadcast on vaccine recommendations
- ✓ Informative posters clinic-wide

RESULTS



Note: 2014-2015 National Average reflects through September 2014.



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QFM STATISTICS

- Adams County is home to 18.3% patients >65 years of age
- Patient population is largely non-insured or underinsured
- An NCQA Level II Patient-Centered Medical Home to 10,833 patients
- Residency Program staffed by 18 residents, with support from nursing staff, attending faculty, care management and behavioral psychologists
- Affiliated with Blessing Health System

CONCLUSIONS

- Vaccine protocol will aid in improving influenza and pneumococcal vaccination rates in elderly
- Improvement in our vaccination rates closed the gap to national averages



Achieve immunization rates consistent with the U.S. Department of Health and Human Services Healthy People 2020 initiative by reaching an influenza and pneumococcal immunization rate of 90%.

- Utilize the wait list during vaccination shortage periods
- Competition between 4 provider/nursing teams to increase vaccination rates
- Expand on the abilities of the automated telephone messaging system to create reminders
- Improve the I-CARE registry by increasing provider participation in Illinois

REFERENCES

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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.
-

Name of Family Medicine Residency Program

Southern Illinois University School of Medicine Quincy Family Medicine Residency Program (SIU-QFM)

Contact Information

1. Name, Title, Email of person completing the report
Diane M. Hughes, MBA, Project Coordinator, dhughes@siumed.edu
2. Project Contact information if different from above
Timothy T. Ott, DO, tott@siumed.edu
3. Name(s) of Resident(s) presenting Immunization Awards Poster at the 2015 National Conference
Ravi Mehta, MD, Deena Jacob, MD, Priyanka Costa, MD

Title of Project

Improving SIU-QFM Influenza and Pneumococcal Vaccination Rates for Seniors

Statement of Goal(s) Include your Primary Metrics

Goal 1: Achieve an influenza vaccination rate of 81% (25% increase from 2012-2013 Flu Season) for SIU-QFM patient population age 65 and older (Seniors) by March 31, 2015.

Goal 2: Achieve a pneumococcal vaccination rate of 59% (25% increase from 2012-2013 Flu Season) for SIU-QFM patient population age 65 and older (Seniors) by March 31, 2015.

Impact on Target Population

1. PATIENT DATA – Complete information in Appendix 1.
2. KEY OUTCOMES (Bullet points)
SIU-QFM accomplished the outcomes listed below by achieving a 61% (10% increase) influenza vaccination rate and a 56% (14% increase) pneumococcal vaccination rate:
 - Outcome: SIU-QFM Senior patients are aware of the importance of the influenza and pneumococcal vaccinations, proven by an increase in patients reporting "vaccinated" on monthly vaccination report.
 - Outcome: SIU-QFM collaborates with other vaccination sites (Health Department and Pharmacies) by referral of Senior patients for vaccination and updating I-CARE with vaccinations administered to Seniors at SIU-QFM, proven by an increase in Senior patients reporting "vaccinated" on monthly vaccination report.
 - Outcome: SIU-QFM will increase influenza and pneumococcal Senior vaccination rates by encouraging Seniors to schedule a Medicare wellness exam, proven by an increase in Senior patients reporting "vaccinated" on monthly vaccination report.
3. KEY PROGRAM COMPONENTS
 - Education for providers and clinical staff
 - Rooming policy for senior patient population developed and implemented (*See attachment A*)
 - Use of walk-in hours Monday-Friday 8:30am-5pm for vaccinations

- Manual integration of information from State Immunization Registry into SIU Electronic Health Records
- Letters and informational brochures to educate patients
- Patient reminder phone calls from automated system

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

Letters were mailed out to all senior patients encouraging vaccinations and notifying them of walk-in availability. We feel it offered an impactful piece of education about access to vaccinations. Our reception area was bombarded with phone calls to schedule Medicare wellness exam in the first weeks after the letters were mailed out. The nursing staff followed the letter up with reminder phone calls which were effective because staff was able to document in the EHR if a patient already received a vaccination at another facility and it also offered the opportunity to educate the patient on why vaccinations were important. We also utilized the automated telephone system that made phone calls to patients and played a recording reminding them to come in for a vaccination. SIU-QFM plans to use automated phone system for future vaccination reminders. Phone calls were made to patients who reported not vaccinated on the monthly vaccination report.

Grant education and reminders were provided during resident meetings, nurse meetings, and during staff meetings. It also helped that the three lead residents were on separate teams to encourage the momentum.

Vaccination walk-ins were open Monday-Friday from 8:30am-4:30pm. This created a window of opportunity for patients to get vaccinated at their convenience.

The rooming policy (attachment A) was effective when vaccines became unavailable in the clinic. Towards the beginning of the grant period we fell short of vaccinations. There was a time period when we didn't have vaccinations available to the patients. To help work through this problem the staff developed a waiting list for the patients. We would ask senior patients if they would like to be placed on a waiting list, so the clinic staff could contact them once the vaccinations became available.

5. LESSONS LEARNED

SIU-QFM senior patient population was reported as being greater in previous years on our original grant application. Please note the data reported in this document, there are fewer total senior patients. We mailed the letter to all of our active senior patients from that data. A few days later we began getting phone calls from the families of patients stating that the patient was deceased. This was upsetting to the families and our employees of SIU that we had made this mistake. We had a staff person dedicate time to mark the files appropriately. SIU-QFM is exploring avenues to keep our patient record up to date with this information. An example, is reviewing obituaries in the local paper to check and see if the patient was seen in our clinic. We then mark those EHR files appropriately.

We made four formal efforts throughout the project to educate our staff about the grant activities. Some ideas that might have helped roll out this information would have been scheduled presentations on a monthly basis and presenting the data on a poster to hang in the clinical area to remind staff of the project. We could have kept this poster up to date with most recent data and completed activities. We think it would have been beneficial to have created a friendly competition between our three teams to see who could vaccinate the most seniors. We ran into a barrier getting the vaccination letters out to our senior patient population because there was a delay until November 2014 in getting our flu vaccines. Some of our education within the clinic to staff/team members happened prior to the vaccination letters being mailed out in November. The delay in mailing the letters may have contributed to loss of momentum and team members *forgetting* about the project. Grant project education needed to happen at different levels numerous times throughout the project period.

The vaccination report created wasn't always accurate. We found that ICARE was not interfacing with our EHR, Allscripts. Therefore, we had a staff person manually updating Allscripts with vaccinations from ICARE. In addition, reports were ran several times to assure data integrity, but caused waste in personnel time, etc. So we learned to be more specific with our report requests to prevent time sifting through data.

6. PERSONAL STORY Please provide a personal account that shows a difference was made as the result of the work you and your team have done on this project. It can be a story that reflects on a resident or on someone from the patient population you are serving.

This story was shared by one our SIU-QFM residents and is written in 1st Person, *"It is not everyday that patients are motivated to seek preventative care in our society, especially ones that understand that it is quicker to come in only when they have an urgency. Today, my patient informed me that her sister died from complications from pneumonia. She was interested in how to prevent this from happening to her. In addition, she asked me for ways to quit smoking. She empowered me to share this story with others and it gives me hope."*

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

Impact on Residents and Team Members

1. Provide a general description of those who worked on the quality-improvement and/or community-based project (e.g., 18 residents, 3 medical students, and 2 MPH graduate students).

SIU-QFM utilized two faculty, three residents, one lab assistant, one nurse administrator, one IT person, and one project coordinator.

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

It has been time consuming improving processes for running reports. Future impacts include improved work flow efficiencies for example: we now have the vaccination reporting system to keep track of patients who have been vaccinated and can follow-up with those that have not. There has been increased awareness for mindset change to realize process improvement for providers and patients. With the processes we have set up and lessons learned with this grant, it will make it easier for years to come for residents to continue to improve vaccination rates. Contact with local public media outlets will provide future media opportunities regarding vaccinations.

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. We did not institute a policy of using the second pneumococcal vaccine during the grant period.

Education and Outreach

1. Summary of accomplishments

- Residents involved in this project learned about how to organize and implement a quality improvement project.
- The media released information that there was a question over the effectiveness of the influenza vaccine this past flu season. SIU-QFM faculty involved in this project offered a brief news story on a local station about flu vaccine recommendations.
- Project team members utilized staff meetings, top of the morning nursing meetings, and noon time resident meetings to educate the clinic staff about the vaccination project. This offered the opportunity to educate the staff about the implications of these illnesses.

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

- Rooming Policy for clinical staff (see attachment A)
- Vaccination letter to patients (see attachment C)
- Patient flyer mailed with vaccination letter (see attachment D)
- 3. List of presentations with the date(s) and brief description of the audience.
- August 2014 - Project team notified reception about forecasted "Walk-ins" for vaccinations because of letter that was mailed
- September 2014 – Nurse Administrator educated nursing staff on vaccination grant goals and objectives during "top of the morning meeting".
- October 2014 – Residents presented vaccination grant goals and objectives at Resident noon meeting.
- November 2014 – Additional update to nursing staff during "top of the morning" meeting to serve as a reminder about the grant. (Letters were finally mailed as we were late receiving the flu vaccination)

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.

See *attachment*.

Sustainability

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

The work on this project put in place processes for future residents to continue to improve vaccination rates. This project has created an awareness throughout the clinic about the importance of flu and pneumonia vaccination. We have been able to create a patient education flyer, vaccination letter, and have learned how to educate our patients and answer questions about vaccinations and implications of illnesses. These are tools that we will be able to use in the future.

One of the best tools we found was our automated telephone messaging system which can be used for many purposes and is free for us to use. This system allows a SIU-QFM employee to record a message and send it to a mass amount of phone numbers. The phone numbers can be chosen based on criteria from the EHR. We can utilize this phone messaging system to remind patients who have not been vaccinated about vaccination clinics.

In future years, we will plan a friendly competition between care management teams to help increase vaccination rates. The competition will serve as a reminder to encourage vaccinations to our patients.

SIU-QFM plans to continue utilizing the waiting list during vaccination shortage periods in the future. As mentioned earlier in this report, we went through a period when we didn't have vaccinations available for our patients. The patient was in the clinic for a visit and our staff chose to take the time to educate the patient on the importance of the flu and pneumonia vaccinations. Patients agreed to be placed on a waiting list. We were then able to follow up with the patient who were placed on the waiting list to get a vaccination once we received them. Those follow up phone calls allowed us to update our EHR if the patient had received a flu vaccination at another site since the time of their visit.

Future improvements in the ICARE registry will enable accurate tracking of immunizations. Currently the system is uni-directional and is not consistently updated.

Nursing staff utilizes a document known as the Rooming Vital Sheet (see *attachment B*). This sheet is a bright yellow color and filled out on all patients prior to the physician seeing the patient. There are two checkboxes at the bottom of the sheet for Flu and Pneumonia. This will help to serve as a reminder for nursing to continue checking vaccination records for Senior Patients, to provide education on why the vaccinations are important to patients, and notifying the physician when a patient needs vaccination.

SIU-QFM was able to use the vaccination letter to serve three purposes. We were able to notify our patients about the "walk-in" flu and pneumonia vaccination clinic that will be offered every day from 8:30am-4:30pm for their convenience. Second, we used the letter as an opportunity to insert the educational flyer encouraging vaccinations. Finally, we took the opportunity to educate our patients about a benefit available to them to schedule a Medicare Wellness Exam which is no cost to the patient who is covered by Medicare. Medicare Wellness Exam are something our healthcare team encourages. As SIU-QFM works to schedule Medicare Wellness Exams in the future, influenza and pneumonia vaccination and education will be a normal part of those visits.

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?

Until this project we didn't encourage the pneumococcal vaccine consistently. If a patient was 65 or older and a physician picked up on the fact they didn't have a vaccination, then one was given; it lacked consistency. Now, the nurses are checking immunization status when they room the patient and bringing it to the attention of the provider every time if needed, trying to improve consistency. Amongst the providers it created better knowledge about the importance of preventative care, and the vast categories of illnesses pneumococcal

vaccinations can be used for. It also helped us understand the epidemiology of influenza when the vaccine is partially effective and the impact of media on patient education. This QI project has improved vaccination awareness for our providers and senior patient population.

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: 1071
- 1b. Total # of seniors who **received** an *influenza vaccine* from 9/1/14 - 3/31/15: 654 were vaccinated; 102 declined vaccination
- 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 (%) | 56% | 51% | 61% |
| Numerator/Denominator (absolute numbers used to calculate rate) | 628/1125 | 511/998 | 654/1071 |

- 1d. Summary of methodology used to obtain the data and information:
SIU-QFM utilizes a program called Analytics that is provided by our Electronic Health Record software company, Allscripts, to create custom reports and queries. Analytics allows SIU-QFM to create a registry of current patients over the age of 65 and query vaccination records specific to influenza and pneumococcal. Data was collected in April 2015 for the 2014-2015 flu season and the 2013-2014 flu season. The 2012-2013 flu season data was collected at the time of our grant application.

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: 1071
- 2b. Total # of seniors who **received** a PPSV23 vaccine from 9/1/14 – 3/31/15: 170 vaccinated; 76 seniors declined
- 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 (%) | 34% | 42% | 56% |
| PPSV23 Numerator/Denominator (numbers used to calculate rate) | 385/1125 | 421/998 | 605/1071 |
| *Number of seniors who received PCV13 during specific time period | | | 170 (76 declined vaccination) |

- 2d. Summary of methodology used to obtain the data and information:
SIU-QFM utilizes a program called Analytics that is provided by our Electronic Health Record software company, Allscripts, to create custom reports and queries. Analytics allows SIU-QFM to create a registry of current patients over the age of 65 and query vaccination records specific to influenza and pneumococcal. Data was collected in April 2015 for the 2014-2015 flu season and the 2013-2014 flu season. The 2012-2013 flu season data was collected at the time of our grant application.

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: This section is not applicable for SIU-QFM.

- 3b. Total # of seniors served through community outreach who **received** an influenza vaccine from 9/1/14–3/31/15: Click here to enter text. Is this data included in the data presented in question 1b and 1c? Click here to enter text.
- 3c. Total # of seniors served through community outreach who **received** a PPSV23 vaccine from 9/1/14-3/31/15: Click here to enter text. Is this data included in the data presented in question 2b and 2c? Click here to enter text.
- 3d. Total # of seniors who **received** a PCV13 vaccine * from 9/1/14 – 3/31/15: Click here to enter text. Is this data included in data presented in 2c? Click here to enter text.
- 3e. Summary of methodology used to obtain the data and information:
Click here to enter text.

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

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

| PNEUMONIA-RELATED HOSPITALIZATION RATES FOR SENIORS AGE \geq 65 | | |
|---|---|---|
| Patients 65 and older | 2013-2014 Flu Season (Sep 2013-Mar 2014) | 2014-2015 Flu Season (Sep 2014-Mar 2015) |
| Community Acquired Pneumonia | 58 | 82 |
| Pneumococcal Pneumonia | 0 | 1 |
| Influenza-Related Pneumonia | 1 | 23 |

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

Data Source:

Community Acquired Pneumonia – Patients \geq 65 who were are PN-6 Core Measure Population

Pneumococcal Pneumonia - Patients > 65 who had a primary ICD-9 code of 481.0

Influenza with Pneumonia - Patients > 65 who had a primary ICD-9 code of 487.0