



Improving Preventive Health of Older Adults in Wyandotte County through Improved Influenza and Pneumonia Vaccine Rates

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Introduction

Older adults in an urban setting are at high risk for not receiving the appropriate vaccines.

Despite being located next to one of the healthiest counties in the state, Wyandotte County ranks 101st out of 101 counties in the state.⁴

The KU Family Medicine Clinic (FMC) and hospital are both located in Wyandotte County, which is where the largest proportion of clinic patients resides.

- 22% of patients are uninsured
- 21% have poor or fair health
- 12.8% of seniors live in poverty⁴

Pneumonia remains a substantial burden on the healthcare system.

- 68% of invasive pneumococcal disease and 83% of all deaths occur in patients greater than 50 years old.
- Of the older adults reporting not getting the vaccine, 90.6% of them reported at least 1 missed opportunity.
- Morbidity and mortality rates are substantial.

Influenza remains a significant cause of hospitalization and death.

- The older adult population is at high risk for serious complication of influenza.
- In 2012-2013 the CDC estimates there were 3,697 deaths attributed to Influenza, which equates to 1.2 deaths per 100,000.
- Over the past 2 years in Kansas, flu vaccination coverage decreased 6% from 66.7% to 60.8% of adults aged 65 and older.³

To address these barriers of physician and patient education on new ACIP pneumococcal vaccine recommendations and patient access, a 3-pronged outreach program was implemented.

Project AIMS

AIM 1: Quality improvement within FMC through a multi-step approach.

- Increase influenza vaccination rate to 75%
- Vaccinate 480 with PCV13 if never received PPSV23

AIM 2: Improve community access through a **Vaccine Clinic**

- Vaccinate 100 older adults

AIM 3: Improve community access through a **Homebound Program**

- Vaccinate 20 homebound older adults

Methods

AIM 1:

- Provide training sessions for all clinical faculty, residents, and staff to review ACIP guidelines for older adults, specifically for influenza, PCV13, PPSV23
- Improve EMR utilization to ensure accurate vaccine documentation
- Outreach to patients via MyChart, phone call or mailer
- Administer clinic surveys to assess patient knowledge and opinion on vaccine

AIM 2:

- Offer walk-in vaccine clinic to older adults at Landon Center on Aging

AIM 3:

- Identify homebound older adults through outreach with Wyandotte/Leavenworth Aging & Disability Resource Center needing primary care services, including vaccines
- Provide influenza and appropriate pneumonia vaccine in the home

Results AIM 1

Table 1. FMC Vaccine Rates

Vaccine for ≥ 65 yo	2012-2013 Flu season	2013-2014 Flu season	2014-2015 Flu Season	2015-2016 Flu Season
Influenza	46.0%	53.0%	59.6%	44.9% (82.7%†)
PPSV23	25.0%	28.0%	30.0%*	54.3%
PCV13	—	—	—	52.5%‡

Table 2. FMC Number of Patients Vaccinated

Vaccine for ≥ 65 yo	2014-2015 Flu Season	2015-2016 Flu Season
Influenza	378	488
PPSV23	unknown	744
PCV13		590
PCV13 (65 only)	—	83/158‡

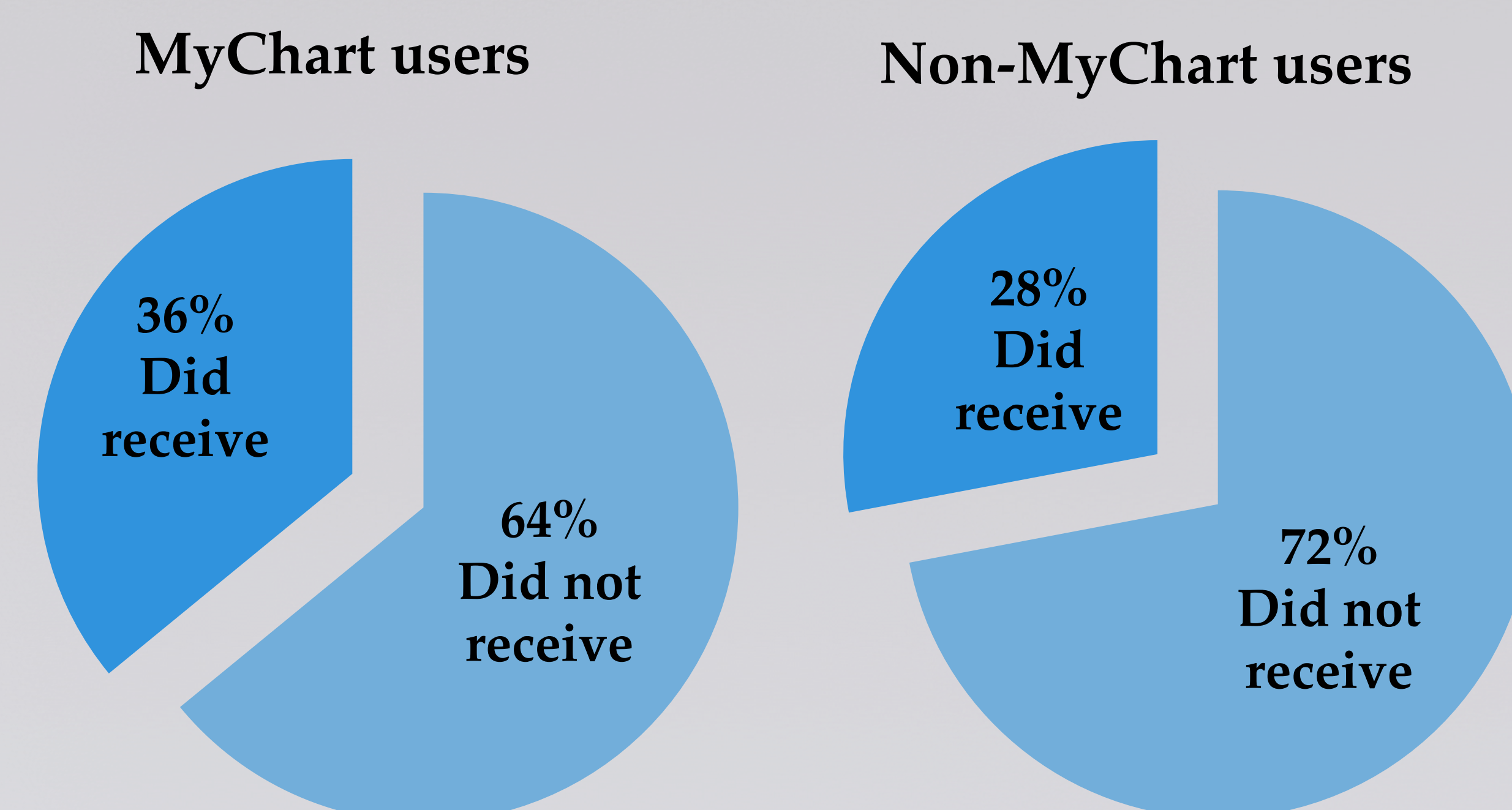
* Estimate extrapolated from previous years data due to inconsistencies in user reporting

† Represents the vaccination rate for all patients 65 and older seen between 9/1/15-12/31/15 prior to running out of influenza vaccine in the clinic

‡ Adults aged 65-only

Results AIM 1 Continued

Figure 1. MyChart use and vaccination rate 2014-15 Influenza Vaccine*



*Statistically significant difference (p <0.005) in the vaccination rate of MyChart users vs non-MyChart users. While MyChart use does not correlate with getting vaccinated, NOT having MyChart contributed to not being vaccinated

Table 6. Results of cold-calling patients 65 years old during 2015-2016 flu season

Patients contacted of 207 eligible	Did you know you need the influenza vaccine this year?	Did you know that you need a pneumonia vaccine at age 65?	Do you want to be transferred to scheduling?
35	31	24	0
16.9%	88.6%	68.6%	0

Results AIMS 2 & 3

AIM 2:

- 23 older adults were given influenza and PCV13 vaccines
- Building of relationship with the LCOA event/community outreach director for future collaborations
- Improved understanding of current clinic infrastructure and how it can impact future projects.

AIM 3:

- 8 homebound older adults received PCV13
- Resident physician awareness of homebound conditions for older adults
- Reengagement of the homebound program within the Geriatrics Division and the residency program.
- Building of relationship with local Aging & Disability Resource Center

Conclusions

AIM 1:

- Important to order appropriate number of vaccines to avoid missed opportunities in FMC
- Regular refresher sessions would benefit FMC by reenergizing staff to look for vaccine opportunities
- Most effective use of staff resources for outreach appears to be through MyChart
- Patients still rely on their doctors to advise on vaccines

AIM 2:

- Current health system infrastructure does not allow for an easy-to-access vaccine clinic for unestablished patients or those without insurance

AIM 3:

- Home visits are an invaluable experience for resident physicians
- Older adults do not have a formal way of tracking their vaccination status

Next Steps

- Continue trending data to follow vaccination rates of influenza, PPSV23, PCV13
- Create clinic team competition to continue FMC staff engagement
- Optimize use of MyChart for vaccination reminders within FMC
- Incorporate home preventive visits into Geriatric training during residency
- Continue to build relationships with community resources

References

1. <http://www.cdc.gov/vaccines/pubs/surv-manual/chpt11-pneumo.html#t1>. Accessed August 1, 2015.
2. <http://www.cdc.gov/nchs/fastats/flu.htm>. Accessed August 1, 2015.
3. <http://www.americashealthrankings.org/Senior/KS>. Accessed July 13, 2016.
4. <http://www.countyhealthrankings.org/app/kansas/2016/rankings/wyandotte/county/outcomes/overall/snapshot>. Accessed July 13, 2016.

Acknowledgements

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2016-2016 Senior Immunization Grant Awards RESULTS & FINDINGS: FINAL REPORT Form

Instructions

- Provide the information and data requested including Appendices 1-3.
 - Your Final Report is due by May 5, 2016.
 - 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

1. Kelsie Kelly, MD, MPH; kkelly3@kumc.edu

Title of Project: Improving Preventive Health of Older Adults in Wyandotte County through Improved Influenza and Pneumonia Vaccine Rates

Statement of Goal(s) Include your Primary Metrics

Immunization Rates ("Primary Metric"): During the 2015-16 flu season 475 seniors (75%) will receive a flu vaccine in the clinic; and an additional 120 seniors will receive a flu vaccine through our two community-based initiatives.

Final Report Data:

- A. For the **clinic program, 488 patients received the influenza vaccine**. This is a rate of 44.9% (488/1088) during 9/1/15-2/29/16. The number of patients vaccinated is above our goal of 475 however the rate is low. Our clinic ran out of influenza vaccine January 2016, so prior to running out of influenza vaccine, the number of patients vaccinated was 473 with a rate of 89% (473/572). 15 more patients received the influenza vaccine in Jan-Feb, however this is because a small quantity was located for the clinic to use. The data for actual numbers receiving influenza vaccine are accurate, however the 89% who received the influenza vaccine seems higher than anticipated. This could be due to improvement in documentation of influenza vaccine in the EMR. It is concerning that the percent vaccinated decreased tremendously when vaccine was not available in clinic.
- B. For the **community program, a total of 31 older adults** were vaccinated, 23 from the vaccine clinic and 8 from the homebound program. In the interim report we discussed the barriers and reasons for the low turnout for the vaccine clinic. We also discussed decreasing the number of homebound adults to 10 from 20. We were able to successfully reach our goal for the homebound adults as we did reach out to 15 older adults, however only 8 were willing to receive the vaccine.

For patients turning 65 this year we will administer 100 PCV13 vaccines. In addition we will: provide a PCV13 vaccine to 225 seniors who are already over 65 and already immunized by PPSV23; and try to administer PCV13 pneumococcal vaccines to an additional 480 patients over 65 that have not yet been immunized yet by PPSV23.

- A. PCV13 vaccine administered to 65 years only: 106
 - a. 83 from FMC
 - b. 23 from Vaccine Clinic
- B. PCV13 vaccine who are older than 65 years and had already received the PPSV23: 343
- C. PCV13 to patients over age 65 that had not received PPSV23: 247

Impact on Target Population

1. PATIENT DATA – Complete information in Appendix 1.

2. KEY OUTCOMES (Please group by bullet points)

AIM 1: Quality Improvement with in the FMC

- a. Clinician Education: Faculty, residents and nursing staff received education in the form of 20 minute PowerPoint presentation. This presentation was completed by the identified PGY-2s on this project.
 - i. Residents were asked to complete a quiz at the end of April to assess their retention of knowledge regarding the influenza and pneumococcal vaccines. Unfortunately, knowledge retention as indicated by the quiz was not successful. 12 residents took the quiz and none of them scored 100%, 3 of the residents did not get any answers correct. This small sample indicates the importance of refresher presentations on vaccines in the FMC.
- b. Documentation Improvement: A research assistant completed retrospective chart review from 10/15-10/31/15 to see if documentation of immunizations was in the appropriate place in the EMR so that data tracking would be accurate moving forward. The list of 2406 patients 65 and older from last year's clinic data was organized by medical record number and every 50th patient was selected for retrospective chart review, thus a total of 53 patient were charts reviewed.
 - i. See Tables 7-9 for data. In short, this chart review showed that FMC staff is documenting correctly under the Health Maintenance Tab, which is how rates are tracked in the EMR, after staff education in August and September. It is unknown what the documentation was prior to this chart review, but we can deduce that staff education was important to correct documentation in the EMR.
- c. Phone Calls to Patient: The research assistant attempted to contact all patients turning 65 by phone call and advise the patient that they needed an influenza vaccine and/or PCV13. 207 patients were identified and the phone calls were made from 10/15-10/31/15. The response rate was very low with only talking to 35 patients. This was deemed likely to cold-calling patients and not calling them back later as well as not having the most up to date contact information. No patient that was contacted wanted to be transferred to scheduling to set up an appointment. These patients were also asked how they knew about the influenza vaccine, the response always included the doctor's office. See Table 6 for the data on phone calls.
- d. MyChart Users: The PGY-2 residents sent individual MyChart messages to 236 active MyChart users who were in need of the PCV13. Of those messaged, we plan to determine how many have since received the PCV13 (we will have this number for the poster presentation).
 - i. MyChart is a similar to email service to the FMC for patients. Through our data collection it was clear that MyChart users had a higher vaccine rate, which is likely statistically significant, see Table 1.
- e. Patient Education: Mailers were not implemented into the quality improvement plan as originally developed. Mailers were ordered after a long process of designing and trying to determine how to make the mailers returnable without having private health information visible. Once the mailers were available, the clinic ran out of influenza vaccine and it was determined that the mailers would not be useful if mailed at that time. We plan to use the mailers during next influenza season.
- f. Clinic Survey: Patients aged 65 and older were surveyed during the week of 3/7-3/11/16 to assess knowledge about the influenza and pneumococcal vaccines. We received 22 patient surveys. The following were the outcomes:
 - i. 72.7% received influenza vaccine
 - ii. 86.3% knew they needed the influenza vaccine
 - iii. 91% knew the vaccine was needed annually
 - iv. 63.6% have received a pneumococcal vaccine
 - v. 41% knew they needed 2 pneumococcal vaccines
 - vi. 55% keep track of their vaccines, of those 54.5% use MyChart to track their vaccines
 - vii. 59% knew they needed the influenza vaccine from their doctor's offices
 - viii. 6a8% knew they needed the pneumococcal vaccines needs from their doctor's offices

AIM 2: Community-based Initiative: Landon Center on Aging (LCOA) Vaccine Clinic

- a. Only 23 older adults were vaccinated for influenza and PCV13 when we anticipated 100. Advertising was completed as originally planned, at the various free lunch seminars, classes and at the fitness center, with outreach to 1000-1200 older adults (~800 on mailing list, 350-400 on email list) and another 200 flyers were made available at the LCOA activities. The turnout was likely low due to the cumbersome process that patients had to actually schedule for the clinic and had to be a patient within the KU system, we could not make the clinic a true free clinic as we only budgeted to buy vaccine for the homebound patients. This is not a sustainable option for our current clinic infrastructure.

AIM 3: Community-based Initiative: Wyandotte/Leavenworth Aging & Disability Resource Center (aka Area Agency on Aging/AAA)

- a. 15 older adults were identified as needing PCV13 vaccine. These patients were not identified as originally planned through collaboration with the AAA, but instead through the start-up of the homebound program through the Geriatrics Division within the Family Medicine Department. Three separate home visits date were arranged, on 3/7, 3/14 and 3/28. On 3/7 the location was an independent living facility, and 3/14 and 3/28 were into patients' homes.
- b. 6 of the 8 already had the influenza vaccine
- c. All 8 were given the PCV13
- d. A survey was completed for these patients, the following are the outcomes:
 - All 8 patients identified their source of influenza vaccine knowledge from their physician.
 - 4 of 8 knew they needed a pneumonia vaccine.
 - Only 1 of 8 knew they needed 2 different pneumonia vaccines.
 - Only 1 of 8 actually tracked their vaccines, and that was having their DPOA track them.
 - All 8 were appreciative of the home visit
 - 4 of 8 stated they would have received the vaccine regardless of the home visit
- e. The PGY-2s were able to do an abbreviated home visit in the community which I believe will add to their training as a family physician. Seeing the patients where they live, in the communities that are not safe, with the modifications patients make in their home, is always an eye-opening experience.

3. KEY PROGRAM COMPONENTS (Please group by bullet points)

AIM 1: Quality Improvement with in the FMC

- a. 20 minute PowerPoint presentation with handout for all FMC staff.
- b. Provider knowledge assessment quiz
- b. Phone calls to patients were not successful
- c. Retrospective chart review of EMR to assess vaccine documentation
- d. MyChart messages to patients were of use
- e. Mailers were developed and printed, however not appropriate for use when the FMC ran out of influenza vaccine.
- f. Clinic survey to understand patient knowledge of the vaccines

AIM 2: Community-based Initiative: Landon Center on Aging (LCOA) Vaccine Clinic

- a. Teamwork and careful coordination with LCOA community outreach director, Geriatrics clinic staff and project team was key to making this clinic run smoothly
- b. Vaccine Clinic Flyer
- c. Extra influenza and PCV13 vaccines were ordered by FMC to support this effort

AIM 3: Community-based Initiative: Wyandotte/Leavenworth Aging & Disability Resource Center

- a. Coordination with Geriatrics Division to identify homebound older adults was invaluable.
- b. Home Visit Survey to better understand patient's knowledge about the vaccines.
- c. 2 physicians (1 attending, 1 resident) were required to go to patients' homes and administer vaccine.

4. THINGS THAT WORKED BEST

AIM 1: Quality Improvement with in the FMC

- a. Presentation to staff was well received and improved knowledge of vaccine indications and contraindications in the short term with immediate post-testing, however not with >6 month knowledge retention.
- b. MyChart messages to patients were well received
- c. Reviewing proper documentation in the EMR improved accuracy of vaccination data, and also helped staff understand how quality data was collected which reinforced proper documentation.
- d. Surveying patients showed the power of the doctor's office to inform patients of their preventive health needs. This information will be useful moving forward with any QI project.

AIM 2: Community-based Initiative: Landon Center on Aging (LCOA) Vaccine Clinic

- a. Teamwork and communication with LCOA

AIM 3: Community-based Initiative: Wyandotte/Leavenworth Aging & Disability Resource Center

- a. Using vaccine nurse in FMC to make reminder calls to patients of upcoming homebound appointments
- b. Trying to cluster home visits into one afternoon
- c. Surveying patients again showed the power of the doctor's office to inform patients of their preventive health needs.

5. LESSONS LEARNED

AIM 1: Quality Improvement with in the FMC

- a. Annual or semi-annual updates on vaccines would benefit all FMC staff and reenergize staff to continually look for vaccine opportunities in clinic.
- b. Phone calls to patients were not useful and did not lend to an increase in the FMC vaccine rate. This is not a sustainable option moving forward.
- c. MyChart users respond well to messages from FMC staff and have a higher vaccination rate. A standard smartphrase can be developed and used for other vaccines and/or preventive health items moving forward. The FMC nursing staff and patient service representatives could use this to message patients without a large consumption of time. This could be an affordable, sustainable option to continue.
- d. Developing mailers is a more cumbersome process that anticipated, however now that we have the mailers we will use leftover award funds to mail these out in September of the next flu season.
- e. There was a drop off in patients receiving the influenza vaccine after the FMC ran out, the number of potential missed opportunities is demonstrated in Table 2. There were 323 patients seen from 1/1-2/29/16 that did not receive the influenza vaccine (57.7%). The numbers of missed opportunities plus the number given will help our clinic determine how much influenza vaccine to order for the next flu season to avoid a repeat of this season.

AIM 2: Community-based Initiative: Landon Center on Aging (LCOA) Vaccine Clinic

- a. The current clinic infrastructure has too many competing demands to allow for a true free vaccine clinic to function. This would have to be a hospital-based initiative so that the barriers of the EMR and billing could be removed.

AIM 3: Community-based Initiative: Wyandotte/Leavenworth Aging & Disability Resource Center

- a. Home visits are time consuming and using physicians to administer vaccines is not the best use of resources, however if visits are clustered this could be a sustainable option for nursing and residents to do together.
- b. Home visits are always an invaluable experience for residents to see patients in their own home. It helps residents to realize that the clinic visit is only a small portion of a patient's health.

- c. Many older adults do not have a formal way of tracking their vaccination status. 7 of the 8 we vaccinated did not have a system and all relied on their doctor's to make them aware of vaccine needs. The suggestion will be made to the homebound program to consider running vaccine status reports semi-annually to identify those in need of appropriate vaccines. This should not be a cumbersome process as the program is no more than 50 patients at this time.
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.

I think the biggest impact this project has made, while small in number, was through the homebound efforts. These patients were very appreciative of people coming to their homes and providing them with the care they have needed. The patients and their families were eager to share their stories. Visiting a patient's home is eye-opening. One of our patients was living in isolation, her drapes were dark and pulled closed with minimal sunlight. Another couple was living separate lives in different parts of their home, the husband spent his time upstairs where modifications had been made for him, and the wife spent her time downstairs where her bed and modifications had been made. Another couple had moved their bedroom to the room immediately off the front foyer for ease of access in and out of the house. The four patients we visited at the independent living facility had down-sized their personal belongings to live in a small one bedroom apartment, but they all had personal pictures in every nook and cranny possible. The residents went with me to these home visits and I could see the opening of their eyes to situations and rejuvenation for why they went into medicine. The PGY-2s both began to recall their community service efforts as a medical student and shared these openly, enjoying the adventures they had working with underserved populations.

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).

The project team consisted of myself (Dr. Kelly), 2 PGY-2s (Drs. Austin and Mou), 1 Geriatrician (Dr. Huhn), 1 PhD (Dr. Hester – Research Director for FMRP), 1 LPN (Melodie Smith – vaccine nurse).

Receiving the educational component on the vaccines as well as being responsible for providing patient care generally involved all 27 residents. Two PGY-2 residents were identified to be intimately involved in this project. These two residents were responsible for developing surveys given throughout the project, in the FMC, vaccine clinic and the homebound program as well as running the descriptive statistics for the surveys. They administered vaccines themselves in the homebound program, which was a new experience for them.

The FMC vaccine nurse was also involved in the project, helping to coordinate logistics of the FMC system and homebound program, ordering vaccines, and putting together a traveling vaccine kit for the homebound program.

The PhD researcher was helpful with organizing our data and statistics. She also helped the residents work through how to do QI and research, setting up data tables and calculating statistics.

2. Address the current and future impacts of this project on the residents &/or members of the team.
 - A. Residents
 - a. Current – There has been a deeper understanding of the QI process and research. They will be presenting the results of this project at the residents' internal Research Day and will have the opportunity to present at the Kansas Immunization Conference in June 2016. They were also personally motivated to make sure all of their own personal panel patients were vaccinated, and found competition between each other to improve their rates.
 - b. Future – Moving forward, the residents will be able to think of systems changes that could have a positive impact on the clinic and patient care.
 - B. Staff (both faculty and nursing)
 - a. Current – Project has been a reminder to consider vaccines in all patients when they present to the office, regardless of chief complaint. There have been numerous occasions where the nurse has already discussed and drawn up the recommended vaccine before I have seen the patient, they just wait for me to give the approval. Giving nurses the autonomy to do this has been rewarding for all staff and patients.
 - b. Future – Staff will need to continue to identify ways to improve our vaccine rates. Recently the FMC has been selected as a site for the AAFP Adult Immunization Office Champions Project, showing the continuing efforts to improve our vaccine rates.

Education and Outreach

1. Summary of accomplishments.

A.FMC Accomplishments:

- Improved EMR documentation by nursing and physician staff.
- Increased clinician knowledge about the influenza and pneumococcal vaccines in the short term
- Increased influenza vaccine rates in FMC, as long as influenza vaccine available
- Improvement in both PCV13 and PPSV23 vaccination rates.
- Mailer developed and ready for use during the next influenza season
- Knowledge that MyChart users in the FMC have a significant higher vaccination rate, which could lend to further QI projects to improve other aspects of that patient population's care, could extend this knowledge to weight loss, diabetes follow up, etc.
- Resident involvement in QI project with presentation at internal Resident Research Day on 5/11/16 and ability to present at Kansas Immunization Conference on 6/8/16.
- Improved understanding of how EMR tracks and calculates vaccination rates and other QI markers, which will help with other areas of QI.

B.LCOA Vaccine Clinic Accomplishments:

- 23 older adults were given the PCV13 and influenza vaccine
- Building of relationship with the LCOA event/community outreach director for future collaborations
- Improved understanding of current clinic infrastructure and how it can impact future projects.

C. Homebound Project Accomplishments:

- 8 homebound older adults received PCV13
- Resident awareness of homebound modifications by patients to remain in their homes, whether safe or unsafe.
- Reengagement of the homebound program within the Geriatrics Division of the Family Medicine Department and the residency program.
- Building of relationship with AAA, despite not being able to identify any older adults without insurance to provide the vaccines. However the AAA has referred several patients to the homebound program so those patients may receive primary care.

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

FMC Project:

- Clinician education powerpoint
- Clinician education handout
- Clinician education quiz
- Clinic mailer
- Clinic patient survey

LCOA Vaccine Clinic

- Vaccine Clinic flyer
- Vaccine Clinic patient survey

Homebound Program

- Home Visit patient survey

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

- “Immunization in Older Adults” didactics, August 19th – Resident education on vaccines during core didactic time. The 2 identified PGY-2s assembled presentation, including PowerPoint and handout, and gave 30 minute didactic to all residents.
- “Immunization in Older Adults” didactics, September 3rd – Faculty education on vaccines during faculty meeting. The 2 identified PGY-2s gave the same presentation to faculty, however in a 10 minute version due to time constraints.
- “Immunization in Older Adults” didactics, September 17th – Nursing education on vaccines during nursing in-service time. The 2 identified PGY-2s gave the same presentation residents received to the nursing staff.
- Internal Resident Research Day presentation of QI project, May 18th – The 2 identified PGY-2s will present project to all faculty and residents to satisfy their research requirement for graduation.
- Kansas Immunization Conference, June 8th – Dr. Kelly and Dr. Huhn will present the project in a 30 minute presentation to the audience at the state conference, this includes physicians, nurses, clinic coordinators, Kansas Department of Health & Education staff, amongst others. The 2 identified PGY-2s will participate as able.

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.

Please see attached PDFs

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

AIM 1: Quality Improvement with in the FMC

We discovered that a refresher on vaccine requirements for older adults (and likely all vaccines) is an important aspect of this project to maintain moving forward. Every August, a 10 minute presentation on influenza vaccine and other older adult vaccines to all staff (faculty, residents and nursing) will likely continue to improve rates. Especially given that the vast majority of our patients rely on their doctor’s offices to tell them about vaccines they need. A competition for a pizza party between clinic teams (red, blue, yellow) will energize FMC staff to encourage vaccinations in the office visit, Tables 3-5 include the vaccine rates by clinic team. We have also learned that focusing staff energy to MyChart users will be advantageous as these patients have higher immunization rates and responded well to the messages sent by the PGY-2s. If the EMR could send a general message to all MyChart users on September 1st every year reminding patients to get their influenza vaccine, this would likely be beneficial and not time consuming. This will need to be discussed as a possible option with the EMR IT team.

Lastly, the funding for the mailers was beneficial, even though the mailers were not sent for the 2015-2016 influenza season. The mailers are generic and can be mailed in September 2016. As part of the ongoing QI

process in the FMC, the rate of influenza vaccine will need to be compared to past years to see if improvements were made.

AIM 2: Community-based Initiative: Landon Center on Aging (LCOA) Vaccine Clinic

Unfortunately, the option of a vaccine clinic is not a sustainable option in the current clinic infrastructure. However advertising with the LCOA community outreach/event coordinator proved beneficial as the director was able to contact >1000 older adults about the needs for influenza and pneumococcal vaccines through the mailers, emails and classes already in place. We did not track whether or not these older adults were vaccinated, but given this project showed that the majority of patients identify their doctor's office as their main source of knowledge, vaccine reminders from the LCOA (where the Geriatrics Division is housed) would likely prove beneficial.

AIM 3: Community-based Initiative: Wyandotte/Leavenworth Aging & Disability Resource Center

The partnership between the AAA and the Geriatrics Division is now in place. While referrals to the homebound program from the AAA are low, they are now happening, and patients who previously had no primary care have now been seen by a family medicine physician. I believe that clustering vaccine administration visits would prove sustainable. The clinician going to the home is doing many other things, and sometimes coordinating bringing the vaccine is the last item on the list, especially when one needs all the supplies and the vaccines kept on ice. If a report on homebound patients was run semi-annually, then a nurse and a resident could go to several homes in one half day, without the cost of an attending, allowing the patients to receive the vaccines they need. This would also continue to expose residents to homebound patients and could be incorporated into our Geriatrics curriculum. Lastly, the cost of the vaccine and administration will be covered as all patients identified as homebound thus far already have Medicare, or would qualify for Medicare and are being assisted with the application process.

Case Study Information– Complete contact information in Appendix 3.

Project Impact Statement for Funders What would you like those who supported this project to know about this project and the benefit you, your patients, and/or your Family Medicine residency program derived from receiving this grant?

Ultimately, the goal is to improve the care we provide to our patients. I think anytime we are given the opportunity to improve the system in which we work to meet this goal, it is clearly a good thing. The benefit of this project was including residents to be directly involved so they may have a better understanding of QI, and now hopefully a desire to be involved in QI in whatever population they may serve. Those two residents and myself, also have a clearer understanding of the clinic infrastructure and EMR capabilities. We became intimately involved with the many layers of a large academic system, which can be frustrating, but the project kept us sticking to our goal and we had to find solutions that we may have otherwise conceded. I also believe the project will be the basis for the FMRP to have other QI projects branch from this. Continued QI will improve patient care, meet PCMH goals and give residents research opportunities. For example, in this project the knowledge that our MyChart users have a statistically significant higher vaccination rate may be able to translate to improving quality markers in other areas such as Diabetes, Hypertension, obesity, other preventive health items.

The funding was also a benefit because it allowed us to try things that did not work. The two examples from this project were staffing to call FMC patients about vaccines and the community outreach vaccine clinic. Both of these projects would not have been a possibility without the funding to try. And now moving forward when designing new projects we can be aware of what has not worked to avoid further failure. So to the supporters of this project, while failure is never desirable, it is sometimes needed to be able to take the next step forward. So we will now focus our energy to improve vaccine rates by increasing access to MyChart users, by providing recurring update vaccine sessions for all FMC staff, and by addressing our homebound patients in community outreach programs.

The homebound patients were all so pleased to have a provider come to their home. While the number of patients may have been small, these patients frequently can have their preventive health pushed aside due to their homebound status even though they may be at higher risk by not being vaccinated. The ability to provide vaccines to these patients with the funding from the award was a wonderful gift. Fortunately, this project should be sustainable given the patients' insurance status, and we have piloted a system in which residents can go to patient's home to see another side of patient care.

Lastly, this project has helped to make our FMC renewed in the "vaccines are good" spirit. We will be participating in the AAFP Adult Immunization Office Champions Project and are excited to participate in this 3-year project. Without the support for this project, our FMC may not have become interested in this upcoming project.

Appendix 1: PATIENT DATA for 2015-2016 Senior Immunization Grant Award

PLEASE PROVIDE THE DATA IN THE FORMAT THAT IT IS BEING REQUESTED. If you want to express your results in a different way, please complete the info below, as requested, and then include the additional information labeled, "Attachment to Appendix 1".

I. INFLUENZA VACCINE INFORMATION: 2016-2016 Flu Season

- la. Total # of seniors (adults aged ≥65) served by your residency who were **eligible** for an *influenza* vaccine from 9/1/15 - 3/31/16: 1088
- lb. Total # of seniors who **received** an *influenza vaccine* from 9/1/15 - 3/31/16: 488
- lc. Historical Data – Enter data in the table by clicking on the box and typing in the numbers

Seniors (age 65 and older)	2013-2014 Flu Season (Sep 2013-Mar 2014)	2014-2015 Flu Season (Sep 2014-Mar 2015)	2015-2016 Flu Season (Sep 2015-Mar 2016)
Influenza Vaccine Rate (%)	53 %	59 %	44.9 % **
Numerator/Denominator (absolute numbers used to calculate rate)	Estimates, no true numbers	378/634	488/1088**

- ld. Summary of methodology used to obtain the data and information:
We had to query the EMR (Epic) for older adults seen between 9/1/15-2/29/16 and then have the Epic data analyst itemize the DOB, Date of service, and each vaccine as given or not given. 488 received the vaccine, however 473 received the vaccine from 9/1-12/31/15, the FMC ran out of influenza vaccine in January and the numbers and rate vaccinated decreased tremendously. We also queried the billing/scheduling interface (IDX) during the same timeframe for the influenza procedure code as comparison, and this was consistent with Epic data. **After reviewing how data is retrieved, the 44.9% seems low, but likely due to the FMC running out of influenza vaccine, prior to running out the FMC had a rate of 89%. The rate of 89% would have likely decreased through Jan-March, however we anticipate would have been higher than the previous flu season.

II. PNEUMOCOCCAL VACCINE INFORMATION: 2015-2016 Flu Season

*Note: New ACIP recommendations for PCV13 and PPSV23 use in adults aged ≥65 were issued on 9/19/14.

- IIa. Total # of seniors who were **eligible for a PPSV23** vaccine who were served by your residency from 4/1/15 - 3/31/16 : 1368 (any patient >65 years old)
- IIb. Total # of seniors who **received a PPSV23** vaccine from 4/1/15 - 3/31/16: 744 (any patient >65 years old)
- IIc. Historical Data – Enter data in the table by clicking on the box and typing in the numbers

Seniors (age 65 and older)	2013-2014 (Apr 2013-Mar 2014)	2014-2015 (Apr 2014-Mar 2015)	2015-2016 (Apr 2015-Mar 2016)
PPSV23 Pneumococcal Vaccine Rate (%)	28 %	30 %	54.3%
PPSV23 Numerator/Denominator (numbers used to calculate rate)	Estimates, no true numbers	Estimates, no true numbers	744/1368
*Number of seniors who received PCV13 during specific time period			83/158 (52.5%)

- IId. Summary of methodology used to obtain the data and information:
These statistics are not as clean as desired, however in order to make some organization out of all the patient data received, we deemed a patient eligible for PCV13 if they were 65 only and PPSV23 if they were older than 65. This was done because the ACIP recommends PCV13 first at age 65 then followed by PPSV23. We queried the EMR (Epic) for older adults seen during the time frame 4/1/15-3/31/16 and then had the Epic data analyst itemize the DOB, Date of service, and each vaccine as given or not given. We were not able to identify who had received the vaccine during that office visit through Epic, in order to determine when a patient receives a vaccine in an office visit we have to query IDX (as described in influenza data). Given these are two different departments in our health system, that do not speak the same computer language, we are unable to state exactly how many patients received the vaccine during the time frame identified. We can say accurately that 744 patients more than 65 years old had received the PPSV23 ever in the FMC, of the 1368 patients that were eligible during the time frame. For the PCV13, the FMC served 158 patients aged 65, and 83 received the PCV13.






III. COMMUNITY-BASED PROJECTS ONLY: INFLUENZA & PNEUMOCOCCAL INFORMATION: 2015-2016 Flu Season

- IIIa. Total # of seniors served by this project through community outreach from 9/1/15 – 3/31/16: 33
- IIIb. Total # of seniors served through community outreach who **received an influenza vaccine** from 9/1/15 – 3/31/16: 23
- Is this data included in the data presented in question 1b and 1c? Yes **No**
- IIIc. Total # of seniors served through community outreach who **received a PPSV23 vaccine** from 9/1/15 – 3/31/16: 0
- Is this data included in data presented in 2c? Yes **No**
- IIId. Total # of seniors who **received a PCV13 vaccine** from 9/1/15 – 3/31/16: 31
- Is this data included in data presented in 2c? Yes **No**
- IIIe. Summary of methodology used to obtain the data and information:
A list of patients was kept for both the vaccine clinic and the homebound program, these totals were then counted.


Appendix 2. IMMUNIZATION INTERVENTIONS: DEGREE OF IMPACT


Instructions:


- Place your cursor on the box and click to check the box.
- Please check only one box per row.
- Evaluate the impact of the intervention on increasing senior influenza and pneumococcal immunization rates.
- Add notes below the table, as needed, if you want to explain further.


IMMUNIZATION INTERVENTIONS	HIGH Impact	SOME Impact	LOW Impact	NO Impact	NEGATIVE Impact	Did NOT Use
Clinic Based Education 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community-Wide Education 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community &/or Local Government Partnerships	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home Visit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mobile Clinic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Immunization Champion System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IIS at Population Level 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IIS at point of Clinical Care 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Clinic EMR linked with State Immunization Registry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient Incentive Rewards 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Patient Reminder and Recall Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient-Held Paper Immunization Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Provider Assessment & Feedback	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provider Education	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provider Reminders	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provider Friendly Competitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standing Orders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reduced Cost of Vaccine \$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Transportation reimbursement or vouchers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
List Other Interventions Below (not listed or to be more specific about your intervention). Add rows as needed						
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Interventions and Definitions below were extracted from the Community Guide <http://www.thecommunityguide.org/vaccines/index.html>

 **Clinic Based Education** approaches may include the use of brochures, videotapes, posters, vaccine information statements (VIS), electronic bulletin boards, and face-to-face sessions designed to inform and motivate patients to obtain recommended vaccinations in the clinic. These activities are usually delivered in advance of and in addition to the client-provider interaction

 **Community-wide Education** information is disseminated with the goal of informing, encouraging, and motivating individuals to seek recommended vaccinations. Content generally focuses on vaccination risks and benefits, as well as where and when vaccinations can be obtained.

 **Immunization information systems (IIS)** are confidential, computerized, population-based systems that collect and consolidate vaccination data from vaccination providers that can be used in designing and sustaining effective immunization strategies.

 **Patient Incentive Rewards** may be monetary or non-monetary, and they may be given to patients for keeping an appointment, receiving a vaccination, returning for a vaccination series, or producing documentation of vaccination status. Rewards are typically small.

\$ Reduced Cost of Vaccine examples include paying for vaccination or administration or reducing co-payments at the point-of-service.

NOTES:

Table 1. My Chart User to Non-MyChart User Vaccine Rates during 9/1/15-2/29/16

Total MyChart "Active" Status	420
Percent with Active status	38.6%
Prevnar Rate	64.3%
Pneumovax Rate	54.5%
Prevnar + Pneumovax Rate	37.6%
Flu Rate	51.9%

65 only - MyChart "Active" Status	58
Percent of Active pts who are 65 only	13.8%
Prevnar Rate	63.8%
Pneumovax Rate	36.2%
Prevnar + Pneumovax Rate	22.4%
Flu Rate	48.3%

Total Not Using MyChart Status	668
Percent not using MyChart	61.4%
Prevnar Rate	47.9%
Pneumovax Rate	51.2%
Prevnar + Pneumovax Rate	27.8%
Flu Rate	40.4%

65 only - Not Using MyChart Status	71
Percent of Not using MyChart who are 65 only	10.6%
Prevnar Rate	47.9%
Pneumovax Rate	35.2%
Prevnar + Pneumovax Rate	16.9%
Flu Rate	49.3%

Table 2. Missed Opportunities – after FMC ran out of influenza vaccine (1/1-2/29/16)

Missed Opportunities	
Total pt 1/2/16-2/29/16	560
Total pt 1/2/16-2/29/16 who did NOT get flu vaccine	323
% of pts NOT vaccinated after running out of flu vaccine	57.7%

Table 3. Influenza rate by clinic team in the FMC during 2015-2016 flu season

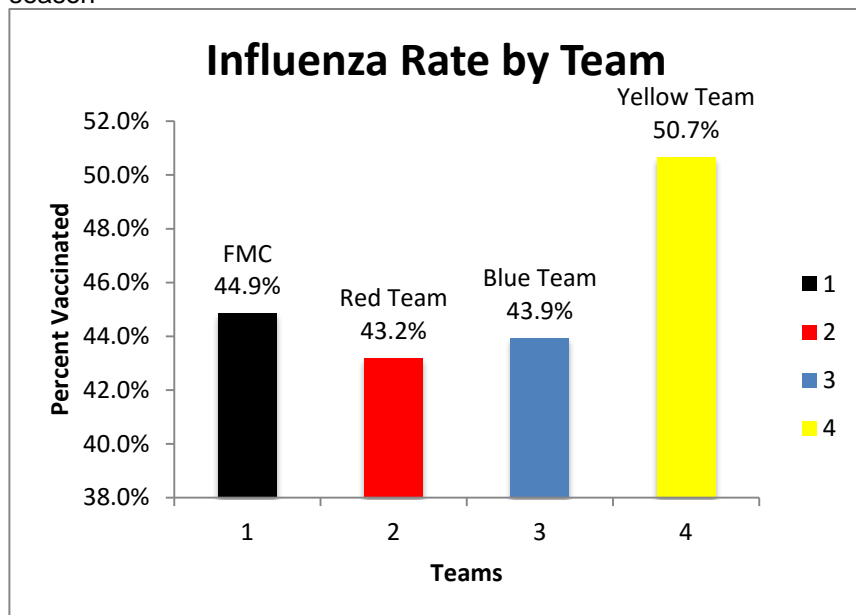


Table 4. PCV13 rate by clinic team in the FMC during 2015-2016 flu season

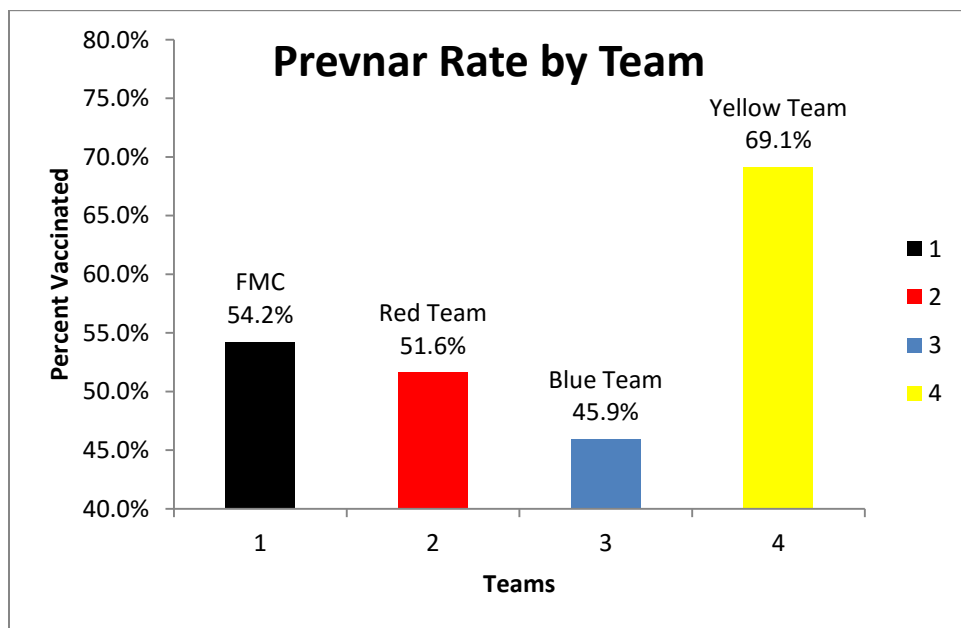


Table 5. PPSV23 rate by clinic team in the FMC during 2015-2016 flu season

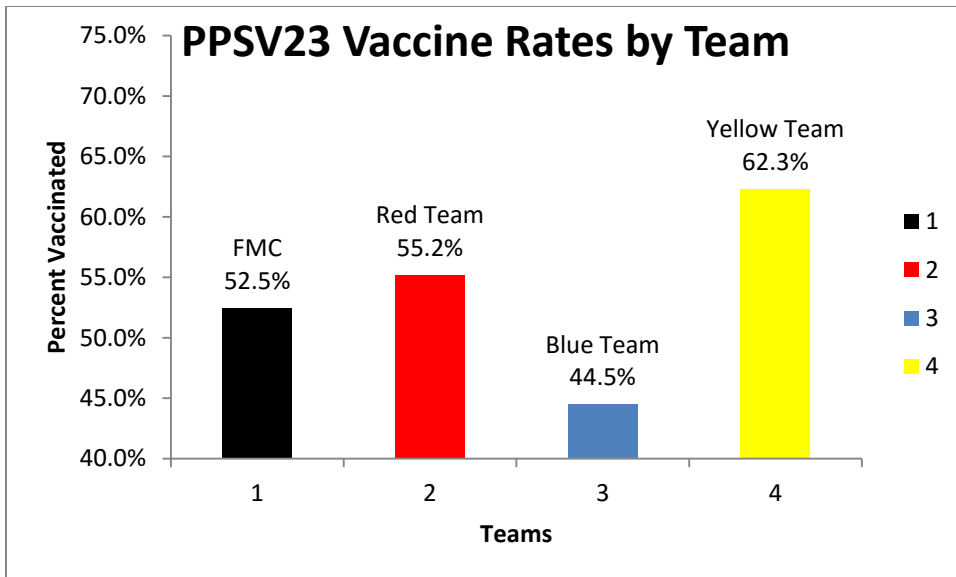


Table 6. Results of cold-calling patients 65 years old during 2015-2016 flu season

Patients contacted of 207 eligible	Are you a patient of the FMC or LCOA?	Did you know you need to receive the influenza vaccine this year?	Did you know that you need a pneumonia vaccine at age 65?	Pt asked to be transferred to scheduling?
35	33	31	24	0
16.9%	94.3%	88.6%	68.6%	0

Table 7. Retrospective Chart Review on EMR documentation for influenza vaccine of 53 random patients 65 and older.

Has the patient received an influenza vaccine?	Where was the Influenza vaccine documented in the EMR?			
	Health Maintenance tab?	Immunization tab?	Progress Note?	Outside records?
9	11	7	7	1
17.0%	122.2%*	77.8%	77.8%	11.1%

*Indicated patient likely received vaccine at outside facility rather than KU FMC and was documented appropriately in EMR, so percent is >100%.

Table 8. Retrospective Chart Review on EMR documentation for PCV13 vaccine of 53 random patients 65 and older.

Has the patient received PCV13?	Where was the PCV13 documented?			
	Health Maintenance tab?	Immunization tab?	Progress Note?	Outside records?
13	20	18	11	0
24.5%	153.8%*	138.5%*	84.6%	

*Indicated patient likely received vaccine at outside facility rather than KU FMC and was documented appropriately in EMR, so percent is >100%.

**8 of the 53 patients were difficult to determine whether they had received the PCV13 or PPSV23.

Table 9. Retrospective Chart Review on EMR documentation for PPSV23 vaccine of 53 random patients 65 and older.

Has the patient received the PPSV23?	Where was the PPSV23 documented?			
	Health Maintenance tab?	Immunization tab?	Progress Note?	Outside records?
22	21	19	23	1
41.5%	95.5%	86.4%	104.5%*	4.5%

*Indicated patient likely received vaccine at outside facility rather than KU FMC and was documented appropriately in EMR, so percent is >100%.

University of Kansas Family Medicine Residency**IMMUNIZATION PROJECT BUILDS QI COMPETENCY & COMMUNITY CONNECTIONS**

In a very personal way, Shane Austin, MD was already an ideal candidate to lead a project focused on increasing immunizations when he entered his first year of residency at the University of Kansas (KU) Family Medicine Residency Program. “My mother is a public health nurse and has been involved for many years with community immunization programs...so I already had strong feelings about this,” he said.

Jonathan Mou, MD, also in his first year of residency in Family Medicine at KU, was very much of the same mind. “I always thought vaccinations were important--it’s one of those basic preventive things you can do to significantly improve an individual’s overall health and life expectancy.” So when Drs. Austin and Mou learned that a faculty member, Kelsie Kelly, MD, had secured a 2015 Senior Immunization Grant through the American Academy of Family Physicians (AAFP) Foundation, their interest was piqued.

The Senior Immunization Awards help Family Medicine residency programs implement projects that increase influenza and pneumococcal vaccination rates in patients age 65 and older. The impetus for Dr. Kelly’s application came by way of a coworker’s tip. “My colleague had worked on previous immunization projects that had been very beneficial,” she recalls, “and I knew the grant

would be good for our residents. They are all required to do a research or quality improvement (QI) project prior to graduation, and we like for them to do it during their first year.”

An Assistant Professor in The University of Kansas Medical Center’s (KUMC’s) Department of Family Medicine, Dr. Kelly took on the additional role of grant project manager and quickly moved to recruit her resident team. “I approached Drs. Austin and Mou about taking the lead on this with me.” It was an easy sell, and also an opportunity that came along at just the right moment. “It seemed like an interesting time to do a project like this,” commented Dr. Mou, “since the new guidelines for pneumonia vaccines had recently been released and we knew many clinicians were unfamiliar with them.”

KUMC’s grant proposal defined the project’s target group to include older adults served at the University of Kansas Family Medicine Clinic (FMC), community members who attend Landon Center on Aging (LCOA) events, and homebound seniors identified by the Geriatrics Division within the KU Department of Family Medicine. Project goals anticipated increasing the number of eligible seniors served at the FMC by 15% for the influenza vaccination, 35% for the Pneumovax (PPSV23) and 50% with the (newer) Pevnar 13 (PVC13) vaccine.

The target set for the LCOA was to vaccinate 100 older adults--whether with influenza, PCV13 or PPSV23 (or a combination)--at two half-day vaccination clinics. Located on the medical center campus, LCOA houses the Geriatric Medicine Clinic and the outpatient clinics of the Department of Neurology for the FMC and also hosts free weekly and monthly classes and brownbag lunches for older adults, which are open to the community. Finally, a total of 20 homebound patients would be vaccinated with the influenza, PCV13 or PPSV23 vaccine during community visits; this number was later adjusted to target 15 individuals.

As lead residents and immunization champions for the project, Drs. Austin and Mou worked closely with the Family Medicine Clinic (FMC) vaccine nurse who helped coordinate logistics of the FMC system and homebound program, ordered vaccines and put together a traveling vaccine kit for the homebound program. All 27 residents and clinical staff participated in vaccine education and refresher training on the proper way to document vaccinations within the electronic medical record (EMR) system. In retrospect, these education sessions proved key to success in boosting the FMC's senior vaccination rates. "It took time to show staff how they should properly document vaccinations under the "Health Maintenance" and "Immunization" tabs and to review MyChart features," said Dr. Austin, "but it was time well spent." MyChart, a web portal offered by the FMC, allows patients access to their medical records and provides convenient self-service functions such as managing appointments, communicating with clinic staff, etc.

According to Dr. Mou, "The friendly competition we set up between the three clinic teams plus our Midwest clinic over vaccination rates really helped reduce the high rate of missed chances here at the clinic." Rivalry was encouraged by monthly patient reports broken down by individual clinic teams. "The reports are known to the entire residency, so we try to outdo each other," Dr. Austin acknowledged. And indeed demand—especially for the influenza vaccine—shot through the roof starting in September 2015 and continued through the end of the year. Lamentably, momentum significantly slowed when the clinic ran out of influenza vaccine in January 2016. As to why this happened, Dr. Austin could only speculate. "Perhaps the estimate we had from the previous year was not a good predictor of our supply needs for this year, especially given this project and our more aggressive administration efforts."

Another well-intended (although admittedly less successful) strategy for boosting senior immunization rates included phone calls from a research assistant to the 207 patients turning 65 years old during the 2015 flu season. The outreach reminded patients that they were due for an influenza vaccine and also needed the PVC13. If the patient was signed up for MyChart, they received an email message as well.

The phone calls were made during the second half of October 2015, with only 35 patients responding. At the end of the conversation none of these patients wanted to be transferred to scheduling to set up an appointment. "This was disappointing, but still useful information," commented Dr. Mou. "It showed us that

reminder phone calls are not a very worthwhile place for us to put resources or effort.”

Drs. Austin and Mou also sent individual MyChart messages to 236 active users who were in need of the PCV13, and data was gathered on how many have since received the vaccine. Effectiveness of the emails remains murky, according to Dr. Kelly. “Through our data collection, it was clear that MyChart users had a higher vaccination rate than non-MyChart users, but we were unable to confirm statistical significance. What we can show as statistically significant is that those who don’t use MyChart are less likely,” she added.

The grant team also developed and printed vaccination reminders targeting MyChart users who had not responded within six weeks of receiving the MyChart email. Available in English, Spanish, Bhutanese and Nepali, the mailers also invited the patient to report previously-administered PCV13 or PPSV23 vaccines; a research assistant tracking the responses then updated the EMR. “We ordered the mailers after a long process of designing and trying to determine how to make them returnable without having private health information visible,” said Dr. Kelly. When the FMC ran out of the influenza vaccine, use of the mailers was scrapped. “The mailers are probably still a good idea,” Dr. Kelly maintains, “and now we have them available to use next year.”

The two half-day vaccination clinics held at the Landon Center on Aging (LCOA) also fell short of expectations. Advertising was completed as planned—at various free lunch seminars, classes and at the LCOA fitness center, with outreach to 1,000 to 1,200 older adults and

another 200 flyers made available at the LCOA activities. But at the end of the day, “Only 23 older adults were vaccinated for influenza and PCV13 when we’d anticipated 100,” said Dr. Kelly. She attributes the low numbers to a cumbersome process requiring seniors to be patients within the KU systems and to schedule appointments so the visits could be billed through insurance. “It turned into a lot of steps that turned away a lot of people.” All three lead physicians agreed that, if money were no object, they would love to see a truly “free” clinic where anyone could just come in or drive through to get vaccinated. This had been provided by the University of Kansas Hospital at some point in the past, to great success.

If one were to ask Drs. Kelly, Austin and Mou what was the most successful, and also the most rewarding outreach component, all would agree that it was the visits they made to homebound individuals in the community. Fifteen adults were identified as needing PCV13 vaccine through the Geriatric Division within the KU Family Medicine Department, and eight ultimately accepted.

“Eye-opening,” was the term Dr. Austin used to describe his visits. “You get a completely different view—you see their surroundings, their day-to-day struggles.” He recalls visiting a frail woman who had been suffering a lot of falls. “All her furniture was bunched up at the door,” he said, “and I could see where making small changes—moving the couches a bit further apart, for example—could help a lot to prevent those falls.” Dr. Kelly recounts finding a patient living in complete isolation and near darkness; the drapes in her room had been pulled tightly closed. “And the four patients we visited at the independent living facility had

down-sized their personal belongings to fit inside a tiny one bedroom apartment--but they all had personal photos in every nook and cranny," she said.

From Dr. Mou's perspective, "It really helped me get out of the 'hospital' mindset. There's a distinct subset of the population who aren't able to make regular appointments to come into the clinic. This demonstrates a significant hole within our system—these individuals won't be able to receive regular healthcare—won't be able to get the help they need." Indeed, expanding the homebound visits is something Dr. Kelly feels could be both constructive and sustainable. "I think our Geriatric Division would be very welcoming if we were to send two residents out to give vaccines. It would be helpful to the program because during a typical home visit, long lists of things are often discussed besides vaccinations. Perhaps the residents could use the month-long geriatric rotation in their third year to do all the preventive measures that are so often pushed to the side when more acute issues take precedence."

In the final analysis, project results were mixed. Although goals were met for increased vaccination rates for homebound and FMC patients (and this despite running out of vaccine), the vaccine clinics offered through the LCOA fell far short of the 100 anticipated. Looking back over the project, all three physicians expressed appreciation for the opportunity, and felt that the experience had been very beneficial.

Dr. Kelly singles out closer ties with the LCOA as an outcome that holds future promise. "This project definitely caused me to re-establish the relationship. I was amazed at how easy it was for the event coordinator to access patients with ListServe and mailers. Thanks to this project, I discovered a really great group of people."

For Dr. Austin, the most valuable take-away simply affirmed the unique connection doctors have with their patients. "As much as we rely on technology, the buck stops with us. The EMR is a great tool for generating reminders, but when it comes to getting the vaccine *into* the person, it's really the one-on-one relationship with the patient that matters most—there's really no comparison. In spite of all the things we tried, it turns out that a good old-fashioned office visit is the way to go."

Dr. Mou sees great value in being able to try various strategies—even those that seemed like stumbling blocks—and expresses hope that the project will provide groundwork for other QI projects within the FMRP. "It would be interesting if this sort of thing could be picked up in the future to strengthen our data collection and the process improvements we've already made. I guess what I'm saying is that I feel that we've put a lot of stepping stones in place leading to future improvements," Dr. Mou adds. "This just seems like a very good start."