

Immunize and Save Lives: The Kaiser Permanente Los Angeles Medical Center Hospital and Community-Based Immunization Intervention



Natalie Mourra, MD
Department of Family Medicine
Kaiser Los Angeles Medical Center



BACKGROUND

- Over 90% of influenza-related deaths annually occur in individuals > 60 years of age.
 - The influenza-associated hospitalization rate in individuals ≥65 years of age was 60%.
 - 258 adults ≥65 years per 100,000 were hospitalized for influenza, versus 15 per 100,000 in adults aged 18–49 and 41.2 per 100,000 in adults aged 50–64.¹
- Pneumococcal infections also cause significant morbidity and mortality in the elderly.
 - In 2013 incidence of invasive pneumococcal disease was 30.2 cases per 100,000 individuals >65 years.
- Vaccination remains the single most effective method of preventing considerable morbidity and mortality in the elderly.
- There has been a culture of hesitancy to immunize hospitalized patients.
- The influenza vaccine has been demonstrated to be safe and effective in the hospitalized, elderly population.

METHODS

QUALITY IMPROVEMENT PROJECT

Between September 2014 – March 2015, a quality improvement project was undertaken at Kaiser Los Angeles Medical Center to improve inpatient vaccination rates for influenza and invasive pneumococcal disease for patients ≥65.

- Weekly talks were given to Family Medicine and Internal Medicine residents on inpatient rotations.
- General surgeons and neurosurgeons were later included in due to their low vaccination ordering rates.
- A short video dispelling myths about the influenza vaccine was played for all patients prior to discharge.

COMMUNITY OUTREACH PROJECT

- We purchased 150 pneumococcal polysaccharide vaccines (PPSV23, PneumovaxTM) using funds from the AAFP Senior Immunization Grant.
- These vaccines were distributed to the Mobile Clinic project at UCLA and Homeless Healthcare Los Angeles.
- A contract was established with the Los Angeles Department of Public Health to provide influenza vaccinations free of charge to the Mobile Clinic site.
- Flyers were posted advertising weekly influenza vaccinations at the Mobile Clinic.

DATA SOURCE AND ANALYSIS

- Records of all patients hospitalized at Kaiser LAMC from September 2014 – March 2015, September 2013 – March 2014 and September 2012 – March 2013 were obtained. Records were filtered to include only those ≥65 years of age.
- Exclusion criteria:
 - Documented allergy to influenza or PPSV23 vaccination
 - Documented egg allergy (for those receiving flu shot)
 - Patients undergoing active organ transplantation
 - Patients receiving chemotherapy during hospitalization
 - Patients who had received the flu or pneumococcal vaccine at a prior encounter (in the clinic or a prior hospitalization)
- For the community arm, the name, gender, age and medical co-morbidities were gathered for patients who received the PPSV23 vaccination. Name, gender and age were collected for those who received the influenza vaccination.

RESULTS

Table 1: Influenza and PPSV23 Vaccination Totals and Average Age at Community Sites

	Influenza Vaccination at Mobile Clinic Site	PPSV23 Vaccination at Mobile Clinic and Homeless Health Care LA Site
Patients ≥ 65 years	6	86
Total Patients	72	86
Average age	45.2	69.3

Figure 1: Demographics of Patients Vaccinated with PPSV23 at Community Sites

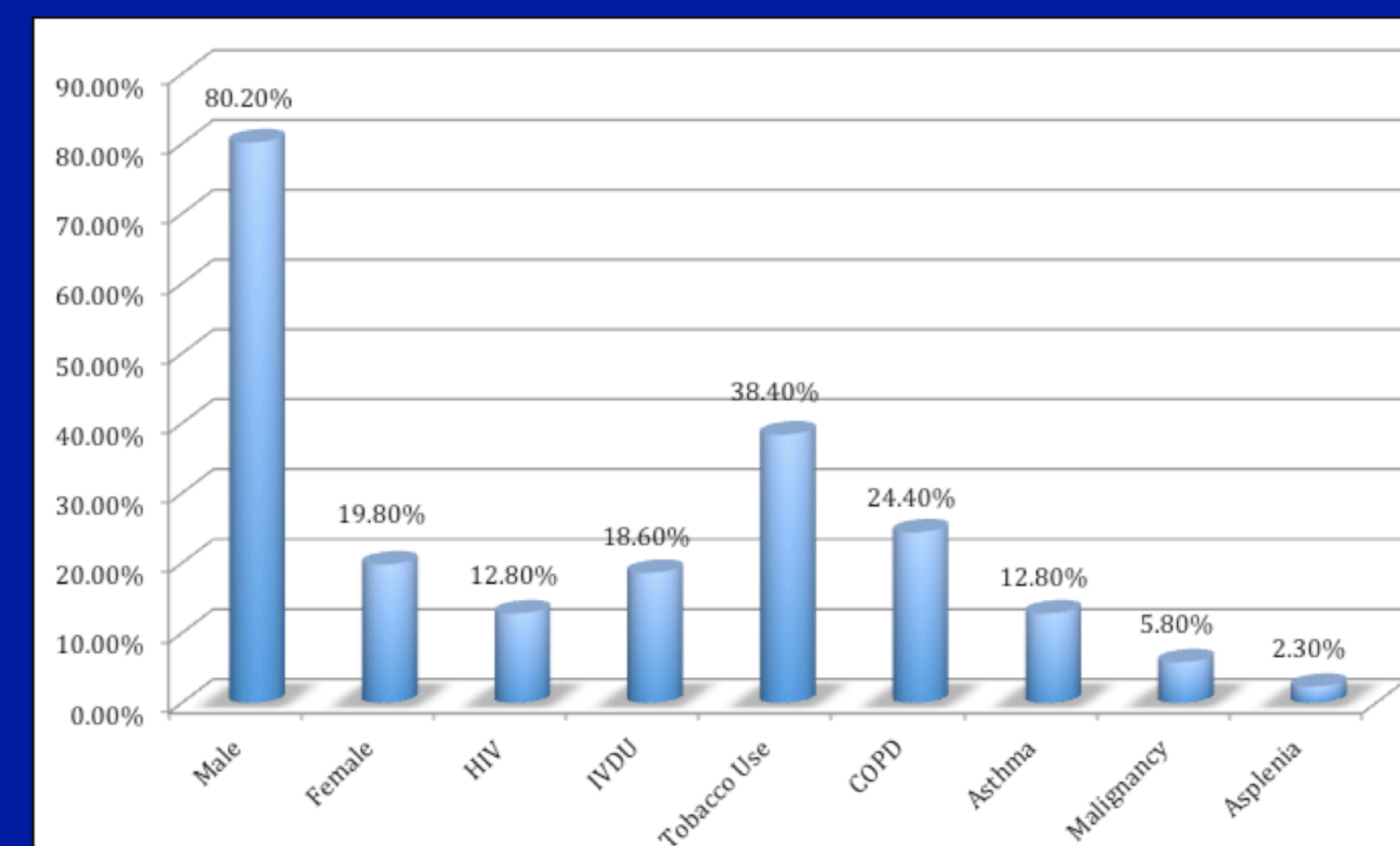
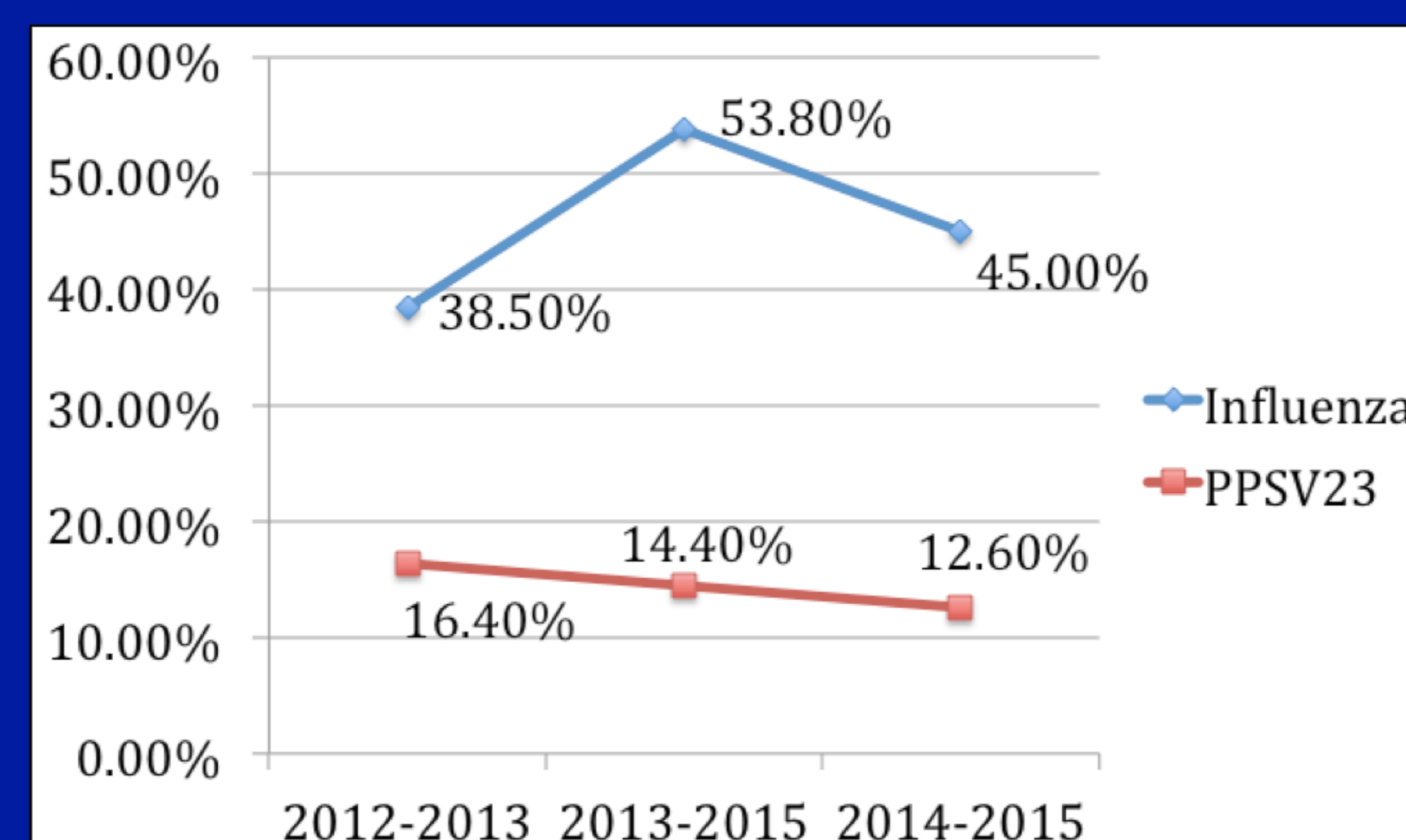


Table 2: Influenza and PPSV23 Vaccination Rates Among Hospitalized Patients ≥65 Years of Age

	September 2012 – March 2013	September 2013 – March 2014	September 2014 – March 2015
Influenza	38.5% (581/1507)	53.8% (654/1214)	45.0% (537/2291)
PPSV23	16.4% (53/323)	14.4% (51/352)	12.6% (39/310)

Figure 2: Influenza and PPSV23 Vaccination Rates Among Hospitalized Patients ≥65 Years of Age



DISCUSSION

- The hospital-based intervention did not improve vaccination rates in hospitalized elderly patients for either the influenza or pneumococcal polysaccharide vaccines.
- Rates of vaccine orders among resident physicians were relatively high (80–86%).
- Rates of vaccine orders among general surgery and neurosurgery specialties were low.
 - Concern for post-operative fever secondary to vaccination remains a commonly cited myth.
- Patient refusal rates for influenza vaccination were high.
 - Widely publicized stories of flu vaccine ineffectiveness for the 2014–2015 season may have contributed.
 - The video provided was available only in English.
- Nursing administration of ordered vaccines was problematic.
 - In many cases, the vaccine was not given despite orders to do so (and patient refusal was not documented).
- The community-based intervention was successful in vaccinating 159 elderly or at risk individuals against influenza and invasive pneumococcal disease
 - A sustaining relationship has been established between the Department of Public Health and the Mobile Clinic Project at UCLA so that flu vaccines can be offered yearly

LIMITATIONS

- Content of conversations that occurred between patients, physicians and nurses prior to discharge were not recorded.
 - Learning how healthcare professionals address vaccination in the hospital with patients would be helpful to understand more about the reasons for patient refusal.
- The influenza educational video was not available in Spanish, alienating a significant portion of hospitalized Latino patients.
- The cost of PPSV23 is relatively prohibitive (\$65 per vaccine at a discounted rate) and is therefore difficult for free health clinics to obtain.

LOOKING FORWARD

- The Immunization Task Force at Kaiser Los Angeles Medical Center has been tasked with following up on lessons learned this year, addressing physician ordering, nursing fallouts, and patient refusal.
- The Mobile Clinic Project at UCLA will continue to provide yearly influenza vaccinations free of charge for at risk patients.

ACKNOWLEDGMENTS

- This project was made possible with the assistance of the Immunization Task Force at Kaiser Los Angeles Medical Center, including Bruno Lewin, MD and Sue Lee, RN, as well as the Community Medicine Fellow Neil Chawla, MD.
- Support for the Senior Immunization Grant was made possible by the AAFP Foundation, through a grant from the Anthem Foundation

1.) "Update: Influenza Activity – United States, September 28, 2014 – February 21, 2015". Morbidity and Mortality Weekly from Cdc.gov. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6408a2.htm>
2.) "ABCs report: Streptococcus pneumoniae, 2013." <http://www.cdc.gov/abcs/reports-findings/surveys/spneu10.html>
3.) Berry B, Ehler D, et al. "Vaccination is safe and immunogenic when administered to hospitalized patients." *Vaccine*. 2001; 19: 3493–3498.



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.

KAISER LOS ANGELES MEDICAL CENTER FAMILY MEDICINE RESIDENCY

Contact Information

1. Natalie Rose Mourra, MD
PGY-3 Family Medicine
Kaiser Los Angeles Medical Center
nrmourra@gmail.com
2. Presenting at 2015 National Conference:
Neil Chawla, MD
Fellow, Community Medicine
Kaiser Los Angeles Medical center

Immunize and Save Lives: The Kaiser LAMC Immunization Project

Statement of Goal(s): Our project's goal was to increase immunization rates against influenza and invasive pneumococcal disease in elderly (≥ 65 years of age) hospitalized patients at Kaiser Los Angeles Medical Center as well as at affiliated community sites including the Mobile Clinic Project at UCLA and Homeless Health Care Los Angeles. Our vaccination goals for hospitalized patients were originally predicated on incorrect data; but ultimately our goal was to vaccinate an additional 10% of hospitalized seniors against influenza and invasive pneumococcal disease compared to the 2013-2014 flu season, translating into 120 and 35 seniors, respectively. Our community outreach goals included vaccinating at least 302 seniors or high risk individuals against influenza and invasive pneumococcal disease.

Impact on Target Population

1. PATIENT DATA – Complete information in Appendix 1.
2. KEY OUTCOMES (Bullet points)
 - Among hospitalized seniors ≥ 65 years of age, immunization rates against influenza and invasive pneumococcal disease was not improved with a physician, resident and patient based education initiative, in comparison to the 2013-2014 respiratory illness season.
 - Upon further examination of the data, the decline in vaccination rates among hospitalized patients was largely the result of either patient refusal or nursing administration fall-out (i.e., the vaccine was ordered, but not given, and no reason was given for this).
 - For example, in January 2015, there were 27 hospitalized patients (≥ 18 years of age) who were eligible for the PPSV23 vaccine. These patients were either elderly (≥ 65) or high risk (active malignancy, COPD, asthma, etc). Doctors had ordered 27 vaccinations, 11 patients refused the vaccine, and the remaining 16 patients were not vaccinated by the nurses despite having an order to do so.
 - The manner in which the vaccine order is displayed in the nursing system may contribute to the problem; ie, if the vaccine is ordered on admission, it is an active order, but within days it drops to the bottom of the list of active orders.
 - Lapses in physician ordering of vaccines were most prevalent in the neurosurgical and surgical units of the hospital.

- The emergency room provides a rich environment for vaccination opportunity, however it is not part of ER protocol at this time to vaccinate patients.
- The community-based intervention fell short of goal vaccination rates, however 86 individuals ≥65 years of age were vaccinated against invasive pneumococcal disease and 72 elderly and/or high risk individuals were vaccinated against influenza, for a total of 159 affected individuals.
 - Among those vaccinated in the community-based intervention, co-morbidity rates were very high. In the PPSV23 group, 12.8 reported a history of HIV; 18.6% reported IV drug use; 38.4% reported tobacco use; 24.4% reported a history of COPD, 12.8% reported a history of asthma, 5.8% reported a history of malignancy and 2.3% reported a history of asplenia (functional). Although definitive percentages for co-morbidities were not obtained for the influenza group (vaccinated at the Mobile Clinic Project at UCLA), every vaccinated individual reported a personal history of homelessness.

3. KEY PROGRAM COMPONENTS

- Resident education: Laminated cards were created and distributed to residents, providing reminders to order vaccination for all hospitalized elderly (≥65 years of age) who had not previously received the vaccine and at risk patients with the pneumococcal polysaccharide vaccine. Weekly announcements were made at morning report and noon conference sessions reminding residents to order flu and pneumococcal vaccines.
- Physician education: Lectures to General Surgeons and Neurosurgeon groups at Kaiser Los Angeles Medical Center took place November-February 2014-2015 to encourage ordering of vaccines during hospitalization for surgeries. This component of the project was added because it was noted in years past that the lowest rates of vaccination orders took place among these specialties.
- Patient education: In November 2014, nursing groups were encouraged to play a 5 minute video which addressed the importance of influenza vaccination and false myths regarding vaccination. The video was English only, and was unable to be translated into Spanish per the Educational Department at Kaiser LAMC.
- 150 PPSV23 vaccinations and associated supplies (needles, syringes) were purchased and distributed to the Mobile Clinic Project at UCLA and Homeless Health Care LA with instruction to be administered to high risk or elderly patients. Three hundred influenza vaccines were acquired free of charge from the Los Angeles Department of Public Health and distributed to the Mobile Clinic site (which has not previously had access to flu vaccines).
- Flyers were distributed in the West Hollywood and Santa Monica areas of Los Angeles to advertise the availability of free flu vaccines to the homeless or at risk population.

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

- Resident education: vaccine ordering rates among residents were high (for example, in November 2014, 88% of elderly patients admitted to Family Medicine or Internal Medicine teams had the influenza vaccination ordered. In December 2014, rates were relatively similar at 86%.)
- After several months of community outreach, it became clear that the Mobile Clinic Project site did not have a significant number of senior patients, and a new site was sought (Homeless Health Care LA in Downtown Los Angeles). This site serves very at risk elderly individuals and although the PPSV23 vaccines were distributed to the site in late January, by mid-March 86 seniors had been vaccinated.

5. LESSONS LEARNED

- The purchase of pneumococcal vaccines was an incredibly bureaucratic and slow process. Though efforts were made to begin the purchase in June 2014, they were not acquired until mid-November 2014.
 - The vaccines were purchased at a discounted rate through UCLA. Approval of the purchase took two months.
 - Mobilization of funds from the Kaiser Research & Evaluation Department was a prolonged process as well.

- Vaccines were very expensive (roughly \$65 per PPSV23 vaccine), therefore the entirety of the grant was used for vaccine purchase and there was not enough to spend on nurse educators to speak with patients one on one.
- Ordering of vaccines in the hospital is one component of the problem, however nursing administration of the vaccine also plays a significant role in inpatient vaccination rates.
 - Anecdotal encounters with patients suggested the manner in which they were asked to receive the vaccine was not very informative or educational. For example, three patients under the care of a family medicine resident team stated they were asked “Do you want the flu vaccine or not? It’s not mandatory”.
 - Therefore, we believe that nursing education on how to talk to patients about vaccination will be a worthwhile endeavor to work on next year.
 - The manner in which the vaccine order is displayed in the nurse’s work window needs to be more prominent.
- It is difficult to convince patients to get vaccinated when they have fixed beliefs about vaccination beforehand. Video education may not be effective in changing their minds.
 - Unfortunately the influenza vaccination for the 2014-2015 year was not as effective against circulating strains compared to years prior, and this was popularized in the media. Several patient encounters (anecdotally) listed this as a reason for refusal.
 - Given the diverse population Kaiser LAMC serves, it would have been ideal to have a Spanish version of the flu video, however the videos suggested by the CDC were not approved by the Kaiser Health Education and Media Departments, and these departments failed to produce alternative videos in Spanish.
- Surgical specialties, particularly Neurosurgery and Cardiac Surgery, are particularly resistant to administering vaccinations in the hospital.
 - One of the prevailing beliefs was that giving vaccinations after a surgery can lead to post-operative fever (despite an incidence of <1%), which prolongs hospital stay for investigation of fever.
 - Another obstacle among neurosurgical patients was informed consent, given that many neurosurgical patients are not appropriately alert to accept/decline vaccination. However, it was explained that patient families can also provide informed consent (similar to their providing consent for the surgery itself).

6. **PERSONAL STORY:** Francisco is a regular at the Mobile Clinic in West Hollywood; he is one of the first patients I had ever interacted with in my career, beginning my first year as a medical student at UCLA. It’s hard to miss him – he is effusive, loud and hilarious – his energy pulls you in (whether you want to engage with him or not). He wasn’t homeless at the time, but couldn’t find a steady job, and didn’t have health insurance. I recall a particularly late and exhausting night at the clinic, during finals time, when he pulled me aside and told me, “Sweetheart, you look awful. I mean, let’s be real, you need more help than I do.” He cracked a smile, and I did too; he forced me to reflect on how many things I had to be grateful for in my life. I was healthy. I didn’t know until much later that he was not.

I didn’t see Francisco again until my community medicine rotation in residency, three years later. He was thinner, but still carried the same energy (and still told some of the same jokes). I found out later that he now had AIDS, and was not doing very well; he had several hospitalizations in the last year for AIDS related illnesses. At the time I saw him, he was trying to get set up with the AIDS Healthcare Foundation, but had trouble with finding transport to the clinic. Operating out of the Mobile Clinic, I wasn’t sure how much we could actually help him; his health issues required more care and management than a mobile van could provide. But this year, we had vaccines.

Francisco laughed when I asked him if he had ever been vaccinated against pneumonia or the flu. He told me that during all of his prior hospitalizations, no one had mentioned how vaccines could help him, or offered them to him. In fact, even before he had AIDS, he had never received a flu shot. “I didn’t really think it was important – and I never really had a doctor. I just came here.” It was easy to convince him to get both the influenza and PPSV23 vaccines (though I had to show him how small the needles

were first!) and we were also able to set him up with bus tokens so he could establish care at the AIDS Healthcare Foundation.

I know that, in the long run, Francisco is not going to do well. I know he may miss some appointments, not be able to refill his medications, or may not even take them consistently. But I also know that he is a little more protected against potentially life threatening illnesses like influenza and pneumonia, because of this project; and I know he will be able to get flu vaccines at our Mobile Clinic for years to come, because of this project. And for this reason, I am proud of the work we have done, and grateful for the opportunity we have had to change this man's life, undoubtedly for the better.

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).
 - This project was implemented by two residents (myself and Jennifer Chang, MD) and our Kaiser Los Angeles Community Medicine Fellow, Neil Chawla, MD. The coordinators at the Mobile Clinic Project at UCLA Site were Gianmarco Radi and Evan Shih. The Immunization Task Force team included our mentor, Bruno Lewin, MD and our data analyst Sue Lee, RN.
2. Address the current and future impacts of this project on the residents &/or members of the team.
 - The residents of the Family Medicine and Internal Medicine programs at Kaiser-Los Angeles Medical Center were impacted by the project as they were reminded, on a weekly basis, of their performance on quality measures such as ordering the flu and PPSV23 vaccines. Many residents expressed that they didn't usually order vaccines for hospitalized patients and assumed most would be vaccinated in clinic. We feel our project has positively impacted our ability to provide preventive care in the hospital.
 - The residents of the General Surgery program at Kaiser LAMC were similarly positively affected; surgical culture had previously dictated that they should never vaccinate post-operative patients, but after our intervention, many residents expressed that they now made this a habit.
 - Dr. Chawla and myself will be employed next year as primary care providers and hospitalists at Kaiser Los Angeles Medical Center. Because it has a residency program, research and continuous QI is encouraged and supported by faculty members. We can oversee the ongoing implementation of various strategies to try to increase immunization rates at our facility.
 - Two residents, Young Kim, DO and Alexander Goldman, MD will be taking part in the Immunization Task Force to continue our efforts.
 - Evan Shih and Gianmarco Radi, the UCLA medical students who helped coordinate vaccine administration at the Mobile Clinic Project Site, are in the process of submitting an application to the UCLA IRB to study vaccination outcomes in the homeless population next year. They hope to administer 200 influenza vaccines, and track a control population of 200 (who refuse vaccination), to see if the vaccinated population has less risk of ER visits or hospitalization.
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>)
 - Our project did not incorporate the new recommendations, however at Kaiser LAMC we are working toward implementing this guideline in our primary care clinics and eventually, during hospitalizations within the next year.

Education and Outreach

1. Summary of accomplishments
 - We were able to reach a portion of the homeless population and spread the word about influenza and pneumonia vaccinations being available at the Mobile Clinic Project at UCLA sites. We did this with the use of flyers and word of mouth.

- We established a relationship between the Immunization Task Force and the Kaiser Health Education and Media Department, as well as the nursing heads for each unit who were instructed to play the video before patient discharges.
 - We were able to effectively educate residents from the Family Medicine, Internal Medicine and Surgery Departments in terms of ordering vaccines and appropriate populations to vaccinate.
2. List of clinical & patient education and outreach materials produced or used in this project.
 - PPSV23 reminder cards (reminding residents to order the vaccine for at risk and elderly patients)
 - Kaiser produced Influenza “Myths and Facts” video (unavailable for attachment as it requires Kaiser internal system access to view)
 - Flyers posted around West Hollywood and Santa Monica areas advertising free influenza vaccinations for at risk patients
 3. List of presentations with the date(s) and brief description of the audience.
 - Friday September 11, 2014: Noon Conference: spoke for 3-4 mins prior to conference presentation to remind Internal Medicine and Family Medicine residents to order influenza and pneumococcal vaccines.
 - Friday September 18, 2014: Noon Conference: IM and FM residents
 - Friday September 25, 2014 Noon Conference: IM and FM residents
 - Friday October 3, 2014: Noon Conference: IM and FM residents
 - Tuesday October 14, 2014: Surgical Conference: spoke for 5 mins to General Surgery faculty and residents encouraging them to order influenza and pneumococcal vaccines
 - Friday October 24, 2014: Noon Conference: IM and FM residents
 - Friday October 31, 2014: Noon Conference: IM and FM residents
 - Friday November 14, 2014: Noon Conference: IM and FM residents
 - Friday November 21, 2014: Noon Conference: IM and FM residents
 - Tuesday December 2, 2014: Neurosurgery Meeting: Spoke with neurosurgery faculty and staff regarding myths/facts about ordering influenza and pneumococcal vaccines in hospital.
 - Friday December 5, 2014: Noon Conference: IM and FM residents
 - Wednesday December 10, 2014: Neurosurgery Meeting, Neurosurgery faculty and staff
 - Friday December 19, 2014: Noon Conference: IM and FM residents
 - Friday January 2, 2015: Noon Conference: IM and FM residents
 - Friday January 16, 2015: Noon Conference: IM and FM residents
 - Friday January 30, 2015: Noon Conference: IM and FM residents
 - Tuesday February 3, 2015: Surgical Conference: General Surgery Residents
 - Friday February 27, 2015: Noon Conference: IM and FM residents
 - Friday March 3, 2015: Noon Conference: IM and FM residents
 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.
 - As noted above, the video we used to show patients cannot be accessed via the web and requires internal Kaiser access to view.

Sustainability

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

- Our residency program continues to encourage involvement in quality improvement projects, and we have already involved two residents Young Kim, DO and Alexander Goldman, MD, in the Immunization Task Force to continue our efforts to increase in-hospital immunization rates. Their responsibility will also include implementing new guidelines (inpatient and outpatient) for Prevnar13 (a best practices recommendation from the CDC).
- We have achieved curriculum changes this year which include a community medicine rotation in the first and third years, protected from calls and other clinical duties, which maximizes the time that our residents will be interacting with the Mobile Clinic Project at UCLA and Homeless Health Care LA. Opportunities to expand our immunization project definitely exist, and with more time from our curriculum devoted to the community, I have no doubt that it will expand in

the future and our original goals (of immunizing at least half of the patients seen at these clinics) will ultimately be met.

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?

I would like the donors who supported this project to know that I am grateful for the opportunity I had to truly impact my community in a positive way, offering protection from significant morbidity and mortality to some of the most vulnerable members of our population in Los Angeles. On a day-to-day basis, I feel a small sense of accomplishment from helping my patients – getting a hemoglobin A1c under control or starting someone on an anti-depressant that works for him/her. But the sense of achievement I have felt with this project – from analyzing and identifying areas of improvement for our hospital immunization initiative, and establishing a sustaining relationship with the LA Department of Public Health to continue vaccinating our at-risk patients, is incredible. Thank you!

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: **1191** hospitalized adults ≥65 years of age.
- 1b. Total # of seniors who **received** an *influenza vaccine* from 9/1/14 - 3/31/15: **537** seniors were vaccinated during hospitalization
- 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 (%)	38.5%	53.8%	45.0%
Numerator/Denominator (absolute numbers used to calculate rate)	581/1507	654/1214	537/1191

- 1d. Summary of methodology used to obtain the data and information:
Records from all patients hospitalized from September 2014 – March 2015 were obtained. Records were filtered to include only those ≥65 years of age. Patients with documented flu or egg allergy, or those undergoing active organ transplantation, were then excluded. Patients who had received the flu vaccine at a prior encounter (in the clinic or hospital) were excluded. Unfortunately for those who previously received the vaccine, it could not be determined whether or not they received the vaccine at a prior hospital encounter versus a clinic encounter. Data was then filtered to see who actually received the flu vaccine for this season while in the hospital (date and time of vaccine administration was visible in the records). This was the numerator. This totaled 537/1191 patients, or 45.0%.

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: **310** hospitalized adults ≥ 65 years of age.
- 2b. Total # of seniors who **received a PPSV23** vaccine from 9/1/14 – 3/31/15: **31** seniors were vaccinated during hospitalization.
- 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 (%)	16.4%	14.4%	12.6%
PPSV23 Numerator/Denominator (numbers used to calculate rate)	53/323	51/352	39/310
*Number of seniors who received PCV13 during specific time period			Not recorded

- 2d. Summary of methodology used to obtain the data and information:
Records from all patients hospitalized from September 2014 – March 2015 were obtained. Records were filtered to include only those ≥ 65 years of age. Patients with a history of allergic reaction to PPSV23 were excluded. Patients who had received the pneumococcal vaccine at any prior encounter (in the clinic or hospital) were excluded. Data was then filtered to see who received the PPSV23 vaccination during hospitalization (date and time of vaccine administration was visible in the records). This was the numerator. This totaled 31/310 patients, or 12.6%. As the Prevnar 13 recommendations were released in September, 2014, our Immunization Task Force Data Team had not yet begun to implement this as a core measure, and therefore data related to vaccination with this Prevnar 13 has not been collected.

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

- 3a. Total # of seniors served by this project through community outreach from 9/1/14 – 3/31/15: **93 seniors** were affected by the community outreach project.
- 3b. Total # of seniors served through community outreach who **received an influenza** vaccine from 9/1/14– 3/31/15: **Six seniors** received the influenza vaccination at the Mobile Clinic Project at UCLA community site. However, **72 total individuals** were vaccinated and all had risk factors for influenza (including a personal history of homelessness, or a history of smoking, COPD, asthma, active malignancy, HIV). The average age of this vaccinated population was 45.2 years. Is this data included in the data presented in question 1b and 1c? This data is not included in 1b and 1c as this was a separate arm of the project.
- 3c. Total # of seniors served through community outreach who **received a PPSV23** vaccine from 9/1/14-3/31/15: **Eighty-six seniors ≥ 65 years of age** received the PPSV23 vaccine during the specified time period. The vaccinations were distributed at the Homeless Health Care LA Site in a poor and underserved section of downtown Los Angeles, known as Skid Row. 80.2% of patients were male; 19.8% were female. 12.8% of these vaccinated seniors have HIV; 18.6% reported IV drug use; 38.4% reported tobacco use; 24.4% reported a history of COPD, 12.8% reported a history of asthma, 5.8% reported a history of malignancy and 2.3% reported a history of asplenia (functional). Is this data included in the data presented in question 2b and 2c? This data is not included in 2b and 2c as this was a separate arm of the project (patients with Kaiser insurance hospitalized at Kaiser LAMC).
- 3d. Total # of seniors who **received a PCV13** vaccine* from 9/1/14 – 3/31/15: PCV13 was not included in this project given that the PPSV23 doses were already purchased at the time of the CDC recommendation. Is this data included in data presented in 2c? No.
- 3e. Summary of methodology used to obtain the data and information: Simple spreadsheets including the last name, date of birth, date of vaccination, co-morbid conditions, lot number, vaccine administration location

(right or left deltoid) and administering MD or RN were used to keep track of the vaccines given at the Mobile Clinic Project at UCLA and Homeless Health Care LA sites. Simple filters were applied to the data to obtain the average age and % co-morbidities of those who were vaccinated.

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

PNEUMONIA-RELATED HOSPITALIZATION RATES FOR SENIORS AGE ≥ 65		
Patients 65 and older	2013-2014 Flu Season (Sep 2013-Mar 2014)	2014-2015 Flu Season (Sep 2014-Mar 2015)
Community Acquired Pneumonia and Pneumococcal Pneumonia	512	638
Influenza-Related Pneumonia	18	55

- 4b. Summary of methodology used to obtain the data and information: A list of all hospitalized seniors ≥65 years of age from September 2013 – March 2014 and September 2014 – March 2015 was obtained from the Data and Statistics Department at Kaiser Los Angeles Medical Center. The patients' discharge diagnosis was filtered for "Pneumonia", "Influenza", "Sepsis", "Sepsis due to Pneumonia" and "Severe Sepsis due to Pneumonia". Then, I looked through the data and manually removed cases of "Hospital Acquired Pneumonia", "Klebsiella Pneumonia", "Aspiration Pneumonia", "Pneumonia due to Pseudomonas", "Healthcare Associated Pneumonia" or "Unspecified Septicemia" (or "sepsis" from other causes unrelated to pneumonia). I then manually counted the diagnoses for Pneumonia and Influenza. Since Pneumococcal Pneumonia was so rarely documented (as the organism must be cultured in order for the diagnosis to be used), I counted Community Acquired and Pneumococcal Pneumonia together. Often I came across the diagnosis of "Pneumonia, Unspecified", which, based on the circumstances of the patient's admission and discharge, I would decide to count either as Community Acquired or Hospital Acquired. Although "Sepsis" was often the principal admitting or discharge diagnoses, if influenza or pneumococcal pneumonia was also listed under the "problem list" for that particular hospitalization, this was counted.