

## 2016-2017 Senior Immunization Awards CASE STUDY

### University of Nevada School of Medicine Las Vegas Family Medicine Residency

#### INCREMENTAL STEPS YIELD BIG RESULTS IN BOOSTING SENIOR IMMUNIZATION RATES

When Department Chair and Professor Elissa Palmer, MD, FAAFP learned that the Las Vegas area (or for that matter, the State of Nevada) had never received an AAFP Foundation Immunization Award she took the opportunity to apply for a 2016-2017 award geared towards increasing flu and pneumonia immunization rates in seniors. Dr. Palmer immediately tapped two of her star third-year residents. Neither resident had experience in developing or implementing a work plan or implementing it, so she thought it would be valuable experience for them.

By the time the Senior Immunization Award was announced Kevin Mailland, DO and David Kuykendall, MD were newly-minted faculty in the school's Family and Community Medicine Department. According to Dr. Mailland, "It couldn't have come at a better time—it was the perfect way to start off my career in academic medicine." Both physicians fully embraced the grant's intent; "Preventive health and immunization is really what sets Family Medicine clinics apart from the other specialties," added Dr. Kuykendall. Certainly more focused attention on prevention was warranted. With the previous year's influenza vaccination rates at under 18% and pneumococcal vaccination rates at under 6%, projecting an increase in immunization rates by at least 25% seemed achievable. Data drawn from Centricity, the clinic's electronic medical record (EMR) system, identified 458 adults ages 65 and older who were eligible to receive the influenza vaccine during the 2016-2017 flu season, and 591 eligible to receive one or both of the two available pneumonia vaccines (Pneumovax 23 and Prevnar 13).

One of the first challenges facing Drs. Mailland and Kuykendall was the creation of a detailed work

plan to guide project methods and activities. The success of each activity would be monitored by applying the PDSA (Plan, Do, Study and Act) logic model—a straightforward yet powerful tool for promoting continuous improvement. Dr. Mailland would work primarily with third-year residents to conduct PDSA cycles quarterly throughout the project period to track changes in patient vaccination status, assess the effectiveness of each strategy and make course adjustments where needed.

Once the work plan was in place, the project team turned their attention to bringing faculty, residents and peripheral staff on board with the project and up-to-date on vaccination guidelines. The initial lecture, presented in August 2016 during regular didactics to 15 residents and attending faculty, overviewed U.S. Preventive Services Task Force (USPSTF)/Centers for Disease Control and Prevention (CDC) recommendations on all immunizations. "We wanted a comprehensive preventive health lecture to get them on a 'vaccine timer,'" explained Dr. Kuykendall. Soon thereafter, the team presented a second lecture tailored specifically to grant activities. In addition to senior vaccination guidelines for flu and pneumonia, Dr. Kuykendall included a section on "Busting Common Vaccine Myths" with specific rebuttals for each. A separate component was devoted to explaining the PDSA model and its application in improving large system operations via small scale changes. A pre- and post-test allowed the team to measure increases in faculty and resident knowledge on vaccines.

In October 2016, the team used the lunch break to present an "Immunization Lecture" to office staff (basically an abbreviated version of the one given to physicians). Attendees included a Licensed

Practical Nurse (LPN), two office managers and eight Medical Assistants (MAs). “The Clinic Manager provided lunches for the group, and the staff loved it,” reported Dr. Kuykendall. The initial immunization lecture was so well received by staff that, “We’ve now started a staff education lecture series that includes other topics of interest, such as how to assess an individual in an emergency, or how to apply de-escalation interview techniques when confronted with disruptive behaviors.”

As project activities moved beyond provider education to focus on office routine modifications that support increased vaccination rates, it became clear that limitations within the clinic’s EMR system would hinder accurate data reporting. The most immediate obstacle involved the nurses’ ability to accurately and consistently document vaccinations within the patient’s chart. “There was no immunization page within the EMR, no clear spot to document. Consequently, the information was entered in several different places. There was no record of immunizations unless we combed through every single note,” lamented Dr. Mailland. Even re-training nursing staff in proper documentation, although critical, was unlikely to completely solve the accuracy problem, so when it came time to access EMR data needed for reporting throughout the project, he turned to the medical school’s information technology (IT) staff for help.

Dr. Kuykendall expands on the theme: “We initially wanted to make changes within the EMR—perhaps even build in EMR “pop-up” reminders to flag those patients in need of a vaccine. But our EMR is archaic with limited technical support, so we decided it was not cost effective for us to even try.” So they turned instead to creating a manual process of collecting patient immunization data by modifying the Patient Intake Form already in use. The revised form highlighted each patient’s vaccine status for flu, Pneumovax 23 and Prevnar 13 and the patient’s willingness/interest in receiving any missing vaccines. Besides creating a paper trail documenting the patient’s immunization status and flagging those who needed one or more vaccines, the Intake Form followed the patient into the exam room as a tangible reminder for nurses and physicians. “After

we got the MAs on board, everything became much simpler. If the patient said ‘yes,’ order the vaccine. If the patient says ‘no,’ have the physician talk to them about it,” said Dr. Kuykendall.

As the Intake Forms (augmented by the returned flyers) began to accumulate, the Health Educator worked with the residents to create an Excel flow sheet where they could manually document each patient’s vaccination status. “At one point we had, like, 500 sheets,” said Dr. Mailland. The resulting “master flow sheet” went a long way towards filling in the gaps and reducing errors in documentation.

In another protocol change, nursing staff were trained in using and updating WebIZ (Nevada’s statewide immunization monitoring site) and began to routinely check each patient’s vaccination status when roomed. “A big percentage of our patients are transient—hopping around from clinic to clinic and when you switch clinics, you can lose a lot of vaccination potential. By using WebIZ on everyone, we can make sure that nothing is lost in the transfer,” said Dr. Kuykendall.

With these changes implemented by the end of the second PDSA cycle (December 2016), Drs. Mailland and Kuykendall were hopeful for encouraging results. “But when we compared our second quarter numbers to our baseline information, we could see that the increases just weren’t there, and that we needed to go back to the drawing board,” said Dr. Kuykendall. He acknowledged that some early confusion between faculty and the residents regarding “who was responsible for what” may have initially slowed things down. This demonstrated to both doctors the value of sufficient up-front planning so that “the duties of each group were more clearly delineated.” Once these issues were addressed, the project kicked into high gear.

At the top of the new agenda: boosting clinical outreach to their patients. The residents developed and mailed pre-stamped reminder flyers to all patients identified as needing a flu and/or pneumonia shot, encouraging them to come into the clinic. Since there was also no way of collecting or recording vaccinations given

outside the clinic for this group, patients who received vaccinations elsewhere were asked to make a note of date(s) and location(s), and return the form. The team wanted to augment this contact with automated e-mail/text message prompts, but found that although their system could send out automated appointment reminders, the message could not be altered to change or add content. “But we do have cell phone numbers for many of our patients,” commented Dr. Mailland, “so eventually we may be able to do this.”

The team also stepped up efforts to more consistently educate and reinforce staff responsibilities and clinic goals at morning meetings and regular clinic huddles. Drs. Mailland and Kuykendall provided weekly updates to all staff, encouraging them to keep pushing towards achieving their shared vaccination targets. As more immunization conversations took place between providers and their patients, many of the residents were surprised to discover how much influence they often had. “I think it was very empowering for residents to realize how much trust our patients have in us,” said Dr. Kuykendall.

In the third quarter, patient awareness/education materials under development for several months were ready to go! Colorful posters presented the facts about flu and pneumonia vaccines, tips on how to stay healthy, and invited patients to “learn more.” Patient education handouts highlighted information about the nature and prevalence of flu and pneumonia, expected benefits, and facts versus myths of possible vaccination side effects. The posters were strategically displayed throughout the clinic and flyers kept handy for nurses and physicians in the patient exam rooms.

These additional measures did indeed improve the project’s bottom line, and although results still fell short of project goals, they nevertheless reflected significant gains. Immunizations for influenza increased from 16% (87/541) in the previous year to 27% (124/458). The increase was closer to 38% when revised to reflect patients who had either refused or received vaccines elsewhere and were therefore ineligible for vaccination at the clinic. The number of pneumonia vaccinations also

improved, from 0.57% (4/697) to 3% (18/591) for PPSV23 and from 3.9% (27/697) to 14% (83/591) for PCV13.

There were some lingering disappointments. For example, the project work plan initially called for participation in community/group/nursing home health fairs, “but they either didn’t have room for us, or wanted to charge too much money,” lamented Dr. Kuykendall. As an alternative approach to community outreach, he expressed support for someday scheduling an on-site vaccination clinic. “We would deliver way more vaccines if we advertised a vaccine clinic on a specific day, have physicians on hand to answer questions, etc.”

But overall, both physicians expressed pride in what had been accomplished. “I had zero experience working on a grant,” admitted Dr. Mailland. “I went in blind, but now I’m much more comfortable with all that’s involved. It was a decent amount of work, but having gone through it, I’m pleased with how it turned out.” He now feels motivated and empowered to seek out future grant opportunities.

Dr. Kuykendall agrees. “This was the first grant I’ve taken charge of. Being new faculty, from a leadership and organization point of view, it really helped me grow.” He expressed confidence that many components initiated through this project—patient/provider education, the new Patient Intake Form template, clinic flow and protocol improvement, and use of the PDSA cycles for quality improvement—will all continue.

“The experience and training was very good for residents as well—has really reinforced the power of provider/patient communication,” added Dr. Mailland. “I know that 80% of our residents stay in practice in the community. By the time they graduate, they will have a solid foundation in immunization practices and how to talk about vaccinations to patients. Consider how many patients each resident will reach over a lifetime of practice!”