

## In the Spotlight



### **P. Neil Edillo, PharmD**

**Informatics Pharmacist**

**Oregon Health and Science University**

**ASHP Member Since: 2003**

**Focus: Pharmacy Informatics**

### **Brief Bio**

---

Neil Edillo earned his Doctor of Pharmacy degree from the University of Michigan College of Pharmacy (Ann Arbor, Michigan) in 2005. Immediately after pharmacy school, Dr. Edillo went on to complete a Pharmacy Practice Residency at The Johns Hopkins Hospital (Baltimore, Maryland) in 2006. He then returned to the University of Michigan Hospitals and Health Centers (Ann Arbor, Michigan) to complete a Pharmacy Informatics and Technology Specialty Residency in 2007.

### **Role:**

---

Dr. Edillo currently is an Informatics Pharmacist for Oregon Health and Science University (OHSU). The majority of his time is spent involved with the configuration, validation, deployment, and maintenance of the integrated electronic health record (EHR) at OHSU. He is engaged in many projects and committees associated with the EHR, ranging from medication configuration to evaluating clinical and operational workflows. Aside from working with the EHR, Dr. Edillo supports other technologies in Pharmacy Services and also is responsible for precepting students and residents in Pharmacy Informatics.

### **An Integrated Electronic Health Record at an Academic Medical Center:**

---

There are numerous complexities with a university teaching hospital and attempting to replicate these complex workflows into an information system is fairly challenging. Working with the vendor of the EHR, OHSU has successfully implemented the integrated system throughout much of the healthcare system. Currently, all of the ambulatory clinics in the health system are using the EHR, inpatient providers serving the adult population are performing CPOE, nurses are using an eMAR for documentation, and pharmacists are performing order verification in the integrated system.

The implementation of the EHR, however did not happen overnight. Dr. Edillo says, "It's certainly been a bumpy road from the beginning of the project to where we are now. By the very nature of using an integrated system, all healthcare providers have had to come together and rethink a lot of our strategies for patient care. Many things changed because of the EHR: rewrites of policies and procedures, order set changes, workflow changes, just to name a few. All of these changes needed to happen and often times compromises needed to be made. I believe we have been successful at doing this because healthcare providers were consistently reminded of the greater good that would result from having an integrated EHR. There is still much more work to be done but I truly think the majority of healthcare providers at OHSU will say we have improved patient care tremendously relative to where we were only a few years ago. We are better able to share and access much more patient information that was previously tucked away in a disparate system."

## Telepharmacy Services:

---

One of the big projects that Dr. Edillo is currently involved with outside of the EHR project is implementing telepharmacy services to off campus sites, distributed throughout Oregon. The biggest difficulty that the Department of Pharmacy Services is facing is having enough pharmacy personnel to staff these areas. To facilitate the use of pharmacy services off campus, OHSU will implement a telepharmacy solution.

Specifically, the telepharmacy solution allows for the remote checking of IV admixtures. The process involves a technician compounding in the IV hood off site all the while taking intermittent photographs of the process. Once the technician has completed the admixture, the pharmacist will view the images remotely and determine if everything was made appropriately.

Dr. Edillo states that this has been a massive undertaking. "Unfortunately for us, not too many other pharmacies in the country have implemented something like this before. There is definitely a lot of work that needs to be done to get this project off the ground. We are currently working to ensure that this process is adherent to the laws and statutes that are applicable to institutions as OHSU. We are also working extensively with our Information Technology Group to ensure that the proper network infrastructure exists to support this technology. We are working with the vendor to ensure that the product works according to specifications and we are working with these off campus sites to understand their current workflow. All of this work has the potential to lead to a great technological solution that others may be able to replicate."

## Lessons Learned

---

In Dr. Edillo's involvement in working with an integrated EHR at OHSU, it has become increasingly clear to him that although pharmacy services are a major stakeholder in the medication use process, this process is shared by everyone in the healthcare system. This process is shared between patients, doctors, nurses, pharmacists, respiratory therapists, physician assistants, nurse practitioners, and many others. With an integrated EHR, the lines between ordering providers, pharmacy services, and nurses become less defined as we begin to better understand the complexities of other healthcare providers' roles within the medication use process.

To put this in perspective, Dr. Edillo says, "Just think about one medication record in an integrated EHR and how it flows throughout the medication use process. First, an ordering provider uses this medication record to prescribe therapy. Secondly, a pharmacist needs to verify that this medication record is appropriate for the patient and subsequently dispense the correct product pursuant to the order. Finally, a nurse needs to have the appropriate information populate on the eMAR to support correct documentation for administration. This one medication record touches all of these healthcare professionals ultimately on its way to the patient."

This example actually underscores one way in which an Informatics Pharmacist may profoundly impact the healthcare system. Dr. Edillo states, "Simply multiply this one medication record by the total number of patients requiring it. The impact of an Informatics Pharmacist then becomes easy to see. In doing the build for this one medication record, I need to be cognizant of all of these stakeholders and be supportive of them when setting up the medication record. It is with the utmost importance that I am accurate and judicious while performing medication build; the potential impact is far too great to do otherwise. It is responsibility not to be taken lightly."

## Opportunities Available to Pharmacists in Informatics

---

There are opportunities everywhere. As an Informatics Pharmacist, you have a lot of options. You could work for a hospital or health system. You could work as a consultant. You could work in the private sector for a vendor. You could even work as an entrepreneur if you have the business acumen.

In general, pharmacists are in high demand throughout the country. For Informatics Pharmacists, the demand is even higher. Dr. Edillo says, "I truly believe that as more and more health systems look to implement technology and automation, having someone that understands the clinical impact, the operational impact, and the use of information technology is invaluable. Employers everywhere are realizing this and are seeking out these individuals."

## Advice

---

Although knowing and understanding technology is a major component of Pharmacy Informatics, the most essential aspect in being an effective Informatics Pharmacist is that you are a pharmacist first and foremost. Above all else, you are concerned about taking care of patients. Informatics Pharmacists need to be able to assess clinical issues, understand operational workflows, and be current on policies and best practices both at the local and national level. You need to first understand how to be a pharmacist and how health systems work to be successful in Pharmacy Informatics.

The only way to actually gain this fundamental understanding is through years of on the job experience or by pursuing a pharmacy practice residency. As a product of an accredited pharmacy practice residency, Dr. Edillo thinks this is vital to the success of anyone that wants to pursue Pharmacy Informatics as a career. "Colleges of Pharmacy across the nation do a wonderful job at preparing our students academically but it is really through your experience practicing that you truly begin to understand your role as a pharmacist and understand your place on the healthcare team. It would be difficult to attempt to implement technology without understanding the context of how and where it will be used. Pharmacy practice residencies are, without a doubt, a great way to gain this experience."

After first gaining experience as a pharmacist, then consider pursuing a specialty residency in Pharmacy Informatics. A specialty residency in pharmacy informatics not only gives you a great understanding of technology that is currently available in the market place but more importantly, it teaches you to evaluate and troubleshoot issues from a different perspective. "When evaluating issues that arise, it is always easy to blame the technology as the problem. As an Informatics Pharmacist, you need to take a step back and understand the context and workflow surrounding the technology that might be contributing to end user frustration. What often comes to light is that the problem does not lie in the technology but with how the technology is being used." Dr. Edillo says. The time you spend in a Pharmacy Informatics Specialty Residency helps to hone these fundamental informatics skills and concepts.

## Value of ASHP Membership

---

Dr. Edillo ultimately joined ASHP because he wanted to become a better pharmacist. Although he felt academically prepared from his College of Pharmacy experience, he knew that there was much more to learn. Initially for Dr. Edillo, this translated into pursuing residency training. "ASHP provided me the opportunity to network and learn about different residency programs at the residency showcase during the annual Midyear Clinical Meeting. After that point, I was able to pinpoint what I specifically needed in a residency program and the rest is history. Without ASHP, I can easily say that I would not be the pharmacist I am today" Dr. Edillo says.

Now that he is a few years removed from that experience, Dr. Edillo says that his membership is still contributing to him becoming a better pharmacist. He states, "We all have one goal in common: taking care of patients. Through this common goal, we can all learn from each other's experiences to make patient care better. Chances are that others are having similar issues that you may or may not have and perhaps may have even come up with an innovative solution for the particular issue. ASHP provides all of us with a forum to discuss pharmacy issues across all of healthcare. As I gain more experience in my profession, I hope to

become more involved with the Section of Pharmacy Informatics and Technology and contribute to the overall body of knowledge."