

PGY1 - Pharmacy Informatics Core Rotation

Overview

The PGY1 pharmacy informatics rotation is a 6-week core experience that exposes residents to the evolution of organizations' medication-use systems by applying pharmacy informatics principles, standards, and best practices. Residents will gain basic understanding of the language and concepts of information technology (IT) thereby equipping the resident to function in the interdisciplinary environment of informatics project teams to advance the professional duties and responsibilities of a pharmacy informatics specialist.

Responsibilities

Pharmacists have unique, comprehensive knowledge about safe and effective use of medications. More importantly, pharmacists understand core pharmacy operations and have developed expertise in end-to-end medication-use management, including communication with other information systems. Pharmacists provide expertise to effectively translate and seamlessly communicate the language of medication use across the continuum of care. They can interpret and implement requirements to ensure safe and comprehensive medication order communication. An experienced pharmacist is skilled in the use of electronic medication-order entry systems and has knowledge of human factor issues (e.g., interpretation of ambiguous clinical data) and development of interfaces to disparate applications and systems.

Rotation Activities

The resident will have the opportunity to explore the following practice areas within the field of pharmacy informatics:

- ❑ Computerized prescriber order entry (CPOE) systems for electronic medication ordering integrated with electronic health records (EHRs) and pharmacy information systems.
- ❑ Clinical decision support tools that bring best practice information and guidelines to clinicians at the time it is needed and rules-based systems for monitoring, evaluating, responding, and reconciling medication-related events and information.
- ❑ Pharmacy information systems that allow electronic validation of medication orders in real time, provide the data flows needed to update both the medication administration record (MAR) and order-driven medication dispensing systems, and support such operational activities as supply chain management and revenue compliance.
- ❑ Automated dispensing cabinets and robotics integrated and/or interfaced with pharmacy information systems.
- ❑ Integrated medication administration management systems that enable bar code medication administration and use of “smart” infusion pumps.
- ❑ Integrated medication surveillance applications for medication incident and adverse event reporting.

Participation

The active participation of pharmacists in all aspects of medical informatics that support the medication-use process is imperative for safe and effective medication use. Such participation must be collaborative and comprehensive across the entire healthcare organization. It begins with system identification and vendor selection and includes identification of system requirements as well as application design, development, implementation, and maintenance. Pharmacists must also be involved in the development and implementation of standards for medication-related vocabularies and terminologies to ensure safety and optimize deployment of clinical decision support-related activities.

Goals and Objectives

- **Goal R1.1: Identify opportunities for improvement of the organization’s medication-use system.**
 - *OBJ R1.1.1 (Comprehension)*
 - Explain the organization’s medication-use system and its vulnerabilities to adverse drug events (ADEs).
 - *OBJ R1.1.3 (Evaluation)*
 - Identify opportunities for improvement in the organization’s medication-use system by comparing the medication-use system to relevant best practices.
- **Goal R1.2: Design and implement quality improvement changes to the organization’s medication-use system.**
 - *OBJ R1.2.2 (Synthesis)*
 - Design and implement pilot interventions to change problematic or potentially problematic aspects of the medication-use system with the objective of improving quality.
- **Goal R2.4: Collect and analyze patient information.**
 - *OBJ R2.4.2 (Analysis)*
 - Determine the presence of any of the following medication therapy problems in a patient's current medication therapy:
- **Goal R4.1: Conduct practice-related investigations using effective project management skills.**
 - *OBJ R4.1.1 (Synthesis)*
 - Initiate, design, implement, and write up a practice-related investigation that, at all steps in the process, reflects the skillful application of project management skills.
- **Goal R5.1: Provide effective medication and practice-related education, training, or counseling to patients, caregivers, health care professionals, and the public.**
 - *OBJ R5.1.1 (Application)*
 - Use effective educational techniques in the design of all educational activities.
 - *OBJ R5.1.6 (Application)*
 - Use knowledge of audio-visual aids and handouts to enhance the effectiveness of communications.
- **Goal R6.1: Use information technology to make decisions and reduce error.**
 - *OBJ R6.1.1 (Comprehension)*
 - Explain security and patient protections such as access control, data security, data encryption, HIPAA privacy regulations, as well as ethical and legal issues related to the use of information technology in pharmacy practice.
 - *OBJ R6.1.2 (Application)*
 - Exercise skill in basic use of databases and data analysis software.
 - *OBJ R6.1.3 (Evaluation)*
 - Successfully make decisions using electronic data and information from internal information databases, external online databases, and the Internet.

Meeting Attendance

- <<<INSERT YOUR HEALTHCARE SYSTEM MEETINGS HERE>>>
- Journal Club
- Screen Team
- CPOE Gold Team
- Various other meetings as they arise at the discretion of the resident and preceptor

Topics To Be Reviewed

- ❑ Introduction to <<<INSERT YOUR HEALTHCARE SYSTEM HERE>>> medical information systems and medication-use processes
- ❑ Pertinent safety issues that are associated with the implementation of new technologies into existing medication use systems
- ❑ Managing and directing safe and appropriate use of medications, drug distribution, and administration
- ❑ Developing extensive expertise in using technology to support these activities.

Interaction With Healthcare Professionals

Pharmacy informatics specialists are uniquely qualified to serve as liaisons between the Pharmacy department and others involved in system development, including vendors and other departments. Their skills are needed to:

- ❑ Work closely with Information Systems and Pharmacy staff to develop system programming requirements while understanding system capabilities and limitations
- ❑ Develop and oversee medication management-related systems' databases
- ❑ Identify, suggest solutions to, and resolve system or application problems
- ❑ Assess medication-use systems for vulnerabilities to medication errors and implement medication-error prevention strategies
- ❑ Actively participate in development, prioritization, and determination of core clinical decision support systems
- ❑ Assist in mining, aggregating, analyzing, and interpreting data from clinical information systems to improve patient outcomes

Evaluation

As a core rotation during the resident's PGY1 year, the resident will be evaluated according to <<<INSERT YOUR HEALTHCARE SYSTEM HERE>>> PGY1 Pharmacy Practice Residency Evaluation Standards and the Goals and Objectives outlined in this document.