Informatics

Description of Rotation:
The Informatics rotation will help students become familiar with the key principles and emerging technologies utilized in pharmacy practice and health information technology. This rotation will expose the student to Informatics nomenclature, key principles, tools and available resources, automation and technology assessment and integration, patient safety within the medication use system, and informatics research. The student will be able to apply knowledge gained from this rotation in any pharmacy practice setting to improve technology used to provide patient care.

Goals of Rotation:
To develop an understanding of the history of pharmacy informatics in addition to the unique connection of pharmacy informatics with clinical pharmacy, medication-use processes, and medication safety.

1. Understand patient healthcare needs.
2. Apply evidence-based medicine.
3. Enhance and reinforce didactic coursework.
4. Develop written and oral communication
5. Develop interpersonal and inter-professional communication skills.
6. Adopt and formulate ethics and integrity for practice site and career.
7. Formulate an understanding of the laws and regulation for the practice site
8. Demonstrate leadership skills for successful self-development.
9. Developing an understanding of broad projects that impact multiple medical professions and systems

Learning Objectives:
Upon completion of this rotation the student should be able to:

1. Understand the role of an Informatics pharmacist.
2. Demonstrate understanding of basic pharmacy informatics principles, standards, and best practices.
3. Describe currently available automated technology for order processing, safe and efficient distribution, dispensing, and administration of medications, documentation of medication administration, electronic surveillance systems for effects monitoring, pharmacy inventory management systems, and emerging technology and automation systems that assist with the medication-use system.
4. Understand the steps necessary for the implementation of a new pharmacy technology and medication use systems.
5. Describe the process of mining, aggregating, analyzing, and interpreting data from clinical information systems to improve patient outcomes.
6. Describe the process of documentation, formal testing procedures for data and transactional verification and/or validation.
7. Explain the principles of decision support as they apply to health care providers making direct patient-care decisions and their effect on medication safety.
8. Describe how informatics and technology relate to patient safety in the medication use process.
9. Describe the flow of orders within the health system and indicate points of potential failure and how technology can enhance patient safety. Observe the workflow of central and decentralized pharmacy operations with regard to technology and informatics, and demonstrate proficiency with using automation in dispensing medications safely.
10. 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.
11. Evaluate/Identify opportunities for improving operational efficiencies in order to better serve patient and health professional needs through the application of informatics principles, standards, and best practices.
12. Describe how issues or enhancement requests are identified and communication to the software vendor(s).
13. Communicate effectively and professionally with other clinical informatics staff, both written and verbal.
14. Understand the importance of pharmacy informatics as an integral component of the development and maintenance of an electronic medical record (EMR)
15. Develop and refine project management skills essential for analysis, decision making, and implementation of quality improvements through clinical informatics and technology.

Activities:
1. Complete orientation to organization’s pharmacy operations and clinical activities.
2. Data, information, and knowledge management
3. Practice Analytics
4. Applying user experiences, research, and theoretical informatics principles to improve clinical practice and usability
5. Leadership and management of change
6. Medication use evaluations (MUE)
7. Videos:
   a. ASHP: What is Pharmacy Informatics
   b. ASHP: Role of Pharmacists Practicing in Informatics
8. Computerized Prescriber Order Entry (CPOE) systems
9. Electronic health records (EHRs)
10. Drug information resources
11. Clinical decision support tools
12. Review pharmacy informatics resources:
   a. Agency for Healthcare Research and Quality (AHRQ)
   b. American Medical Informatics Association (AMIA)
   c. American Society of Health System Pharmacists (ASHP)
   d. Certification Commission for Healthcare Information Technology (CCHIT)
   e. Healthcare Information and Management Systems Society (HIMSS)
   f. Health Level Seven International
13. Medication administration
14. Smart pump programming
15. Documentation on (electronic) medication administration record (MAR)
16. Use of automated dispensing cabinets (ADCs) and barcode at the point of care (BPOC)
17. Training sessions with other department staff.
18. Meetings:
   a. Clinical Informatics Committee
   b. Clinical Services/Tech Meetings
   c. CPOE Committee
   d. Electronic Health Records Operational Meetings
   e. Formulary Subcommittee
   f. Interdisciplinary Informatics Committees
   g. P & T Committee
   h. Patient Safety Committee
   i. Pharmacy Medication Management meeting

Common topics encountered in the Informatics setting (list not inclusive):
1. Clinical Decision Support Systems
2. Computerized Provider Order Entry (CPOE)
3. Patient Safety and Medication Errors
4. eHealth Initiatives (Telepharmacy)
5. Electronic Health Records & Clinical Documentation
6. Information Management
7. HIPAA & Privacy
8. Information Security
9. Use of Databases for Data Mining
10. Pharmacy Automation
11. Use of Barcode Scanning/Verification

Potential longitudinal activities to accomplish at site:
1. Patient Care Activity (Patient Care Provider/Practice Manager Domain)

a. Identify and collect appropriate drug-related monitoring parameters for each assigned patient utilising Evidence Based Medicine (EBM)

b. Maintain an adequate patient database for each assigned patient

c. Enter patient-specific information into an electronic health or pharmacy record system

2. Education / Research activities

   a. (Informational Master Domain)
      i. Assist in explaining to a patient or caregiver their health-insurance options and medication cost
      ii. Prepare an article for a newsletter or publication
      iii. Prepare a written drug information response in a practice setting
      iv. Provide options for medication shortage
      v. Provide an educational presentation to pharmacists
      vi. Provide an educational presentation to other health care professionals
      vii. Lead a Journal Club discussion
     viii. Participate in a Drug Utilization Project
      ix. Participate in a Patient/Medication Safety Review or error reduction program
     x. Attend and or develop a monograph for the P+T Committee
     xi. Review the process of maintaining inventory/stock for community
      xii. Discuss the role of a pharmacists as a manager and supervisor
     xiii. Assist or discuss in the preparation for regulatory visits and inspections
      xiv. Participate in a discussion of a pharmacist’s role in ethical issues related to any of the following topics: end of life care, professional behavior, clinical research, and pharmacy current event/hot button issue
      xv. Discuss the benefits of new technology and innovations to pharmacy (Epic, Pyxis, Robotics)
      xvi. Discuss the process of formulary drugs and how to authorize the use of non-formulary medication when clinically appropriate

   b. Continued Professional Development (Self-Developer Domain)
      i. Discuss the benefits or risks of new legislation, law or practice change and how it will impact patients and the profession
      ii. Continue Professional Development: Provide or Attend a Continuing Education Program