PHT 52A: INPATIENT DISPENSING

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	3
Hours:	2 lecture, 3 laboratory per week (60 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Demonstrate proficiency in inventory, purchasing, automated and manual drug processing and compounding procedures in the inpatient pharmacy setting.
- Maintain required legal records of controlled substances,compounded medications,inventory,recalls,IND's and other specialized products in an inpatient pharmacy.

Description

A general study of the usual technician functions associated with an institutional drug distribution system. Practical experience in the manipulative and record-keeping functions of extemporaneous preparations and sterile compounding basics in an inpatient pharmacy setting. Intended for students in the Pharmacy Technician Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:
A. Describe the major hospital services and members of a health care team.
B. Explain the functions of the pharmacy department within the hospital structure and the roles and responsibilities of pharmacy staff.
C. Identify different regulatory agencies that govern the operations of hospitals and hospital pharmacy.
D. Understand the role of the interoperability of hospital management software, different types of electronic health records, medication orders and automated technology.
E. Describe the different dispensing systems for medication orders such as unit dose cards, robotic filling and dispensing equipment, and automated dispensing cabinets.
F. Explain inventory management of pharmaceuticals including drug bidding, ordering, receiving, and storage processes.
G. Describe ordering, receipt, and documentations of controlled substances, including the advantage of utilizing an automated dispensing storage unit.
H. List various ways orders are processed by the pharmacy.
I. Explain and demonstrate the proper procedure for preparing, labeling and repackaging of extemporaneous compounds and unit dose medications.
J. Identify processes in place at hospitals to prevent medication errors.
K. Describe the main components of the infection cycle and factors affecting survival of bacteria.
L. Identify and utilize methods of preventing the spread of microorganisms in aseptic technique.
M. Identify a variety of supplies used for preparing sterile compounds.
N. Describe and demonstrate the aseptic handling of equipment used in the preparation of sterile pharmaceutical include laminar airflow hoods.

Course Content

A. Hospital organizations and functions
1. Organizational framework
2. Functions of a hospital
3. Common hospital departments and acronyms
4. Health care team members
B. Hospital pharmacy department
1. Various locations
a. Central pharmacy
b. Satellite pharmacies
c. Discharge pharmacies
2. Other institutional pharmacy practice settings
a. Home infusion pharmacy
b. Long term care facilities
c. Skilled nursing facilities
d. Home health care agencies
e. Health Maintenance Organizations (HMO)
3. Pharmacy staff members
a. Director of pharmacy
1) Role
2) Responsibility
b. Hospital pharmacists
1) Role
2) Responsibility
c. Hospital pharmacy technicians
1) Role
2) Responsibility
C. Hospital pharmacy standards and procedures
1. Regulatory agencies
a. The Joint Commission
1) The process of accreditation
b. Centers for Medicare and Medicaid Services
c. Department of Health and Human Services
d. Department of Public Health
e. State Board of Pharmacy
f. United States Pharmacopeia
g. Drug Enforcement Agency
D. Electronic hospital records and medication orders
1. Intake records
a. Patient wrist bands
b. Medication histories
c. Admitting orders
2. Electronic medical charts
3. Medication orders
4. Types of medical orders
a. Daily order
b. Continuation order
c. Standing order
d. STAT order
e. Discharge order
5. Portable Computerized Prescriber Order Entry (CPOE)
6. Pharmacy input of handwritten orders
7. Electronic medication administration records

E. Filling and delivery of medical orders
1. The unit drug packaging system
a. Cost and benefit of unit dose system
b. Design of the unit dose delivery cart
c. Filling the daily unit dose cart
d. Hospital dosage timing signa codes
2. Robotic filling
a. Operation of the robot
b. Benefits of robotic filling and dispensing systems
3. Processing the returned unit dose cart
a. Labeling and documentation of repackaged unit dose medications
b. Repacking control log
c. Processing missing orders
4. Stocking emergency drug crash carts/drug boxes
5. Stocking floor stock automated dispensing cabinets (Pyxis machines)
a. Automated dispensing cabinets restocking
b. Automated dispensing cabinet and automated medication dispensing system advantages
F. Inventory management
1. Bidding pharmaceuticals and purchasing contracts
a. Bidding and contract process
G. Ordering, receiving and processing pharmaceuticals
1. Non-formulary drugs
2. Drugs borrowed from other facilities
3. Receiving and storage of drug inventory
4. Special handling of certain pharmaceuticals
a. Narcotics
b. Investigational drugs
5. Performing ongoing inventory responsibilities
a. Rotating inventory
b. Checking for drug recalls
H. Flow of orders
1. Medication orders
2. Manual order processing
3. Automated order processing
4. CPOE
5. Written
6. Order verification
7. Processing orders based on status
8. Filling of order
9. Checking
10. Delivery
I. Organization of medications
1. Extemporaneous compounding
2. Bulk compounding log
3. Refrigerated and frozen medications
4. Unit dose medication
a. Various unit dose packaging types and their use
b. Unit dose automation
c. Unit dose label requirements
d. Unit dose logs
J. Medication safety
1. Adverse drug events (ADE)
2. Medication error causes
3. Possible medication error consequences
4. Incident reports
a. Close call
b. Sentinel event
c. Root cause analysis
5. Organizations involved in medication safety
6. Methods for preventing medication errors
7. Look-alike/sound-alike
8. General hospital safety
a. SDS
b. Proper waste disposal
c. National Patient Safety Goals
d. USP 800
e. OSHA
K. Types of microorganisms
1. Virus
2. Fungi
3. Protozoa
4. Effects of microorganisms
a. Nonpathogenic microorganisms
b. Pathogenic microorganisms
c. Antimicrobial resistance
d. Microbial resistance and superbugs
5. Sources of contamination
a. Touch
b. Air
c. Water
6. Methods of preventing infections
L. Aseptic technique
1. "Sterile" vs. "non-sterile" in a pharmacy
2. USP 797 sterile compounding standards
3. Aseptic garbing, hand washing and gloving
4. Manipulations in the LFH to assure sterility in products
M. Sterile compounding supplies and their care
1. Solution bottles and bags
2. Vials
3. Ampules
4. Syringes
5. Needles
6. Administration sets and their components
7. Medication reservoir cassettes and personal pain pumps
8. Labeling and packaging sterile products
N. Aseptic handling and use of equipment
1. Handling supplies/equipment used in the aseptic preparation of pharmaceuticals
2. Laminar air flow hoods (horizontal and vertical flow): use and maintenance

Lab Content

A. Reading and translating physicians' orders, medical profiles and medication administration records
B. Hospital pharmacy drug organization
C. Medication cart filling and documentation
D. Simulated Pyxis machine/automation and crash carts
E. Recording and management of narcotic drugs
F. Extemporaneous/bulk compounding and log maintenance
G. Prepare various types of unit dose pharmaceuticals
H. Aseptic technique; garbing and hand washing
I. Aseptic technique; hood cleaning, barrier controls, and equipment for sterile production

Special Facilities and/or Equipment

A. Medications cart, cassettes with drawers, unit dose package materials, measuring and weighing devices, Pyxis machine, labels, sterile compounding supplies and equipment, stationery supplies necessary for record keeping and patient profiles.
B. Textbooks, overhead, videotapes, multimedia cart, charts.
C. College library with generalized and specialized references.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Objective exams
Lab practical exams
Quizzes
Laboratory assignments

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture presentations and classroom discussion regarding topics
Small group recitation sessions to discuss concepts
Laboratory

Representative Text(s) and Other Materials

Ballington, Don, and Robert Anderson. Pharmacy Practice for Technicians, 6th ed.. 2017.

American Pharmacists Association, Perspective Press. The Pharmacy Technician, 7th ed.. 2020.

McCartney, Lisa. Sterile Compounding and Aseptic Technique: Concepts, Training and Assessment for Pharmacy Technicians, 2nd ed.. 2018.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

Weekly reading assignments from text, online curriculum, lab manual, and outside sources ranging from 10-15 pages per week.

Discipline(s)

Pharmacy Technology