Hospital Pharmacy

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Hospital Pharmacy

A hospital department responsible for receiving, storing, and distributing medications, chemicals, medical, pharmaceutical, & surgical supplies to:

- hospitalized patients
- patients being discharged
- hospital employees
- other persons in emergency situations

Hospital Pharmacist

- Works in hospitals, clinics.
- advise the medical staff on the selection & effect of drugs, monitor patient's drug regimens, & evaluate drug use patterns in the hospital.
- common to specialize in specific aspects of drug therapy, i.e. Psychopharmacy, Oncology, Drug Information, Radiopharmaceuticals, or Pediatrics.

Hospital PharmacistTypes

Inpatient Pharmacist	Outpatient Pharmacist
Provides medications & prepares injectables for hospitalized patients.	Similar to retail pharmacy in a hospital setting.
Mainly communicate with doctors and nurses because their patients do NOT "physically" bring in their prescriptions	Mainly provides service to patients who can "physically" bring in their prescriptions to pharmacy.

Responsibilities of Hospital Pharmacists

- **Dispensing & distributing** medications for inpatients or outpatients in the hospital setting.
- **Counseling** patients on usage of medicines.
- **Collaborating** with physicians, nurses on the safest & most effective course of medicines & drugs.
- **Ensuring the prevention** of harmful drug interactions or reactions.
- **Monitoring** patients for any side effects to medications.

*** role varies greatly depending on the size of the hospital & services that are provided.

Hospital Pharmacy Services

1- Supply & dispensing	- Medicines supply to inpatients & outpatients - Medical gases supply - Cytotoxic dispensing
2- Provide services	- Clinical pharmacy - Drug Information services
3- Committees	- Pharmacy & Therapeutic Committee - Infection Control Committee.
4- include special units	- Total Parental Nutrition TPN - extemporaneous preparation

Steps for Drug Distribution

- required to get drug to patient
- Methods vary in each hospital
- Pharmacy is responsible
- Sequential processes
  - purchasing, storing, preparing, delivering medications
- Physician orders drug ←→ Patient received drug

Steps for Drug Distribution

1. Drug must be in inventory
2. Medication order must be written
3. Order reviewed & verified by pharmacist
4. Medication order must be processed
5. Drug dispensed/delivered
6. Drug administered to patient
7. Physicians, nurses, pharmacists monitor patient

Pharmacy's Roles in Medication Use Process

- Medication Use Process can impact patient health outcome or costs.
- Pharmacists should be involved in controlling or influencing any step of the process.
- thus have direct or indirect roles in:
  1. Prescribing
  2. Transcribing
  3. Dispensing
  4. Administration
  5. Monitoring

Prescribing

- Usually by physicians and authorized health care professionals
- Pharmacists may have this privilege.
- Pharmacists also INDIRECTLY influence prescribing by:
  - acting as information resources about medications
  - providing feedback about the quality of prescribing
  - developing prescribing protocols through the formulary system

Transcribing

- The process by which a prescriber's written order is copied and either manually or electronically entered into pharmacy records.
- An opportunity for error, especially when done manually.

Dispensing

- The act of physically transferring the drug product following review & approval of the prescription to the area responsible for administering the medication to the patient.
- Errors can occur including (but not limited to):
  - Wrong drug
  - Wrong dose
  - Wrong dosage forms

Administration

- managed by nurses
- errors at this point **cannot be corrected**
- Pharmacists can help improve the safety of medication administration by:
  - clearly labeling the medications&bar coding systems
  - using unit dose packaging
  - reducing the time & effort in accessing drugs (e.g. using decentralizedautomated dispensing device)
  - using technology that reduces administration errors (smart infusion pumps)

Monitoring

Monitoring the patient's response to medicine is a critical phase where pharmacists play a vital role, including:

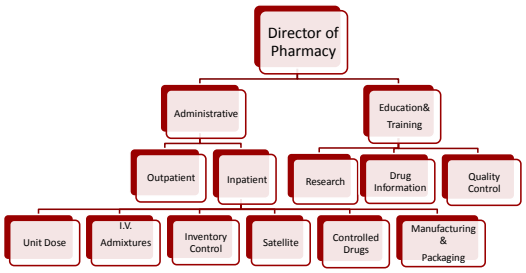
- reviewing lab values correlated with expected therapy outcomes
- other objectives & subjectives that indicate drug effectiveness or toxicity

Does working in a hospital pharmacy have any advantage??

Hospital pharmacists have exposure to many complicated & unique therapy needs, i.e.:

- I.V. medication therapy
- Nutrition (TPN)
- Specific needs (Pediatrics & Elderly)
- Emergency situations (code blue for cardiac arrest)

Hospital Pharmacy Organization



Administrative Division:

1. Plan & coordinate department activities
2. Develop policies
3. Schedule personnel & provide supervision

Outpatient Pharmacy

Outpatient Pharmacy

- Many hospitals have at least one Outpatient Pharmacy
- Similar to community pharmacy but without ……. ?
- Provides medication services to:
  - Hospital clinic patients
  - Discharged patient from inpatient setting
  - Patients with prescriptions written in the Emergency Department

Outpatient Pharmacy

- Provides medication review service & medication counseling to patients.
- Other less traditional outpatient settings include:

1. Pharmacists role in the **emergency** department usually includes:
   - Drug therapy consultation with providers
   - Error prevention & patient safety
   - Monitoring adherence to practice guidelines
   - Medication counseling
   - Reviewing patient profiles
   - Participating in resuscitation effort

Outpatient Pharmacy

2. Pharmacists role in the **Ambulatory care clinics**:
   - general (e.g. primary care, drug adherence)
   - specialized (e.g. anticoagulation)
   - Patients usually see the pharmacist one-on- one by appointment

Outpatient Pharmacy

Pharmacists have great potential to:

- improve medication-therapy outcome
- reduce errors
- reduce readmissions in outpatient clinic settings

Outpatient Pharmacy

Outpatient Location:

- Ease for patient access
- Ease of stock delivery
- Adequate space allowed for all functions
- Close proximity to clinics
- Appropriate signage

Outpatient Pharmacy

Outpatient Security:

- Maintain staff safety while still allowing effective patient counseling to occur
- Glass barrier or other protective device should be available
- Easy access of alert to designated system

Outpatient Pharmacy

Outpatient Layout (arrangement):

- Consider workflow movements including review of prescriptions
- Location of dispensing & checking area should provide minimal interruption
- Environment should be suitable for patients & pharmacists
- Area of counseling
- Adequate storage space


FIGURE 1
Prescription Drop-off/Pick-up Area


FIGURE 2
Prescription Filling Station


FIGURE 3
Modular Prescription Casework


FIGURE 4
Appropriate storage area

Outpatient Pharmacy

Outpatient Equipment:

- Bench space
- Medication storage
- Packaging & Compounding
- Cytotoxic& hazardous drug products
- Drug Information
- Consultation Space
- Office & meeting space
- Automation
- Computerized Systems, Telephones, Printers

Outpatient Pharmacy

Bench space:

Helpful in dispensing step

Medication storage:

- Should be stored under proper conditions of (sanitation, temperature, light, moisture, ventilation, segregation, & security)
- to ensure medication integrity & personnel safety throughout the hospital.

Outpatient Pharmacy

Packaging & Compounding:

- Should have suitable work environment
- to promotes efficiency & minimizes potential for contamination.

Cytotoxic & hazardous drug products:

- Special precautions, equipments, & training for storage, handling, & disposal of cytotoxic & other hazardous drug products should exist.
- to ensure safety of personnel, patients,& visitors.

Outpatient Pharmacy

Drug Information:

- Adequate space, information resources & communication technology should be available
- to facilitate the provision of drug information.

Consultation Space:

- a private area for pharmacist-patient consultations should be available
- to enhance patient's knowledge & compliance with prescribed medication regimen.

Outpatient Pharmacy

Office & meeting space:

Should be available for administrative, educational, & training activities.

Automation:

- Automated mechanical systems & software are useful in promoting accurate & efficient medication ordering, preparation, drug distribution, & clinical monitoring.
- Safely used & do not hinder the pharmacist review of medication orders before the administration of first doses.
- But, pharmacy personnel must supervise the stocking of medications in dispensing machines.

Outpatient Pharmacy

Computerized Systems, Telephones, Printers:

Computer resources should be used to support:

- secretarial functions

- maintain patient medication profile records

- perform patient billing procedures

- manage the inventory

- interface with other available computerized systems to facilitate the continuity of care to & from other care settings.

Outpatient Pharmacy

Computerized Systems, Telephones, Printers:

Telephone should be available to communicate with other health care providers.

Printers used to print labels and should include:

Outpatient Pharmacy

Prescribing Labels:	
1. Patient's full name	7. Quantity dispensed
2. Patient's location (or address)	8. Dose with clear instructions
3. Patient's I.D. (if inpatient)	9. Cautionary labels
4. Name of medication (generic form)	10. Specific directions, including indication for use (when an agent may be prescribed for treatment of multiple disease states)
5. Dosage form & route of administration	11. Refills
6. Strength	12. Expiration date