

# HOSPITAL PHARMACY

## ORGANIZATION AND MANAGEMENT



**Centurion**  
**UNIVERSITY**

**Suman Kumar Mekap**  
**Asst. Professor**  
**CUTM, Bhubaneswar**

# Introduction of the Hospital Pharmacy



- ❖ Department of hospital which deals with procurement, storage, compounding, dispensing, manufacturing, testing, packaging and distribution of drugs.
- ❖ It is also concerned with education and research in pharmaceutical services.
- ❖ Hospital Pharmacy is controlled by a professionally competent and a qualified pharmacist.

# Definition of the Hospital Pharmacy :

Hospital pharmacy is the department, service or a domain in the hospital organization managed under the direction of a professionally competent, legally qualified pharmacist and deals with:

- Supply of drugs, medicines to nursing units
- Filling of prescriptions for ambulatory and out-patients
- Manufacturing of drugs and formulations
- Storage and dispensing of narcotic and biological products
- Supply and storage of ancillary products





# OBJECTIVES OF HOSPITAL PHARMACY

- ❑ To Professionalize the functioning of pharmaceutical services in a hospital.
- ❑ To ensure the availability of the right medication, at the right time, in the right dose, at the minimum possible cost.
- ❑ To take upon itself the functions of materials management-purchasing, storage, inventory control and flawless drug distribution system.

# OBJECTIVES OF HOSPITAL PHARMACY

- ❑ To serve as a counseling department not only to the ultimate user of the drug ; but also to the medical staff and the nursing staff by updating them on dosage regimen, by giving instructions regarding usage, possible side effects, precautions regarding food etc.
- ❑ To act as a data bank on drug utilization.
- ❑ To act as a profit centre and cost centre in a hospital.





# OBJECTIVES OF HOSPITAL PHARMACY

- ❑ To participate in research projects.
- ❑ To plan, organize and direct pharmacy policies procedures in keeping with the established policies of the hospital.
- ❑ To implement decisions of the Pharmacy Therapeutics Committee.
- ❑ To co-ordinate and co-operate with other departments of a hospital

# Functions of hospital pharmacy

- ❖ Provide specifications for the purchase of drugs, chemicals, biological etc.
- ❖ Proper storing of drugs.
- ❖ Manufacturing and distribution of medications such as transfusion fluids, parenteral products, tablets, capsules, ointments, and stock mixtures.
- ❖ Dispensing and sterilizing parenteral preparations which are manufactured in hospital.
- ❖ Dispensing of drugs as per the prescriptions of the medical staff of the hospital.



# Functions of hospital pharmacy

- ❖ Filling and labelling of all drug containers from which medicines are to be administered.
- ❖ Management of stores which includes purchase of drugs, proper storage conditions, and maintenance of records.
- ❖ Establishment and maintenance of “Drug Information Centre”.
- ❖ Providing co-operation in teaching and research programmes.
- ❖ Discarding the expired drugs and containers worn and missing labels.



CASPARA  
Beauty

**purifying**

DEEPENING  
MOISTURIZING

CREAM  
HYDRATANTE

50 ml / 1.7 fl.oz.

Drug Facts	
Indications	Moisturizing
Directions	Apply to clean, dry skin.
Warnings	Do not use if you have a known hypersensitivity to any of the ingredients.
Directions	Apply to clean, dry skin.
Warnings	Do not use if you have a known hypersensitivity to any of the ingredients.
Directions	Apply to clean, dry skin.
Warnings	Do not use if you have a known hypersensitivity to any of the ingredients.
Directions	Apply to clean, dry skin.
Warnings	Do not use if you have a known hypersensitivity to any of the ingredients.





# Functions of hospital Pharmacy

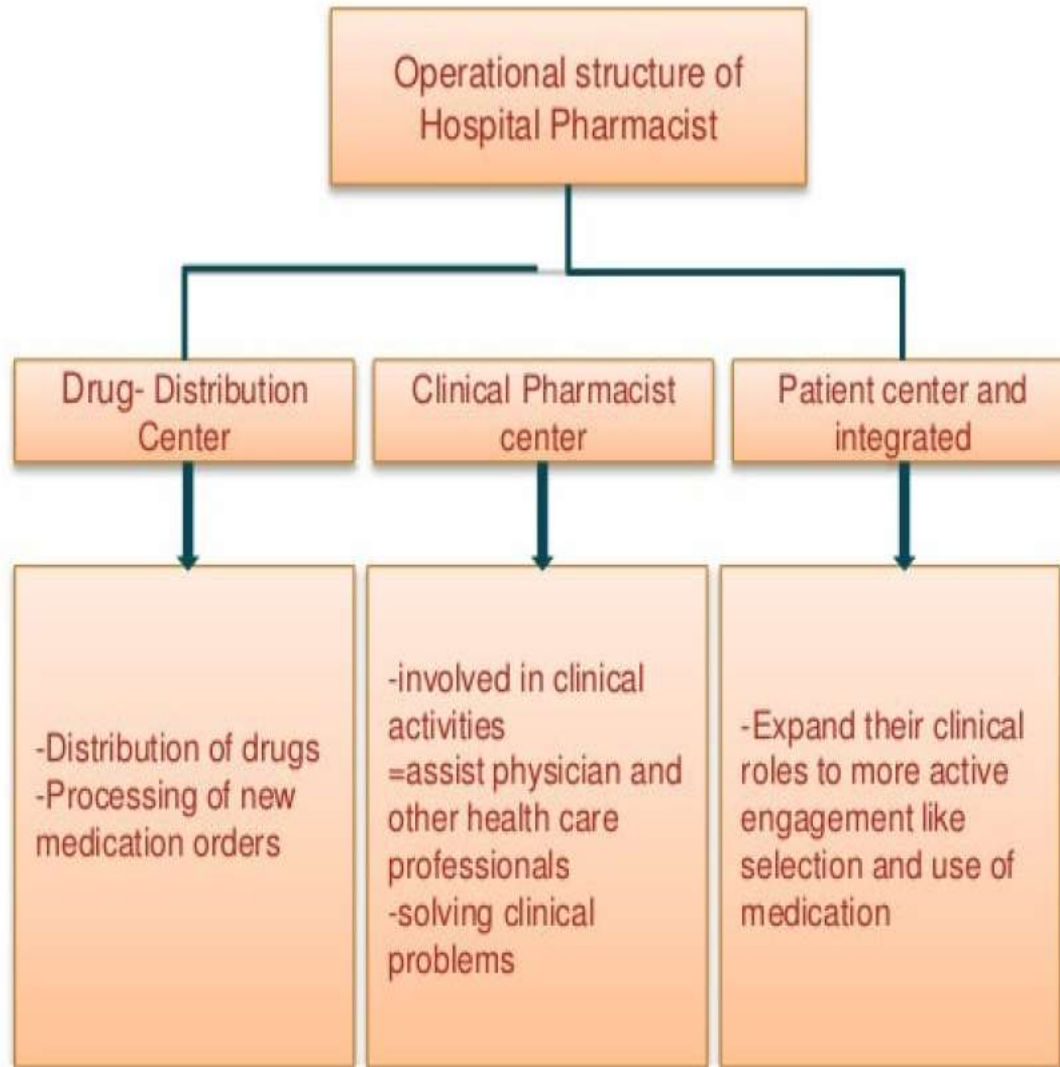
- ❑ To provide and evaluate pharmaceutical services
- ❑ To draw a plan for hospital pharmacy and evolve responsibilities to assistant pharmacist, storekeeper, nursing staff etc.
- ❑ To establish liaison between administrative authorities and medical doctors
- ❑ To estimate the requirement for the department and enforce the policies for recruitment of adequate and competent staff.
- ❑ To maintain clinical and administrative records and reports



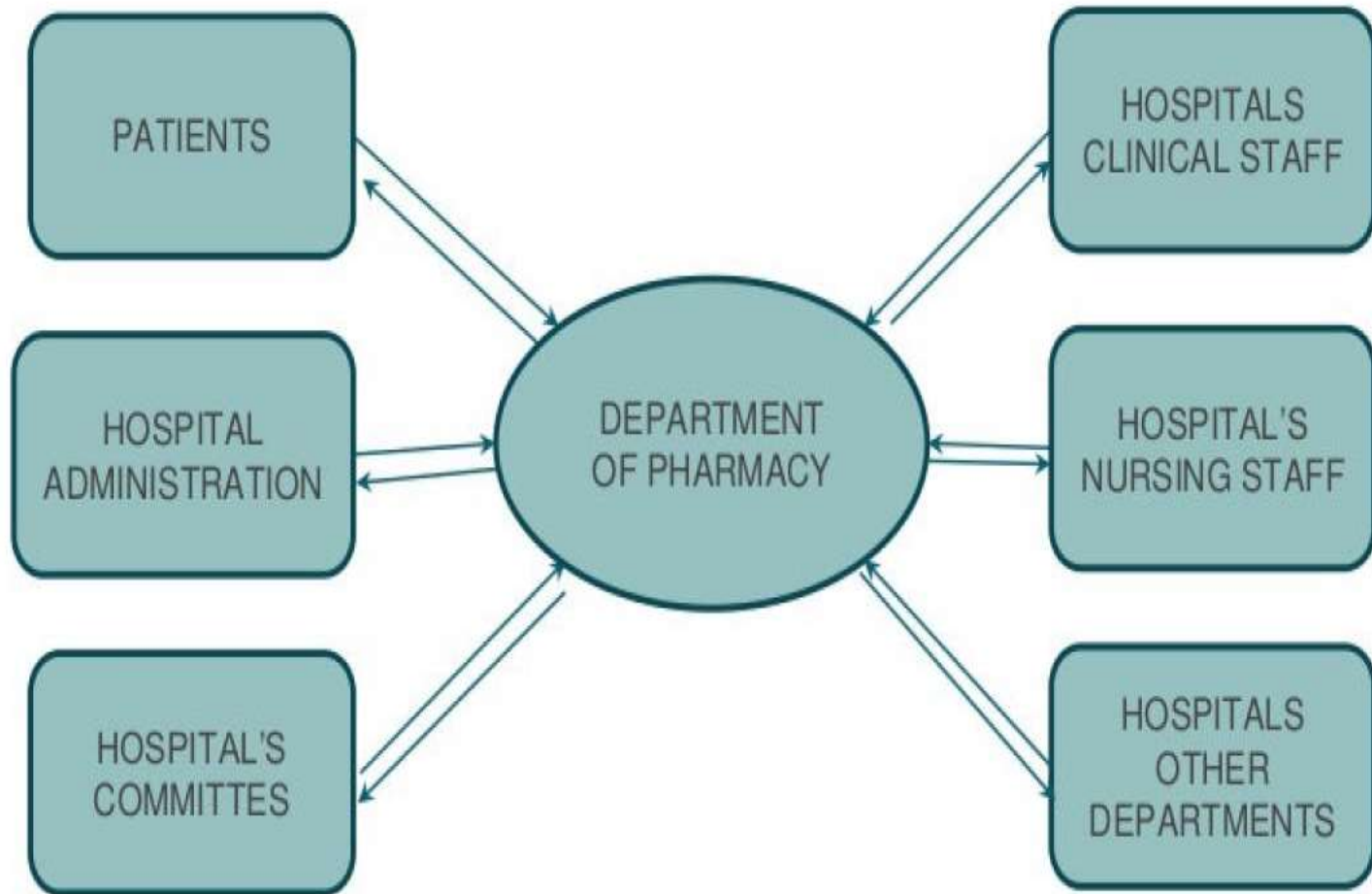
# Functions of hospital Pharmacy

- ❑ To estimate the needs of facilities, supplies and equipments to see proper control of inventory, stocks, dispensing and manufacturing of medicaments.
- ❑ To initiate and participate in research projects designed for improvement of patient care
- ❑ To participate in safety programme of the hospital.

# OPERATIONAL STRUCTURE OF HOSPITAL PHARMACIST



# Set up of hospital pharmacy



# Suggested pattern of a setup of hospital pharmacy

THE DIRECTOR OR DEAN OR MEDICAL SUPERINTENDENT

DIRECTOR OF PHARMACEUTICAL SERVICES  
(M.PHARM PREFERABLY WITH PHARMACOLOGY)

PHARMACY IN-CHARGE

DISPENSING AND  
DISTRIBUTION OF  
DRUGS

Outdoor indoor  
Bpharm assisted by  
Dpharm as junior  
pharmacist

MANUFACTURING

M.Pharm with  
specialization in  
pharmaceutical  
technology

QC

M.Pharm with  
specialization in  
Analytical chemistry  
assisted by Bpharm  
trained in microbiology  
and pyrogen testing

DRUG  
MONITORING  
SERVICES AND  
DRUGS  
INFORMATION  
SERVICES

M.Pharm with  
specialization in  
Pharmacology

MEDICAL RECORDS  
AND  
MISCELLANEOUS  
DUTIES

(B.Pharm or  
D.pharm)

# Roles & responsibilities of hospital pharmacist

- HOD have to ensure that pharmacists functioning in different areas carry out their assigned functions and duties efficiently and is aware of his responsibilities towards its staff and to the hospital administration



**Divided into 4 categories**

- A) Central Dispensing Area**
- B) Patient Care Area**
- C) Direct Patient Care Area**
- D) General Responsibilities**

# Inpatient or indoor pharmacists responsibilities

## A) CENTRAL DISPENSING AREA

- ❖ To ensure that all drugs are stored dispensed correctly
- ❖ To check the accuracy of the dosages prepared especially of intravenous admixture and unit doses
- ❖ To keep proper records and preparation of bills
- ❖ To co-ordinate the overall pharmaceutical needs of the “patient care” areas within the central dispensing area
- ❖ To ensure that the established policies and procedures laid down are followed
- ❖ To maintain professional competence particularly that keeps him updated with of information
- ❖ To communicate with all pharmacy staff regarding new developments in the area and assists in evaluations of employees of his section
- ❖ To ensure that the new personnel in his section are properly trained in the policies and procedures of the central dispensing area
- ❖ To co-ordinates the activities of the area with the available staff to make use of the best possible use of the personnel and resources

## B) PATIENT CARE AREAS

(wards operation theatres, and other departments where drugs of special categories are used)



The pharmacist in charge of this section has got following responsibilities

- ❖ To maintain a liaison with nurses
- ❖ Reviewing of drug administration in each patient periodically
- ❖ To provide instruction and assistance to the junior pharmacists as needed in dealing with difficult patients and new procedures
- ❖ To co-ordinates over all pharmaceuticals services on the running unit level.



## C) DIRECT PATIENT CARE AREAS

His responsibilities involve

- ❖ Identification of drugs brought into the hospital by the patient
- ❖ Obtaining patients medication history and communicating all the information to the physicians
- ❖ To assist in the selection of drugs products and their identities. Also to assist physician in selecting dosage pattern and schedules and assigns the timings for the drug administration
- ❖ To monitor patients total drugs therapy for

Effectiveness(ineffectiveness), side effects, toxicities, allergic drug reactions; their distribution and concentration in organs and tissues by pharmacokinetic and pharmacodynamic studies

- ❖ Counseling patients on

Medications that are to be self administered in the hospital

Regarding the use of discharge- medicines

- ❖ Participating in cardio pulmonary emergencies by

Procurement or preparation of drugs needed..



## D) GENERAL RESPONSIBILITIES

- To provide in service training and education for  
the pharmacist  
pharmacy students  
nurses and nursing students  
physicians and medical students
- He has to provide information regarding drugs  
to the physicians, nurses, and other health care  
personnel



# Outdoor pharmacists responsibilities



- Divided into three categories
- Those regarding
  - Central dispensing area
  - Patient care areas
  - General responsibilities

## A) CENTRAL DISPENSING AREA



- ❖ Pharmacist should ensure
- ❖ Proper techniques are used for extemporaneous compounding
- ❖ Adequate record keeping and billing in respect of patient's medication particulars, records of investigational drugs, records of outpatient bills, maintaining and preparing of all records
- ❖ Correctly maintaining of prescription files
- ❖ Keep the outdoor pharmacy in a neat and tidy manner



sps0374 www.fotosearch.com



## B) PATIENT CARE AREAS

- ❖ To periodically inspect the medication areas on the nursing unit and to make sure that they are always kept adequately supplied with drugs and other articles required
- ❖ To identify the drugs brought into clinic by the patient and record the patient's medication history and communicating the same to the physicians concerned. He also assist them in selection of drugs regimen and schedules and selection of correct drug products and their entities.
- ❖ Monitoring of drugs
- ❖ To counsel the patients on proper use of their medication and prepare the medications for intravenous administration.



## C) GENERAL RESPONSIBILITIES

- ❖ To co-ordinate the overall pharmaceutical needs of the outdoor service area and exercise adequate control over such drugs
- ❖ To ensure that all drugs are handled properly such as storage of investigational drugs
- ❖ To participate in cardio-pulmonary emergencies
- ❖ To provide for in service education and training for pharmacists, pharmacy items. i.e. pharmacy students send for practical training as a part of diploma or degree courses, nurses

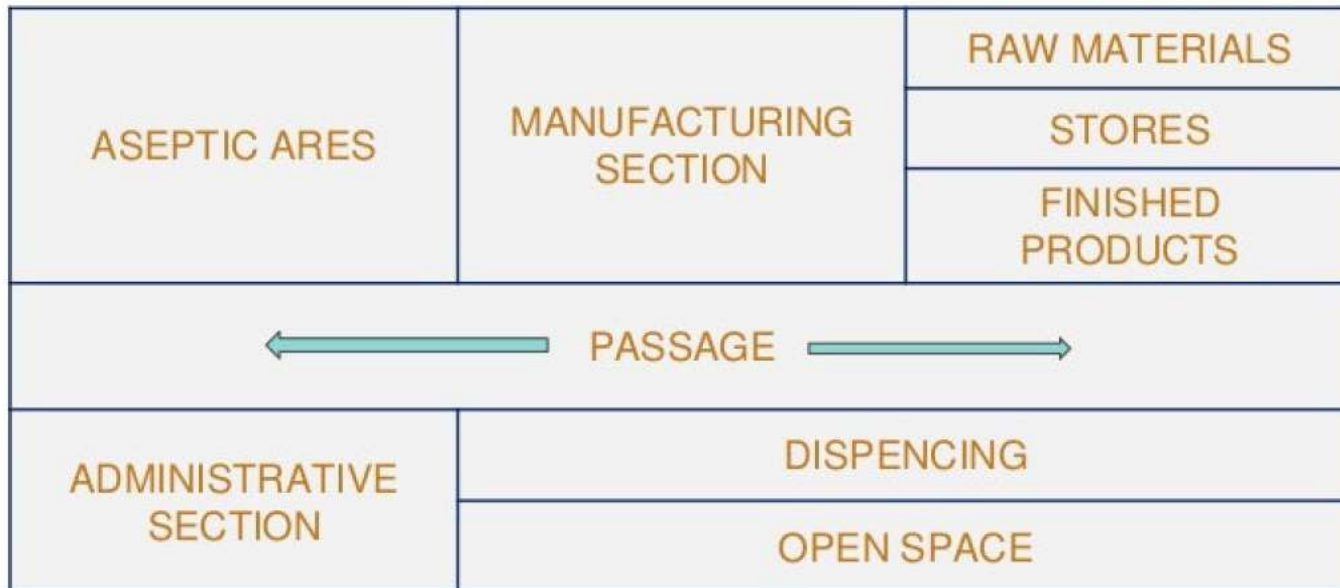




# LOCATION OF HOSPITAL PHARMACY / DESIGNING OF HOSPITAL PHARMACY

- ❑ Located in hospital premises so that patients and staff can easily approach it.
- ❑ In multi-storeyed building of a hospital, the pharmacy should be preferably located on ground floor especially the dispensing unit.
- ❑ It should be laid in such a way that there is a continuous flow of men and materials.

# Layout of hospital pharmacy







## **LOCATION OF HOSPITAL PHARMACY / DESIGNING OF HOSPITAL PHARMACY (CONT..)**

- Provision for security of dangerous drugs must be ensured.
- Provision for control of fire must be ensured, as many inflammable substances are stored there.
- Bulk quantities should not be held in the pharmacy but should be drawn from a remotely located store for dangerous goods.
- Finishes must be impervious to acid and alkali and easy to clean.
- The corridors must allow easy turning of wheeled vehicles.



## **LOCATION OF HOSPITAL PHARMACY / DESIGNING OF HOSPITAL PHARMACY (CONT..)**

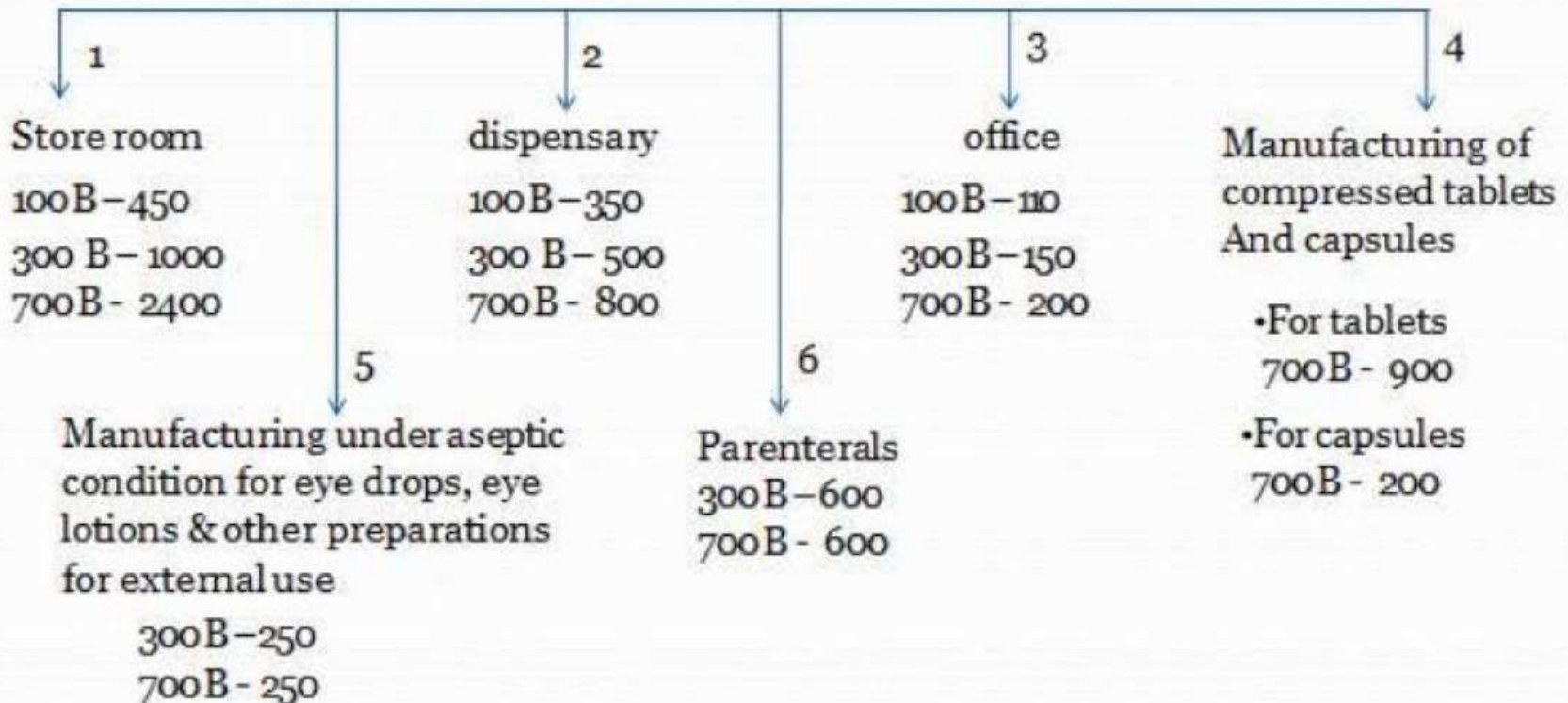
- ❑ The sub-department must be vertically separated.
- ❑ Out-patient pharmacy must be well furnished to give pleasant look.
- ❑ It should be provided with proper seating facilities for waiting patient.
- ❑ It should display educative or informative posters on health for reading to pass leisure time of waiting.
- ❑ From the out-patient department, visitor should have a positive image of pharmacy.



## FLOOR SPACE REQUIREMENTS

- ❖ 250 sq. feet is the minimum required area for any sized hospital.
- ❖ 10 sq. feet per bed in 100 bedded hospital.
- ❖ 6 sq. feet per bed in 200 bedded hospital.
- ❖ Floors of pharmacy should be smooth, easily washable and acid resistant.
- ❖ In manufacturing sections, drains should be provided, walls should be smooth, painted in light colour.
- ❖ Wooden cabinets are laminated.
- ❖ Fluorescent lamps are placed above prescription counter.
- ❖ Counter for Bunsen burner are also required.

# Requirements On The Basis Of Bed Strength (Area in sq. feet)





## Pharmacist requirement on the basis of bed strength

Bed strength	No of pharmacist required
Upto 50 beds	3
Upto 100 beds	5
Upto 200 beds	8
Upto 300 beds	10
Upto 500 beds	15

# PERSONNEL REQUIREMENT IN HOSPITAL PHARMACY

- ❖ No standard rules regarding the requirement of personnel for inpatient pharmacy.
- ❖ Number of pharmacists required for a hospital are calculated on the basis of workload, and the number of bed available.
- ❖ For a small hospital minimum 3 pharmacist are required.
- ❖ As the number of bed increases, the number of pharmacist also increases.
- ❖ Pharmacist should possess adequate pharmacy qualification and experience.
- ❖ If manufacturing drugs is involved in pharmacy, adequate number of technicians, assistants, peons etc. required.



## **PERSONNEL REQUIREMENT IN HOSPITAL PHARMACY**

- ❑ In a hospital pharmacy involved in manufacturing of drugs and formulations should have the manufacturing chemists and analytical chemists.
- ❑ For 50 bedded, 100 bedded, 200 bedded, 300 bedded and 500 bedded hospitals 3, 5, 8, 10 and 15 pharmacists are required.
- ❑ For a big sized hospital, one pharmacist is recommended for 133 patients.

# REQUIREMENTS AND ABILITIES REQUIRED FOR HOSPITAL PHARMACIST

- ❑ **REQUIREMENTS REQUIRED**
- ❑ The Chief pharmacist or director should have minimum post graduate degree in pharmacy preferably in pharmacology or hospital pharmacy.
- ❑ Manufacturing chemist should be graduate in pharmacy with minimum 18 months experience in manufacturing process of drugs and formulations.
- ❑ Analytical Chemist should be post-graduate in pharmaceutical chemistry or analytical chemistry.
- ❑ Registered pharmacist and pharmacist-cum-clerk should have diploma in pharmacy and should be registered in state pharmacy council.



# REQUIREMENTS AND ABILITIES REQUIRED FOR HOSPITAL PHARMACIST

## ABILITIES REQUIRED

1. Technical ability Ability to develop a manufacturing section
  - a. Chief of pharmacy is responsible
  - b. Must be familiar with Health care system
  - c. Co-ordination Planning and integrating professional services Budgeting Inventory control
    - a. Cost review
    - b. Cost effectiveness
    - c. Records & Reports





# REQUIREMENTS AND ABILITIES REQUIRED FOR HOSPITAL PHARMACIST (CONT...)

## provision of comprehensive information on drug

- Primary source of information Maintenance,
- Evaluation and Transmittance of information
- Must have basic science knowledge Knowledge of drug action for evaluating kinetics of drug in the body,
- Knowledge of chemistry, pharmacology

# REQUIREMENTS AND ABILITIES REQUIRED FOR HOSPITAL PHARMACIST (CONT...)

## Product Formulation and Packaging

- ❑ For the products which are not commercially available
- ❑ Principles involved in formulation and preparation of pharmaceutical dosage forms
- ❑ Multi dose prepackaging or Unit dose packaging
- ❑ IV admixtures and TNP
- ❑ Radio pharmacy
- ❑ Must be able to evaluate Economic factors





# REQUIREMENTS AND ABILITIES REQUIRED FOR HOSPITAL PHARMACIST (CONT...)

- ❑ Participation in Research
  - ❑ As a pharmaceutical team member in medical research
  - ❑ Must be able to initiate research himself and conduct pharmaceutical research
  - ❑ Must have ability to
    - ❑ Design Experiments
    - ❑ Collect appropriate data
    - ❑ Interpret the data
    - ❑ Draw conclusions
    - ❑ Transmit the results
  - ❑ Orientation and Training in Research methodology
  - ❑ Pharmaceutical research related to improving pharmaceutical preparations.



# REQUIREMENTS AND ABILITIES REQUIRED FOR HOSPITAL PHARMACIST (CONT...)

## Patient oriented services

- Drug information
- Collection of patient history
- Patient education
- Drug use review
- Monitoring of specific ADR



# **FACILITIES REQUIRED IN HOSPITAL PHARMACY**

- ❑ In smaller hospitals, with one pharmacist only, one room is required for pharmacy, having a combination of dispensing, manufacturing, administrative and all other sections of complete pharmaceutical service.
- ❑ For sterile products there should be a separate room or area.
- ❑ In large hospitals, with 200 or more beds, departmentalization of pharmacy activities is required.



# FACILITIES REQUIRED IN HOSPITAL PHARMACY

- ❖ A separate area is required for :-
- ❖ Inpatient services and unit dose dispensing
- ❖ Outpatient service
- ❖ An office for the chief pharmacist
- ❖ A compounding room
- ❖ Prepacking and labelling room
- ❖ A store room
- ❖ Sterile products room
- ❖ A separate area for drug information services and space assigned on various nursing units for unit dose drug administration.



## Equipments required in hospital pharmacy

- ❖ Prescription case Drug stock cabinets with proper shelves and drawers.
- ❖ Sectional drawer cabinets with cupboards bases.
- ❖ Work tables and counters for routine dispensing.
- ❖ Sink with drainboard and Cabinet to store mortar and pestles.
- ❖ Cabinet for glass utensils, flasks, funnels and beakers.
- ❖ Refrigerator of suitable capacity.
- ❖ Narcotics safe with individually locked drawers.
- ❖ Office desk with telephone connection and file cabinet.
- ❖ Dispensing window for nurses and outpatients.

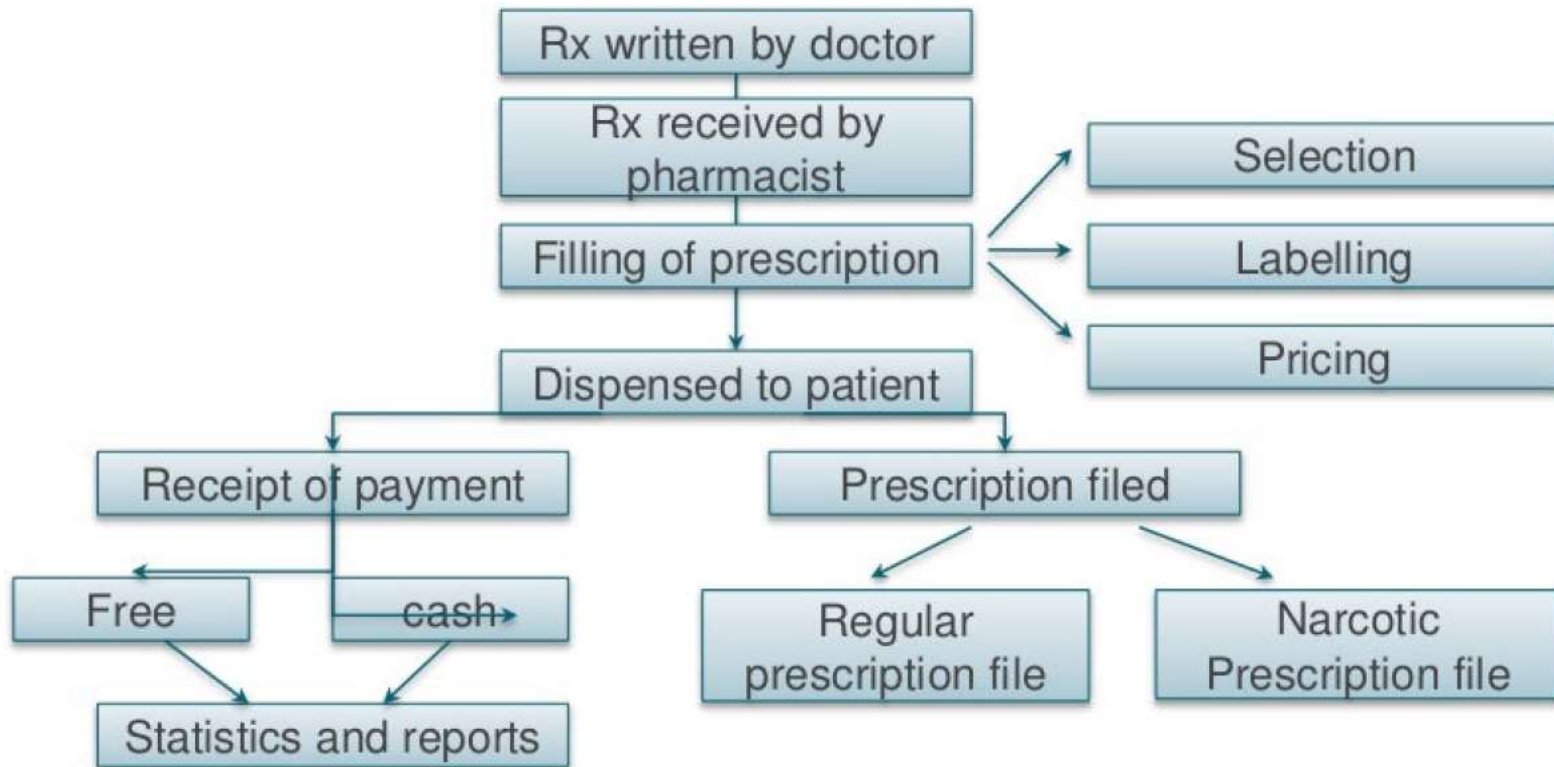




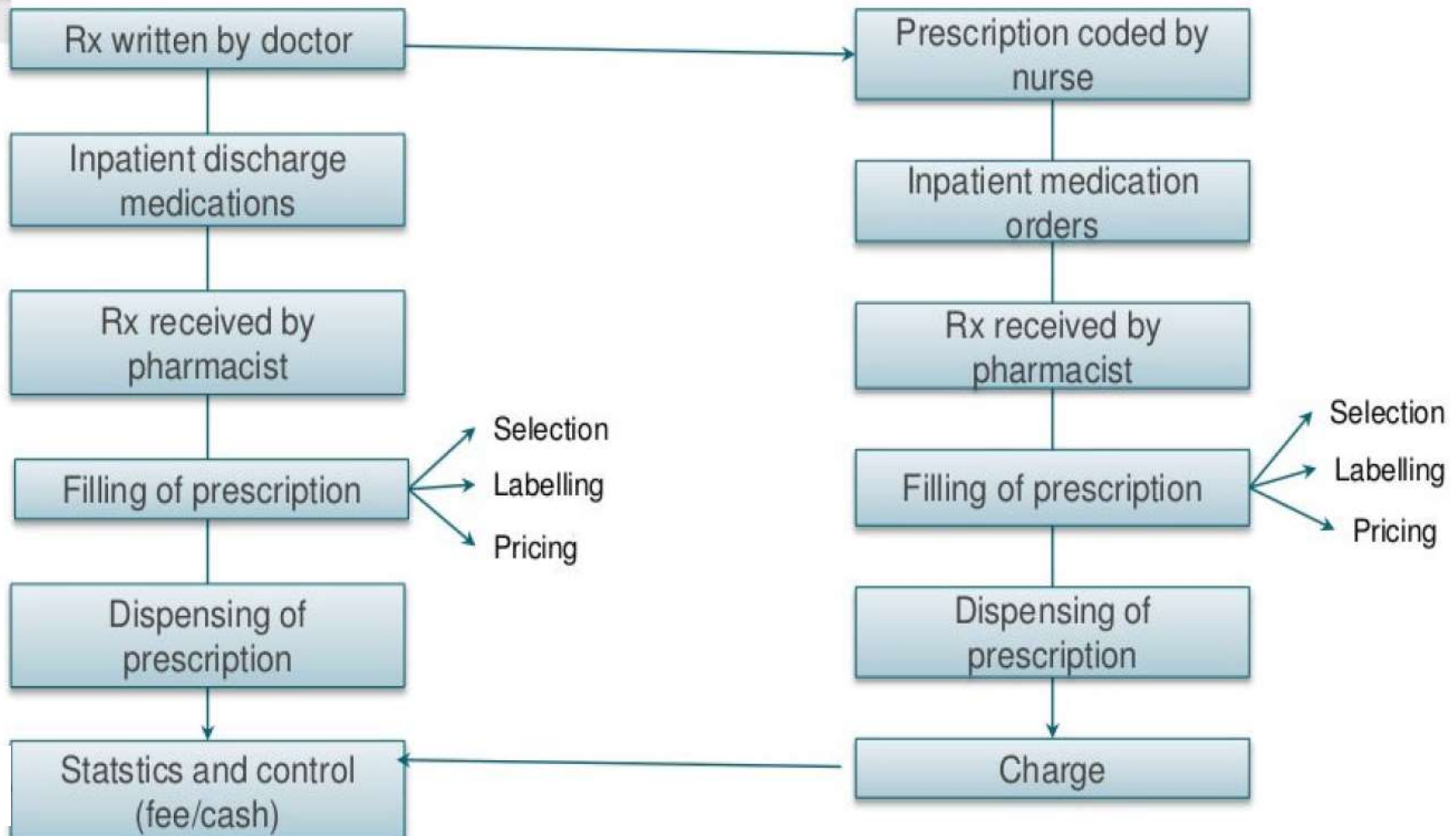
## Flow Chart of Pharmaceuticals/Drugs and Patient

- ❑ **Step I** : Registration step
- ❑ **Step II** : General physiological parameters are recorded and guided to respective clinical department on the basis of symptoms reported by the patient.
- ❑ **Step III** : In this majority of patients come to the pharmacy for medicines and rest of patients are admitted or returned after giving advice.

# General Flow chart for outpatients

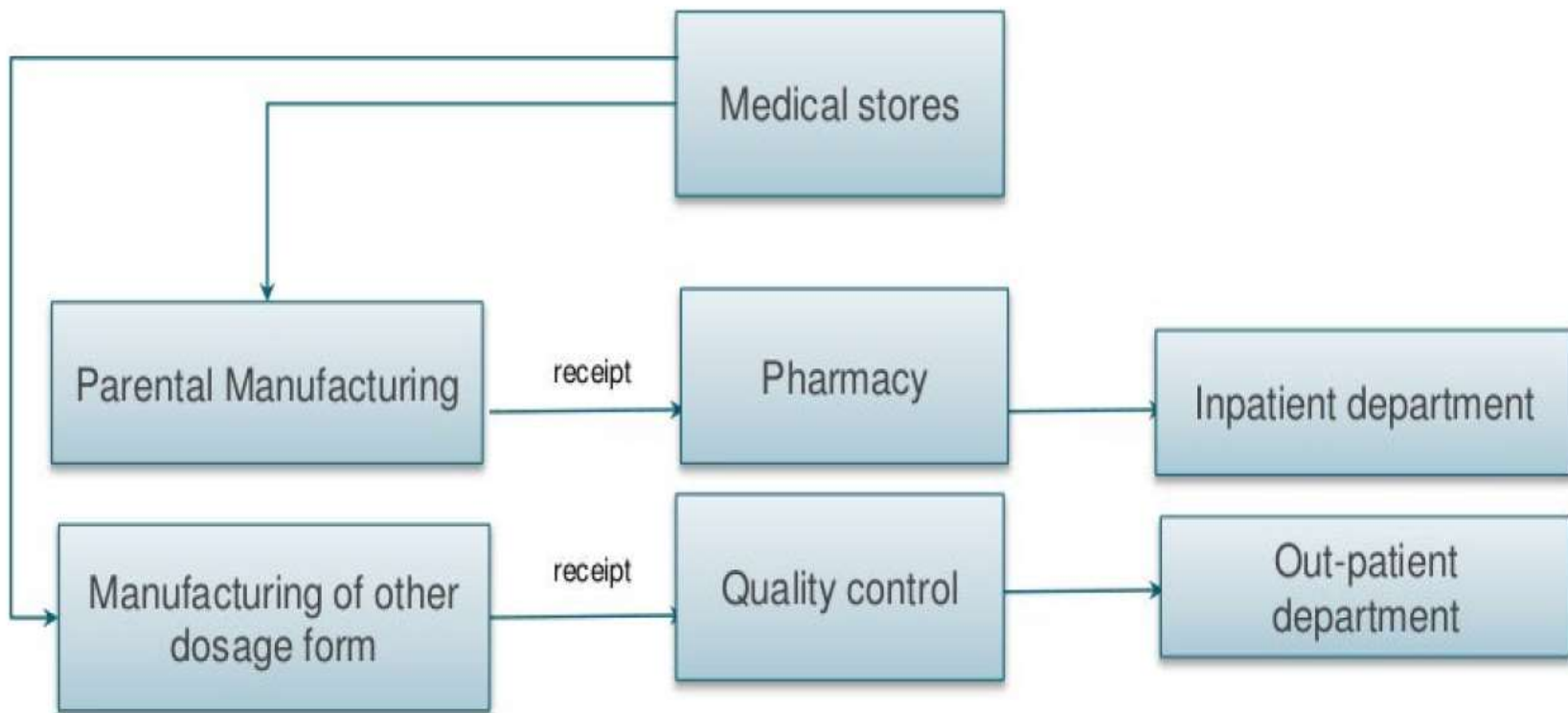


# General Flow chart for inpatients



# Flow chart for materials

Flow chart for materials



**THANK YOU**