

A Review Paper on: Hospital Pharmacy

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Abstract:

Obtaining, storing, and dispensing pharmaceutical preparations while following procedures that restrict the spread of infectious pathogens to patients are the hospital pharmacist's responsibilities. Dispensing anti-infective medications and keeping pertinent records (potency, incompatibility, storage conditions, and deterioration) accessible. obtaining, preserving, and producing vaccinations or sera as necessary Keeping track of the antibiotics given to the medical departments

Keywords: Hospital Pharmacy, Role of Hospital Pharmacist, function of hospital pharmacy, Dispensing of medicine

Introduction:

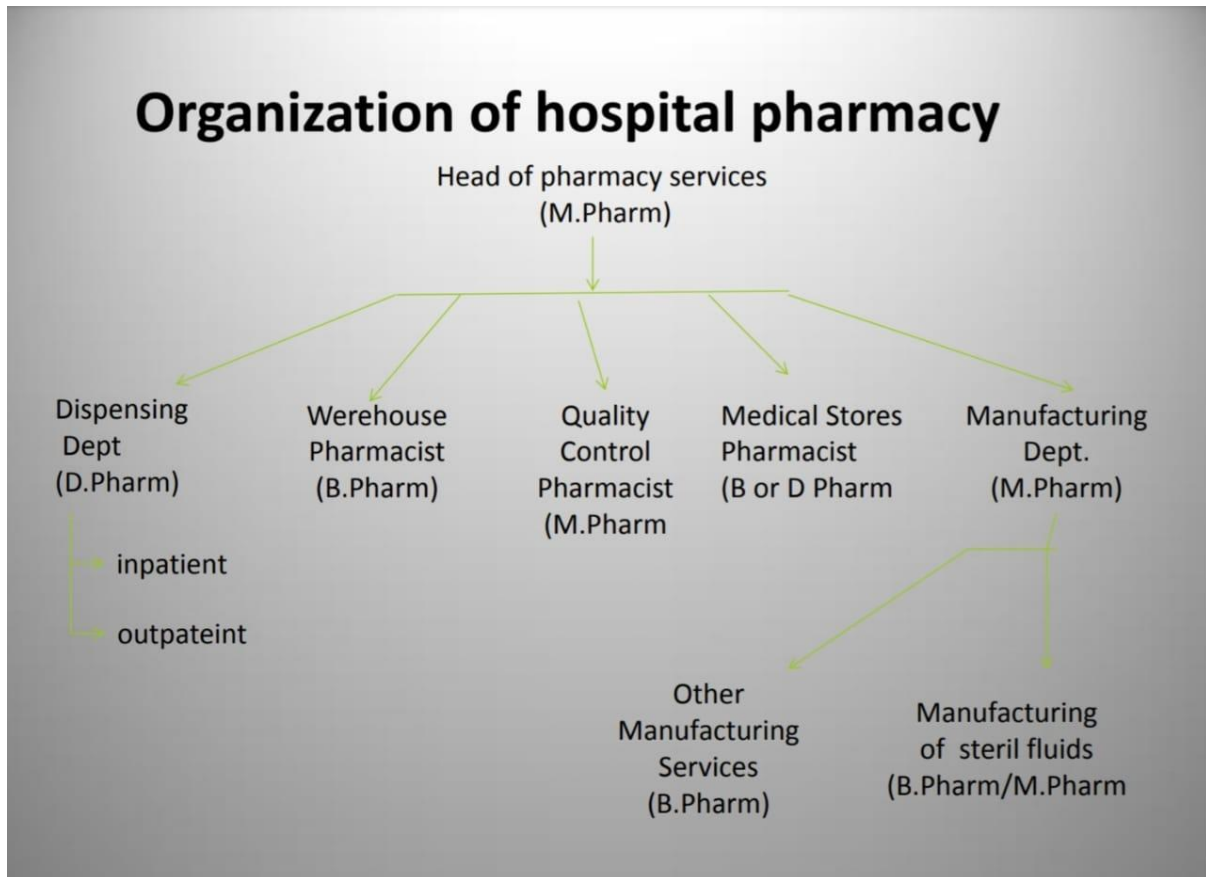
The practice of pharmacy within the hospital under the supervision of a professional pharmacist is known as hospital pharmacy.

- Hospital pharmacy is one of the most important department among several departments of a hospital.
- Hospital pharmacy may be defined as that department of the 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.
- A hospital pharmacy is controlled by a professionally competent and a qualified pharmacist.
- Hospital pharmacy is the health care service, which comprises the art, practice, and profession of choosing, preparing, storing, compounding, and dispensing medicines and medical devices, advising healthcare professionals and patients on their safe, effective and efficient use.
- Hospital pharmacy is a specialised field of pharmacy which forms an integrated part of patient health care in a health facility.
- Hospital pharmacy is the profession that strives to continuously maintain and improve the medication management and pharmaceutical care of patients to the highest standards in a hospital setting. Function of hospital pharmacy:
 - To provide & evaluate pharmaceutical services and thereby supporting the medical staff, with due consideration of the objectives and policies of the hospital.
 - To draw a plan for hospital administration and to evolve responsibilities of each category of personnel involving pharmaceutical services like assistant pharmacist, storekeeper, nursing staff etc.
 - To establish liaison between administrative authorities and medical doctors who will order medicines and ancillary products in the hospital.
 - To estimate the requirements of the department and enforce the policies and procedures of the recruitment of adequate and competent staff.

- To develop and maintain an effective system of clinical and administrative records and reports.
- To participate in and adhere to the financial plan of the operation for the hospital.
- To estimate the needs for facilities, supplies and equipment and to see that there is proper control of inventory, stocks, dispensing and manufacturing of the medicaments (if carried out in hospital)
- To initiate, utilize and participate in research projects designed for the improvement of a patient care and of other administrative and hospital services.
- To participate and adhere to the safety programs of the hospital.
- To participate and/or facilities all educational programmes which include student experiences in the department.



1. Forecast of demand.
2. Selection of reliable suppliers.
3. Prescribing specifications of the required medicament.
4. Manufacturing of sterile or non-sterile preparations.
5. Maintenance of manufacturing records.
6. Quality control of purchased or manufactured products.
7. Distribution of medicaments in the wards.
8. Dispensing of medicaments to out-patients.
9. Drug information source in hospitals.
10. Centre for drug utilization studies.
11. Implement recommendations of the pharmacy and therapeutic committee.



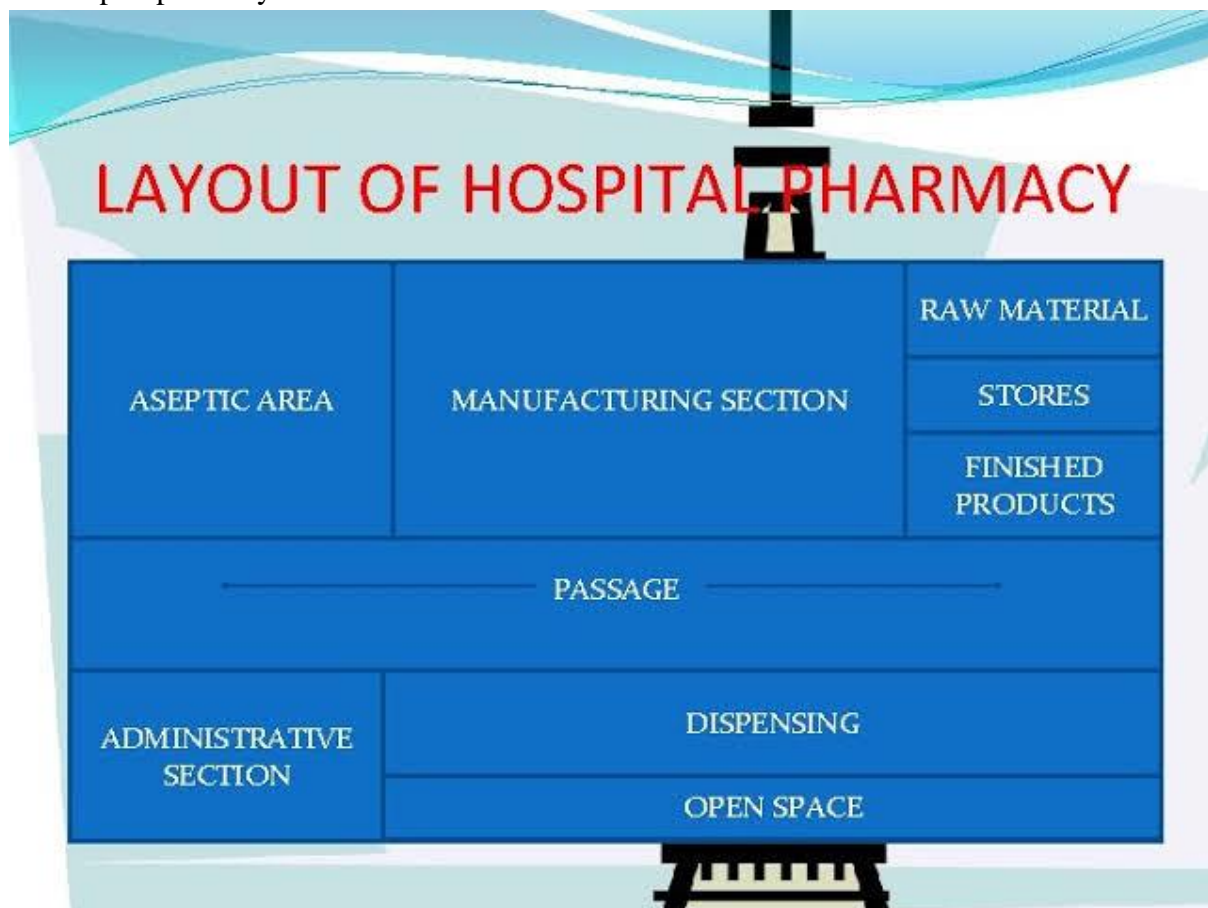
Objective of hospital pharmacy:

1. To professionalize the functioning of the pharmaceutical services in hospitals.
2. to ensure availability of the required medication at an affordable cost at the Required time.
3. To plan, organize and implement the policies of the pharmacy.
4. To perform functions of management of material, purchase, storage of essential items.
5. To maintain strict inventory of all items received and issued.
6. To counsel the patient, medical staff, nurses and others involved in patient care
7. On the use of drugs, possible side effects, toxicity, adverse effects, drug interactions etc.
8. To serve as a source of information on drug utilization.
9. To manufacture drugs, large/ small volume parenteral which are critical for use in patients.
10. To participate in and implement the decisions of the pharmacy and therapeutics committee.
11. to organize and participate in research programmes, educational programmes,
12. To provide training to various members of the patient team on various aspects of drug action, administration and usage.
13. To engage in public health activities to improve the well-being of the population.
14. To interact, cooperate and coordinate with various other departments of the hospital.
15. To ensure the availability of right medication, at right time, in the right dose at the minimum possible cost.
16. To professionalize the functioning of pharmaceutical services in a hospital.
17. To act as a counselling department for medical staff, nurses and for patient.
18. To act as a data bank on drug utilization.
19. To participate in research projects.

Location of hospital pharmacy:

1. The hospital pharmacy should be 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.
2. OPD pharmacy should give a pleasant appearance and must have enough space for seating of patients who have to wait for medicines.
3. OPD's waiting room should give a professional look.
4. It should have educative posters on health and hygiene and light literature for reading.
5. Space must be provided for routine manufacturing of stock solution, bulk powders, ointments etc.
6. The manufacturing room should be adjacent to the pharmacy

Layout of hospital pharmacy:



Infrastructure:

1. Located in the ground floor or in the first floor.
2. Sufficient space for seating of patients.
3. Waiting room for out-patients. It should contain educative posters on health, hygiene and offer literature for reading.
4. Suitable space – routine manufacturing of bulk preparations (stock solutions, bulk powders and ointments etc).
5. Office of the chief.
6. Packaging and labelling area.
7. Cold storage area.
8. Research wing.

9. Pharmacy store room.
10. Radio isotope storage and dispensing area
11. library

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.**

A separate area is required for:

1. Inpatient services and unit dose dispensing.
 2. Outpatient service.
 3. An office for the chief pharmacist.
 4. A compounding room.
 5. Prepacking and labelling room.
 6. A store room.
 7. Sterile products room.
- A separate area for drug information services and space assigned on various nursing units for unit dose drug administration.

Equipment required in hospital pharmacy includes:

1. Prescription case Drug stock cabinets with proper shelves and drawers.
2. Sectional drawer cabinets with cupboards bases.
3. Work tables and counters for routine dispensing.
4. Sink with drain board. Cabinet to store mortar and pestles.
5. Cabinet for glass utensils, flasks, funnels and beakers.
6. Refrigerator of suitable capacity.
7. Narcotics safe with individually locked drawers.
8. Office desk with telephone connection and file cabinet.
9. Dispensing window for nurses and outpatients.

Personnel requirement in hospital pharmacy:

1. No standard rules regarding the requirement of personnel for inpatient pharmacy.
2. Number of pharmacists required for a hospital are calculated on the basis of workload, number of prescriptions received and dispensed and the number of bed available.
3. For a small hospital minimum 3 pharmacist are required.
4. As the number of bed increases, the number of pharmacist also increases.
5. 5 .Pharmacist should possess adequate pharmacy qualification and experience.
6. The overall charge of the in-patient department should remain with the chief pharmacist.
7. If manufacturing of drugs is involved in pharmacy, adequate number of technicians, assistants, peons etc. Required.

Requirement & abilities required for hospital pharmacist:

1. Head of hospital pharmacy department should be a post graduate in pharmacy preferably in pharmaceuticals, pharmacology or hospital pharmacy.
2. He acts as a co-ordinator for the pharmacy and non-pharmacy staff.
3. He reports to the administrator and interacts with other medical departments.



Pharmacist requirement on the basis of bed strength

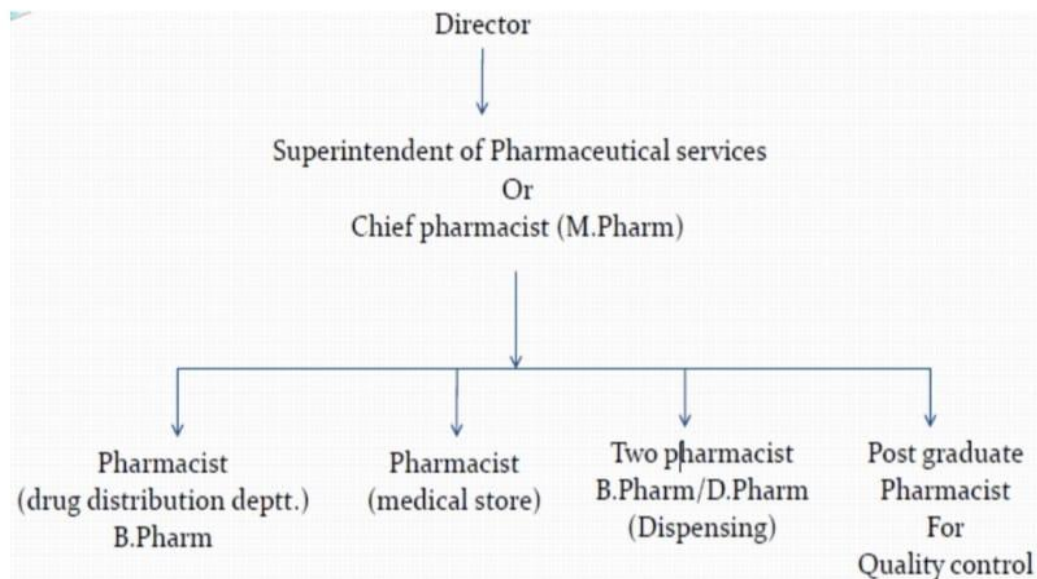
Bed strength	No of pharmacist required
Upto 50 beds	3
Upto 100 beds	5
Upto 200 beds	8
Upto 300 beds	10
Upto 500 beds	15

Abilities required for hospital pharmacy:

- **Technical Ability:** He should have thorough knowledge of basic sciences pharmacology, toxicology, route of administration, stability etc.:
A hospital pharmacist must provide information regarding proper handling of drugs.
As hospital pharmacist is a part of medical team, he must gain confidence amongst his medical colleagues through his technical competence, egg, by providing comparative evaluation of various data on drug actions, dosage, toxicity and relative cost.
- **Ability to Develop a Manufacturing Section:-** Manufacturing within a hospital requires control over supply, quality, equipment, and raw material cost.
Hospital pharmacist has to organise manufacturing function by doing proper cost-benefit analysis.
Although quality maintenance is essential because considerable quantities of drugs are required for treatment of patients (out-door as well as in door).
- **Administrative Ability:** Hospital pharmacist should be able to plan, organise and control various functions of hospital pharmacy. He should prepare work schedule for his staff. He should frame various policies and

procedures to get the work done. He should interact with his staff daily. Hospital pharmacist must maintain the legal and administrative records properly. Where patients are charged for drugs the hospital pharmacist must develop charging policies.

Flow chart for requirements of a hospital pharmacist



Material management of a hospital pharmacy:

- Management is a process involving planning, organising, staffing and controlling any organisation.
- Hospital is a very complex organisation. So emphasis should be given on management of materials in a hospital pharmacy. Financial management, human resource management and computer application are the other aspect.

Store management:

- It is the function of receiving, storing & issuing of materials. Hospital materials require huge investments. It is therefore necessary to ensure accuracy, preservation and safety of materials at all stages of store management.

Functions of store:

A store branch is generally responsible for,

- Receipt of stores- to receive, check and inspect all supplies.
- Storage-To stock all materials properly to avoid damage and pilferage.
- Issue of materials-To issue materials against a requisition.
- Documentation- To maintain accurate records of materials received, issued and stored

Management of finance of a hospital pharmacy:

- Financial management is a vital activity in any organization.

- It is the process of planning, organizing, controlling and monitoring financial resources with a view to achieve organizational goals and objectives.
- The financial management of pharmacies and health systems is a combination of the traditional management of personnel and drug and supply costs with the management of the total costs of care. It includes determining the consequences of less than optimal drug therapy, improving drug therapy, and reengineering pharmacy departments and services across all patient care settings to deliver optimal pharmacotherapy.
- In hospital pharmacy, managers are responsible for planning, organizing, and controlling resources so that the organizations in which they are employed meet their goals.
- Pharmacist managers face many such decisions: how much inventory to carry, which sources of supply to use, how to set prices, which third-party prescription plans to participate in, which drugs to include on a formulary, whether a new disease management service will be profitable, whether the hospital should open a pharmacist-managed hypertension clinic.

Department/Division wise duties of hospital pharmacist:

A] Administrative Services Division

1. Plan and coordinate departmental activities.
2. Develop policies regarding health professionals.
3. Schedule personnel and provide supervision.
4. Coordinate administrative needs of the Pharmacy and Therapeutics Committee.
5. Supervise departmental office staff.

B] Education and Training Division

1. Coordinate programs of undergraduate and graduate pharmacy students.
2. Participate in hospital-wide educational programs involving nurses, doctors etc.
3. Train newly employed pharmacy department personnel.

C] Out-Patient Services Division

1. Compound and dispense out-patient prescriptions.
2. Inspect and control all clinical and emergency services
3. Maintain prescription records.
4. Provide drug consultation services to staff and medical students.

D] Drug Information Services Division

1. Provide drug information on drugs and drug therapy to doctors, nurses, medical and nursing students.
2. Maintain the drug information centre.
3. Maintain literature files

The missions of the hospital pharmacist:

To be part of the medication management in hospitals, which encompasses the entire way in which medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution that medicines make to producing informed and desired outcomes

To enhance the safety and quality of all medicine related processes affecting patients of the hospital.

To ensure the “rights” are respected: right patient, right dose, right route, right time, right drug with the right information and documentation.

Role & responsibilities of hospital pharmacy:

A] Pharmacists role in dispensing/supply of drugs:-

One of the most important duties provided by the hospital pharmacist is the dispensing of drugs after due verification of the prescription.

- Patient confidentiality shall be maintained at all times.
- Appropriate information shall be provided to the patient or the care giver and when possible, understanding of this information should be checked.
- For all prescription handled by the pharmacy
 1. Patients details shall be checked and confirmed.
 2. Proper documentation shall be maintained.

B] Pharmacists role for promotion of rational drug use:-

- To promote rational use of drugs, the pharmacist shall involve himself in activities such as:
 1. Preparation of formularies.
 2. Critical assessment of promotional materials prepared by the drug companies.
 3. Updating the knowledge of drugs through continuing education programmes and also to organize educational programmes for health professionals.
 4. Preparation and dissemination of patient information leaflets.

C] Pharmacists role in patient counselling:-

- Upon receipt of a prescription and following a review of the patient's record, a registered pharmacist shall personally initiate discussion of matters that will enhance or optimize drug therapy with each patient or care giver of such patient.

It should include appropriate elements such as:

1. Name and description of drugs.
2. The dosage form, route of administration and duration of drug therapy.
3. Intended use of the drug and expected action.
4. Special directions and precautions for the drug.
5. Common side effects or interactions and therapeutic contraindications.

I] Techniques for self-monitoring drug therapy.

Ii] Proper storage of the drugs. Iii] Actions to be taken in case of missed dose.

D] Pharmacist role in health promotion:-

- The pharmacist should be involved in health promotion campaigns, on health topics.

Pharmacists

Should be involved in particularly drug related-topics (alcohol use, tobacco use, poison prevention etc.).

E] Pharmacists role in improving medication adherence:-

- Reviewing how patients are using medications can result in suggestions for changes in medication, dosing, or additional therapies that improve patient adherence.

F] Pharmacists role in providing drug information:-

- To provide for in service education & training for pharmacists, pharmacy students and other health care professionals.

G] Pharmacist role in managing pharmacy store:-

- Management of the stores which include: Purchase of drugs and medicines and other allied stores as per the recommendations of the pharmacy and therapeutics committee(PTC).
- Providing instructions for proper storage of such drugs and medicines. Maintenance of proper records of the drugs purchased and the distribution thereof. Storage and dispensing of narcotic and biological products.
- Supply and storage of ancillary products and articles required in the hospital.

H. Inpatient or indoor Pharmacists Responsibilities:**A. Central Dispensing Area**

- To ensure that all drugs are stored correctly
- To check the accuracy of the dosages prepared especially of
 - (a) Intravenous admixtures
 - (b) Unit doses.
- To keep proper records and preparation of bills, if any to co-ordinate the overall pharmaceutical needs of the “patient care” areas with the central dispensing area.
- To ensure that the established policies and procedures laid down are followed.
- To communicate with all pharmacy staff regarding new developments in the area.
- To maintain professional competence- Keep update with information regarding drugs in current use in the hospital, with special reference to their side effects, drug interactions, therapeutic efficacy etc., as well as their incompatibilities and stability.

B] Patient Care Areas (Wards, Operation Theatres and other departments of the hospital where drug of special categories are used)

- To maintain a liaison with nurses who are involved in the drug administration.
- Reviewing of drug administration in each patient periodically to ensure that all doses are being administered and charted accordingly.

Conclusion:

Here we conclude that the role of hospital pharmacist to provide all the information which I required to the patients. To give the required information about the prscription which is given bye the doctor to the patients. Overall, pharmacists are integral to the functioning of CDSCO and the regulatory framework for pharmaceuticals and medical devices in India. Their knowledge, expertise, and commitment to patient safety contribute significantly to the effective regulation and quality control of drugs and medical devices in the country.

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