

Hospital Pharmacy

Q1. Define hospital. State the functions of hospital.

Hospital

According to WHO, “hospital is an organization of governing body which makes the use of complicated but specialized scientific equipments and functioning through a team of trained staff”.

Hospital is an organization which provides a special facility and working for care of patient through the trained persons.

Functions of Hospital

1. To take a care of sick and injured patients.
2. Restoring and keeping up good health of community.
3. To promote good services to patient for getting relief from diseases and pains.
4. To lower the incidences of diseases through early detection and treatment.
5. To make trained and skilled physicians and nurses.
6. To maintain and distribute hospital formulary.
7. To promote research in medical, pharmaceutical and other related fields.
8. To take care of patient by using advanced knowledge and instruments.
9. To rise general standard of medicine for increasing quality of patient care.
10. To contribute in prevention of spreading of disease in the community.
11. To run the programmes like public education and vaccination.
12. It serves as a link between community and official health agencies to improve community health.
13. The bigger hospitals co-operate with smaller hospitals. Thus, hospital performs co-operative work.
14. Primary function is to take care of inpatients and outpatients.

Q2. Give the classification of hospital.

Hospital

A. On Clinical Basis

1. Types of disease

- i. TB hospitals.
- ii. Mental hospitals.
- iii. Leprosy hospitals.
- iv. Cancer hospitals.

2. Types of patient

- i. Gynaecological hospitals.
- ii. Maternity hospitals.
- iii. Pediatric hospitals.

3. Types of medicine

- i. Allopathic hospitals.
- ii. Ayurvedic hospitals.
- iii. Homeopathic hospitals.
- iv. Unani hospitals.
- v. Nature-cure centers
- vi. Physiotherapy centers.

4. Types of organ

- i. ENT hospitals.
- ii. Eye hospitals.
- iii. Orthopaedic hospitals.
- iv. Kidney hospitals

B. On Non-Clinical Basis

1. On the basis of ownership

a. Government:

- i. Central government: Railway and defence hospitals.
- ii. State government: Civil hospitals.
- iii. Local government: Municipality hospitals.

b. Non-government:

- i. Run by trust.
- ii. Run by limited company.
- iii. Run by religious body.
- iv. Other private hospitals/nursing homes.

2. On the basis of size (bed capacity)

- i. Large hospitals: > 1000 beds, e.g. KEM hospital (1600 beds).

- ii. Medium hospitals: 500 to 1000 beds, e.g. Bombay hospital (700 beds).
- iii. Small hospitals: 100 to 500 beds, e.g. Hinduja hospital (175 beds).
- iv. Very small hospitals: Less than 100 beds, e.g. PMD hospital (75 beds).

3. On the basis of cost

- i. Elite hospitals: Hospitalisation rates vary between ₹500–1200 per day.
(Like five-star hotels with facilities like TV, telephone, fridge, etc.), e.g. Jaslok and Hinduja Hospitals.
- ii. Low budget hospitals: Civil hospitals, corporation hospitals.

C. Miscellaneous Hospitals

- 1. **Accredited hospitals:** These hospitals provide facilities which are decided by council about the healthcare. In United States such hospitals are present.
- 2. **Others**
 - i. Teaching hospitals.
 - ii. General hospitals, e.g. Civil hospital.
 - iii. Hospitals for non-profit purpose, e.g. Ramakrishna Mission hospital, Kolkata.
 - iv. Hospitals for profit purpose.

Q3. Write a note on 'organization of hospital'.

- The hospital is run by the governing body or by the board of trustee or by society, trust or association.
- The governing body members are having experience, knowledge and qualification from several fields.
- The governing body/board of trustee is legally responsible for the specific activities run by the trust.
- For smooth functioning of hospital, governing body appoints the qualified and experienced person as the head of particular institution of hospital.
- Head of the hospital is called hospital administrator/director/dean of the hospital. He is the experienced and qualified person from clinical field. Mainly he/she should be having master degree from medical field and minimum 6 to 10 years experience.
- Hospital administrator is selected or appointed by governing body and is appointed by governing body as its member.

4 Hospital and Clinical Pharmacy

- The heads of all departments are the assistants of administrator.
- The department heads are having minimum master degree from their fields and they are assisted by other staff.
- The departments are classified as clinical and non-clinical departments.
- *Clinical departments:* Gynaecological department, paediatric department, ophthalmic department, surgery department.
Non-clinical departments: Pharmacy department, nursing department, laundry department, radiology department, maintenance department, etc.
- The staff pattern of each department is different and dependent on the type of services given by the department. The heads of departments are assisted by assistant heads and staff of that department.
- For radiology department, head is assisted by assistant head and other two or three technicians.
- For nursing department, the staff pattern is large. The head of nursing department is assisted by concerned assistant heads and nurses. Generally, one nurse should be made available for maximum 3 patients only. Therefore, on the basis of bed capacity of department, staff pattern of nursing department, pharmacy department is to be decided.
- For taking decision in emergency conditions and other complicated conditions the committees were prepared such as:
 - i. Temporary committees, e.g. building construction committee, joint conference committee.
 - ii. Permanent committees, e.g. executive committee, PTC, finance committee.
- Thus, the organisation of hospital is dependant on type of services offered by hospital, bed capacity of hospital (Fig. 1.1).

Q4. Write the constitution and functions of governing body of the hospital.

- Governing body is organization having legal authority about the functioning of hospital.
- It is prepared by trust/association/society.
- It is prepared to control over the functioning of hospital.

Constitution

- It is generally constituted by persons from medical, pharmacy, nursing and other fields.

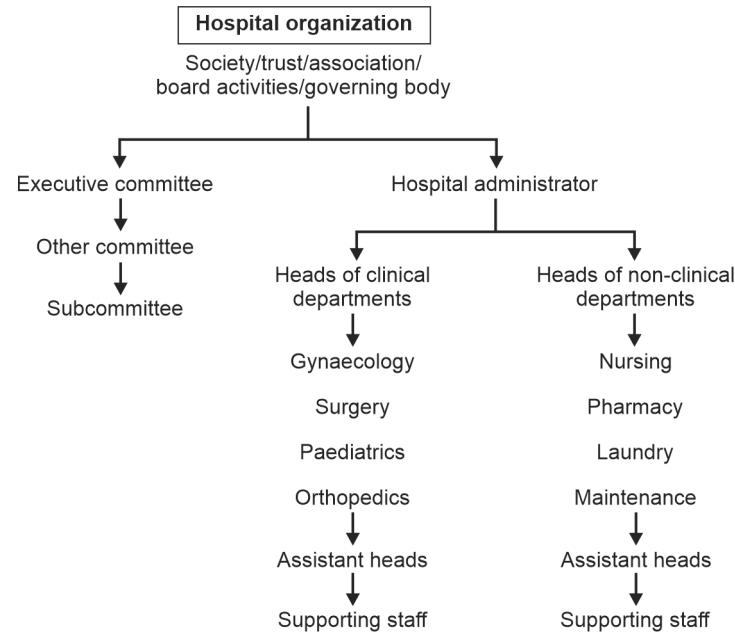


Fig. 1.1: Organisation of hospital

- The governing body appoints some persons which are well known in specific fields, e.g. social workers and advocates.
- The members of this committee should have an interest in social and legal functioning of the hospital. These members should indirectly increase the status of hospital in community.

Functions of Governing Body

1. To appoint hospital administrator.
2. To establish objectives of hospitals.
3. To answer about queries asked by the court regarding court matters.
4. It is a responsible legal authority, therefore, it should guide to staff of the hospital about the requirements of legal documents and papers.
5. To sanction the plans and budget of hospitals.
6. To give suggestions to hospital administrator about management and administration.
7. To select the members of executive committee.
8. To inspect overall activity of hospitals.
9. To conduct the programs through hospital in community for keeping up good health of community.

Q5. Who is the administrator of a hospital? What are his responsibilities/functions?

Administrator of Hospital

“The head/ dean/ director of the hospital is an administrator of the hospital”.

- He is a member of governing body.
- He is the head of PTC.
- He is the secretary of joint and executive committees.
- He is a qualified and experienced person from medical field.
- He is having minimum master degree in medical field and 6 to 10 years experience.

Functions/Responsibility/Role of Hospital Administrator

1. To implement the policies of the governing body.
2. To decide the subcommittees, their members and functions.
3. To decide scientific programmes for the development of knowledge of staff.
4. To manage routine activities by considering main purpose of patient care.
5. To appoint heads of department by taking consideration of governing body.
6. To attend seminars, meetings arranged by other hospitals.
7. To arrange the programmes for keeping good health of the community and to increase the status of hospital.
8. To decide the programmes for training of physicians, nurses and volunteers and control over such programmes and activities.
9. To communicate with hospital staff and to discuss about problems of staff.
10. To attend the meetings of the governing body and to discuss about budget of hospital, finance and other problems of hospital.
11. To take sanctions or approvals of governing body for hospital budget.
12. To check the documents and activities done in hospitals.
13. He should plan for the expansion of a hospital.
14. He should coordinates the work of various section heads of the hospital.
15. He has to provide facilities, equipment and assistance to clinical department.

Q6. What are different type of services provided by hospital?

- The services provided by hospital are divided into two categories:

Clinical services	Non-clinical services (supportive services)
i. General surgery and orthopaedic ii. Gynaecologic and obstetrics iii. ENT iv. Ophthalmologic v. Anaesthesia vi. Psychiatric and nervous diseases vii. Tuberculosis viii. Communical diseases ix. Paediatric x. Medical services (staff pattern)	i. Nursing services ii. Dietary services iii. Pharmacy iv. Housekeeping services v. Pathological services vi. Blood bank vii. Anaesthesia service viii. Account keeping services

1. Clinical Services

Clinical services are completely governed by medically trained and qualified doctors who diagnose and treat the patient.

- General surgery:** Surgical services are offered by surgical department and useful for better care and easy to overcome symptoms of diseases. These services are provided by professionally trained and experienced doctors. They are assisted by a number of physicians, nurses and compounders.
- Medical services (staff pattern):** The staff pattern is dependent on type of patient. The staff is classified as:
 - Honorary staff:** It consists of physicians who are active in hospital during their working years and having interest to work after retirement and having their outstanding performance and experience.
 - Consulting staff:** These are specialized from specific faculty and available for specified time only.
 - Active staff:** These are active and full time employees of the hospital. These are having involvement to increase the standard of hospitals.
 - Associated medical staff:** These are junior and less experienced physicians.
 - Residential medical staff:** These are the group of physicians who are employees of hospital and living in campus of hospitals.
 - Courtesy medical staff:** It is the group of physicians who had decided to attend the private patient but refuse the membership of hospital.

2. Non-clinical Services (Supportive Services)

a. Nursing services: This service provides the total healthcare to patient. It is a therapeutic and preventive service. The emotional support to the patient is also provided by this department. The in-charge of this department is a coordinator between medical and nursing staff. The head of this department should perform the following functions:

- i. Select the procedure and policies of nursing.
- ii. To keep the nursing records.
- iii. To prepare required budget.
- iv. To provide nursing supplies to nurses.
- v. To discuss about nursing problems with the director of hospital.
- vi. To adjust departmental duties of nurses.
- vii. To take part in seminars for getting the recent knowledge.
- viii. To train the nursing staff.

b. Dietary services: It is a supportive service offered by the hospital. The food is offered on scientific basis to each inpatient and suggestions are given about the diet by the food manager. The head of this department is called dietitian.

The duties of head of this department are:

- i. To perform the plan for the type of diet for the patient by considering his food allergies and dietary histories.
- ii. Selection and purchasing of food materials.
- iii. Maintenance of record about purchasing and utilization of food material.
- iv. To act as authority for preparation and distribution of diet to each patient.
- v. To train and to supervise over the staff of the department.
- vi. To follow the specific precautions about the storage of food material.
- vii. To help in research studies.

The head of this department should have master degree and at least 2 years experience, the staff of this department should be at least 12% of the total hospital staff. The prepared food is transferred to nursing department for distribution.

c. Pharmacy services: This department is governed by head of department of pharmacology. It stores and dispenses medications and other supplies to inpatients as well as the outpatients.

d. Housekeeping services: It provides cleaned and clear hospital and bed making services. The head of this department is called housekeeper. Housekeeper is well known and educated person. He is having the knowledge of cleansing agents, detergents, disinfectants, soaps, etc.

His duties are:

- i. To coordinate with other departmental staff.
- ii. To keep records about the utilization of cleansing agents, beds, pillow covers, bed sheets, etc.
- iii. To adjust the duties of department staff.
- iv. To train the unskilled workers.

e. Pathological services: Head of this department is a medical person with special training in pathology. It provides services, such as checking of blood, urine, stool samples of the patients.

f. Blood bank: Most of the hospitals operate blood bank facilities under department of pathology.

g. Anaesthesia services: Head of this department is a specially qualified and trained medical person also known as anaesthetist. They provide anaesthesia services required during surgery.

h. Account keeping services: This department controls over intake and the utilization of money. This department manages purchasing medicines, instruments and other hospital supply and expenses over maintenance of hospital, payments of employees, etc.

Q7. Define Hospital Pharmacy. Give the objectives and functions of Hospital Pharmacy.

Hospital Pharmacy

Definition: Hospital pharmacy is the department, service or a domain in the hospital organization, managed under the direction of professionally competent legally qualified person.

- Hospital pharmacy is the actual practice of pharmacy in hospital.
- Hospital pharmacist was the first recognised representative of the pharmaceutical profession.
- The first North American Hospital, Pennsylvania. Hospital started functioning in 1752 and Jonathan Roberts worked in it as a hospital pharmacist.
- Hospital pharmacy is the practice of pharmacy within the hospital under supervision of professionally competent and legally qualified pharmacist.

Objectives of Hospital Pharmacy

1. To provide the right medicine to right patient at right time, in right quantity with minimum cost.
2. To plan, organize and implement the policies of pharmacy.
3. To implement the decision of PTC.
4. To participate in research work.
5. To act as profit centre of the hospital.
6. To act as a counselling centre to the patient.
7. To act as an information centre about drugs.
8. To manufacture large volume parenterals or suitable dosage forms.

Functions of Hospital Pharmacy

1. To participate in patient care system by dispensing medicine and monitoring the patient.
2. Dispensing of narcotics, medicines and pharmaceutical preparations.
3. Dispensing of radiopharmaceuticals and alcohol-containing drugs.
4. Dispensing of surgical dressing and related products.
5. Packaging of medicines, drugs and labelling of containers.
6. It acts as a profit centre of the hospital.
7. Checking and maintaining of records of drugs about utilization, distribution, etc.
8. Maintenance of inventory control, purchasing methods, book keeping and record keeping.
9. To check sources of drugs and medicines.
10. To check the received materials for their standards.
11. To implement decision of PTC and maintain the distribution system of drugs.
12. To furnish the information about drugs to the patients and clarify queries asked by patients and thus it acts as information and counselling centre.
13. Manufacturing of sterile and nonsterile products and checking of prepared products.
14. To take part in research study and to cooperate with other departments.
15. To take part in various programmes arranged by hospital for better community health.

Q8. Give the location and layout of hospital pharmacy department.**Location**

- Hospital pharmacy department should be located at ground floor or at first floor of the hospital.
- It should be away from inpatient department.
- It should be near to outpatient department, hospital library, drug information centre and should be attached to the manufacturing unit of hospital pharmacy.
- The space for hospital pharmacy department should be minimum 250 sq. feet as per schedule N.
- Depending upon the bed capacity of the hospital the area for hospital pharmacy department is as follows:
 - i. For 100 beds hospital, 10 sq. feet per bed.
 - ii. For 200 beds hospital 6 to 8 sq. feet per bed.
- According to bed capacity of hospital, type of work and workload norms, the requirement of pharmacist is fulfilled.
- At least 3 pharmacists should be appointed for any small hospital.
- According to bed capacity the number of pharmacists required are:

Up to 50 beds	-	3 pharmacists
Up to 100 beds	-	5 pharmacists
Up to 200 beds	-	8 pharmacists
Up to 300 beds	-	10 pharmacists
Up to 500 beds	-	15 pharmacists
- Generally, outpatient attendance and bed strength ratio is 3:1. One pharmacist can be recommended for maximum 10 patients (Fig. 1.2).
- Due to location of hospital pharmacy at ground floor, easy dispensing to the outpatient and to other departments is possible.
- Hospital pharmacy should have adequate space separately for cold storage, storage of narcotic drugs, radiopharmaceuticals, manufacturing section, for outpatient dispensing, for labelling, packing, weighing and compounding, for central sterile supply, for officer in-charge of hospital pharmacy and for hospital library.
- The hospital pharmacy department should have pleasant look and enough space and furniture.
- The educative posters, informative hanging charts should be adjusted on walls, to fill up the waiting time.
- The light literatures, newspapers, educative magazines should be provided in waiting rooms.

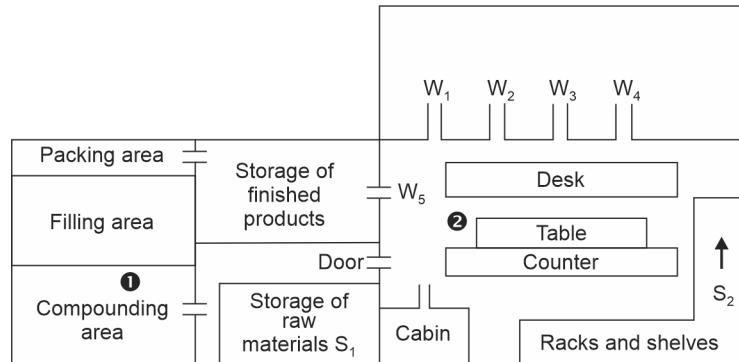


Fig. 1.2: Layout of hospital pharmacy department

Section 1. = Manufacturing department

2. = Hospital pharmacy

W₁ and W₂ = Dispensing to outpatients

W₃ = For dispensing to inpatients

W₄ = Dispensing to emergency patients

W₅ = Forgetting medicines to dispensing from manufacturing section

S₁ = Storage of raw materials

S₂ = Storage of drugs and medicines

- The floors and walls should be clean.
- The floor should be acid-resistant and wall should be painted by light colour and should have smooth surface.
- If manufacturing section is started in hospital, it should be attached to main pharmacy department.
- In large hospitals separate pharmacy substations are located at each floor. Such substations are in vertical manner, therefore, stair way connection can be adjusted.

Q9. **Give the flowchart of materials in hospital pharmacy.**

- Hospital pharmacy receives its supply of materials either from outside manufacturing units or manufacturing units present inside the hospitals (Fig. 1.3).

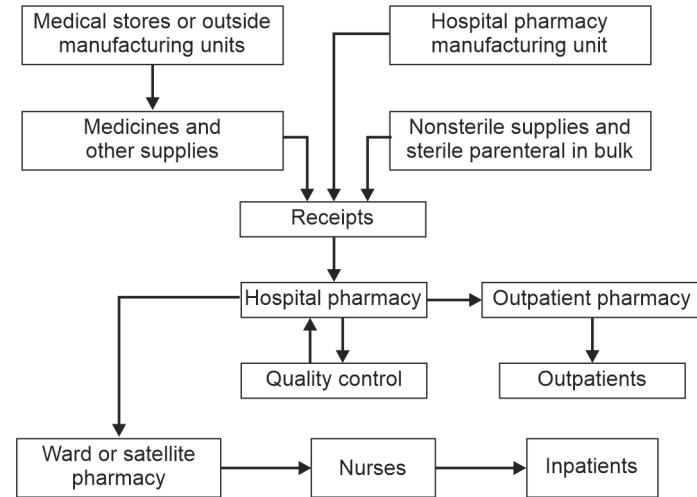


Fig. 1.3: Flowchart of materials

- These supplies are stored and dispensed according to the need to the inpatients or outpatients ultimately.
- It keeps quality control over the receipts.
- For inpatients the supplies are provided to nurses through the ward pharmacies.
- Outpatients medications are supplied through the outpatient pharmacy.

Q10. What are the requirements of space and equipment for smooth working of hospital pharmacy?

The type of hospital, bed capacity of hospital decide the space for pharmacy department. As per schedule N the space for pharmacy department should be minimum 250 sq. feet.

The separate area should be provided to dispensing and distribution, for drugstore, for subdepartments of pharmacy. If manufacturing section is also opened in hospital, separate equipments and space should be provided to that section as per the norms.

Facilities and Equipment Required for Dispensing and Distribution

- i. Prescription cabinet
- ii. Storage cabinet
- iii. Working table
- iv. Counters

- v. Cabinet for storage of mortars and pastes
- vi. Refrigerator, oven
- vii. Sterilizers
- viii. Cabinet for keeping glasswares
- ix. Office desk
- x. Filling cabinet
- xi. Cupboard for keeping journals and books
- xii. Minimum windows for dispensing
- xiii. Fluorescent lamps
- xiv. Sink with adequate drainage facility
- xv. Separate cupboard for narcotics
- xvi. Adequate facility for light and water
- xvii. Shelves racks
- xviii. Book cases
- xix. Lockers
- xx. Notice boards.

For Manufacturing Section

- i. Containers for manufacturing
- ii. Containers and closures
- iii. Packaging material
- iv. Balances for weighing
- v. Machineries required for manufacturing and packing
- vi. Water distillation stills.

For Sterile Products/Section

- i. UV lamps
- ii. Laminar flow
- iii. Bacteria-proof filters
- iv. Aseptic cabinet, etc.

Requirement of Pharmacists/Personnel

The pharmacist should be engaged with maximum 10 patients. The number of pharmacists required is:

Up to 50 beds	–	3 Pharmacists
Up to 100 beds	–	5 Pharmacists
Up to 200 beds	–	8 Pharmacists
Up to 300 beds	–	10 Pharmacists
Up to 500 beds	–	15 Pharmacists

Separate pharmacist for the dispensing, distribution, drugstore, manufacturing section, clinical pharmacy, drug information centre, quality control should be available.

Q11. Describe the qualification requirements and abilities required for hospital pharmacists (head of hospital pharmacy)

The head of hospital pharmacy department should be at least MPharm in pharmacology. Clinical pharmacist should have a degree such as master in clinical pharmacy. Quality control incharge should be MPharm (analytical chemistry) and assistants should be BPharm or DPharm. The head of hospital pharmacy should have the following abilities:

- i. Administrative ability.
- ii. Technical ability.
- iii. Academic ability.
- iv. Ability to develop manufacturing section.
- v. Ability to control.

i. Administrative Ability

- He should have an ability to plan, organize, direct and to control over various activities and functions of hospital pharmacy department.
- He should have an ability to select the staff for pharmacy department and to train and guide them.
- He should prepare proper work schedule, purchasing, budget and should develop better pricing system for costing of prescription.
- He should have an ability to interact properly with other departments.
- He should motivate his staff for achieving greater heights in functioning of pharmacy.
- He should have an ability to make pharmacy department as economical viable unit.
- He should have information about the government rules and regulations for proper record-keeping related with drug distribution, purchasing, utilization, etc.

ii. Technical Ability

- He should have adequate knowledge about the storage of drugs, drug interactions, precautions, dose of drugs.
- He should develop proper drug distribution system, proper way of dispensing and good pricing system of medicines.
- He should know pharmacokinetic, pharmacodynamic, pharmacological and pharmacotherapeutic aspects of drugs.
- He should clarify the queries asked by the assistants or physicians.

iii. Academic Ability

- He is the head of department, therefore, he is also responsible for better manufacturing, dispensing procedures.
- He should have ability to develop suitable training programmes for pharmacist.
- He should have an ability to guide pharmacy staff to conduct active research useful for development of product, dispensing and pricing system.
- He should motivate his staff for medical and pharmaceutical research.
- He should provide research and training material to the staff.
- He should take part in seminars and programmes arranged by the hospital.
- He should know about research methodology.
- He should provide motivation to the staff in taking patient care and to perform better functioning of the departments.
- He should have an ability to train the staff of the department.

iv. Ability to Develop Manufacturing Section

- He should have knowledge about the pharmaceutics.
- He should have an ability to prepare the estimate for starting manufacturing section.
- He should know the standards required for manufacturing of particular dosage forms.
- He should know about the instruments and machinery, apparatus required for the manufacturing of dosage forms.
- He should have an ability to attract a suitable person as the head of manufacturing section.

v. Ability to Control

- He should have control over the inventory of drugs and over the money expenditure.
- He should have an ability to develop suitable procedure for purchasing of drugs, costing of prescription, etc.
- He should have an ability to control over the staff of his department.
- He should be able to inspect any subpharmacy department at any time.
- He should maintain smooth functioning of pharmacy department.

Q12. Write in brief about organization of hospital pharmacy department.

The organization pattern of hospital pharmacy department depends upon the duties and functions carried out by the hospital pharmacy department.

Separate pharmacist should be engaged as the head of the department.

In large hospitals the separate in-charge for each department is appointed.

- The head of hospital pharmacy department should be MPharm in pharmacology with adequate abilities like administrative ability, technical ability, etc.

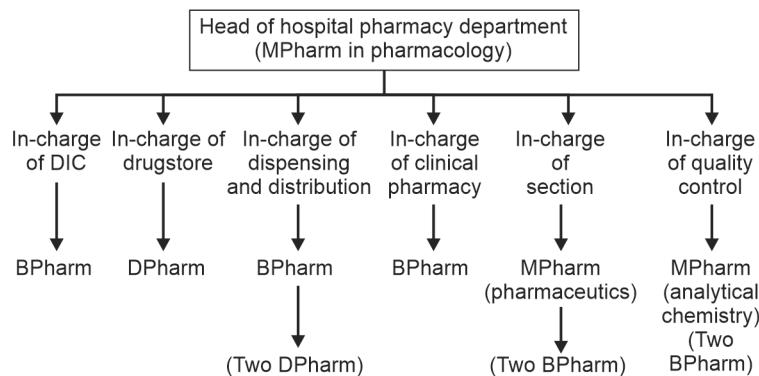


Fig. 1.4: Head of hospital pharmacy department

- The head of hospital pharmacy department is assisted by heads of dispensing and distribution and also of DIC, drugstore, clinical pharmacy, quality control and manufacturing unit.
- The head of drugstore should be DPharm and that of manufacturing section, MPharm in pharmaceutics. The heads from other subdepartments should be at least BPharm.
- Only quality control department should have a head from analytical chemistry and at least a master degree in pharmacy (MPharm).
- In-charge of manufacturing section is assisted by two bachelors in pharmacy, in-charge of quality control section is assisted by two BPharms.
- In-charge of dispensing and distribution is assisted by two DPharms.
- As per workload the staff pattern may be changed.
- In manufacturing section, helpers and other assistants are more as compared to sections such as DIC, etc.

18 Hospital and Clinical Pharmacy

- The quality control department requires assistants for performing analysis and checking of every incoming material and finished products.

Q13. Explain the job specifications and professional responsibilities of hospital pharmacist (chief hospital pharmacist).

JOB SPECIFICATIONS AND PROFESSIONAL RESPONSIBILITIES of HOSPITAL PHARMACIST

Following are the job specifications for the position of chief pharmacist,

1. Plans, organizes, and directs pharmacy policies and procedures in accordance with specified policies of hospital.
2. Compounds and dispenses medicines and preparations according to prescriptions noted by physician.
3. Manufactures sterile and non-sterile preparations in hospitals.
4. Implements decision of PTC of which he is a member.
5. Provides information regarding medications to physicians, interns and nurses.

Responsibilities

1. Specifications for purchase of all drugs, chemicals and pharmaceutical preparations used in treatment of patients.
2. Forecasting the demand of the department.
3. It decides to manufacture or purchase medicine from the industry.
4. Selection of reliable supplier.
5. Purchasing of drug products from reliable suppliers and maintaining a record of the purchased drug.
6. Purchasing raw material for drug manufacturing and maintaining a record of purchased raw material.
7. Manufacturing of sterile and non-sterile preparation and maintaining manufactured records.
8. Quality control of the manufactured products and maintaining the record of quality control of the manufactured products.
9. Storage of drugs.
10. Dispensing of drugs and maintaining a record of dispensed drugs.
11. Dispensing of all narcotic drugs and alcohol and maintenance of a perpetual inventory of them.
12. Maintenance of an approved stock of antidote and other emergency drugs.
13. Manufacturing of drugs and maintaining manufactured product records.

14. Quality control of manufactured products and maintaining the quality control of manufactured products.
15. Providing drug information services.
16. Providing patient counselling.
17. Inspection of all pharmaceutical supplies on all services.
18. Providing information regarding medications to physicians, interns and nurses.
19. Planning, organizing, and directing pharmacy policies and procedures in accordance with specified policies of the hospital.
20. Implementing decision of PTC.
21. Preparation of periodic reports on the progress of the department.

Q14. What is the workload/number of pharmacist required to run hospital pharmacy? Mention Interprofessional relationship of hospital pharmacist.

According to Workload Requirement of Pharmacists

- The manpower trained in pharmacy varies with the size of the hospital, and the services it offers.
- The number of pharmacists required for a hospital is calculated on the basis of some workload norm like the number of prescriptions received and dispensed or the number of beds available in the hospital and its occupancy rate.
- As a rule of thumb, it can be said that there must be minimum 3 pharmacists in a very small hospital. For a 100-bed hospital there can be 5 pharmacists, as the number of beds increases, the number of pharmacists also increases, but not proportionately.
- The following is the suggested staff pattern of pharmacists as recommended by the study group of hospitals (Table 1.1).

Table 1.1: Pharmacist requirement

Bed strength	Number of pharmacists required
Up to 50 beds	3
Up to 100 beds	5
Up to 200 beds	8
Up to 300 beds	10
Up to 500 beds	15

- While calculating the number in very large hospitals (1000 beds, 2000 beds, 3000 beds), the service points available for dispensing to the inpatients and outpatients are considered.

- The outpatient attendance as compared to bed strength in hospitals is usually in the ratio of 3:1 for larger hospitals, one pharmacist has been recommended for 133 patients.

INTERPROFESSIONAL RELATIONSHIPS OF HOSPITAL PHARMACIST

1. Interdepartmental communication is largely a formal affair between different departments of an organization.
2. Interdepartmental communication is effective when it is supported by good infrastructural facilities.
3. Pharmacy department must interconnect with physician and nursing unit.
4. Co-ordination ensures the availability and requirements of day-to-day necessities and emergency medicines.
5. Pharmacists should always check the physician order and the patient history before dispensing the prescription and in case of any doubt, should consult the doctors.
6. While prescribing the medicines, the physicians should always write the patients age and diagnosis, as it will be helpful to pharmacists to take a note of this while dispensing medicines.

Q15. Discuss the “Concept of Good Pharmacy Practice (GPP)”.

OR

What is GPP? Give its requirements, elements and guidelines.

Good Pharmacy Practice (GPP)

Definition: Good pharmacy practice is a practice of pharmacy that responds to the needs of the people, who use the pharmacist's services to provide optimal, evidence-based care.

- International Pharmaceutical Federation (FIP) developed standards for pharmacy services under the heading of “Good Pharmacy Practices” in community and hospital pharmacy settings.
- The mission of GPP is to provide medication and healthcare products and services to people and society to achieve good outcomes from treatment.
- GPP guidelines are based on the pharmaceutical care given by pharmacists
- The GPP guidelines recommended that National Standards should be for the promotion of health, the supply of medicines, medical devices, patient selfcare and improving prescribing and medicine use by pharmacists activities.
- WHO has made certain recommendations about GPP that clarify and meet that obligations to ensure that to provide quality service to the patient.

- In order to satisfy these requirements WHO recommended that:
 - a. Professional responsibility should be main philosophy underlying the practice.
 - b. Pharmacist's input is essential component in decisions on medicine use.
 - c. Professional interactions particularly with physicians should be seen as therapeutic partnership involving mutual trust and confidence.
 - d. Relationship with other pharmacists should be as colleagues and should favour improvement in pharmacy services and not as a competitor.
 - e. Pharmacist must be aware of importance of providing information to patient and to ensure this, patient's medication profile be generated and maintained.
 - f. Pharmacist should try to gather and use comprehensive, objective and current information about therapeutics and medicines in use.
 - g. Pharmacist should continually try to maintain professional competence throughout his professional life.
 - h. It is necessary to have national standards of GPP, that should be adhered to by the practitioners.

Elements of GPP

GPP addresses the following elements.

1. Promoting good health, avoiding ill health and achieving health objectives.
2. Supply of medicines and their rational use.
3. Self-care activities involving advice and where appropriate supply of medications for self treatment.
4. Activities influencing prescribing and medicine use.
5. In collaboration with other healthcare professional's health promotion activities for community at large, prevention of abuse, misuse, etc.
6. Involvement in all stages of clinical trials.

Good pharmacy practice (GPP) organizes the following major roles for pharmacists

1. To prepare, obtain, store, secure, distribute, administer, dispense and dispose the medical products.
2. To provide effective medication therapy.
3. To maintain and improve professional performance.
4. Contribute to improve effectiveness of healthcare system and public health.

Requirements for the Good Pharmacy Practice (GPP)

1. Premises/layout/furniture
2. Equipment
3. Manpower
4. Storage
5. Inventory control
6. Services
7. Documentation

1. Requirements of Premises/Layout/Furniture

- The location of pharmacy should be such that it is easily identified by the public.
- The environment in the pharmacy should be neat and clean.
- It should have clearly and marked word "Pharmacy"
- The pharmacy should also be accessible to disabled people or peoples using wheelchairs
- It should have display counter, shelves for medicine storage, counselling area, waiting area, billing area, adequate space for movement and waste collection boxes

Counselling area should have furniture (table and chairs) and cabinets for keeping Patients Medication Records (PMR).

2. Requirements of Equipments

- The pharmacy should be equipped with refrigerator for storage of medicine in cold temperature and validated from time to time.
- Counselling area should be equipped with demonstration chart, patient information leaflets, reference materials, etc
- It should contain basic equipments such as thermometer, sphygmomanometer, glucometer, stethoscope, weight and height scale
- It should have telephone, computer software facilities.

3. Requirements of Manpower

- The pharmacy should be managed under the supervision of pharmacist and other personnel working in pharmacy should be well trained.
- The pharmacy should have well-documented guidelines and procedures for personnel set by management with pharmacist consultation.
- The personnel in the pharmacy should wear neat apron/coat and wear a badge displaying his name and designation.
- All pharmacy personnel should be medically examined and adequately immunized periodically.

- The chief pharmacist must be bachelor/master in pharmacy.
- Assistant pharmacist must be at least diploma in pharmacy.

4. Requirements for Storage

- All the medicines coming into the pharmacy should initially be quarantined and then checked for quantity, batch number, expiry, integrity, etc. After checking they should be transferred to their respective storage location.
- All the medicines should be stored at appropriate temperature protecting from excessive light, dust and humidity.
- The medicines and shelves should be clean and dust free following Standard Operating Procedures (SOPs).
- Narcotics and psychotropic should be stored and labelled as per norms.
- Shelves should be checked periodically for expiry of medicines and expired medicines should be kept separately labeling a "Expired Goods" "Not for Sale".
- Expired medicines unused and unopened medicines are either returned to the supplier or destroyed as per in-house protocol.

5. Requirements for Inventory Control

- The pharmacy should develop and maintain safe, effective, operational and socio-economically acceptable procurement and inventory management.
- Pharmacist should ensure medicines and healthcare products readily available in the pharmacy in sufficient quantities.

6. Requirements of Services

- Service strategies include home delivery of medicine, special care and attention to patients like elderly patients, regular patients, etc.
- Service manual should state in detail service offered, service time and pharmacy operation schedule.

7. Requirements of Documentation

- Documentation is one of the activities for maintaining and achieving quality.
- Pharmacist shall maintain all necessary documents like registration, permissions, etc.
- All operational documents like purchase invoices, sales invoices, etc.

Q16. Write a note on “hospital pharmacy standards” (FIP Basel statements.)

Hospital Pharmacy Standards (FIP Basel Statements)

- The FIP Congress held in Tokyo in 1993 adopted and FIP/GPP text under Tokyo declaration on standards for quality of pharmacy services, in which it is stated that standards are important part in measurement of quality services to the consumers.
- The FIP believes that standards based on these guidelines should be used by National Pharmaceutical Organizations.
- The guidelines recommended that national standards are set for the promotion of health, the supply of medicines, medical devices, patient self-care and improving prescribing and medicine used by pharmacist activities.
- In 2014, “Revised FIP Basel Statement on the future of hospital pharmacy was adopted as “Hospital Pharmacy Practice Standards” as revisions of initial 2008 version.
- The document consists of total 65 statements, of which first 19 statements are concerned with ‘Overarching and Governance Statements’ and the remaining statements are grouped in six different themes as follows:

Theme 1: Procurement

Theme 2: Influencing on prescribing

Theme 3: Preparation and delivery of medications

Theme 4: Medication administration

Theme 5: Monitoring of medication

Theme 6: Human resources and training

Theme 1: Procurement

- Hospital pharmacists should be involved in the complex process of procurement of medicines and health products promoting equity and access. They should ensure transparent procurement processes are in place in line with the best practice and national legislation, are free from conflict of interest, and are based on the principles of safety, quality and efficacy.

Theme 2: Influences on Prescribing

- Hospitals should utilize a medicine formulary system (local, regional, and/or national) linked to standard treatment guidelines, protocols, and treatment pathways based on the best available evidence.

- Hospital pharmacists should be key members of pharmacy and therapeutics committees to oversee all medicines management policies and procedures, including those related to off-label use and investigational medicines.

Theme 3: Preparation and Delivery

- Hospital pharmacists should assume responsibility for storage, preparation, dispensing, and distribution of all medicines, including investigational medicines. Hospital pharmacists should assume responsibility for the appropriate labeling and control of medicines stored throughout the facility.
- Hospital pharmacists should be involved in determining which medicines are included in ward stock and standardizing the storage and handling of ward medicines.

Theme 4: Administration

- Hospital pharmacists should ensure that the information resources needed for safe medicines preparation and administration are accessible at the point of care. Hospital pharmacists should ensure that clinically relevant allergies, drug interactions, contraindications, past adverse events and other relevant medication history details are accurately recorded in a standard location in patient records and evaluated prior to medicine use.
- Hospital pharmacists should ensure that medicines are packaged and labeled to ensure identification and to maintain integrity until immediately prior to administration to the individual patient.
- Medication labels should be clear and have sufficient information to ensure safe administration, including at least 2 patient identifiers, the name of the medicine, prescribed route, dose in mass and, where appropriate, volume and rate of administration.

Theme 5: Monitoring of Medicines Use

- An easily accessible reporting system for defective medicines should be established and maintained.
- Reports of defective or substandard medicines should be reviewed internally and sent in a timely manner to regional or national pharmacovigilance or regulatory reporting programs, and the manufacturer.
- An easily accessible reporting system for adverse drug reactions should be established and maintained.

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- Reports of reactions should be reviewed internally and sent in a timely manner to regional or national pharmacovigilance or regulatory reporting programs.
- These data should be regularly reviewed to improve the quality and safety of medicines use practices.

Theme 6: Human Resources, Training and Development

- At a national level, competency frameworks are defined, established and regularly assessed.
- At a national level, hospital pharmacists should engage health authorities to bring together stakeholders to collaboratively develop evidence-based hospital pharmacy human resource plans, to support responsible use of medicines including those in rural and remote areas.
- Hospital pharmacists should work with key stakeholders to ensure that workforce education, training, competency, size, and capacity are appropriate to the scope of services, coverage, and responsibilities of all cadres providing pharmacy services.

Q17. What are ASHP guidelines for minimum standards for pharmacies in hospitals?

ASHP guidelines: Minimum standards for pharmacies in hospitals.

- American Society of Health-System Pharmacist (ASHP) guidelines are intended to serve as a basic guide for the provision of pharmacy services in hospitals.
- These guidelines have been developed considering safe, effective and cost-conscious medication use. Accordingly nine standards have been identified as follows:
 1. **Standards I:** Practice management
 2. **Standards II:** Medication use policy development
 3. **Standards III:** Optimizing medication therapy
 4. **Standards IV:** Drug product procurement and inventory management
 5. **Standards V:** Preparing, packing and labeling medications
 6. **Standards VI:** Medication dispensing and delivery
 7. **Standards VII:** Monitoring medication use
 8. **Standards VIII:** Evaluating effectiveness of the medication use system
 9. **Standards IX:** Research

Q18. What is NABH? Enlist various programs under NABH. Give the benefits of NABH.

NABH stands for **National Accreditation Board for Hospitals and Health providers**.

Definition: NABH is a part of the Quality Council of India which was established to offer accreditation to healthcare providers and hospitals on their adherence to quality guidelines.

Objective: The objective of establishing NABH is enhancing health system and promoting continuous quality improvement and patient safety.

- NABH currently considers the following accreditation, certification and empanelment programs:

1. Accreditation Programs

- Hospitals
- Small healthcare organizations
- Blood banks
- Medical imaging services
- Dental facilities/Dental clinics
- Allopathic clinics
- AYUSH hospitals
- Primary health centres
- Clinical trial
- Panchakarma clinics
- Eye care organizations

2. Certification Programs

- Entry level hospital
- Entry level small healthcare organizations
- Entry level AYUSH centre
- Entry level AYUSH hospital
- Nursing excellence
- Medical laboratory program
- Emergency department
- MVTF empanelment certification

Benefits of Accreditation**1. Benefits for patients:**

- Accreditation results in high quality of care and patient safety.

- Patients receive services by credentialed medical staff.
- Rights of patients are respected and protected.

2. Benefits for organization:

- It enables continuous improvement in healthcare organization.
- It ensures organization's commitment to quality care, patient safety and best clinical outcomes.
- It raises community confidence in services provided by the hospital.
- It provides opportunity to healthcare unit to benchmark with the best.
- It provides marketing advantage in a competitive healthcare.
- It gives international recognition to organization which helps to promote medical tourism.
- It provides objective system of empanelment by insurance and other third parties.

3. Benefits for staff:

- Staff gets satisfaction as it provides for continuous learning, good working environment and leadership.
- Efficiencies and competencies of staff gets improved.
- It improves overall professional development, knowledge and competencies.

Q19. Give the difference between "hospital pharmacy and community pharmacy".

Difference between hospital pharmacy and community pharmacy:

Sr. No	Hospital pharmacy	Community pharmacy
1.	Hospital pharmacy is defined as the actual practice of pharmacy in hospital.	Community pharmacy is a practice of pharmacy under the supervision of a pharmacist where prescription orders are compounded and dispensed other than a hospital pharmacy.
2.	Hospital pharmacy is one of the departments of hospital, dispensing medications to inpatients and outpatients.	Community pharmacy is also known as retail pharmacy.
3.	Location in the hospital, should be such that it is convenient for providing services to all departments of hospital and personnel who make daily use of such services.	Location of community pharmacy shall be based on ease and convenience of customers, the patients and other factors like near hospital, market, etc.

Contd.

Contd.

Sr. No	Hospital pharmacy	Community pharmacy
4.	Co-ordination with other departments of hospital is essential.	Co-ordination with prescribing physicians is essential.
5.	Activities are interrelated such that physician–pharmacist–nurse–patient relationship is involved.	Activities are not so extensive and physician–pharmacist–patient relationship is enough.
6.	In addition to internal, external forces influence on standards of practice, e.g. accreditation agencies.	No such influence from external forces on standards of practice.
7.	Responsibility to meet the needs of many other departments of hospital.	No such responsibilities.
8.	Beyond patient care other responsibilities such as education, research, public health.	Beyond patient care, limited other responsibilities.
9.	Opportunity to interact with clinical practitioners, nursing staff, pathologist.	Limited opportunity to interact with other healthcare professionals.

Q20. Enlist NABH standards for hospitals (ten chapters of hospital standards). Explain accreditation process of hospitals.

NABH Standards for Hospitals (Ten Chapters):

Ten chapters of hospital standards are:

1. Access, Assessment and Continuity of Care (AAC)
2. Care of Patients (COP)
3. Management of Medication (MOM)
4. Patient Rights and Education (PRE)
5. Hospital Infection Control (HIC)
6. Patient Safety and Quality Improvement (PSQ)
7. Responsibilities of Management (ROM)
8. Facility Management and Safety (FMS)
9. Human Resource Management (HRM)
10. Information Management System (IMS)

NABH Accreditation Procedure

1. **Preparation of policies and manuals:** Hospital shall prepare quality manual, policies and procedures required as per NABH standards.
2. **Application for accreditation:** Fill in the details in the application as per the instructions given in the online application portal and submit application online.

3. **Scrutiny of application:** NABH officer shall scrutinize the application for its completeness.
4. **Notification of principal assessor and assessment team:** NABH shall appoint principal assessor and a team of other members. The principal assessor shall evaluate the adequacy of all documents (quality manual, policies, procedures, departmental manuals) as mandated by the standards.
5. **Types of assessments conducted by NABH:** NABH in co-ordination with the hospital may choose to follow one of the following methods for conduction of assessment:
 - a. *Onsite assessment:* Here the assessors visit the healthcare organization for predefined mandays based on bed strength of hospital. Assessors verified the documents, facilities and conducts interviews in person at HCO.
 - b. *Desktop assessment:* Here the organization will submit information and documents as per checklist and the same shall be reviewed by NABH assessor. Based on review the assessor shall give recommendations.
 - c. *Remote assessment:* Here the assessor does not go to the HCO in person but conducts entire assessment from a remote location through use of virtual platforms. Hospital needs to provide the online platform.
 - d. *Hybrid assessment:* Here one of the assessors may be physically present at the HCO during assessment and the others will be doing the audit from remote location through the use of virtual platform.
6. **Pre-Assessment (optional):** It is optional and those organizations who do not desire to undergo pre-assessment shall communicate in the remark column of application form. However, who desire to undergo pre-assessment, NABH shall conduct such assessment. Principal assessor along with others in the team are assigned the job of preassessment. The principal assessor shall submit report of assessment online. The hospital shall take corrective actions on the non-conformities pointed by the assessors.
7. **Final assessment:** After the corrective actions taken by organization on the non-conformities pointed in pre-assessment, NABH shall constitute a team for final assessment. The size of assessment team shall depend on bed capacity of hospital and scope of services provided. The date of final assessment shall be mutually agreed upon by hospital management and assessors. The team

shall review the hospitals documented management system with reference to the compliance to NABH standards. Documents, policies, procedures shall be assessed for their implementation and effectiveness. The assessment report is prepared and uploaded by principal assessor in the online portal.

8. **Review of assessment report:** The non-conformities observed are visible to hospital organization, once the report is uploaded by principal assessor. The hospital shall take corrective action on such non-conformities and upload the requisite documentary evidence of action taken. The principal assessor shall review the corrective action taken by the hospital. The hospital organization can avail only two cycles of corrective actions on non-conformities.
After satisfactory corrective action is taken by hospital, the accreditation committee examines the assessment report, additional information received from the hospital and consequent verifications. Accreditation committee shall make appropriate recommendations regarding accreditation of HCO.
9. **Issue of accreditation certificate:** NABH shall issue an accreditation certificate with a validity of four years. The certificate has unique number and date of validity.
10. **Surveillance and reassessment:** Accreditation shall be valid for four years but within 20–24 months of date of accreditation, the NABH shall conduct surveillance. NABH may call for unannounced visit, based on any concern or any serious incident reported by individual, organization or media.
11. **Focus assessment:** When there are any significant changes in accredited hospital, e.g. change in scope of activities, operations, change of location, change in key technical personnel, etc. the focus assessment shall be conducted.
12. **Surprise assessment:** NABH may conduct surprise assessment in accredited hospitals periodically to evaluate the compliance to the standards. Hospitals are expected to adhere to the NABH standards at any point of time, once it is accredited.

Objective Questions with Answers in Bold Letters

1. ASHP stands for **American Society of Health-System Pharmacists**.
2. GPP stands for **Good Pharmacy Practices**.
3. NABH stands for **National Accreditation Board of Hospitals and Healthcare Providers**.
4. NQAS stands for **National Quality Assurance Standards**.

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5. The practice of pharmacy that responds to the needs of the people who use the pharmacists services to provide optimal, evidence-based care is known as **GPP**.
6. The FIP Basel statements can be split into 6 themes
7. GLP stands for **Good Laboratory practices**.
8. The number of pharmacists required for 50 bed size hospital are 3.
9. NABH started the hospital accreditation program in the year **2005**.
10. The minimum qualification required for registered pharmacists is **D. Pharmacy**.
11. The current hospital standards 5th edition is launched in **February 2020**.
12. NABH provides guidelines for the benefits of **patients, employees and hospitals**.
13. Number of beds in medium size hospitals are **500–1000**.
14. For 300 bed hospital, number of pharmacists required are **10**.
15. The minimum area required for hospital pharmacy is **250 sq.ft**.
16. A prescription for Schedule II and Schedule III controlled drug is valid for **14 days**.
17. The head of the hospital is an **administrator** of the hospital.
18. Prescription is dispensed by **pharmacists**.
19. Pharmacy comes under **non-clinical services** of the hospital.
20. The first North American Hospital, Pennsylvania hospital, started function in 1752 and **Jonathan Roberts** worked in it as a hospital pharmacist.