Chapter

1

Hospital Pharmacy

• **Introduction to Hospital Pharmacy:** Definition and Scope; Objectives; Functions • **Scope of Hospital Pharmacy: National and International Scenario** • **Organizational Structure:** Location and Layout of Hospital Pharmacy; Professional Responsibilities; Personnel Requirement and Qualification; Qualifications of Personnel • **Goods Pharmacy Practice:** Requirement of GPP; GPP Guidelines; Main Elements of GPP • **Hospital Pharmacy Standards:** FIP Basel Statements; American Society of Health-System Pharmacy (AHSP) Guidelines • **Introduction to NQAS Guidelines** • **Introduction to NABH Accreditation:** Objectives of NABH • **Role of Pharmacist**

INTRODUCTION TO HOSPITAL PHARMACY

The word "Pharmacy" originates from the Greek word "Pharmakon," meaning remedy. Pharmacy is defined as "the art and science of preparing and dispensing drugs or a place where drugs are sold." According to the World Health Organization (WHO), pharmacy is "the branch of health sciences dealing with the preparation, dispensing, and proper utilization of drugs."

There are several types of pharmacies:

i. Community pharmacy
ii. Hospital pharmacy
iii. Clinical pharmacy
iv. Industrial pharmacy
v. Consulting pharmacy
vi. Ambulatory care pharmacy
vii. Regulatory pharmacy
viii. Home care pharmacy
ix. Nuclear pharmacy

Community pharmacy refers to retail outlets or drug stores where medicines are stored, dispensed, and sold.

A hospital pharmacy is a department within a hospital or healthcare facility responsible for procuring, storing, compounding, and dispensing medications.

Clinical pharmacy involves patient care through medication to improve health outcomes.

Industrial pharmacy encompasses manufacturing, development, marketing, and distribution of drug products.

Compounding pharmacy ensures patients receive appropriate, safe, and effective medication.

Ambulatory care pharmacy provides healthcare services to ambulatory patients in various settings.

Regulatory pharmacy involves registering and authorizing medicines for clinical trials and marketing.

Home care pharmacy prepares and administers injections to critically ill patients at home.

Nuclear pharmacy prepares radioactive materials for diagnosis and treatment.

Definition and Scope

A hospital pharmacy is an integrated part of the patient healthcare system. It can be defined as:

"A department responsible for procuring, storing, compounding, and dispensing medications to inpatients and outpatients," or "A healthcare service comprising the profession of choosing, preparing, storing, compounding, and dispensing medicines/medical devices."

Objectives

i. Teach hospital pharmacy ethics to pharmacists.
ii. Ensure accessibility of medicines to patients.
iii. Develop administrative skills in hospital pharmacists.
iv. Ensure sustainable utilization of hospital resources.
v. Enhance safety and quality of medicine-related processes.
vi. Coordinate with other hospital departments (Fig. 1.1).

Functions

i. Dispensing, compounding, and storing drugs.
ii. Preparing and sterilizing injectable drugs.
iii. Filling and labeling drug containers.
iv. Inspecting pharmaceutical supplies.
v. Maintaining emergency drug stocks.
vi. Dispensing and recording narcotic and alcoholic drugs.
vii. Informing other departments about drug-related aspects.

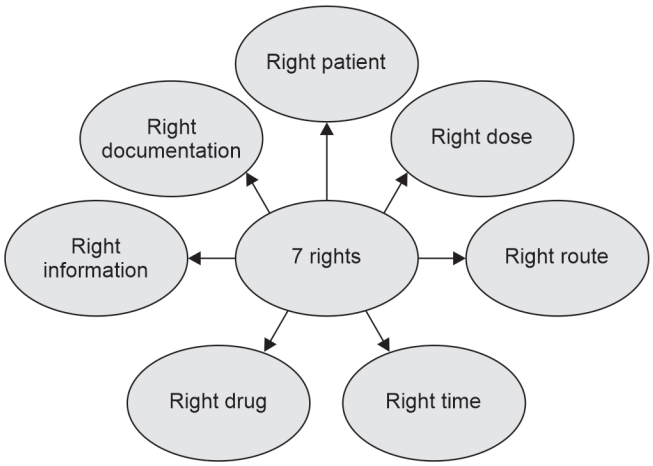

Fig. 1.1: Expected 7 "R's" from the hospital pharmacy

viii. Maintaining department facilities.
ix. Selecting suppliers for drug procurement.
x. Fulfilling hospital demand for drugs.

SCOPE OF HOSPITAL PHARMACY: NATIONAL AND INTERNATIONAL SCENARIO

The pharmaceutical industry has changed a lot in the last few decades. The hospital pharmacy is now an integral part of the hospital. This department is responsible for the storage, production, purchasing, repackaging, testing and distribution of pharmaceutical products. Nowadays, medication monitoring and drug information are also part of the hospital pharmacy. Hospital pharmacists are the bridge between patients and doctors in the hospital. Hospital pharmacists provide all information about medications to patients and physicians. Hospital services currently vary across countries. The scope of hospital pharmacy generally includes the following services:

Compounding of medicines: According to FDA, "Drug compounding is often regarded as the process of combining, mixing, or altering ingredients to create a medication tailored to the needs of an individual patient. Compounding includes the combining of two or more drugs." Compounded drugs are not FDA-approved. A licensed pharmacist or a person under the supervision of a licensed pharmacist can do compounding in an

outsourcing facility. Outsourcing facilities like hospital pharmacy stores are inspected by designated regulatory authorities from time-to-time to maintain quality standards.

Dispensing of medicines: Dispensing is considered the last step and the pharmacist is the last person who can ensure the safety of the medicine before use by the patient. Most of the medication errors are occurred due to dispensing errors. Dispensing of medicines includes various steps that hospital pharmacists ensure:

i. Receiving and validating prescriptions.
ii. Understanding the prescription: Abbreviations, handwriting, prescribed dose, etc.
iii. Labeling and preparing the medication as per the dosage regimen.
iv. Rechecking the process.
v. Documentation of dispensing.
vi. Taking patients' queries and answering them to the best of their abilities.
vii. Delivering the medicines.

Providing clinical services: Various clinical services are provided by hospital pharmacies. Some of them are:

i. Medication chart review
ii. Inpatient dispensing
iii. Outpatient dispensing
iv. Contraceptive services
v. Cold chain management
vi. Therapeutic guidelines and protocol development
vii. Drug therapy monitoring
viii. Medical device services
ix. Discharge counseling
x. Aseptic services
xi. Prenatal nutrition support
xii. Pain management support
xiii. Pharmacotherapy services

Reviewing the safety and efficacy of medicines: Pharmacists review the safety and efficacy of medicines. Pharmacists have a key role in reviewing the safety and efficacy of medicines. The hospital pharmacist's involvement in reviewing the safety and efficacy results in:

i. Reducing medication errors
ii. Improving prescribing practices
iii. Enhancing patient monitoring

Providing drug monitoring services: The services like therapeutic drug monitoring and prescription drug monitoring are provided by hospital pharmacies. Therapeutic drug monitoring (TDM) includes testing that measures the quantity of medicines in the blood. It is usually done to make sure that the amount of medicine the patient is taking is both safe and effective. Prescription drug monitoring includes prescription drug monitoring program (PDMP) is an electronic database that mainly tracks controlled substance prescriptions in a state. PDMPs also provide health authorities with timely information about prescribing and patient behaviors.

Providing drug information services: Drug information is the provision of writing or giving verbal information about the drugs as well as drug therapy if requested by the appropriate authority. Drug information centers (DICs) provide detailed and unbiased information about drugs to physicians, pharmacists, and other healthcare professionals. Pharmacists play an important role in providing related data to these DICs.

ORGANIZATIONAL STRUCTURE

The practice of hospital pharmacy started in India in 1941. It became a regulated as well as respectable discipline in the 60s. We know that a hospital pharmacy is a department of a hospital that deals with all the steps involved in the flow of drugs which includes procurement, storage, compounding, dispensing, manufacturing, testing, packaging, and distribution of drugs. It is also related to education and research in pharmaceuticals that act as boosters for new advancements in the field of pharmacy.

Organization pattern: The hospital pharmacy consists of various departments. It is the setup or organization of a hospital pharmacy that is responsible for the efficient functioning of the department. There is an organization Head/Dean/Director/Medical superintendent at the top of the hierarchical structure. He will ensure the execution of assigned functions to the respective departments in the hospital pharmacy.

The organization of a hospital pharmacy is solely responsible for efficiently rendering the services only when an integrated setup of a hospital pharmacy department is present. The hospital pharmacy department has an integrated setup consisting of the

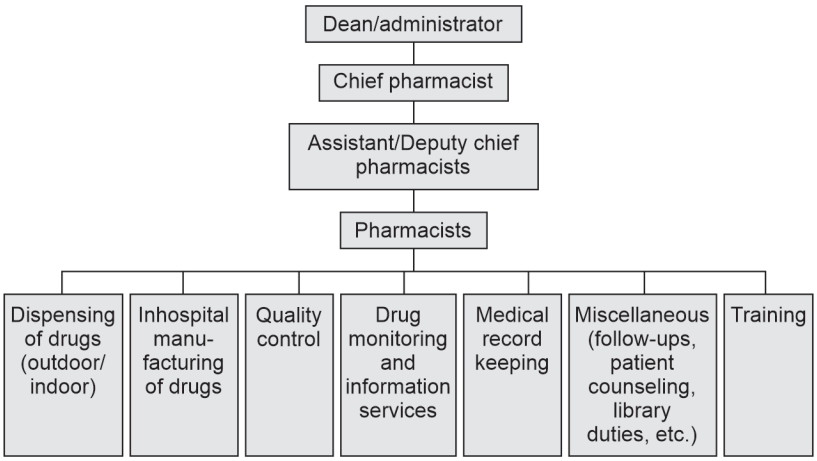

Fig. 1.2: Organization pattern of a hospital pharmacy

dispensing section, manufacturing section, quality control section, and clinical pharmacy section. The hospital pharmacy organizational structure is shown in Fig. 1.2.

The hospital pharmacy is divided into several sections: compounding and dispensing, manufacturing or production, quality control, central sterile supply, research, teaching and training, administration, and the library.

The chief hospital pharmacist heads the pharmacy and reports to the administrator. There are assistant chief pharmacists who support the chief in administration as determined by the nature of the task, the extent of operations, staff strength, and so on. The assistant chief pharmacist oversees and controls the pharmacy's numerous functions.

Staff pharmacists, technicians, pharmacy assistants, and other hospital pharmacy employees are responsible for compounding, dispensing and medication supply, manufacturing, central sterile supply, library tasks, etc.

Location and Layout of Hospital Pharmacy

The location and layout of the hospital pharmacy should be such that it supports smooth material and man flow.

Location: In general (in a hospital with less than 200 beds), the hospital pharmacy should be on the ground floor or first floor of the healthcare facility so that it can provide appropriate services

to every department without hindrance. It should be near the outpatient department. In large healthcare facilities or multi-specialty or large hospitals (hospitals with more than 200 beds), the hospital pharmacy should be on every floor.

Layout (Fig. 1.3): An ideal and complete hospital pharmacy consists of the following areas:

1. Administrative office or chief pharmacist's office
2. Dispensing unit for outpatients
3. Compounding area for bulk products
4. Separate sterile and non-sterile preparation manufacturing unit
5. Designated packaging area
6. Labeling area
7. Alcohol and volatile liquid area
8. Expiry goods storage room
9. Narcotic vaults
10. Storage and dispensing area for radioisotopes
11. Central sterile supply area
12. Cold storage room
13. Research and development room
14. Pharmacy store room
15. Library room
16. Waiting room for patients

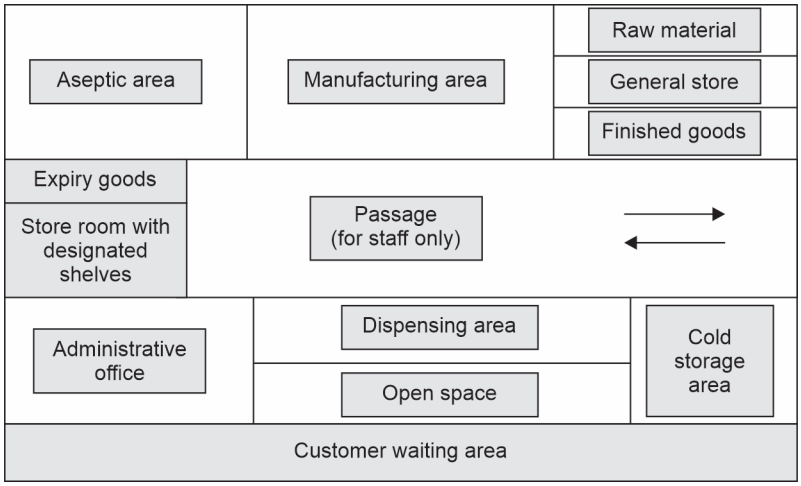

Fig. 1.3: An ideal hospital pharmacy layout

Professional Responsibilities

Administrative Services Division

i. Planning and coordinating departmental activities such as dispensing, manufacturing, storage, and disposal.
ii. Providing monitoring and guidance when necessary.
iii. Coordinating the pharmacy and therapeutics committee's administrative needs.
iv. Supervising departmental office employees to ensure smooth pharmacy operations.

Education and Training Division

i. Coordinating training and education programs for undergraduate and graduate pharmacy students.
ii. Participating in hospital-wide educational programs with nurses, doctors, and others.
iii. Orienting newly hired pharmaceutical department staff.

Purchasing and Inventory Control Division

i. Maintaining accurate drug inventory records.
ii. Purchasing all hospital drugs.
iii. Receiving, storing, and dispensing drugs.
iv. Conducting interviews and coordinating with medical service representatives.

Pharmaceutical Research Division

i. Developing innovative drug formulations, especially non-commercially available dosage forms.
ii. Improving existing product compositions.
iii. Collaborating with medical research staff on drug-related projects.

Inpatient Services Division

i. Providing 24/7 drug services to hospital in-patients.
ii. Inspecting and controlling drugs in treatment areas.
iii. Collaborating in medicinal drug research.
iv. Maintaining prescription records.

Drug Information Services Division

i. Educating doctors, nurses, and medical students on medications and drug therapy.

ii. Maintaining the drug information center.
iii. Keeping literature files for review and follow-up.

Outpatient Services Division

i. Controlling and inspecting clinical and emergency services, compounding, and administering prescription drugs to outpatients.
ii. Maintaining prescription records.
iii. Providing drug consulting services to staff and medical students.

Sterile Products Division

i. Preparing small batches of parenteral solutions.
ii. Developing sterile ophthalmologic, irrigating, and other solutions.
iii. Aseptically diluting lyophilized and unstable sterile injections.

Radiopharmaceutical Services Division

Centralizing procurement, storage, and dispensing of radioisotopes for clinical use.

Intravenous Admixture Division

i. Centralizing intravenous solution admixture preparation.
ii. Examining each IV admixture for physio-chemical and therapeutic incompatibilities.

Departmental Services Division

i. Controlling and dispensing intravenous fluids.
ii. Controlling and dispensing controlled substances.
iii. Coordinating and controlling drug delivery and distribution systems.

Central Supply Services Division

i. Developing and coordinating medical supply and irrigating fluid distribution.
ii. Analyzing manufactured and purchased products.
iii. Creating and updating assay protocols.
iv. Assisting the research division with unique formulations.

Manufacturing and Packaging Division

i. Manufacturing commonly used hospital items.
ii. Managing a comprehensive drug packaging and prepackaging program.
iii. Participating in product development programs.
iv. Maintaining a unit dose program.

Personnel Requirement and Qualification

There is no standard for healthcare personnel in hospitals. The number of pharmacists needed in a hospital is calculated according to workload and available beds (Table 1.1). For example, a small hospital needs at least 3 pharmacists. As the number of beds increases, the number of pharmacists also increases. Pharmacists in the hospital should be well qualified and experienced. If manufacturing of drugs are involved in pharmacy then adequate technicians, assistants, peons, etc. are also required.

Table 1.1: Number of pharmacists required by the size of the hospital

Size of the hospital (number of beds)	*Number of pharmacists required*
≤ 50 beds	3
≤ 100 beds	5
≤ 200 beds	8
≤ 300 beds	10
≤ 500 beds	15

The primary goal of an outpatient pharmacy is to provide a comfortable and professional environment for patients. To achieve this, the pharmacy should have sufficient space and a waiting room. The waiting room should be equipped with posters promoting health and cleanliness, as well as educational literature.

i. To prevent overcrowding, an outpatient pharmacy should have enough space and waiting room for the patients.
ii. The drug storage areas should be near to the pharmacy for proper man and material flow.
iii. The minimum area required for all large hospitals is 25 square meters. Area required per bed is 1 square meter in 100 bedded hospital (100 sqm) and 0.65 sq. meter per bed in 200 bedded hospital (130 sqm).
iv. The floorings of the pharmacy should be smooth, easy to clean, and resistant to acids.

v. The factory should have proper drainage system, and the walls should be smooth and painted in a light color.
vi. There should be wooden cabinets properly laminated.
vii. Fluorescent lamps should be positioned above prescription counter.

Qualifications of Personnel

i. The chief pharmacist or director should have a minimum postgraduate degree in pharmacy, preferably in pharmacology or hospital pharmacy.
ii. Manufacturing chemist should be a graduate of pharmacy with a minimum of 18 months of experience in manufacturing processes related to drugs and formulations.
iii. Analytical chemists should be postgraduate in pharmaceutical chemistry or analytical chemistry.
iv. Registered pharmacists should have a diploma in pharmacy with relevant experience of a minimum of one year and should be registered as pharmacists in the state pharmacy council.
v. Pharmacist cum clerk should have a diploma in pharmacy with computer knowledge and should be registered with the state pharmacy council.

GOOD PHARMACY PRACTICE

The primary aim of pharmacy practice is to provide medications and fulfill the healthcare needs of people. The main goal of pharmacy practice is to provide quality services and products, enabling society to use them effectively. Good pharmacy practice (GPP) is the way to achieve these aims.

Requirements of GPP

i. The primary responsibility of pharmacists is to prioritize patient well-being and treatment.
ii. The main focus of the pharmacy is to provide high-quality medications and healthcare products, along with accurate information and guidance for patients, and closely monitor their effects.
iii. Promoting rational and economical prescribing, as well as appropriate medicine use, is an integral part of a pharmacist's contribution.

To meet these requirements, the following conditions must be fulfilled:

i. The well-being of patients should be the guiding principle of pharmacy practice, despite the importance of ethical and economic factors.
ii. Pharmacists should have a say in determining how medications are used.
iii. A system should be established to enable pharmacists to report adverse events, medication-related challenges and errors, misuse of medications, abuse of medications, poor product quality or the identification of counterfeit medicines.
iv. Pharmacists should establish a therapeutic partnership with other health professionals, particularly doctors, based on mutual trust and confidence in medication.
v. Pharmacists should view each other as partners working to improve pharmacy services, rather than competitors.
vi. Organizations, group practices, and pharmacy managers should define, assess, and improve quality.
vii. Pharmacists must stay up-to-date with vital medical and pharmacological information, such as diagnosis, laboratory test results, and patient history.
viii. Pharmacists should take personal responsibility for maintaining and evaluating their competency throughout their careers.
ix. Pharmacy education programs should include current and projected advancements in practice.
x. National GPP standards should be established and adhered to by practitioners.

GPP Guidelines

There are two types of guidelines issued under GPP such as: (1) Structural guidelines, and (2) Process guidelines.

1. **Structural guidelines:** These are related to:
    a. *Facility:*
        i. Premises
        ii. Furniture and fixtures
        iii. Equipment

b. *Systems:*
   i. Quality control policy
   ii. Service policy
   iii. Staff training and education policy
   iv. Complaints/suggestion policy
   v. Drug recall/drug alert policy
   vi. Audit and inspection policy
c. *Personnel*

2. **Process guidelines:** These are related to:
   i. Procurement and inventory management
   ii. Storage inventory management
   iii. Prescription handling
   iv. Dispensing
   v. Information for the patient
   vi. Patient counseling
   vii. Health promotion and ill health prevention
   viii. Pharmacovigilance
   ix. Enhancement of professional role
   x. Professional interactions and relations

Pharmacists are responsible for documenting their professional practice experience and actions, as well as conducting and/or participating in pharmacy practice and therapeutic research.

Main Elements of GPP

The primary components of GPP are as follows:

1. Promoting health and preventing illness
2. Ensuring the availability and proper use of prescription drugs and other medical supplies
3. Encouraging self-care
4. Influencing medication use and prescriptions
5. Developing plans for population-level health promotion initiatives
6. Expert evaluation of advertisements for medications and other health-related products
7. Distribution of assessed information regarding medications and medical topics
8. Participation in clinical studies at every level.

HOSPITAL PHARMACY STANDARDS

FIP Basel Statements

The International Pharmaceutical Federation (FIP) Hospital Pharmacy Section organized the Global Conference on the Future of Hospital Pharmacy in 2008. The conference resulted in the creation of the Basel statements, which embody the profession's vision for practice in the hospital context. Medication safety was a key issue in the development of these statements. Each facilitator also developed proposed consensus statements for consideration. In advance of the conference, all draft materials were disseminated to working groups consisting of official representatives and other participants, and a "virtual dialogue" was conducted. Working group members exchanged comments and suggestions regarding these manuscripts via Email, allowing many statements to be refined in advance of the meeting in Basel.

This landmark two-day meeting, organized by FIP's Hospital Pharmacy Section, resulted in an agreement on 75 declarations that embody their practice vision: the Basel declarations. In 2014, hospital chemists convened again in Bangkok, Thailand, to update the declarations and provide feedback on future practice. The most recent version of the Basel statements was published in September 2015. Now there are 65 statements. The statements are organized into the following sections: procurement; preparation and distribution; prescribing, and administration of medicines; monitoring of patient outcomes; human resources and training; and general and governance statements.

By these statements, hospital pharmacies can develop a self-assessing tool and compare the services provided by the hospital with Basel statements. This helps in improving the standard of services and products provided in the hospital. It is a very efficient method and is used in several countries' hospitals worldwide.

American Society of Health-System Pharmacists (AHSP) Guidelines

To address the demands of the public, pharmacists collaborate closely with other medical professionals. Pharmacies must offer a wide range of organized services due to the diverse societal needs for pharmaceutical care. These guidelines mainly focus on acting as a manual for providing pharmaceutical services in hospitals,

however, some of its components might also be useful in other healthcare facilities. These guidelines are also helpful in determining the scope and quality of pharmacy services.

The guidelines of the American Society of Health-System Pharmacists are meant to be used as a reference while providing pharmacy services in hospitals.

These recommendations set forth a minimal standard of services that the majority of hospital pharmacy departments should continually offer.

Pharmacy professionals care about the results of their work, not just the act of doing it. The minimal standards for pharmaceutical services in hospitals are outlined in these guidelines. The elements of a pharmacy program that are critical to overall successful performance in a hospital include:

i. Leadership and practice management
ii. Drug information and education
iii. Activities to ensure rational medication therapy
iv. Drug distribution and control
v. Facilities
vi. Participation in drug therapy research.

These components work together to form a minimal standard of practice that hospital pharmacy departments must consistently work to meet. These factors are intimately related to outcomes, even though the scope of pharmaceutical services will probably vary from site to site based on the needs of the patients served. Therefore, not offering any of these services could lower the standard of pharmaceutical treatment as a whole.

INTRODUCTION TO NQAS GUIDELINES

The National Health Systems Resource Centre was established in 2007 with the mission of assisting in policy and strategy creation, providing and mobilizing technical help to states, and creating capacity for the Ministry of Health. The National Health Systems Resource Centre created National Quality Assurance Standards (NQAS) while taking into account the particular requirements for public health institutions as well as worldwide best practices. NQAS are now accessible for mainly district hospitals, community health centers, primary health centers (PHCs), and urban PHCs. Guidelines are primarily intended to help providers analyze their quality for improvement using established standards and to prepare their facilities for certification.

The National Quality Assurance Standards are broadly arranged under the following eight "Areas of Concern":

i. Service provision
ii. Patient rights
iii. Inputs
iv. Support services
v. Clinical care
vi. Infection control
vii. Quality management
viii. Outcome

These standards are accredited by International Society for Quality in Health Care (ISQua). These standards meet global benchmarks in comprehensiveness, objectivity, evidence, and rigour of development.

INTRODUCTION TO NABH ACCREDITATION

The Quality Council of India (QCI) includes the National Accreditation Board for Hospitals & Healthcare Providers (NABH) as one of its constituent boards. NABH was established to develop and operate accreditation programs for healthcare organizations. The board (Fig. 1.4) aims to meet public expectations and set standards for the advancement of the health sector. The board operates independently and collaborates with stakeholders, including the government, industry, and consumers. NABH is an institutional member of the ISQua and a member of ISQua's Accreditation Council. Additionally, NABH is a member of the Asian Society for Quality in Healthcare (ASQua).

NABH's vision is to become a premier national healthcare accreditation and quality improvement organization, operating at par with international standards. NABH's mission is to run accreditation and related programs in partnership with stakeholders that prioritize patient safety and healthcare quality according to national and worldwide standards.

NABH is founded on the following core values:

i. **Credibility:** Providing trustworthy and valuable services.
ii. **Responsiveness:** Continuously improving services by listening and adapting.

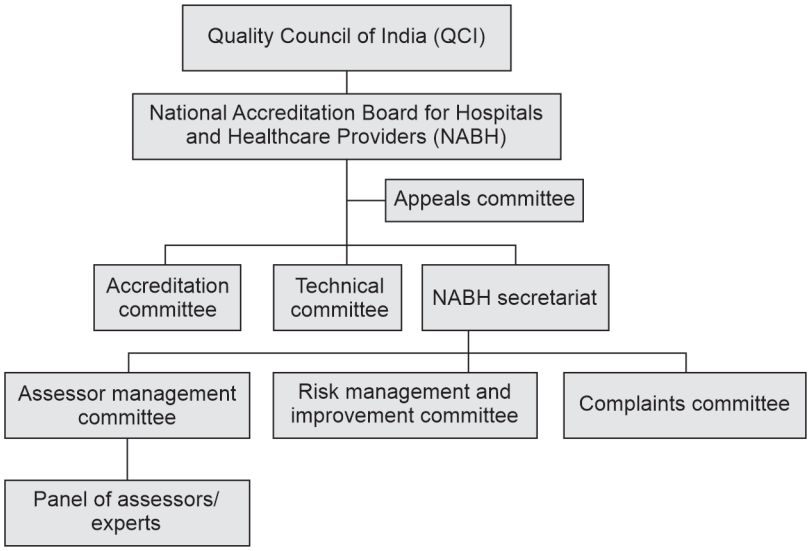

Fig. 1.4: NABH structure
(*Source:* https://nabh.co/introduction.aspx#gsc.tab=0)

iii. **Transparency:** Ensuring openness and freedom of information in stakeholder interactions.
iv. **Innovation:** Embracing change, originality, ongoing education, and fresh ideas to enhance services.

Objectives of NABH

i. Accrediting healthcare facilities to ensure quality care.
ii. Promoting quality initiatives, such as nursing excellence and laboratory certification programs.
iii. Conducting information, education, and communication (IEC) activities, including public lectures, advertisements, and workshops/seminars.
iv. Providing education and training on quality and patient safety.
v. Supporting high-quality healthcare training and courses.

ROLE OF PHARMACIST

A hospital pharmacist plays a vital role in ensuring quality patient care by preventing unnecessary complications caused by medication misuse or over-prescription. Under the supervision of

Fig. 1.5: Role of pharmacist in hospital pharmacy

medical professionals, hospital pharmacists provide guidance on drug selection and usage, ensure safe drug administration and dosage, and offer advice on drug treatment and effects.

Some of the primary duties of a pharmacist (Fig. 1.5) include:

i. Supporting medical services by providing and evaluating pharmaceutical services.
ii. Assessing departmental needs and implementing rules and guidelines for hiring qualified personnel.
iii. Developing and maintaining an efficient administrative and clinical record-keeping and reporting system.
iv. Creating an administrative strategy for the hospital pharmacy.
v. Participating in the financial planning of hospital operations and adhering to the plan.
vi. Outlining requirements for purchasing pharmaceuticals, chemicals, and biologicals.
vii. Labeling and filling medication containers for dispensing.
viii. Dispensing and sterilizing parenteral medications produced in the hospital.
ix. Participating in and following hospital safety initiatives.

x. Maintaining communication between patients, nurses, and medical staff.
xi. Disposing of expired medications and containers.
xii. Dispensing medications according to hospital medical staff prescriptions.
xiii. Ensuring proper storage of medicines as per guidelines.
xiv. Developing and implementing a continuing education program for staff.
xv. Collaborating with physicians to determine suitable medications for patients.
xvi. Creating and monitoring drug charts to ensure accurate prescription instructions.

ISOLATED KEY POINTS

- **Hospital pharmacy:** A hospital pharmacy is a department where registered pharmacists procure, store, compound, test, dispense, prepare, pack, and distribute medications to inpatients and outpatients.
- **Objectives and functions of hospital pharmacy:** The hospital pharmacy performs various functions, including dispensing, compounding, and quality testing of medications. The key objectives of hospital pharmacy include teaching ethics, ensuring medicine accessibility, developing administrative skills, utilizing resources sustainably, and maintaining medication safety and quality.
- **Organizational structure:** The hospital pharmacy's organizational structure includes various departments and hierarchical positions. The pharmacy's location and layout are crucial for providing optimal patient services.
- **Goods pharmacy practice (GPP):** Good pharmacy practice aims to provide quality healthcare services and products to society.
- **FIP basel statements:** The Basel statements, published in September 2015, comprise 65 statements organized into sections such as procurement, preparation and distribution, prescribing, and administration of medicines.
- **American Society of Health-System Pharmacists (AHSP) guidelines:** The American Society of Health-System Pharmacists guidelines serve as a reference for providing pharmacy services in hospitals.

- **Introduction to NQAS guidelines:** The National Health Systems Resource Centre established the National Quality Assurance Standards (NQAS) to assist healthcare providers in analyzing and improving quality using established standards.
- **Introduction to NABH accreditation:** The National Accreditation Board for Hospitals & Healthcare Providers (NABH) is a constituent board of the Quality Council of India, established to operate accreditation programs for healthcare organizations.
- **Role of pharmacist:** A hospital pharmacist works under the supervision of qualified medical professionals, providing guidance on medication selection and use, ensuring safe administration and dosage, and advising on drug treatment and effects.

PRACTICE EXERCISE

Objective Type Questions

1. The word 'Pharmacy' originates from the Greek word '.....' which means remedy.
2. The full form of WHO is .....
3. Which is not the function of hospital pharmacy?
   a. Take care of sick and injured patients
   b. Primary function is to take care of inpatient and outpatient
   c. Maintaining a stock of emergency drugs.
   d. Plantation of herbal drugs
   e. Dispensing and maintaining the records of all narcotic drugs.
4. Write the number of pharmacists required in relation to the size of the hospital.

Size of the hospital (number of beds)	*Number of pharmacists required*
≤ 50 beds	–
≤ 100 beds	–
≤ 200 beds	–
≤ 300 beds	–
≤ 500 beds	–

5. The full form of GPP in hospitals is .....
6. Which of the following is not American Society of Health-System Pharmacists (AHSP) guidelines?
   a. Drug information and education
   b. Dispensing of narcotic drugs
   c. Drug distribution and control
   d. Participation in drug therapy research
7. NQAS stands for .....
8. ..... is established to operate accreditation programs for healthcare organizations.
9. NABH is an institutional member of:
   a. International Society for Quality in Health Care (ISQua)
   b. Accreditation Council of the International Society for Quality in Health Care
   c. Asian Society for Quality in Healthcare (ASQua)
   d. All of the above
10. Match the values related to NABH:

a. Credibility	i. Openness in communication and freedom of information to its stakeholders
b. Responsiveness	ii. Provide credible and value addition services
c. Transparency	iii. Incorporating change, creativity, continuous learning, and new ideas to improve the services being provided
d. Innovation	iv. Willingness to listen and continuously improve service

11. Which of the following is not the objectives of NABH?
    a. Accreditation of healthcare facilities
    b. IEC activities: Public lectures, advertisements, workshops/seminars
    c. Education and training for quality and patient safety
    d. Patient medicine dispensing

Short Answer Type Questions

1. Explain the term 'Pharmacy' and its types.
2. Define hospital pharmacy.
3. What are the objectives and functions of hospital pharmacy?

4. Explain the organizational structure of hospital pharmacy.
5. Explain the following terms:
   a. Location and layout of hospital pharmacy
   b. Personnel requirements and qualification in hospital pharmacy
   c. NABH accreditation
   d. AHSP guidelines
6. Highlight the importance of GPP in maintaining hospital pharmacy.

Long Answer Type Questions

1. What are the objectives, structure, and functions of hospital pharmacy?
2. Explain in detail the definition and scope of hospital pharmacy.
3. Describe in detail the professional responsibilities of personnel and the role of pharmacists in hospital pharmacy.
4. "GPP is the way by which the aim and objectives of hospital pharmacy can be achieved". Explain the statement by explaining GPP guidelines and elements.
5. Describe in detail:
   a. NQAS guidelines
   b. FIP Basel statements

Answers (Objective Type Questions)

1. Pharmakon
2. World health organization
3. d
4. 3, 5, 8, 10, 15
5. Goods pharmacy practice
6. b
7. National quality assurance standards
8. National accreditation board for hospitals and healthcare providers (NABH)
9. d
10. a. ii, b. iv, c. i, d. iii
11. d