Hospital Pharmacy 1

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 patients, doctors, nurses and other health care professionals on their safe, effective and efficient use.

Hospital pharmacy is a specialized 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.

SCOPE OF THE HOSPITAL PHARMACISTS

This includes:

- To be part of the medication management system in hospitals, which encompasses the entire way in which medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution to produce desired outcomes.
- To enhance the safety and quality of all medicine related processes affecting patients of the hospital to ensure the 7 "rights": right patient, right dose, right route, right time, right drug with the right information and documentation.

NATIONAL SCENARIO OF HOSPITAL PHARMACY

The pharmacy profession was introduced in India in the year 1932 and has now completed 99 years in the year 2022.

Development of Pharmacy Profession in India

The Government of India appointed the **Drugs Enquiry Committee** (1930–31) under the chairmanship of Dr RN Chopra. First Pharmacy College in India with the inspiration of Late Mahamana Pandit Madan

Mohan Malviya and with the untiring zeal and enthusiasm of Late Professor ML Schroff was established as early as 1932. The full 4 year's course in pharmacy was started in the year 1937 in BHU. Drug Act 1940: The Government of India took 9 years to process the Drugs Act, 1940 after submitting the report of Drugs Enquiry Committee in 1931. The Drugs rules were framed in the year 1945 to formulate as per provision of this act.

The Indian Journal of Pharmacy was started by Prof ML Shroff in 1939. In 1935, United Province Pharmaceutical was established which later converted into Indian Pharmacy Association.

HOSPITAL PHARMACY

Hospital pharmacy is a department or service in a hospital that provides pharmaceutical services or pharmaceutical care. The objective of the hospital pharmacy services is to provide safe and effective medication for all patients attending hospitals and clinics.

Development of hospital pharmacy in India: In the year 1959, the model scheme for a Hospital Pharmacy was approved by the Pharmacy Council of India (PCI) in a hospital with 500 beds or more to have in addition to the ordinary pharmacy, required to fulfil the need of drugs of hospital. During the 15th IPC at Pilani in 1963 Dr BD Miglani who is known as the Father of Hospital Pharmacy started the Indian Hospital Pharmacist Association (IHPA) in the country with the founder member of Sh SL Nasa and Sh Davender K Jain, Ex-Secretary, Pharmacy Council of India. IHPA is the National Professional Body of Hospital Pharmacists engaged in Practice of Pharmacy. The mission of IHPA is to promote and develop the practice of hospital pharmacy, upgrade the knowledge and skills of hospital pharmacists. There are various committees' set up by the government to develop hospital pharmacy in India which includes Mysore Expert Committee (1967), Haathi Committee, National Human Right Commission (1991), etc. Drugs information centres are set up to facilitate more information about the use of drugs and its contents for the pharmacists; Software has been developed in which the data of more than 80,000 drugs has been displayed. This can give drug information to the doctors, nurses and other para medical staff. Some of the Drugs Information Centre available in India is Delhi Institute of Pharmaceutical Sciences and Research, Delhi, LBS College of Pharmacy, Jaipur, Rajasthan, JSS College of Pharmacy, Mysore, Ooty.

DUTIES AND PROFESSIONAL RESPONSIBILITIES OF HOSPITAL PHARMACISTS

Hospital pharmacists need to:

- Check prescriptions for errors, ensuring they are appropriate and safe for the individual patient
- Provide advice on the dosage of medicines and the most appropriate form of medication, which could be by tablet, injection, ointment or inhaler
- Preparation and sterilization of injectable medicine
- Fill and label the medicine containers
- Proper dispensing of narcotic medicine
- Properly maintain the records of narcotic medicine
- Maintain the sufficient stock of antidote for poisoning and emergency medicine
- Participate in ward rounds to take patient drug histories
- Liaise with other medical staff on problems which patients may experience when taking their medicines
- Discuss treatments with patients' relatives, community pharmacists and GPs
- Make sure medicines are stored appropriately and securely
- Supervise the work of less experienced and less qualified staff
- Answer questions about medicines from within the hospital, other hospitals and the general public
- Keep up to date with, and contribute to, research and development
- Frame the guidelines for drug use within the hospital and implement hospital regulations
- Provide information on expenditure on drugs
- Prepare and quality-check sterile medications, e.g. intravenous medications
- Implementation of decision of pharmacy and therapeutic committee.
- Set up and supervise clinical trials
- Carry-out teaching within the pharmacy department and in other areas of the hospital—this would only be once you have gained substantial experience.
- Play an active role inpatient counselling.

ORGANISATION STRUCTURE OF HOSPITAL PHARMACY

Hospital pharmacy is mostly located at convenient place in hospital premises only so that patients and staff can easily approach it. In the multi-stored building of a hospital, the pharmacy should be preferably located on the ground floor especially the dispensing unit. It should be

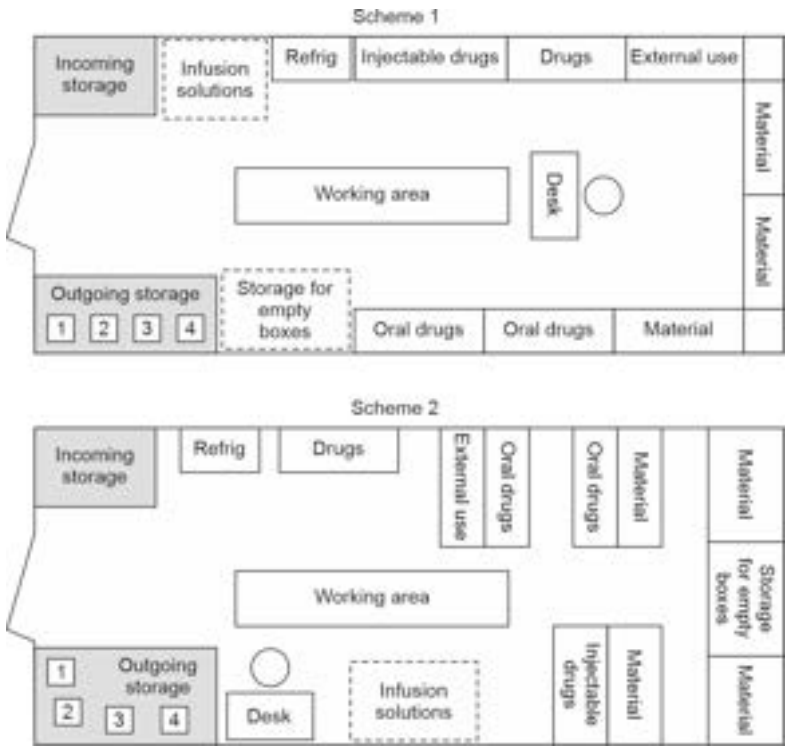

Fig. 1.1: Structure of hospital pharmacy organisation

laid in such a way that there is a continuous flow of men and materials (Fig. 1.1).

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:

- Inpatient services and unit dose dispensing
- Outpatient service
- An office for the chief pharmacist
- A compounding room
- Prepacking and labelling room

- A store room
- Sterile products room

A separate area for drug information services and space assigned on various nursing units for unit dose drug administration.

Floor Space Requirements

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

QUALIFICATION AND EXPERIENCE REQUIRED FOR HOSPITAL PHARMACIST

Hospital pharmacist is an individual currently registered and who works in a hospital pharmacy service, primarily within the public/private sector. They are responsible for ensuring the safe, appropriate and cost-effective use of medicines.

Registered pharmacist: Registered pharmacist is a person who is registered under a State Pharmacy Council of concern state where he is living or pursuing his pharmacy profession.

Applying for new registration as a pharmacist, candidate should have minimum qualification and documentations. Minimum qualification and documentation vary country to country and state to state.

Qualification for Registration as a Pharmacist

Candidate should be Diploma in Pharmacy/Bachelor in Pharmacy/M Pharm in Pharmacy/Doctor in Pharmacy to be eligible for applying as a pharmacist registration. Other documentations vary state to state or country to country.

How to Apply for Pharmacist Registration?

For registration as a pharmacist, candidate should have passed minimum of Diploma in Pharmacy or Degree in Pharmacy or Pharma D from an institution recognized under Section 12 of the Pharmacy Act.

For diploma candidates, which is a two-year of duration after 10 + 2 (PCM or PCB) requires 500 hours practical training, to be completed in not less than 3 months duration, whereas for degree students no practical training is required.

ROLE OF CHIEF PHARMACIST

Chief pharmacists ensure staff and medicines are managed and compliant with legal and professional regulations, ensuring the safe, high quality and effective use of medicines. The role provides expert pharmaceutical advice, at all levels, on the effective, economic use of medicines and the systems and processes needed in the department.

Qualifications

- M Pharm or equivalent degree in pharmacy approved by Central Pharmacy Council
- 1 year pre-registration training and experience
- Registered pharmacist with the State Pharmacy Council

Postgraduate qualification in pharmacy practice or management (desirable).

Workload Requirements

The hospital pharmacy is integrated with the dispensing section, manufacturing section, quality assurance section, and clinical pharmacy services. The requirement of personnel for an inpatient pharmacy depends on the nature and quantum of services provided by the department. The requirement of hospital pharmacists in hospitals is based on workload and number of beds in hospital. Generally, small hospitals require a minimum of three pharmacists, but this varies with the number of beds in each hospital. The number of pharmacists required according to beds in a hospital is listed in Table 1.1.

Table 1.1: Pharmacist requirement in hospitals

Bed strength	*No. 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

INTERPROFESSIONAL COLLABORATION IN HEALTH CARE

There are numerous ways to describe interprofessional collaboration in the provision of health care services. In the general sense of the word, it is defined as working together with one or more members of a team who each make a unique contribution for achieving a common goal. Each individual contributes from within the limits of her/his scope of practice. The World Health Organization defines it as "multiple health workers from different professional backgrounds working together with patients, families, carers (caregivers), and communities to deliver the highest quality of care.

There is mounting evidence that an interprofessional care environment may offer multiple benefits. These include:

Improved outcomes for people with chronic diseases: According to a study, interprofessional collaboration improves chronic disease management. For example, in the primary care setting, pharmacist and physician collaborations have reported successful outcomes with regards to cholesterol lowering and cardiac risk reduction, blood pressure control, diabetes management, heart-failure management, depression, pain, asthma control and palliative care.

Decreased health cost: Interprofessional collaboration in health care helps to prevent medication errors, improve the patient experience, and deliver better patient outcomes—all of which can reduce health care costs. It also helps hospitals to save money by improving the hospital work flow. As per study, interprofessional collaboration between its nurses and physican, hospital cut its fall rate in half, decreased length of stay by 0.6 days, increased annulized bed turn 20% and increased discharges before noon by 20%.

Reduced medication errors: As the health care system is faced with the challenge of reducing medication errors and adverse drug events, one viable solution may be to increase physician–pharmacist collaboration. According to the literature, increasing physician–pharmacist collaboration reduced medical errors lowering emergency department clinical error rates from 30.9 to 4.4%.

Increased job (practitioner) satisfaction: The benefit of interprofessional collaboration is not only felt by the patients and the health care system but also by the participating health care professionals. Health care professionals' benefit from interprofessional collaboration by gaining diverse knowledge of other practitioners on the health care team. Furthermore, health care professionals' benefit from the more equal distribution of workload among team members, which contributes to an increase in the practitioner satisfaction rates.

GOOD PHARMACY PRACTICES

Good pharmacy practice (GPP) is the heart or very essence of the profession of pharmacy. Moreover, its main aim is to facilitate good therapeutic outcomes with medicines.

It is recognized that pharmacy practice varies enormously from one country to another and from one continent to another, incorporating developing, transitional and developed countries. The applicability of the 2011 update of the joint WHO/FIP guidelines on Good Pharmacy Practice: Standard for quality of pharmacy services is intended to take these variations in practice into account.

Definition of Good Pharmacy Practice

GPP is the practice of pharmacy that responds to the needs of the people who use the pharmacists' services for getting optimal, evidence-based care. To support this practice, it is essential to have an established national framework of quality standards and guidelines.

Requirements of Good Pharmacy Practice

- GPP requires that a pharmacist's first priority in all settings is the welfare of patients.
- GPP requires that the core of the pharmacy activity is to help the patients to make the best use of medicines. Fundamental functions include the supply of medication and other health care products of assured quality, the provision of appropriate information and advice to the patient, administration of medication, when required, and the monitoring of the effects of medication use.
- GPP requires that an integral part of the pharmacist's contribution is the promotion of rational and economic prescribing, as well as dispensing.
- GPP requires that the objective of each element of pharmacy service is relevant to the patient, is clearly defined and is effectively communicated to all those involved. Multidisciplinary collaboration among health care professionals is the key factor for successfully improving patient safety.

Main Elements of Good Pharmacy Practice

For each of the four main elements of GPP, national standards covering processes and necessary facilities should be established and promoted to the profession.

1. Health Promotion and Ill-health Prevention

National standards are needed for:

i. Facilities for confidential conversation that cannot be overheard by others.
ii. Provision of general advice on health matters.
iii. Involvement of personnel in briefings for specific campaigns to ensure coordination of effort and consistency of advice.
iv. Quality assurance of equipment used and advice given in diagnostic testing

2. Supply and the use of Prescribed Medicines and other Health Care Products

a. Receiving of the prescription and confirmation of the integrity of the communication
   National standards are needed for: (i) Facilities, (ii) procedure, (iii) personnel
b. Assessment of the prescription by the pharmacist
   1. Therapeutic aspects (pharmaceutical and pharmacological)
   2. Appropriateness for the individual
   3. Social, legal, economic aspects.
   National standards are needed for: (i) Information sources, (ii) competence of pharmacist, (iii) medication records
c. Assembly of the prescribed items
   National standards are needed for: (i) Sources of supply of medicines and other items; manufacture of medicines, (ii) storage, (iii) condition at time of supply to the patient, (iv) personnel involved, (v) equipment required, (vi) facilities and workplace required, (vii) preparation and quality assurance of extemporaneous preparations, (viii) disposal of unused pharmaceutical products and pharmaceutical waste.
d. Advice to ensure that the patient or carer receives and understands sufficient written and oral information to derive maximum benefit from the treatment.
   National standards are needed for: (i) Facilities for confidential conversation that cannot be overheard by others, (ii) information sources, (iii) procedure to be followed and the appropriate documentation of these procedures, (iv) competence of personnel involved.
e. Following up the effect of prescribed treatments
   National standards are needed for: (i) Procedure to be followed in regular, systematic evaluation of progress or outcomes of treatment

for individual patients or groups of patients, (ii) access to necessary monitoring equipment and facilities, (iii) quality assurance of monitoring facilities.

f. Documentation of professional activities
National standards are needed for: (i) Recording professional activities and pertinent data in a manner that allows access to comprehensive information, (ii) procedures for self-assessment of professional activities and quality assurance.

3. Self-care

National standards are needed for:

i. Facilities for confidential conversation that cannot be overheard by others.
ii. Qualifications of personnel to be involved
iii. How proper assessment of need is to be made, For example: a. Who has the problem; b. What are the symptoms; c. How long has the condition existed; d. Action already taken; e. Medicines already being taken.
iv. Efficacy and safety of products recommended.
v. When reference to medical practitioner is appropriate and how to follow up.

4. Influencing Prescribing and Medicine use through General Rational Prescribing Policies

National standards are needed for: (i) Quality of prescribing data provided to the pharmacist, (ii) the preparation of formularies on medicines, (iii) contacts with physicians on individual prescribing, (iv) evaluation of data on the use of medicines in medical and pharmaceutical practices, (v) assessment of promotional materials, (vi) dissemination of evaluated information within a formal network, (vii) educational programmes for health professionals, (viii) reference sources available to the pharmacist, (ix) confidentiality of data relating to individual patients.

Roles of Pharmacist in GPP

The pharmacist's role is expanding beyond the traditional product-oriented functions of dispensing and distributing medicines and health supplies. The pharmacist's services of today include more patient-oriented, administrative and public health functions. Pharmacist can perform following functions in compliance with GPP:

- Prepare, obtain, store, secure, distribute, administer, dispense and dispose of medical products.

- Provide effective medication therapy management
- Maintain and improve professional performance
- Contribute to improve effectiveness of the health care system and public health.

HOSPITAL PHARMACY STANDARDS

FIP Basel Statements

The International Pharmaceutical Federation (FIP) represents over 3 million pharmacists and pharmaceutical scientists around the world through 137 national organizations, as well as academic institutional and individual membership.

In 2008, FIP representatives from 98 nations met in Basel, Switzerland, during the inaugural Global Conference on the future of Hospital Pharmacy.

The outcome of the conference was a set of consensus statements representing a global initiative to promote the practice of hospital pharmacy around the world. These statements, known as the *Basel statements on the future of hospital pharmacy*, are organized under several "overarching statements" and 6 themes. The themes are as follows:

- Medicines procurement,
- Influences on prescribing,
- Preparation and delivery of medicines,
- Administration of medicines,
- Monitoring of medication use, and
- Human resources and training.

The Basel statements are supported by evidence-based practices, with a strong focus on medication safety, as evidenced by literature reviews and a global survey of hospital pharmacy practices.

Since their creation, the Basel statements have been made available in 21 languages, including the official languages of the United Nations. Furthermore, several international initiatives related to the Basel statements have emerged around the world. Recently, the FIP Hospital Pharmacy Section revised the Basel statements. The 65 revised Basel statements continue to provide a global, unified vision for the future of hospital pharmacy profession in an ever-changing health care environment. New additions to the Basel statements include hospital pharmacists' role in minimizing the environmental effects of pharmaceuticals and their expanding role related to information technology and informatics.

ASHP GUIDELINES: MINIMUM STANDARD FOR PHARMACIES IN HOSPITALS

American Society of Health-System Pharmacy (ASHP) has suggested the minimum standard guidelines, intended to serve as a basic guide for the provision of pharmacy services in hospitals.

Standard I: Practice Management

Effective leadership and practice management skills are necessary for the delivery of pharmacy services in a manner consistent with the hospital's and patient's needs.

A. Pharmacy and Therapeutic Services

Pharmacy mission, goals, and scope of services: The pharmacy shall have a written mission statement that reflects both patient care and operational responsibilities.

24-hour pharmacy services: 24-hour pharmacy services should be provided when possible.

After-hours pharmacy access: In the absence of 24-hour pharmacy services, access to a limited supply of medications shall only be available to authorized, licensed health care professionals for use in carrying out urgent medication orders.

Practice standards and guidelines: The standards and regulations of all relevant government bodies (e.g. state boards of pharmacy, departments of health) shall be met.

B. Laws and Regulations

Applicable local, state, and federal laws and regulations shall be followed, and relevant documentation of compliance shall be maintained.

C. Policies and Procedures

Policies and procedures manual: There shall be a policy and procedure manual governing pharmacy functions (e.g. administrative, operational, and clinical), and all pharmacy personnel shall follow those policies and procedures.

Personnel safety: Pharmacy employees should be involved in the development of the hospital's plans for emergency response, infection prevention and control, management of hazardous substances and waste, and incident reporting, and all pharmacy staff shall receive education about those plans.

Emergency preparedness: Facility of emergency preparedness plans shall describe the role of pharmacy staff in emergency response (including evacuation), and the facility's business continuity plan shall include procedures for providing safe and efficient pharmacy services in case of emergencies.

Medical emergencies: The pharmacy shall participate in hospital decisions about the contents of code carts, emergency medication kits and trays, and the role of pharmacists in medical emergencies.

Immunization programs: The pharmacy shall participate in the development of hospital policies and procedures concerning preventive and postexposure immunization programs for patients and hospital employees.

Substance abuse programs: The pharmacy shall assist in the development of and participate in hospital substance abuse education, prevention, identification, treatment, and employee assistance programs.

D. Human Resources

Position descriptions: Areas of responsibility within the scope of pharmacy services shall be clearly defined. The responsibilities and related competencies of professional and supportive personnel shall be clearly defined in written position descriptions.

Director of pharmacy: The pharmacy shall be managed by a professionally competent, legally qualified pharmacist. The director of pharmacy should be thoroughly knowledgeable about and have experience in hospital pharmacy practice and management.

Pharmacists: The pharmacy shall employ an adequate number of competent, legally qualified pharmacists to meet the specific medication-use needs of the hospital's patients.

Support personnel: Sufficient support personnel (e.g. pharmacy technicians and clerical or secretarial personnel) shall be employed to facilitate pharmacy services.

Education and training: All personnel shall possess the education and training required to fulfil their responsibilities and shall participate in relevant continuing-education programs and activities as necessary to maintain or enhance their competence.

Recruitment, selection, and retention of personnel: Personnel should be recruited and selected by the pharmacy director on the basis of job-related qualifications and prior performance. An employee retention plan is desirable.

Orientation of personnel: There shall be an established, structured procedure for orienting new personnel to the pharmacy, the hospital, and their respective positions.

Work schedules and assignments: The director of pharmacy shall ensure that work schedules, procedures, and assignments optimize the use of personnel and resources.

Performance evaluation: There shall be procedures for regularly scheduled evaluation of the performance of pharmacy personnel. The evaluation format should be consistent with that used by the hospital.

Effective communication: There should be established methods for communicating important information to staff in a timely manner (e.g. electronic communications, staff meetings, newsletters, bulletin boards).

E. Facilities

Pharmacy: Adequate space, equipment, and supplies shall be available for all professional and administrative functions relating to pharmacy services.

Medication storage and preparation areas: There shall be suitable facilities to enable the receipt, storage, and preparation of medications under proper conditions of sanitation, temperature, light, moisture, ventilation, segregation, and security to ensure medication integrity and personnel safety throughout the hospital.

Compounding areas: There shall be suitable facilities to enable the compounding, preparation, and labelling of sterile and nonsterile products, including hazardous drug products, in accordance with established quality-assurance procedures.

Patient assessment and consultation area: In outpatient settings, a private area for pharmacist–patient consultations shall be available to confidentially enhance patients' knowledge of and adherence to prescribed medication regimens.

Office and meeting space: Adequate office and meeting areas shall be available for administrative, educational, and training activities.

Automated systems: There shall be policies and procedures for the evaluation, selection, use, calibration, monitoring, and maintenance of all automated pharmacy systems.

Information technology: A comprehensive pharmacy computer system shall be employed and should be integrated to the fullest extent possible with other hospital information systems and software, including computerized provider-order-entry, medication administration, electronic health record, and patient billing systems.

Drug information: Adequate space, current resources, and information-handling and communication technology shall be available to facilitate the provision of drug information.

Record maintenance: All records be maintained with applicable laws, regulations and institutional policies.

F. Committee Involvement

A pharmacist should be member of and actively participate in hospital and health-system responsible for establishing and implementing medication related policies and procedures as well as those committees responsible for patient care.

Standard II: Medication-use Policy Development

a. ***Policy development:*** All committees that make decisions concerning medication management and use shall have at least one pharmacist as a member. This includes the P&T, infection-control, patient care, medication-use evaluation, medication safety, nutrition, pain management, and information technology committees, as well as the institutional review board (or their equivalents).
b. ***Formulary management:*** A well-controlled formulary of approved medications shall be maintained and regularly updated by the P&T committee (or its equivalent).
c. ***Drug information requests:*** The pharmacist shall provide patient-specific drug information and accurate and comprehensive information about drugs and drug therapy to health professionals, patients, and patients' caregivers as appropriate.

Standard III: Optimizing Medication Therapy

An important responsibility of the pharmacist is optimizing medication use. It involves:

a. Creating a relationship with the patient
b. Acquiring essential patient data
c. Consulting with other health professionals about medication therapy.

Standard IV: Drug Product Procurement and Inventory Management

The pharmacy shall be responsible for the procurement, distribution, and control of all drug products used in the hospital for inpatient and ambulatory patients. Policies and procedures governing these functions shall be developed by the pharmacy with input from other appropriate hospital staff and committees.

a. Selecting sources of pharmaceutical products
b. Managing inventory
c. Inspecting storage areas and inventory items
d. Returning recalled, expired, and other unusable items.

Standard V: Preparing, Packaging, and Labelling Medications

A. Preparing Medications

Compounding: Drug formulations, dosage forms, strengths, and packaging that are not available commercially but are needed for patient care shall be prepared by appropriately trained personnel in accordance with applicable practice standards and regulations.

Sterile preparations: When possible, manufactured sterile preparations should be preferred to compounding in the pharmacy. All sterile medications shall be prepared and labelled in a suitable environment by appropriately trained personnel in accordance with established quality-assurance and expiration dating procedures.

Hazardous drug products: There shall be policies and procedures that describe special precautions, equipment, and training for preparation, handling, storage, and disposal of hazardous drug products and products used in their preparation.

B. Packaging Medications

Unit dose packaging: Whenever possible, medications shall be available for inpatient use in single-unit packages and in a ready-to-administer form. Manipulation of medications before administration (e.g. withdrawal of doses from containers, reconstitution of powdered drug products, labelling of containers, and splitting of tablets) by final users should be minimized.

Bar-coding of unit dose packaging and point of care administration: Unit dose packages should contain a bar code and that code should be used in inventory management, dose preparation and packaging, dispensing, and administration. It is the responsibility of the pharmacy department to ensure the quality of all aspects of bar-code medication administration, including scanability of bar codes and database management.

Standard VI: Medication Dispensing and Delivery

a. Medication dispensing
b. Medication delivery and administration

Medications shall be prescribed by individuals who have been granted appropriate clinical privileges in the hospital and are legally permitted to order medications. The pharmacy personnel shall have responsibility for developing policies, procedures, and quality-assurance programs regarding drug delivery systems, administration devices, and automated distribution devices that ensure safety, accuracy, security, and patient confidentiality. The potential for medication errors associated with such systems and devices should be thoroughly evaluated. Only personnel who are authorized by the hospital in accordance with applicable laws and regulations and appropriately trained shall be permitted to administer medications to a patient. All administered, refused, or omitted medication doses should be recorded in the patient's medical record according to an established procedure, and all medications that have not been administered should be returned to the pharmacy.

Standard VII: Monitoring Medication use

a. Reviewing patient responses to medication therapy. Medication therapy monitoring shall be conducted by pharmacists. Medication therapy monitoring includes a proactive assessment of patient problem and an assessment of therapeutic appropriateness of patient medication regimen.
b. Educating and Counseling Patients and Family, Pharmacist shall be available to participate in patient education. Pharmacists should help to ensure that all patients are given adequate information about the medications they receive in order to help patients participate in their own health care decisions and encourage adherence to medication regimens.

Standard VIII: Evaluating the Effectiveness of the Medication-use System

There shall be an ongoing, systematic program for quality assessment and improvement of pharmacy services and the medication-use system. The program should include routinely evaluating the literature for new technologies or successful practices that have been demonstrated to enhance safety in other organizations to determine if such technologies or practices can improve the hospital's medication-use system.

Standard IX: Research

The pharmacist should initiate, participate in, and support clinical and practice-related research appropriate to the goals, objectives, and resources of the specific hospital. The pharmacist shall ensure that

policies and procedures for the safe and proper use of investigational drugs and medication-related devices are established and followed and that these policies and procedures meet all applicable laws and regulations.

NATIONAL QUALITY ASSURANCE STANDARDS (NQAS) GUIDELINES

National Quality Assurance Standards (NQAS) have been developed keeping in the specific requirements for public health facilities as well global best practices. NQAS are currently available for District Hospitals, CHCs, PHCs and Urban PHCs. Standards are primarily meant for providers to assess their own quality for improvement through predefined standards and to bring up their facilities for certification. The National Quality Assurance Standards are broadly arranged under 8 "Areas of Concern":

- Service provision,
- Patient rights,
- Inputs,
- Support services,
- Clinical care,
- Infection control,
- Quality management, and
- Outcome.

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

NATIONAL ACCREDITATION BOARD FOR HOSPITALS AND HEALTH CARE PROVIDERS

National Accreditation Board for Hospitals and Health Care Providers, abbreviated as NABH, is a constituent board of Quality Council of India (QCI), set up to establish and operate accreditation programme for health care organizations. It is the principal accreditation for hospitals in India.

NABH accreditation system was established in 2006 as a constituent of QCI. The first edition of standards was released in 2006 and after that the standards has been revised every 3 years. Currently, the 5th edition of NABH standards, released in Aug. 2020 is in use.

The first hospital to be accredited by NABH is 'Malabar Institute of Medical Sciences (MIMS), Kerala' which is a 650-bed multispeciality hospital and was accredited in 2007 and till date more than 838 hospitals in India has achieved accreditation by NABH. In public hospitals,

Gandhinagar general hospital was the first to get NABH accreditation in 2009.

Standards

In NABH standards 4th edition, standards are documented in 10 chapters, which are as follows:

1. Access, assessment and continuity of care
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)

Benefits of Accreditation

- Accreditation benefits all stake holders. Patients are the biggest beneficiaries. Accreditation results in high quality of care and patient safety.
- Accreditation to a hospital stimulates continuous improvement. It enables hospital in demonstrating commitment to quality care.
- The staff in an accredited hospital are satisfied lot as it provides for continuous learning, good working environment, leadership and above all ownership of clinical processes. It improves overall professional development of clinicians and paramedical staff and provides leadership for quality improvement within medicine and nursing.
- Accreditation provides an objective system of empanelment by insurance and other third parties.

ROLE OF HOSPITAL PHARMACIST

Hospital pharmacists work in hospital pharmacy services belong to the Ministry of Health as well as the private sector. Pharmacists work in this field are responsible for dispensing of medications, quality testing, formulating and re-formulating dosage forms, monitoring and reporting drug safety, and preparing budget for medications. They are also responsible for medication storage and planning for medication quantities for their hospitals. Some hospitals also have a drug reviewing

committee and pharmacoeconomic unit for approval of new medications and optimizing their utilization. The specialized and university hospitals have pharmacy-managed clinics for some specialized areas, depending on the specialty of pharmacists they have. Therefore, typical day of hospital pharmacists may include the following activities:

- Managing pharmacy-related services and logistics 24 × 7.
- Prescribing medications and ensuring their safety and efficacy.
- Preparing all the medications and converting dosage forms to the applicable situation.
- Reporting all the potential DRPs to the Government agencies.
- Contacting all health care provider for medication-related issues.
- Participating in clinical rounds run by all health care providers and attending pharmacy-managed clinics.
- Providing adequate statistics on medication consumptions.
- Managing medication stores and planning for medication budgets.
- Providing drug information services.
- Conducting pharmacy-related training for undergraduates and postgraduates.
- Supervising pharmacy-related research activities.