FirstHope Notes | D.Pharm Year - 2

Hospital Pharmacy

Hospital Pharmacy

Definition

- Hospital Pharmacy is a specialized field of pharmacy that is integrated within hospitals and healthcare institutions.
- It involves the preparation, compounding, storage, dispensing, and proper utilization of medications, along with providing drug-related information to healthcare professionals and patients to ensure optimal therapeutic outcomes.
- Hospital pharmacists are responsible not only for the supply of medicines but also for advising on their safe, effective, and cost-efficient use in clinical settings.

Scope of Hospital Pharmacy

The scope of hospital pharmacy includes:

1. **Drug Dispensing and Distribution**
   - Ensuring correct medicines reach the right patients.
   - Inpatient and outpatient dispensing.
   - Unit-dose and ward-based systems.
2. **Clinical Pharmacy Services**
   - Patient counseling.
   - Therapeutic drug monitoring (TDM).
   - Participation in medical rounds.
3. **Pharmaceutical Care**
   - Ensuring appropriate drug therapy.
   - Monitoring for drug interactions, side effects, and efficacy.
4. **Drug Procurement and Inventory Control**
   - Managing procurement processes.
   - Ensuring availability and proper storage.
   - Reducing wastage and expiration.
5. **Sterile and Non-Sterile Compounding**
   - Preparing IV admixtures, TPNs (Total Parenteral Nutrition), and cytotoxic drugs.
6. **Pharmacovigilance**
   - Reporting and analyzing Adverse Drug Reactions (ADRs).
7. **Education and Research**

- Training pharmacy students and staff.
- Conducting clinical research and audits.

National and International Scenario

A. National Scenario (India)

- **Evolution:** Traditionally focused on dispensing and stock management; now evolving towards clinical pharmacy.
- **Regulatory Bodies:**
  - **Pharmacy Council of India (PCI)**: Regulates pharmacy education.
  - **Drug Controller General of India (DCGI)**: Regulates drug approval and safety.
- **Trends:**
  - Increasing focus on patient-oriented services.
  - Growth of Pharm.D programs promoting clinical skills.
  - Implementation of Antimicrobial Stewardship Programs (AMSP) and NABH accreditation pushing for better standards.

B. International Scenario

- **Developed countries** (e.g., USA, UK, Canada):
  - Strong clinical pharmacy presence.
  - Hospital pharmacists integrated into medical teams.
  - Advanced systems for electronic prescribing and medication reconciliation.
  - Emphasis on evidence-based practice and pharmacoeconomics.
- **Developing countries**:
  - Varied infrastructure.
  - Transitioning from product-based to patient-based services.
  - WHO and FIP (International Pharmaceutical Federation) support through guidelines and training.

Organizational Structure of Hospital Pharmacy

The structure varies based on the size and type of hospital, but typically includes:

1. **Chief/Head of Pharmacy Department**
   - Overseas all pharmacy operations.
   - Responsible for policy, budgeting, and compliance.
2. **Clinical Pharmacists**
   - Work directly with healthcare teams.

- Provide recommendations for drug therapy and monitor outcomes.

3. **Dispensing Pharmacists**
   - Manage outpatient and inpatient pharmacy counters.
   - Ensure correct dispensing and documentation.
4. **Pharmacy Technicians/Assistants**
   - Assist in drug preparation, labeling, inventory, and storage.
5. **Specialized Units**
   - Sterile compounding unit
   - Cytotoxic reconstitution area
   - Drug information center
   - Research and Quality Control labs
6. **Support Staff**
   - Administrative personnel for record keeping, billing, and logistics.

Professional Responsibilities,Qualification & experience requirements of Hospital Pharmacists

Professional Responsibilities of Hospital Pharmacists

Hospital pharmacists have clinical, administrative, and technical responsibilities, including:

1. **Clinical Responsibilities:**
   - Ensuring rational drug use and therapeutic efficacy
   - Monitoring drug interactions, adverse drug reactions (ADRs), and patient compliance
   - Providing drug information and consultation to doctors, nurses, and patients
   - Participating in ward rounds with the medical team
   - Counseling patients on medication use, storage, and side effects
2. **Administrative Responsibilities:**
   - Inventory management and drug procurement
   - Ensuring proper storage and handling of medications
   - Complying with regulatory and legal standards (e.g., labeling, record-keeping)
   - Maintaining Standard Operating Procedures (SOPs)
   - Coordinating with Pharmacy & Therapeutics Committee
3. **Technical Responsibilities:**
   - Compounding and reconstitution of medications

- Preparing sterile products, IV admixtures, and TPN
- Repackaging and labeling of bulk medications

Qualifications and Experience Requirements:

A. Chief Pharmacist / Director of Pharmacy

- **Qualification:** B.Pharm / M.Pharm / Pharm.D + Registration
- **Experience:** 8–10 years hospital experience

B. Clinical Pharmacist

- **Qualification:** Pharm.D / M.Pharm (Pharmacy Practice / Clinical)
- **Experience:** 2–5 years clinical/hospital experience

C. Staff Pharmacist

- **Qualification:** B.Pharm + PCI Registration
- **Experience:** 0–3 years (entry level)

D. Pharmacy Assistant/Technician

- **Qualification:** D.Pharm (Diploma in Pharmacy)
- **Experience:** 0–2 years

Job Specifications:

Job Title	Key Skills Required
Hospital Pharmacist	Knowledge of hospital formulary, drug storage, legal compliance, computer literacy (HIS, e-prescription), communication skills
Clinical Pharmacist	Strong understanding of pharmacotherapy, lab values, patient counselling, evidence-based medicine
Pharmacy Technician	Drug compounding, labelling, inventory control, cleanliness, accuracy, and speed
Chief Pharmacist	Leadership, inventory budget management, regulatory compliance, staff training

Workload Requirements And Inter Professional Relationships

Workload Requirements:

- It depends on hospital size, bed strength, and service complexity.
- WHO/FIP guidelines recommend:
  - 1 pharmacist per 50–100 hospital beds.
- Workload includes:
  - **Prescription processing**: 100–300/day depending on hospital size
  - **Inventory items**: Management of 500–1000+ SKUs
  - Patient counseling sessions, ADR monitoring, and clinical documentation
- Shift duties and on-call responsibilities in 24×7 hospitals

Inter-professional Relationships:

- Effective collaboration is vital in hospital settings.

Pharmacists interact with:

1. **Physicians**
   - ➢ Discussing drug therapy plans.
   - ➢ Clarifying prescriptions.
   - ➢ Recommending alternative or cost-effective medications.
2. **Nurses**
   - ➢ Guiding administration techniques (IV push, infusion rates).
   - ➢ Monitoring ADRs and reporting medication errors.
3. **Dietitians**
   - ➢ Collaborating on nutritional support, especially in TPN and electrolyte balance.
4. **Laboratory Technicians**
   - ➢ Coordinating for TDM (e.g., vancomycin, digoxin) and renal/liver function data.
5. **Administrative Staff**
   - ➢ Budgeting, procurement, compliance, and documentation.

Good Pharmacy Practice (GPP) in hospital

Definition of GPP

- Good Pharmacy Practice (GPP) is the practice of pharmacy that responds to the needs of the people who use the pharmacists' services to provide optimal, evidence-based care.
- In hospitals, this means ensuring that medication management contributes effectively to safe, rational, and cost-effective patient care.
- The World Health Organization (WHO) and the International Pharmaceutical Federation (FIP) define GPP as pharmacy practice that:
  - ○ Delivers quality patient care.
  - ○ Promotes the responsible use of medicines.
  - ○ Meets ethical and professional standards.

Key Elements of GPP in Hospitals

A. **Patient-Centered Care**
   - ➢ Ensure optimal therapeutic outcomes by focusing on individual patient needs.

B. **Quality Medication Use**
   - ➢ Promote rational prescribing, dispensing, and monitoring of drug therapy.

C. **Safe and Effective Services**

- Prevent medication errors, ensure aseptic preparation, and maintain hygiene.

D. Ethical and Legal Compliance

- Uphold professional ethics, local regulations, and global standards.

E. Documentation and Reporting

- Maintain detailed prescription records, report adverse drug reactions (ADRs), and evaluate interventions.

F. Continuous Professional Development (CPD)

- Engage in lifelong learning and training to enhance service delivery.

G. Interprofessional Collaboration

- Work closely with physicians, nurses, and allied health professionals.

H. Technology Integration

- Use Hospital Information System (HIS), Electronic Medical Records (EMR), barcode dispensing, and drug interaction software to enhance safety.

Hospital Pharmacy Standards

- To guide hospital pharmacy services globally, various professional bodies have issued standards and statements.

FIP Basel Statements (International)

- Issued by the International Pharmaceutical Federation (FIP) in 2008 (updated later), the Basel Statements provide a global vision for hospital pharmacy practice.

They are organized under six domains:

A. Procurement

- Medicines should be procured ethically, cost-effectively, and sustainably.
- Selection based on evidence, not solely price.

B. Preparation and Delivery

- Compounding and preparation of medications must follow international safety and quality standards.
- Cytotoxic drugs must be prepared in controlled environments.

C. Prescribing

- Pharmacists should play a role in reviewing and verifying prescriptions.
- Promote rational use and suggest alternatives when necessary.

D. Administration

- Hospital pharmacists should help train staff on proper drug administration.
- Emphasis on IV admixtures, infusion rates, and monitoring.

E. Monitoring of Medication Use

- Continuous assessment of drug efficacy and safety.
- Implementation of pharmacovigilance and medication error reporting.

F. Human Resources and Training

- Sufficiently trained pharmacists and support staff.
- Continuous professional development is essential.

ASHP Guidelines (USA)

- The American Society of Health-System Pharmacists (ASHP) provides comprehensive best practice guidelines and standards widely followed in the U.S. and internationally.

Core ASHP Practice Standards:

A. Minimum Practice Standards for Hospital Pharmacies

- 24/7 medication supply and emergency support.
- Adequate staffing and technology use (e.g., computerized order entry).

B. Clinical Roles

- Active participation in interdisciplinary care.
- Involvement in drug therapy design, monitoring, and patient education.

C. Medication-Use System

- Standardized processes for prescribing, transcribing, dispensing, administering, and monitoring.
- Incorporation of technologies like barcode scanning, electronic medical records (EMR), and automated dispensing units (e.g., Pyxis).

D. Sterile Compounding Standards (USP <797>)

- Specific cleanroom design and aseptic techniques.
- Quality checks for contamination and labeling.

E. Pharmacy Informatics

- Integration with hospital IT systems to improve accuracy and reduce errors.

F. Residency and Training

- Emphasis on Postgraduate Year 1 (PGY1) and PGY2 pharmacy residencies for advanced clinical roles.

NAQS – National Accreditation Quality Standards (India)

Definition:

- NAQS refers to a set of structured guidelines developed to ensure quality and safety in healthcare services across India.

- These standards are aimed at promoting continuous improvement, patient safety, and evidence-based practices in hospitals.

Purpose of NAQS:

- Establish minimum quality benchmarks in healthcare delivery.
- Ensure uniformity in patient care across various levels of healthcare institutions.
- Serve as a foundation for hospital accreditation and regulatory compliance.
- Enhance patient satisfaction, safety, and clinical outcomes.

Key Focus Areas of NAQS:

- Patient rights and education
- Clinical protocols and safety
- Medication management
- Infection control
- Infrastructure and facility safety
- Staff competencies and training

Implementation in India:

- NAQS guidelines are implemented under National Health Mission (NHM).
- Used for NQAS (National Quality Assurance Standards) certification of government hospitals.
- Supports Kayakalp initiative for promoting cleanliness and infection control in healthcare facilities.

NABH – National Accreditation Board for Hospitals and Healthcare Providers

Definition:

- NABH is a constituent board of the Quality Council of India (QCI), established to operate accreditation programs for healthcare organizations.
- It sets stringent quality standards for hospitals, nursing homes, and other healthcare providers in India.

Objectives of NABH:

- Improve quality of patient care and safety.
- Promote continual improvement in healthcare services.
- Provide a benchmarking system for healthcare organizations.
- Enhance credibility and patient trust in accredited hospitals.

Benefits of NABH Accreditation:

- Enhances patient confidence and hospital reputation.
- Promotes safe and ethical healthcare practices.
- Assists in compliance with regulatory and legal norms.

- Facilitate insurance and empanelment with government and private agencies.
- Encourages staff training, better clinical outcomes, and resource optimization.

Steps in NABH Accreditation Process:

1. **Application Submission**
   - ➢ Hospital registers and submits required documents.
2. **Pre-assessment**
   - ➢ NABH team conducts a gap analysis to identify areas of improvement.
3. **Implementation**
   - ➢ Hospital addresses gaps and strengthens systems and practices.
4. **Final Assessment**
   - ➢ Comprehensive evaluation based on NABH standards.
5. **Accreditation Decision**
   - ➢ Certificate granted upon compliance; valid for 3 years.
6. **Surveillance / Re-assessment**
   - ➢ Periodic monitoring and re-evaluation to ensure continued compliance.

Role of Pharmacists in NAQS and NABH Accreditation

Pharmacists play a crucial and active role in ensuring the successful implementation of NAQS and NABH standards.

Role in Medication Management (MOM):

- Develop and implement Standard Operating Procedures (SOPs) for drug procurement, storage, dispensing, and administration.
- Ensure safe handling of high-risk medications (e.g., chemotherapy, narcotics).
- Monitor expiry dates, stock levels, and temperature-sensitive medications.
- Participate in medication error reporting, adverse drug reaction (ADR) surveillance, and pharmacovigilance.

Role in Clinical Services:

- Participate in ward rounds and provide clinical decision support.
- Review prescriptions for accuracy, drug interactions, and therapeutic appropriateness.
- Provide patient counseling on medication use and adherence.
- Conduct drug utilization reviews (DUR) and medication audits.

Role in Training and Policy Making:

- Train pharmacy staff and nurses on hospital protocols and safe medication practices.

- Help develop and review hospital formulary in collaboration with the Pharmacy & Therapeutics Committee (PTC).
- Maintain documentation as per NABH standards (medication charts, labeling, inventory records).

Role in Infection Control and Safety:

- Ensure availability and proper use of antibiotics and implement antimicrobial stewardship programs.
- Follow aseptic techniques in IV admixtures and compounded sterile preparations.
- Collaborate with the Infection Control Committee to monitor drug-related infection risks.

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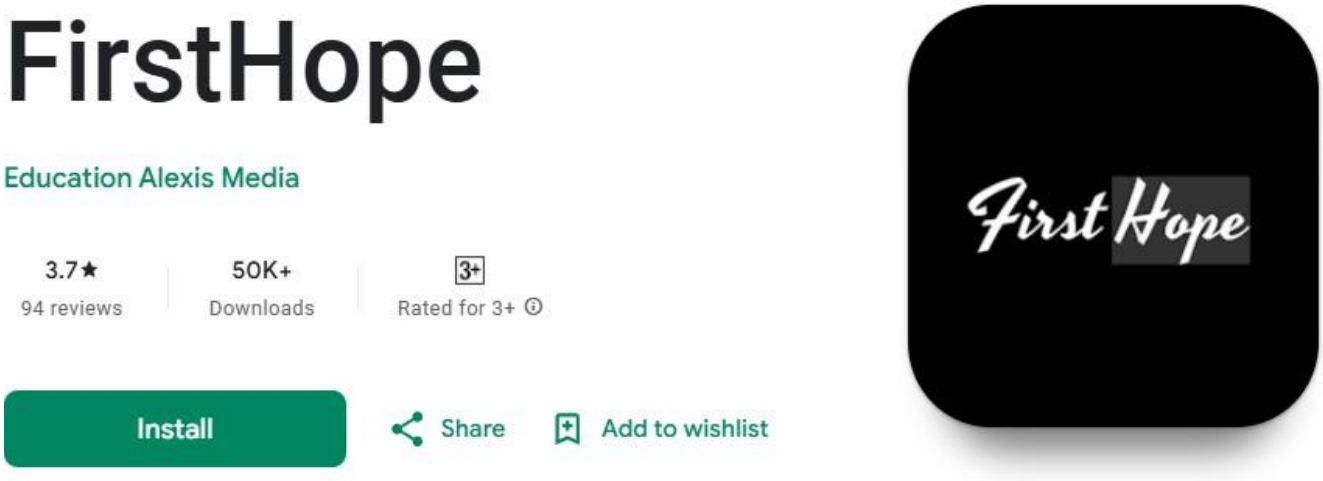

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