



Dr. Arvind Kumar Gupta

(M.Pharm, PDCR, PGDMM & Ph.D)

GATE 2003 Qualified with 97.2 percentile

Dr. S. N. Dev College of Pharmacy

Shamli (U.P.)

OFFICE:

BUILDING No. 3/314, OFFICE-1, GAUSHALA ROAD, SHAMLI DISTRICT SHAMLI (U.P.) – 247776

Mobile: +91-9719638415

Email: arvindrkgit@gmail.com, www.phbeducation.com

Course Name	: D. Pharm
Year	: Second Year
Subject Name	: Hospital & Clinical Pharmacy
Topic Name	: Hospital Pharmacy Practice

Hospital pharmacy is a specialized field of pharmacy that is integrated into the care of a medical center. These include centers such as a hospital, outpatient clinic, drug-dependency facility, poison control center, drug information center of residential care facility.

7.1

Introduction of Hospital Pharmacy Practice**1. Medication Management:**

- **Procurement:** Ensuring the availability of necessary medications through efficient procurement and inventory management.
- **Dispensing:** Safe and accurate dispensing of medications to inpatients and outpatients.
- **Clinical Services:** Providing medication therapy management, patient counseling, and participating in multidisciplinary healthcare teams.

2. Compounding:

- **Sterile Compounding:** Preparation of sterile products such as IV admixtures, chemotherapy, and parenteral nutrition under aseptic conditions.
- **Non-Sterile Compounding:** Preparation of oral, topical, and other formulations as per specific patient needs.

3. Medication Safety:

- **Monitoring:** Regular monitoring of medication therapy to prevent adverse drug reactions and interactions.
- **Reporting:** Reporting and analyzing medication errors to improve safety protocols.

4. Education and Training:

- **Continuous Education:** Ongoing education and training for pharmacy staff on new drugs, technologies, and best practices.
- **Patient Education:** Educating patients about their medications, potential side effects, and adherence to therapy.

7.2

Application of Computers in Hospital Pharmacy Practice**1. Electronic Health Records (EHRs):**

- **Integration:** EHR systems integrate with pharmacy management systems to streamline medication orders, track patient data, and manage medication histories.
- **Access:** Pharmacists can access comprehensive patient information, including lab results and medical history, to make informed clinical decisions.

2. Pharmacy Information Systems (PIS):

- **Inventory Management:** Automated systems track medication stock levels, expiration dates, and reorder points.
- **Prescription Processing:** Electronic prescription processing reduces errors associated with handwritten prescriptions.

3. Clinical Decision Support Systems (CDSS):

- **Drug Interaction Alerts:** Automated alerts for potential drug interactions, allergies, and contraindications.
- **Dosing Recommendations:** Provides personalized dosing recommendations based on patient-specific factors.

4. Automated Dispensing Systems:

- **Automated Dispensing Cabinets (ADCs):** Secure, computerized storage and dispensing units for medications at the point of care.
- **Robotic Dispensing:** Robots assist in the accurate and efficient dispensing of medications, reducing manual errors.

5. Telepharmacy:

- **Remote Consultations:** Pharmacists provide consultations and medication management services remotely via telecommunication tools.
- **Access in Rural Areas:** Extends pharmacy services to rural and underserved areas through telepharmacy.

6. Data Analytics:

- **Clinical Data Analysis:** Analyzing medication usage trends, patient outcomes, and adverse events to improve clinical practice.
- **Performance Metrics:** Tracking key performance indicators (KPIs) to optimize pharmacy operations.

Electronic Health Records (EHRs)

1. Integration with Pharmacy Systems:

- **Medication Orders:** Streamlined electronic ordering and verification of medications.
- **Medication Reconciliation:** Accurate tracking of medications across different stages of patient care.

2. Clinical Information:

- **Access to Patient Data:** Real-time access to patient medical histories, lab results, and imaging studies.
- **Clinical Notes:** Detailed documentation of patient interactions, treatment plans, and clinical outcomes.

3. Decision Support:

- **Clinical Alerts:** Automated alerts for potential medication interactions, allergies, and contraindications.
- **Guideline Adherence:** Tools to help ensure adherence to clinical guidelines and protocols.

4. Patient Safety:

- **Error Reduction:** Reducing errors associated with manual entries and enhancing the accuracy of medication administration.
- **Tracking and Monitoring:** Monitoring patient responses to medications and tracking adverse events.

Software Used in Hospital Pharmacy

1. Pharmacy Information Systems (PIS):

- **Cerner Millennium:** Comprehensive pharmacy management, including order entry, dispensing, and inventory control.
- **Epic Willow:** Integrated with EHR for seamless medication management and clinical decision support.
- **Meditech:** Provides electronic prescribing, inventory management, and clinical documentation.

2. Automated Dispensing Systems:

- **Pyxis (BD):** Automated dispensing cabinets for secure medication storage and dispensing.
- **Omnicell:** Automated solutions for medication management, including dispensing and inventory tracking.

3. Clinical Decision Support Systems (CDSS):

- **TheraDoc:** Provides real-time clinical surveillance and decision support to enhance patient safety.
- **First Databank (FDB):** Drug databases that integrate with other systems to provide drug interaction alerts and clinical guidelines.

4. Compounding Systems:

- **Baxa ExactaMix:** Automated compounding system for sterile preparations, including TPN.
- **PharmaSys:** Software for managing non-sterile compounding, including formulation and batch tracking.

5. Telepharmacy Platforms:

- **Telepharm:** A platform for providing remote pharmacy services and consultations.
- **PipelineRx:** Telepharmacy services that extend clinical pharmacy expertise to remote locations.

6. Data Analytics Tools:

- **Tableau:** Data visualization software for analyzing and presenting clinical and operational data.
- **IBM Watson Health:** Advanced analytics and AI solutions for healthcare data analysis.