Unit-3
Pharmacy Practice

B.Pharma 7 Sem Notes

1. Pharmacy and therapeutic committee

- Organization, functions, Policies of the pharmacy and therapeutic committee in including drugs into formulary, inpatient and outpatient prescription, automatic stop order, and emergency drug list preparation.

2. Drug information services

- Drug and Poison information centre, Sources of drug information, Computerised services, and storage and retrieval of information.

3. Patient counseling

- Definition of patient counseling; steps involved in patient counseling, and Special cases that require the pharmacist

4. Education and training program in the hospital

- Role of pharmacist in the education and training program, Internal and external training program, Services to the nursing homes/clinics, Code of ethics for community pharmacy, and Role of pharmacist in the interdepartmental communication and community health education.

5. Prescribed medication order and communication skills

- Prescribed medication order- interpretation and legal requirements, and Communication skills- communication with prescribers and patients.

Pharmacy and Therapeutic Committee (PTC)

Introduction & Definition

DEFINITION

The Pharmacy and Therapeutic Committee (PTC) is an advisory group of the medical staff that serves as the official organizational line of communication between the medical staff and the hospital pharmacy. It is responsible for selecting safe, effective, and economical drugs for the hospital and for developing drug-use policies.

Organization of PTC

PTC is a multidisciplinary committee with members from different departments. A typical PTC has the following members:

◆ PTC Members
▶ Chairperson — usually a senior physician
▶ Secretary — Chief Hospital Pharmacist
▶ Members — specialists (Medicine, Surgery, Pediatrics, Gynae, Anesthesia)
▶ Nursing Superintendent
▶ Hospital Administrator / Medical Superintendent
▶ Microbiologist and Clinical Pharmacologist
▶ Other invited experts as needed

The committee usually meets once a month or at least every two months. Decisions are taken by discussion and majority opinion. Minutes of every meeting are recorded.

Functions of PTC

The main functions of the Pharmacy and Therapeutic Committee are:

- To select and evaluate drugs for the hospital formulary.
- To prepare, revise, and maintain the hospital formulary.
- To develop policies for rational and safe use of drugs.
- To decide rules for prescription writing, dispensing, and labelling.
- To monitor adverse drug reactions and drug interactions.
- To prepare the emergency drug list and control drug list.
- To educate medical, nursing, and pharmacy staff about new drugs.

- To review antibiotic usage and infection control measures.
- To evaluate the cost-effectiveness of drugs.
- To coordinate between pharmacy and other hospital departments.

Policies of PTC

A) Including Drugs into the Hospital Formulary

The PTC develops a clear policy for adding drugs to the formulary. The general policy is:

- A written request is submitted by a doctor or department for the new drug.
- The request should mention the drug's name, therapeutic use, and reason for inclusion.
- The committee reviews safety, efficacy, cost, and availability of the drug.
- Drugs are compared with existing formulary drugs for advantages.
- Only drugs with proven benefit are added by majority decision.
- Duplicate drugs with similar action are usually not added.

B) Inpatient Prescription Policy

For inpatients, drugs are prescribed on a medication order sheet or treatment chart. The PTC policy generally requires:

- Prescription must be written by a registered doctor only.
- Use of generic names wherever possible.
- Clearly mention drug name, dose, strength, route, frequency, and duration.
- Doctor's signature with date and time is mandatory.
- Prescription must be written clearly to avoid misreading.
- Any verbal order in emergency must be confirmed in writing within 24 hours.

C) Outpatient Prescription Policy

For OPD patients, the prescription policy usually includes:

- Prescription on a printed hospital prescription pad.
- Patient's name, age, OPD number, and date must be written.
- Drug name, dose, and duration should be clearly mentioned.
- Doctor's signature with registration number is required.
- Use of approved abbreviations only.

D) Automatic Stop Order Policy

This is a safety policy made by the PTC. It means that certain drugs are automatically stopped after a fixed duration if the doctor does not re-order them. This avoids long-term unnecessary use of dangerous drugs.

Common examples of automatic stop orders:

Drug Category	Automatic Stop Period
Narcotic analgesics	48 to 72 hours
Antibiotics	7 days
Anticoagulants	3 days
Sedatives / Hypnotics	7 days
Corticosteroids	As per doctor's order
Cancer chemotherapy	One cycle only

After the fixed time, the doctor must re-evaluate the patient and write a new order if needed.

E) Emergency Drug List Preparation

PTC prepares a special list of drugs that must always be available in emergency areas like casualty, ICU, OT, and ambulance. Important features:

- List is prepared based on the type of emergencies commonly seen.
- Includes drugs for cardiac arrest, shock, poisoning, asthma, seizures, allergy etc.
- Usually kept in an emergency drug box or crash cart.
- Quantity is fixed and checked daily by nurses and pharmacists.
- Replaced immediately after use.
- Regular check for expiry dates.

Examples of emergency drugs: Adrenaline, Atropine, Dopamine, Hydrocortisone, Furosemide, Dextrose 25%, Diazepam, Naloxone, Sodium bicarbonate, Salbutamol.

Drug Information Services (DIS)

Definition

> **DEFINITION**
> *Drug Information Service (DIS) is the activity of providing accurate, unbiased, and up-to-date information about drugs to doctors, nurses, pharmacists, and patients. A Drug Information Centre (DIC) is a specialized unit, usually part of the hospital pharmacy, that collects, evaluates, and supplies this information whenever needed.*

Drug Information Centre (DIC)

A Drug Information Centre is a place where a trained drug information pharmacist answers drug-related queries. It is usually located in the hospital pharmacy or medical library.

Main functions of DIC:

- Answering drug-related queries from healthcare professionals.
- Providing information on doses, interactions, side effects, and contraindications.
- Preparing drug bulletins and newsletters.
- Helping the PTC in drug selection and evaluation.
- Training pharmacy students and staff.
- Monitoring ADRs and medication errors.

Poison Information Centre (PIC)

A Poison Information Centre provides information on poisons, their toxic effects, and treatment of poisoning cases. It works 24 hours a day in many countries.

Main functions of PIC:

- Giving first-aid advice in cases of poisoning.
- Providing information on antidotes and treatment.
- Educating the public on poison prevention.
- Collecting data on poisoning cases for research.

In India, major poison information centres are at AIIMS New Delhi, NIPER Mohali, and CMC Vellore.

Sources of Drug Information

Drug information is obtained from three main types of sources:

A) Primary Sources

Original research articles published in scientific journals. They give the latest and most original information.

- Research articles (e.g., JAMA, Lancet, NEJM, Indian Journal of Pharmacology).
- Case reports and clinical trial reports.
- Conference papers and theses.

B) Secondary Sources

These are indexes or abstracts that help locate primary literature.

- Medline / PubMed — largest biomedical database.
- Embase, IPA (International Pharmaceutical Abstracts).
- Current Contents, Chemical Abstracts.
- Google Scholar.

C) Tertiary Sources

These are textbooks, compendia, and review articles that summarize information.

- Indian Pharmacopoeia (IP), USP, BP.
- Martindale — The Complete Drug Reference.
- Goodman and Gilman's Pharmacological Basis of Therapeutics.
- AHFS Drug Information, British National Formulary (BNF).
- CIMS, MIMS, Drug Today, and Indian Drug Review.
- Package inserts provided with medicines.

Computerised Drug Information Services

Modern DIC uses computers and the internet for faster and better drug information. Common computer-based sources include:

- Online databases — Medline, PubMed, Embase, Cochrane Library.
- Drug interaction software — Micromedex, Lexicomp, Drugs.com.
- Electronic versions of reference books (e.g., e-Martindale).
- Mobile apps like Epocrates, Medscape, Daily Med.
- Hospital information systems for patient medication records.

Advantages: fast retrieval, always up-to-date, easy searching, and large storage.

2.6 Storage and Retrieval of Information

A good drug information centre must keep its information in an organized way so that it can be retrieved quickly. Common methods are:

- **Manual Filing:** Arranging books and journals by subject and author on shelves.
- **Card / File System:** Storing research articles and leaflets alphabetically by drug name.
- **Electronic Storage:** Maintaining computer databases of queries, answers, and references.
- **Query Log:** Keeping a record of all questions received and answers given.
- **Updating:** Regularly updating the database and removing outdated information.
- **Security:** Using passwords and limited access for confidential records.

Patient Counseling

Definition

DEFINITION

Patient counseling is the process in which a pharmacist provides information, advice, and assistance to a patient about the proper use of medicines and related matters like diet, lifestyle, and disease. The main aim is to improve the patient's understanding, adherence, and therapeutic outcomes.

Objectives of Patient Counseling

- To ensure correct use of medicines.
- To improve medication adherence.
- To reduce medication errors and adverse effects.
- To educate the patient about the disease.
- To build trust between pharmacist and patient.
- To encourage lifestyle and dietary modifications.

Steps Involved in Patient Counseling

Patient counseling should follow a systematic step-by-step approach:

STEP 1: Introduction — greet the patient, introduce yourself

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STEP 2: Verify patient identity and review prescription

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STEP 3: Assess patient's existing knowledge about the disease & drug

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STEP 4: Explain name, purpose, dose, route, and timing of the drug

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STEP 5: Discuss side effects, precautions, and storage

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STEP 6: Explain lifestyle, diet, and follow-up advice

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STEP 7: Use the teach-back method to confirm understanding

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STEP 8: Answer patient's questions and close the session

During the counseling session, the pharmacist should use simple language, maintain good eye contact, avoid medical jargon, and ensure patient privacy.

Information to Share with Patient

- Name of the medicine (brand and generic).
- Purpose / why the drug is being given.
- How much, how often, and for how long to take.
- When and how to take (before / after food).
- Common side effects and what to do about them.
- Food, drink, or other drugs to avoid.
- What to do if a dose is missed.
- How to store the medicine properly.
- When to come back for follow-up.

Special Cases Requiring Pharmacist Attention

Some patient groups need extra care and detailed counseling:

- **Pediatric Patients:** Dose depends on age and weight; liquid forms preferred; parents must be educated.
- **Geriatric Patients:** Multiple drugs, memory problems, risk of falls, drug accumulation due to reduced kidney function.
- **Pregnant & Lactating Women:** Teratogenic drugs must be avoided; explain risks of self-medication.
- **Renal & Hepatic Impairment:** Dose adjustment needed; some drugs are contraindicated.
- **Chronic Disease Patients:** Need long-term counseling (diabetes, hypertension, asthma, TB, HIV, epilepsy).
- **Diabetic Patients:** Detailed counseling on diet, injection technique, glucose monitoring, and hypoglycemia signs.
- **Asthma / COPD Patients:** Use of asthma inhalers, spacers, and peak flow meters needs demonstration.

- **Psychiatric Patients:** Need family involvement as patients may not remember or follow instructions.
- **Infectious Disease Patients:** Advise on antibiotic course, anti-TB drugs, and antifungal/antiviral compliance.
- **Cancer Patients:** Counseling on managing side effects, cycle timings, and supportive care.

Education and Training Program in the Hospital

Introduction

Education and training are important parts of the hospital pharmacist's job. Since new drugs, new treatments, and new rules come regularly, the entire hospital staff needs to be updated. The hospital pharmacist plays a major role in conducting these programs.

Role of Pharmacist in Education and Training

- Educating doctors about newly approved drugs, dosage, and side effects.
- Training nurses in safe handling, storage, and administration of drugs.
- Training pharmacy students and interns.
- Preparing drug bulletins, newsletters, and posters.
- Organizing Continuing Medical Education (CME) programs.
- Giving lectures on ADR monitoring, antibiotic policy, and rational drug use.
- Training hospital staff on medication error prevention.
- Counseling patients and their families about disease management.
- Participating in infection control and quality improvement programs.

Internal Training Programs

These are conducted within the hospital for its own staff. Examples:

- Orientation programs for new doctors, nurses, and pharmacy staff.
- Weekly / monthly in-service training for existing staff.
- Case presentations and journal clubs.
- Drug utilization review and audit meetings.
- Mock drills for emergencies and fire safety.

External Training Programs

These are conducted outside the hospital or in collaboration with other institutions. Examples:

- Conferences, seminars, and workshops organized by pharmacy associations.
- Training at medical colleges, universities, and research institutes.
- Industry-sponsored training on new drugs and equipment.
- Government-organized programs on immunization, TB control, or HIV care.
- International conferences and exchange programs.

Services to Nursing Homes and Clinics

Hospital pharmacists also provide services to small nursing homes, clinics, and health centres which do not have their own pharmacy department.

- Supplying quality medicines at reasonable prices.
- Helping in preparing their small formulary and drug list.
- Providing drug information and updates.
- Training their staff on storage, dispensing, and record keeping.
- Advising on rational antibiotic use and infection control.
- Helping in ADR reporting and pharmacovigilance.

Code of Ethics for Community Pharmacy

The Pharmacy Council of India has given a Code of Ethics that every pharmacist must follow. The main points are:

- Maintain high standards of professional behaviour.
- Always put the welfare of the patient first.
- Dispense only on valid prescription from a registered practitioner.
- Never substitute a drug without the doctor's permission.
- Maintain patient confidentiality.
- Keep accurate records of all transactions.
- Do not advertise or offer commissions for professional services.
- Cooperate with doctors, nurses, and other healthcare workers.
- Continue professional education throughout the career.
- Uphold the dignity and reputation of the pharmacy profession.

Role of Pharmacist in Interdepartmental Communication

The hospital pharmacist acts as a bridge between pharmacy and other hospital departments. Examples of communication include:

- With doctors — for drug selection, dose adjustment, and ADR reporting.
- With nurses — for correct administration and storage of drugs.
- With lab staff — for TDM and microbiology reports.
- With stores / purchase department — for procurement of drugs.
- With administration — for budget and policy matters.
- With patients — for counseling and education.

Role in Community Health Education

Community pharmacists are in close contact with the public and can play a major role in health education.

- Conducting awareness programs on diabetes, hypertension, TB, and AIDS.
- Advising on family planning and maternal / child health.
- Promoting vaccination and immunization programs.
- Educating about the dangers of self-medication and drug abuse.
- Giving information on correct use of antibiotics.
- Participating in health camps and public awareness drives.
- Distributing pamphlets, leaflets, and health posters.

Prescribed Medication Order & Communication Skills

Definition of Prescription

> **DEFINITION**
> *A prescription is a written, oral, or electronic order given by a registered medical practitioner to a pharmacist, directing him to dispense a specific medicine to a particular patient at a particular time. It is a legal document and must follow specific rules of writing and interpretation.*

Parts of a Prescription

A complete prescription has the following parts:

◆ Parts of a Prescription
▶ Superscription — date, patient's name, age, sex, address, and the symbol ℞ (Recipe)
▶ Inscription — name of the drug(s), strength, and dosage form
▶ Subscription — directions to the pharmacist (quantity, form of preparation)
▶ Signatura (Sig.) — directions to the patient (dose, timing, route, duration)
▶ Renewal / Refill instructions — if the medicine can be repeated
▶ Doctor's signature with registration number and date

Interpretation of Prescription

Interpretation means understanding the prescription correctly. The pharmacist should:

- Read the prescription carefully and completely.
- Check the patient's name, age, and date.
- Confirm the doctor's name and registration number.
- Identify the drug name, strength, and dosage form.
- Understand the abbreviations used (e.g., b.d., t.d.s., q.i.d., p.c., h.s., SOS).
- Check the total quantity and duration of therapy.
- Recognize illegible or doubtful handwriting and clarify with the doctor.
- Check for drug interactions, allergies, and contraindications.
- Calculate the correct dose for the patient if needed.

Common Prescription Abbreviations

Abbreviation	Meaning
℞	Take (recipe)
b.d / b.i.d	Twice a day
t.d.s / t.i.d	Three times a day
q.i.d	Four times a day
o.d	Once daily
h.s	At bedtime
a.c	Before food
p.c	After food
SOS	If necessary
stat	Immediately
q.h	Every hour
q.4h	Every 4 hours
p.o	By mouth (oral)
IV / IM / SC	Intravenous / Intramuscular / Subcutaneous

Legal Requirements of a Prescription

A prescription is a legal document. It must meet the following legal requirements:

- Written by a registered medical practitioner with valid registration.
- Written in ink (pen), not pencil; or printed if electronic.
- Must contain the patient's full name, age, sex, and address.
- Should clearly mention drug name, dose, strength, route, and duration.
- Date of the prescription must be written.
- Signature of the doctor with registration number and qualification.
- For Schedule H and H1 drugs, the prescription must be retained or recorded by the pharmacist.
- For narcotic drugs, the prescription must be in duplicate and preserved for 2 years.
- No over-writing or alterations without fresh signature of the doctor.
- Prescriptions for Schedule X drugs must be kept for 2 years with entries in a special register.

Communication Skills

Communication skills are very important for a pharmacist. Good communication improves patient care, builds trust, and reduces medication errors.

A) Types of Communication

- **Verbal:** Speaking, writing, asking questions, counseling.
- **Non-Verbal:** Facial expressions, eye contact, body language, tone of voice.
- **Written:** Prescriptions, reports, leaflets, emails, messages.

B) Communication with Prescribers (Doctors)

The pharmacist often needs to contact the doctor regarding a prescription. Good communication with doctors should:

- Be polite, professional, and respectful.
- Be brief and to the point.
- Start by identifying yourself and the patient.
- Clearly state the problem (illegible prescription, interaction, dose issue, unavailable drug).
- Suggest an alternative if needed.
- Confirm changes in writing to avoid confusion.
- Never criticize the doctor in front of the patient.
- Document the communication in the patient's record.

C) Communication with Patients

Good communication with patients is the heart of pharmacy practice. The pharmacist should:

- Greet the patient warmly and introduce themselves.
- Speak in a language the patient understands (avoid medical jargon).
- Maintain eye contact and use a friendly tone.
- Listen carefully to the patient's concerns.
- Use open-ended questions to get complete information.
- Show empathy and respect patient privacy.
- Use demonstrations for devices like inhalers and insulin pens.
- Use the teach-back method to check the patient's understanding.
- Provide written instructions or pictorial aids when needed.
- Encourage the patient to ask questions.

D) Barriers to Effective Communication

- Language differences and illiteracy.

- Hearing and vision problems.
- Cultural and religious differences.
- Lack of privacy and noisy environment.
- Time pressure and heavy workload.
- Medical jargon and technical words.
- Emotional distress of the patient.

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