PHARMACEUTICAL CARE

Medicines, when **used appropriately**, provide therapeutic relief and improve the patient's health. However, when **used inappropriately**, they may cause harm and increase treatment-related costs for both patients and healthcare systems.

Pharmacists, with their expertise in **therapeutics and clinical pharmacy**, play a vital role in identifying and resolving **drug-related problems (DRPs)**.
They act as **counselors**, educating patients about:

- Safe and rational use of medicines
- Appropriate diet
- Lifestyle modifications

These actions help **maximize therapeutic outcomes** and enhance the **quality of life**.

Pharmaceutical Public Health vs. Pharmaceutical Care

- **Pharmaceutical Public Health** → deals with **health issues at a societal level** through prevention and health promotion.
- **Pharmaceutical Care** → focuses on **individual patient-centered care** by ensuring safe, effective, and rational drug therapy.

Definition of Pharmaceutical Care

- The term *"Pharmaceutical Care"* was **coined by Mikeal et al. (1975)** and defined as:

  > "The care that a patient requires and receives which assures safe and rational drug use."

- Later, **Hepler and Strand (1990)** redefined it as:

  > "The responsible provision of drug therapy for the purpose of achieving definite outcomes that improve the patient's quality of life."

This definition was **adopted globally** by the **International Pharmaceutical Federation (FIP) in 1998**.

Key Features of Hepler and Strand's Definition

- Goal-oriented and **patient-centered**.
- Focuses on **achieving measurable outcomes**, especially in **chronic diseases** (e.g., diabetes, hypertension).
- Involves pharmacist's **active participation** in:

- Analyzing prescriptions
- Identifying DRPs
- Consulting with prescribers and patients to resolve therapy issues

Goal of Pharmaceutical Care

To meet each patient's need for:

- **Appropriate**,
- **Effective**,
- **Safe**, and
- **Convenient** drug therapy
  with the ultimate aim of **improving health-related quality of life**.

Who Needs Pharmaceutical Care?

Ideally, **all patients** who use medicines can benefit.
However, due to **time constraints and limited staff**, pharmacists prioritize:

- Patients with **chronic diseases**:
  Diabetes, Hypertension, Asthma, CKD, HIV/AIDS
- Patients on **polypharmacy**
- Patients with **poor adherence** or **frequent hospital visits**

Documentation and monitoring are essential components of the process.

Drug-Related Problems (DRPs)

Definition:

"An undesirable event experienced by a patient that involves or is suspected to involve drug therapy and interferes with the desired outcome."

Types of Drug Therapy Problems

1. **Indication without drug**
   - Example:
     - RA patient on NSAIDs may develop gastritis → needs H_2 blocker or PPI.
     - TB patient on INH → requires pyridoxine to prevent neuropathy.
2. **Drug without indication**
   - Example:
     - Pantoprazole prescribed without any gastritis symptoms.
3. **Improper drug selection**
   - Example:
     - Isotretinoin given to a pregnant woman (contraindicated).

    - Wrong dosage form (e.g., nitroglycerin patch for mild angina unnecessarily).
4. **Inappropriate dosage**
    - Wrong dose, frequency, or duration.
    - Example: Omeprazole 20 mg TID for PUD (too frequent).
5. **Adverse Drug Reaction (ADR)**
    - Ofloxacin → Thrombocytopenia
    - Insulin → Hypoglycemia
    - Penicillin → Hypersensitivity
6. **Drug–Drug or Drug–Food Interactions**
    - Ciprofloxacin + Antacids → Therapy failure
    - Grapefruit juice + many drugs → Toxicity
7. **Failure to receive the drug**
    - Due to nurse's omission, patient forgetfulness, or high cost.
8. **Non-adherence to medication**
    - Leads to **therapeutic failure**.
    - Causes include cost, side effects, forgetfulness, and polypharmacy.

Skills Required for Good Pharmaceutical Care

- Good **communication skills**
- Strong **therapeutic knowledge**
- Accurate **prescription interpretation**
- Proper **record maintenance**

1. Good Communication Skills

1. Helps in accurate identification of the patient's problems.
2. Improves patient satisfaction with pharmaceutical care.
3. Enhances patient adherence to prescribed treatment.
4. Builds a good pharmacist–patient relationship.
5. Reduces patient anxiety and depression.

2. Sound Knowledge of Therapeutics

1. Involves knowledge of mechanism of action of drugs.
2. Includes understanding of pharmacokinetics and fate of drugs in the body.
3. Requires knowledge of dosage and dosing schedules.
4. Includes awareness of contraindications and drug interactions.
5. Helps in identification and resolution of drug related problems.

3. Prescription Interpretation Skills

1. A prescription is a medication order issued by a physician.
2. Patients with comorbid conditions may receive multiple drugs.
3. Review of prescription before dispensing is essential.

4. Helps in identifying potential drug related problems.
5. Allows discussion with the prescriber and patient for problem resolution.

4. Maintenance of Records

1. Involves documentation of pharmaceutical care services.
2. Acts as legal and professional evidence of care provided.
3. Patient medication records can be maintained using software.
4. Enables regular updating of patient and medication related information.
5. Ensures quality pharmaceutical care and improves patient health outcomes.

Systematic Approach to Deliver Pharmaceutical Care

Pharmaceutical Care Process:

Step	Description
1. Assess	Evaluate patient's drug therapy needs and identify DRPs.
2. Develop Care Plan	Formulate strategies to resolve/prevent DRPs.
3. Implement	Carry out interventions in consultation with prescriber/patient.
4. Monitor & Review	Follow-up to evaluate the effectiveness of interventions.

Step 1: Assess the Patient

Pharmacist collects and reviews:

- **Patient demographics** (age, weight, gender)
- **Medical history** and current problems
- **Allergies, organ function** (liver/kidney)
- **Lifestyle and social factors** (alcohol, smoking, diet)
- **Patient beliefs** about therapy

Information is obtained from **medical records** and **patient interviews**.

Step 2: Develop the Care Plan

- Agreement between pharmacist and patient on medication management.
- Identify **actual and potential DRPs**.
- Set **therapeutic goals** (e.g., blood glucose control, BP target).
- Design interventions to achieve desired outcomes.

Step 3: Implement the Care Plan

- Pharmacist implements the strategies (dose adjustment, substitution, counseling, etc.)
- Interventions are **documented** in the patient's case notes.
- Collaboration with **prescribers** for acceptance.

Step 4: Monitor and Review

- Continuous **follow-up** with the patient.
- Assess outcomes: whether the care plan achieved therapeutic goals or caused new problems.
- Modify the care plan as needed.

Documentation of Pharmaceutical Care

Documentation is vital for communication and continuity of care.

Common Formats:

1. **SOAP** – Subjective, Objective, Assessment, Plan
2. **FARM** – Findings, Assessment, Resolution, Monitoring
3. **PRIME** – Pharmaceutical issues, Risks, Interactions, Mismatch, Efficacy
4. **CORE** – Conditions, Outcomes, Regimen, Evaluation

FARM Example

Component	Description
F – Findings	Collect subjective and objective data
A – Assessment	Identify and analyze the problem
R – Resolution/Recommendation	Suggest interventions
M – Monitoring	Plan follow-up and evaluate outcomes

PRIME Example

P	Pharmaceutical-based problems
R	Risks to patient
I	Interactions
M	Mismatch between drug and condition
E	Efficacy issues

CORE Example

C	Condition of the patient
O	Desired outcome
R	Regimen chosen
E	Evaluation parameters

Barriers to Implement Pharmaceutical Care

A. Pharmacist-Based Barriers

- Lack of time and staff
- Increased workload
- Inadequate training
- Lack of assertiveness or communication skills
- No legal recognition or remuneration
- Belief that patient care is solely the doctor's responsibility

B. Pharmacy-Specific Barriers

- Inadequate space or facilities
- Lack of patient counseling areas

PHARMACEUTICAL CARE PROCESS IN DETAIL

Pharmaceutical care improves the **quality of practice** and **patient health outcomes**. A **systematic approach** to delivering pharmaceutical care involves the following steps:

1. Assessment

The purpose of assessment is to determine whether the patient's **drug-related needs** are being met and to identify any **drug therapy problems**.

Key Points:

1. Assess if the patient's drug-related needs are fulfilled and identify existing or potential drug therapy problems.
2. Understand the patient thoroughly, including their **medication experience**, before making drug therapy decisions.
3. Collect only **relevant information** required for making drug therapy decisions.
4. Assess drug-related needs in a **systematic order**:
    - Appropriateness of indication
    - Effectiveness of drug therapy
    - Safety of drug therapy
    - Patient adherence (evaluated only after the above factors)
5. Document the practitioner's assessment of how well drug-related needs are met and describe identified drug therapy problems.
6. Gather, analyze, research, and interpret information related to the patient, medical conditions, and drug therapies. Drug-related needs may exist even if the patient is not currently taking medications.
7. The assessment interview encourages **active patient participation** in the care process.
8. Information on social and environmental factors (home environment, social drug use, family support) is collected through patient or caregiver interviews.
9. Assess:
    - Response to current drug therapy
    - Presence of allergies
    - Complexity of the regimen

- Use of devices (e.g., inhalers, rotahalers, insulin pens)

10. The assessment interview influences communication, data accuracy, clinical decisions, ethical judgments, patient adherence, satisfaction, and clinical outcomes.

2. Develop Care Plan

A care plan is an **agreement between the pharmacist and the patient** regarding medication use management.

Key Points:

1. Developed collaboratively by the pharmacist and patient.
2. Identifies drug therapy needs, actual and potential drug-related problems, and strategies to resolve them.
3. Established for **each medical condition** managed with pharmacotherapy.
4. Includes:
   - Goals of therapy
   - Interventions
   - Schedule for follow-up evaluation
5. Goals of therapy are the **desired therapeutic outcomes** the patient aims to achieve.
6. Includes interventions to:
   - Resolve drug therapy problems
   - Achieve therapeutic goals
   - Prevent future drug therapy problems
7. Pharmacotherapy interventions may include:
   - Initiating or discontinuing therapy
   - Increasing or decreasing dosage
   - Changing the medication product
8. Additional interventions include:
   - Patient education
   - Adherence aids or reminders
   - Referrals to other healthcare professionals
   - Monitoring plans and training on monitoring equipment
9. The final step is scheduling a **follow-up evaluation**.
10. Documentation links therapeutic goals with the interventions used to achieve them.

3. Implementation of the Care Plan

1. The pharmacist implements appropriate interventions in consultation with the **prescriber and the patient**.
2. All therapeutic interventions are **documented** in the patient's case records.

4. Monitor review and Follow-Up

The purpose of follow-up evaluation is to determine **patient outcomes** and compare them with the **goals of therapy**.

Key Points:

1. Assess patient outcomes in relation to desired therapeutic goals.
2. Evaluate parameters reflecting both **effectiveness and safety** at each visit.
3. Effectiveness evaluation includes improvement in:
    - Clinical signs and symptoms
    - Laboratory values
4. Safety evaluation includes identifying:
    - Adverse drug reactions
    - Drug toxicity
5. Assess patient adherence and its impact on outcomes.
6. Determine and document the outcome status of the treated or prevented medical condition.
7. Reassess the patient for any **new drug therapy problems**.
8. Document actual results and outcomes of drug therapy.

Important Principle:

☞ *"Follow up early and follow up often."*

- Shortage of information and documentation tools

REFERENCES

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3. **Pharmaceutical Care Practice** – Cipolle, Strand & Morley, McGraw Hill.