



Clinical Pharmacy



Clinical Pharmacy

Clinical pharmacy is defined as that area of pharmacy concerned with the science and practice of rational medication use

Pharmaceutical care

*Pharmaceutical care is the direct, responsible provision of medication related care for the purpose of achieving **definite outcomes** that improve a patient's quality of life*

- Cure of the disease
- Elimination or reduction of symptoms
- Arrest or slowing of a disease process
- Prevention of disease or symptoms





Clinical Pharmacy

- ❑ Clinical Pharmacy includes all the services performed by pharmacists practising in
 - ❑ Hospitals
 - ❑ Community pharmacies
 - ❑ Nursing homes
 - ❑ Home-based care services
 - ❑ Clinics
 - ❑ Other settings where medicines are prescribed and used

- ❑ The term “clinical” does not necessarily imply an activity implemented in a hospital setting.

How does clinical pharmacy differ from pharmacy?

- ❑ The discipline of pharmacy embraces the knowledge on synthesis, chemistry and preparation of drugs
- ❑ Clinical pharmacy is more oriented to the analysis of population needs with regards to medicines, ways of administration, patterns of use and drugs effects on the patients.
- ❑ The focus of attention moves from the drug to the single patient or population receiving drugs.

Goal

To promote the correct and appropriate use of medicinal products and devices.

These activities aim at:

- ☐ Maximising the clinical effect of medicines
- ☐ Minimising the risk of treatment-induced adverse events
- ☐ Minimising the expenditures for pharmacological treatments.



Career Options

- ☐ Clinical Pharmacy
- ☐ Community Pharmacy
- ☐ Hospital Pharmacy

Information Source

- ☐ Medical record
- ☐ Patient
- ☐ Family
- ☐ Health care team



Level of Action of Clinical Pharmacists

Clinical pharmacy activities may influence the correct use of medicines at three different levels: before, during and after the prescription is written.





1. Before the prescription

- ☐ Clinical trials
- ☐ Formularies
- ☐ Drug information
- ☐ Drug-related policies



2. During the prescription

- ❑ Counselling activity
- ❑ Clinical pharmacists can influence the attitudes and priorities of prescribers in their choice of correct treatments.
- ❑ The clinical pharmacist monitors, detects and prevents **Medication related problems**
- ❑ The clinical pharmacist pays special attention to the dosage of drugs which need therapeutic monitoring.
- ❑ Community pharmacists can also make prescription decisions directly, when over the counter drugs are counselled.

Medication-related Problems

- ☐ *Untreated indications.*
- ☐ *Improper drug selection.*
- ☐ *Subtherapeutic dosage.*
- ☐ *Medication Failure to receive*
- ☐ *Medication Overdosage.*
- ☐ *Adverse drug reactions.*
- ☐ *Drug interactions.*
- ☐ *Medication use without indication.*

3. After the prescription

- ☐ Counselling
- ☐ Preparation of personalised formulation
- ☐ Drug use evaluation
- ☐ Outcome research
- ☐ Pharmacoeconomic studies





Introduction

- ❑ Clinical pharmacy comprises of as set of functions that promote the safe, effective and economic use of medicines for individual patients
- ❑ It is the active participation of the pharmacist in patient care with the long-term aim of giving advice on medication with an individual patient in mind and tailoring drug therapy for that individual
- ❑ Requires the application of specific knowledge of pharmacology, pharmacokinetics, pharmaceuticals and therapeutics to patient care



Introduction

- ❑ Pharmacist involvement in monitoring patients therapy and giving advice which directly influence the decisions concerning drug therapy and the way in which it is administered
- ❑ Clinical pharmacy carries a traditional hospital pharmacist from his product oriented approach to a healthier patient oriented approach, so as to ensure the patients maximum well being while on drug therapy



Basic components

1. Communication
2. Counseling
3. Consulting

Communication

- ❑ Communicative skills → effective clinical practitioner
- ❑ The pharmacist must attempt to understand factors such as
 - ❑ Psychological aspects of various illness
 - ❑ Behavioral characteristics of individuals from different socio-economic strata
 - ❑ Be familiar with medical terminology and their functions for effective communication with physicians and other health care professionals
- ❑ The pharmacist must possess and convey
 - ❑ A confidence in his abilities
 - ❑ A willingness to listen
 - ❑ A concern for the patients well being
 - ❑ An enthusiasm for contributing to patient care



Counselling

- ❑ Counselling used in the context of pharmacy practice might be defined as the *provision of advice on therapeutic matters to patients or members of the health care team*
- ❑ Patient drug profile should be maintained that provides the pharmacist with
 - ❑ Biographic information about the patient
 - ❑ Summarizes his complete drug therapy, including over the counter medications

Counselling

- ☐ By properly applying the knowledge of pharmacology and pathology, the pharmacist can monitor and counsel the patient and physician for possible
 - ☐ drug-drug interactions
 - ☐ drug-food interactions
 - ☐ adverse drug reactions
- ☐ Verbal instructions should be concise and exact in counseling
- ☐ The patient's mental ability to comprehend should be evaluated and the conversation should be adjusted accordingly
- ☐ The patient's ability to understand should never be overestimated



Consulting

- ❑ Most promising and potentially significant aspects of the clinical practice of pharmacy is consulting
- ❑ The demand for a source person for detailed drug information will increase as
 - ❑ the information explosion continues
 - ❑ medical care becomes more complex
 - ❑ potential hazards of drug therapy become more evident
- ❑ The pharmacist can expand his role to function as a therapeutic consultant to the public, the physician and other health care professionals



Objectives

- ❑ Primary objective is to improve pharmaceutical services and increase health care delivery
- ❑ At student level
 - ❑ Increase awareness of the general methods of diagnosis and patient care specifically as they relate to drug therapy
 - ❑ Develop a awareness in providing pharmaceutical services
 - ❑ Acquainting the student with clinical application of pharmacological and pharmaceutical principles
 - ❑ Integrate the knowledge acquired in the preclinical years and apply it to the solution of real problems
 - ❑ Develop an awareness of responsibility in monitoring drug utilization



Objectives

- ❑ At professional level
 - ❑ Optimize drug therapy by increasing effectiveness and minimizing ADRs
 - ❑ Assist physicians in prescribing and monitoring drug therapy
 - ❑ Assist nurses in administering medicines and documenting SAEs
 - ❑ Maximize patients role in drug use process

Scope of Clinical Pharmacy

- ☐ Drug distribution systems
- ☐ Drug information
- ☐ Drug utilization
- ☐ Drug evaluation and selection
- ☐ Formal education and training programme
- ☐ Miscellaneous

Drug distribution systems

- ❑ Complete understanding and appreciation of various drug distribution systems regarding unit-dose systems of distribution and control procedures is essential
- ❑ Clinical instructors, hospital pharmacists and community pharmacist should establish accurate and safe medication distribution systems in hospitals



Drug information

- ❑ Foundation of clinical pharmacy
- ❑ Essential to keep updated literature
- ❑ Utilize information to make data available in a rapid efficient manner
- ❑ Drug information centres can serve as data bank of important information
- ❑ Drug information should be provided via an intrahospital news letter, inservice education and community lectures



Drug utilization

- ☐ The pharmacist has a professional obligation to monitor drug utilization
- ☐ The pharmacist should be vigilant of
 - ☐ Drug abuse
 - ☐ Abnormal prescribing patterns
 - ☐ Drug-Drug interaction
 - ☐ Drug -food interactions
 - ☐ Drug-laboratory test interactions
 - ☐ Adverse drug reactions
 - ☐ Intravenous admixture incompatibilities
 - ☐ Duplicated prescriptions
- ☐ The patient drug profile is a very useful document in monitoring drug utilization.

Drug evaluation and selection

- ❑ The pharmacist becomes a valuable resource person in the selection of drugs for various disease states
- ❑ The pharmacist can provide unique service in evaluating the formulation of various dosage forms based on the knowledge of biopharmaceutics
- ❑ Pharmacist can achieve professional respect from the medical community by furnishing essential scientific information on drug evaluation and selection



Formal education and training program

- ❑ The pharmacists has fundamental knowledge and expertise that should be shared with all those involved in drug storage, preparation prescribing and administration

Miscellaneous

- ❑ Clinical practitioners must develop an appreciation of electronic data processing (EDP) and recognize its application
- ❑ Applications of EDP in pharmaceutical services can contribute to more efficient and economic systems of health care delivery to patients

What Is A Hospital Pharmacy ?

- ❑ 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 healthcare professionals and patients on their safe, effective and efficient use.
- ❑ Hospital pharmacy is a specialised 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.
- ❑ Hospital pharmacists provide services to patients and health care professionals in hospitals.



Responsibilities of a HP

- ❑ Getting the drugs the patients need
- ❑ Compounding what we cannot get
- ❑ Small scale manufacturing
- ❑ Storing medication
- ❑ Therapeutic drug monitoring
- ❑ Preparing Cytotoxics and other IV drugs
- ❑ Dispensing Drugs to Patients
- ❑ Working within the therapeutic team



Role of Clinical Pharmacy (pharmacist)

1. Supervises all drug distribution activities for drug use and patient safety
2. Selects for patients, therapeutically effective prescription drug products at reasonable cost
3. Promotes rational drug therapy by physicians
4. Helps to establish dosage regimens for patients
5. Records patients medication history of drugs taken and any adverse reactions therefrom
6. Compounds drug preparations to meet specific patient requirement
7. Supervises the dispensing of prescriptions



Role of Clinical Pharmacy (pharmacist)

8. Counsels patients on the use of drugs to assure compliance
9. Detects and diagnoses adverse drug reactions and drug interactions
10. Advises patients on selection of OTC drugs
11. Integrates the psycho-socio-economic aspects of health care
12. Supervises management of patients with acute and chronic diseases
13. Detects and overcomes incompatibilities in drug mixtures
14. Has ability to evaluate the drug literature
15. Performs drug utilization review
16. Provides health care education
17. Prescribes for self limiting diseases
18. Monitors patients responses to drugs utilizing patient medication profile and other resources



Role of Clinical Pharmacy (pharmacist) in Community Pharmacy

- ☐ Referral Service
- ☐ Personalized patient care
- ☐ Clinical services



