



**Clinical Pharmacy –
Definition, Development
and Scope**

Objective

- The objective of clinical pharmacy practice is to optimize patient outcomes by working to achieve the best possible quality use of medicine (QUM)

Definitions

Clinical pharmacy practice is the practice of pharmacy in a multidisciplinary healthcare team directed towards achieving patient treatment goals by ensuring:

- That the correct patient receives the optimum dose of the most appropriate medication for specific condition via a rational dosage form and regimen, over an appropriate time period
- That untoward effects and interactions of drugs are identified, resolved and where possible prevented
- Involvement in patient education and counseling, monitoring of drug therapy, prescriber education and research
- That the quality use of medicines is promoted through other activities as appropriate

Clinical pharmacy services

- A pharmacy service should provide suitable trained and qualified pharmacists to facilitate the most effective, efficient and economical utilization of drug therapy with the aim of optimizing patient care.
- The service includes supply, administration, drug therapy monitoring, drug information, patient counseling and pharmacokinetic interventions (drug-drug ; herb-drug interactions)
- Monitoring of drug therapy and outcomes should optimally be performed on a daily basis, however some patient groups may require less intensive monitoring
- Clinical pharmacists should also be involved in activities which may not be directly related to individual patient care but are directed at enhancing the quality medication use e.g: DUE, teaching and research and development of multidisciplinary care plans.

Clinical Pharmacy Services

- Clinical pharmacy should not be restricted to hospital pharmacy practice.
- Communication and cooperation b/w institute-based and community-based pharmacists is an essential element of a patient's ongoing care
- Ensuring the continuity of supply and drug therapy monitoring in the community is an important role of clinical pharmacists
- Clinical pharmacy service include:
 - Medication history interview
 - Drug therapy monitoring
 - Medication order review; adverse drug reaction management, clinical review and TDM
 - Participation in ward rounds and meetings
 - Selection of drug therapy
 - Prevention, assessment and management of drug interactions
 - Provision of drug information
 - Patient medication counseling
 - Liaison with community services

Role of clinical pharmacists in education and research

- Involvement in education and research is essential components of contemporary clinical pharmacy practice
- **Pharmacists** practicing clinical pharmacy should undertake research into optimum utilization of drug therapy and the practice of clinical pharmacy
- Clinical pharmacists should support, initiate and participate in research projects whenever possible. Areas of specific focus may include:
 - Development of clinical pharmacy services
 - Individual case reviews
 - Clinical trials
 - Quality assurance
 - Guideline and protocol formulation and evaluation
- Clinical pharmacists involved in research activities should adhere to the principle and procedures in Declaration of Helsinki, other relevant guidelines of ethical considerations

Education and research...

- The expertise and resources of other health professionals should be utilized whenever possible
- Collaboration with other pharmacists interested in the same field may be of assistance
- Clinical research (experience!) must be published in reputed journals
- Contribute to other co-workers, pharmacists , pharmacy students and other healthcare professionals
- Involvement include:
 - Experiential education of pre-registration pharmacists
 - Orientation and training of pharmacists in specific fields of practice
 - Patient and career education
 - Education of other health professionals in areas relevant to quality use of medicines
 - Specific UG pharmacist education
 - Design, format and methods of undergraduate and post graduate pharmacy course programs
 - Design of patient focused education programs
 - Development of specific training programs and courses on selected aspects of clinical pharmacy practices
 - Publication of training programs and education tools

Development of Clinical Pharmacy

- **First Pharmacy Degree 70 years ago @ BHU**
- **The Pharmacy Act – 1948 was developed by PCI**
- **Education regulation was drafted for D. Pharm 1953, 1972, 1981 and 1991**
- **Till today pharmacy education oriented towards the pharmaceutical industry**
- **Production, formulation, quality control and marketing**
- **Growth of pharma industry – self sufficient**
- **Various types of dosage forms including controlled release or sustained release are available (approx 75,000 formulations)**

- **The first change in ER 1991 – Clinical, hospital and community pharmacy, drug store management subject included**
- **In 1980s and 1990s consequences of drug misuse, such as poor health outcomes from drug treatment, antibiotic resistance, adverse drug reactions and economic loss to patients**
- **In late 1990s pharmacy profession realized the need of training the pharmacists to contribute to improving medication use in the country**
- **Problem remained – education system trained in pharmaceuticals, chemistry, pharmacology and industrial pharmacy**
- **Patient care – based on the knowledge of pathophysiology, applied therapeutics, clinical pharmacokinetics, practice skills such as drug information, drug therapy review etc**

Scope of Clinical Pharmacy

- Clinical pharmacy practice is concerned with the promotion of effective, safe and economical drug therapy
- Pharmacy Practice – includes clinical pharmacy services and other activities performed by pharmacists in the hospital and Community pharmacy setting including
 - Dispensing and drug distribution
 - Drug information
 - Health promotion
 - Patient counseling
 - Pharmacovigilance
 - Medication reviews
 - Academic detailing etc

Why we need clinical pharmacy practice in India?

Drug use related problems in India

Pharmaceutical
Industry

Prescribers

Pharmacists

Patients

Government

Pharmaceutical Industry

- >75,000 formulations
- Irrational drug combinations and non-essential medicines (vitamin tonics etc)
- Doctors rely in promotional material from pharma industries for drug information
- Biased information, does not provide independent advice regarding indications for treatment and safety issues
- Many pharma industry do not have full fledged medical information dept
- Package inserts contain technical information for prescribers not for patients
- Thus,
 - **Clinical pharmacy practice address these issues by providing un-biased, independent drug information to doctors and by providing patient care through counseling.**

Prescribers

- Patient load is extremely high
- OP dept is over crowded
- “a pill for every ill”
- Un-necessary drug related problems – ADR
- Not adequate pharmacotherapeutic training
- Rely on information from pharma companies
- Brand name prescription – with the risk of duplication of therapeutic equivalents
- Infectious diseases often treated empirically; hence antibiotic resistance found
- Thus,
 - **Clinical pharmacists can help by providing doctors with advice and information to deliver safer and more effective drug therapy**

Pharmacists

- Do not offer any professional services include patient counseling, labeling information on medication use, drug interactions etc
- Due to poor knowledge base, lack of training and confidence; lack of financial benefits...
- Statutory bodies control on medical stores – not satisfactory
- Pharmacies are managed by non-pharmacists; hence community pharmacy practice does not exist
- Hospital pharmacists manage business formalities – such as drug inventory, maintenance of OPD dispensing and record keeping.
- Thus
 - **With appropriate education and training, graduate pharmacists can help to improve medication use, by providing services, ward round participation, and ADR reporting and monitoring.**

Patients

- >50% cannot Read & Write
- Medication compliance is poor
- Patient counseling – NIL
- PIL and advisory labels in local language assist in improved medication use
- Thus
 - **Clinical pharmacists can advice on patients and their doctors on the most cost effective medications for a particular condition, and help to reduce spending on unnecessary and irrational medications**

Government

- National health policy focused on pharmaceutical industry rather than patient
- Technical and commercial matters such as price control and licensing of mfgs have given priority
- Advertising and promotional claims by the mfg – not strictly regulated
- Govt. is not ready to initiate uniform ADR documenting system; which indirectly help to initiate medication safety
- No guidelines on STGs on pediatric; geriatric patients
- Thus
 - **Monitoring and reporting the ADRs should be initiated by the clinical pharmacy practice , and pharmacists can play a meaningful role in the healthcare system of India.**