



## Requirement and impact of clinical pharmacy practice in modern healthcare systems in India: A review

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### Abstract

Clinical pharmacy practice is a wing of pharmacy in which clinical pharmacists provide direct patient care to optimize the proper use of medication and promotes health, wellness, and disease prevention. Rational management of critically ill patients often necessitates proper insight into the medications administered. Chief factors involving appropriate selection of drug therapy includes justifiable drug selection, proper dosing, proper administration of medications and proper drug monitoring strategies. So, Clinical pharmacists are the need of the hour, especially in a country like India, which has the second largest population in the world.

**Keywords:** clinical pharmacy practice, modern healthcare systems, medication, promotes health, wellness, disease prevention

### Introduction

Rational management of critically ill patients often necessitates proper insight into the medications administered. Chief factors involving appropriate selection of drug therapy includes justifiable drug selection, proper dosing, proper administration of medications and proper drug monitoring strategies. Although a particular patient may receive and appropriate drug, subtherapeutic dosing or overdosing of the same can culminate in either reduced drug efficacy, enhanced toxicity, or both <sup>[1, 2]</sup>. Treatment complexity, coupled with heightened care required for patients (especially in the ICU) can precipitate more risks to patients than benefits <sup>[2]</sup>. Presence of a clinical pharmacist in a healthcare system can attenuate treatment complexities by proper review of medication errors, that can prevent medication errors, as well as provision of cost-effective therapy options. Thus, the inclusion of a clinical pharmacist (as a substantial part of a healthcare team) can contribute to optimized patient care, reduced risks of adverse drug events (ADE) and improved Health-Related Quality of Life (HRQoL) <sup>[3]</sup>.

### Clinical pharmacy in India: the current scenario

Although a decade has passed since the introduction of Doctor of Pharmacy (Pharm.D) program in India, numerous questions have arisen with respect to Clinical Pharmacy in the country. Clinical pharmacists show promising contribution to optimized healthcare in many aspects, thereby transforming the country's healthcare scheme for the better <sup>[4]</sup>.

### Roles and responsibilities of clinical pharmacist in healthcare systems in India

Although, currently, there are very few provisions for clinical pharmacists [CPS] in a healthcare system in India, CPS do play a vital role in optimizing patient care in the following aspects:

#### Medication History Interview (MHI)

With appropriate MHI, clinical pharmacists can get an insight into past medical history of the patient, the medication/s the

patient was taking in the past/concurrently, history of documented allergies, etc. <sup>[4]</sup>.

#### Medication Review

Also known as clinical review, clinical pharmacists screen for prescribed drug therapy to ensure that the therapy provided to the patient is justifiable and rational <sup>[4]</sup>. This step finds chief application in antibiotic usage in clinical care settings, in which indiscriminate and irrational use of antibiotics can result in toxicities and enhanced risk of multi-drug resistant organisms. Clinical pharmacist also equates clinical manifestations of the patient, laboratory reports, provisional diagnoses with the concurrent therapeutic plan, with the sole objective of optimizing patient care <sup>[4]</sup>. Medication errors, which can be detrimental to patient health (in particular neonates <sup>[5]</sup>) can be addressed and resolved by clinical pharmacists.

#### Patient Counselling

As far as a patient is concerned, there are many queries that can emerge in his/her mind regarding disease condition, drugs in use, lifestyle and dietary modifications, method of usage of specific medical devices (insulin pen, metered dose inhalers, etc). Medication non-adherence, which stands as a great impediment to improved HRQoL, can be addressed and resolved by clinical pharmacists through effective patient counselling. Drug-related, disease-related and lifestyle-related patient counseling can be provided, which can ensure that treatment outcomes are positive <sup>[4, 6]</sup>. With proper patient counselling, patient satisfaction, medication adherence, improved therapeutic outcomes and emotional confidence (especially in chronic diseases) can be achieved <sup>[7]</sup>.

#### Ward round participation

Being an integral part of the healthcare team, clinical pharmacist can attend ward rounds, which can provide a deeper insight into the patient's clinical history, prognosis, proper discharge planning, etc, in accordance with hospital formulary and clinical guidelines <sup>[4]</sup>.

### Community Pharmacy

Clinical pharmacists can undertake or take part in numerous community service programs (smoking cessation, awareness about infectious diseases, cancer awareness, vaccination awareness, etc) <sup>[4]</sup>.

### Drug Interactions

Drug interactions can occur in many ways, chiefly drug-food interactions and drug-drug interactions. Drug-drug interactions are quite prevalent in a clinical care setting, predisposing factors including polypharmacy, geriatrics, patients under chemotherapy, etc. Drug-food interactions are also emerging as potential impediments to rationalized therapy. In such situations, a clinical pharmacist can assist in reviewing of prescriptions and making interventions, so that clinical significant interactions do not reach the patient <sup>[7]</sup>.

### Therapeutic Drug Monitoring (TDM)

TDM refers to the process of measurement of plasma drug concentrations of specific drugs at specific intervals of time, in order to monitor their pharmacokinetic profile and make dosage adjustments, if necessary. TDM is required in those drugs that have a narrow therapeutic index (Cyclosporine, methotrexate, azathioprine, etc). A multidisciplinary approach, that warrants absolute collaboration between a TDM team comprising clinicians, nurses and clinical pharmacists, is required to ensure that safe plasma drug levels are achieved without serious toxicities <sup>[8, 9]</sup>.

### Conclusion

Clinical pharmacists are the need of the hour, especially in a country like India, which has the second largest population in the world. India, also being the hub of many chronic and infectious diseases, requires the services of clinical pharmacy practice. Looking into the future, clinical pharmacists may get more opportunities in Indian healthcare systems to discharge their duties and services. Clinical pharmacists reduce the workload of clinicians and work in collaboration with other health care professionals, with the common objective of optimizing drug therapy and enhancing convalescence.

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