

# Understanding the Career Opportunities of Clinical Pharmacy in India

Abhimanyu Prashar \*, Anushruti  
Department of Pharmacy Practice,  
Maharishi Markandeshwar College of Pharmacy,  
Maharishi Markandeshwar University,  
Mullana, Ambala, Haryana, India  
\*abhi.parashar29@gmail.com

## ABSTRACT

This review highlighted on understanding the career opportunities available in India for Clinical Pharmacy practitioners. Clinical pharmacy is a health science discipline which deals with providing patient care that optimizes medication therapy and promotes health, and disease prevention. To improve the status of this field in India a new course, Doctor of Pharmacy (Pharm.D) was introduced a decade ago. The students pursuing this course are uncertain and misled about the career options of clinical pharmacy. Due to lack of awareness and skills among the budding pharmacists as well as the lack of guidance by academicians and academic institutions, it is really becoming difficult for the students to understand the areas where they can pursue their career. There are diverse fields in which Pharm.D students can pursue their career such as pharmacovigilance, health economics and outcome research, clinical research, medical writing, academics and research. However, clinical pharmacy and its practitioners have fewer acceptances in the healthcare system and among the general public. Due to lack of awareness among the Indian population, dominance of the clinicians in the healthcare field, lack of initiatives by the governing authorities to mandate the role of clinical pharmacist in the government sector this field is not well established. Therefore, it is high time for the budding pharmacists to focus on such an embrasure of the healthcare scenario and to understand and utilize the available opportunities. The present situation might be discouraging for the individuals pursuing their study in clinical pharmacy but, there is a wide scope and demand for the graduates in clinical pharmacy and no opportunity is small.

**Key Words:** Clinical Pharmacy; Clinical Pharmacist; Scope; Career Opportunities

## INTRODUCTION

"Pharmacy Practitioner" means an individual (Community Pharmacist/ Hospital Pharmacist/ Clinical Pharmacist/ Drug information Pharmacist) currently licensed, registered or otherwise authorized under the Pharmacy Act to counsel or otherwise and administer drugs in the course of professional practice (Pci.nic.in, 2016). Clinical pharmacy is the branch of pharmacy Practice which is still in the beginning phase in Indian subcontinent and its acceptance is still a big question among the physicians and the general public. Pharmacy Practice branch was added in the curriculum of Masters of Pharmacy (M.Pharm) in early 90's and it has been more than two decades that still the clinical pharmacist is struggling for their acceptance in healthcare system. Moreover in year 2008, a new course, Doctor of Pharmacy (Pharm D) was added in

the Pharmacy curriculum and was thought to change the existing scenario of Clinical Pharmacy and Pharmacy Practice in India. The aforementioned course was introduced almost a decade ago but still the scope of clinical pharmacy is uncertain and it is still a dilemma among the students pursuing this course that what are the career perspectives are available for them.

The leading cause of its lower acceptance in Indian population is lack of awareness among the society, dominance of the clinicians in the healthcare field, lack of initiatives by the governing authorities to mandate the role of clinical pharmacist in the government sector. With all these existing issues in the Indian healthcare sector, the growth and scope of clinical pharmacy seems to be hindered. Looking at the current scenario, lack of awareness and skills

among the budding pharmacists, it is really becoming difficult for the students to understand the areas where they can pursue their career. One of the hindrances for students in framing a better future is the lack of guidance as well as misguidance by academicians as well as the academic institutions.

In the current scenario there are many opportunities available for the Pharm D/ M.Pharm (Pharmacy Practice) students to frame their career in private as well as the government organizations. Various fields where the Pharm. D/ M.Pharm (Pharmacy Practice) students can pursue their career are – pharmacovigilance (Private/ Government sector), clinical research, medical writing, health economics and outcome research, clinical pharmacist, academics and research. Currently these booming fields provide a better platform where one can frame their career.

#### **CLINICAL PHARMACIST**

Clinical pharmacist in a hospital is the primary area of work after completion of Pharm D/ M.Pharm (Pharmacy Practice), but this set up is not well established and recognized in the Indian healthcare sector compared to the developed nations. There are many significant factors hindering its acceptance. The foremost contributing factor that is preventing the acceptance of clinical pharmacist is the healthcare system, as the healthcare cost burden is not been taken care by the government in contrast to developed countries like USA, Europe and Australia, where the government is concerned to reduce the patient healthcare cost in view to reduce the economic burden on the countries economy. In Indian healthcare system, the expenses are covered majorly by self finance or with the private health insurance, which directly increases the improper use of medications and healthcare cost in profit making healthcare organizations. Thus initiatives should be taken by the governing authorities in order to reduce the economic burden on the patients by mandating the clinical pharmacists in government as well as private hospitals.

As mentioned in the Pharmacy Practice regulations published by Pharmacy Council of India (PCI) the disciple of Pharmacy Practice should also be engaged in Interpretation, evaluation and implementation of

medical orders; dispensing of prescriptions, drug orders ; Participation in drug and device selection, drug administration, drug regimen reviews and drug or drug related research; Provisions of patient counseling and the provision of those acts or services necessary to provide pharmaceutical care in all areas of patient care including primary care; and responsibility for Compounding and labeling of drugs and devices; providing drug information services; Participating in the administrative activities of the drug information center along with other faculty/ healthcare providers; developing and assisting in development of drug monographs and reviews for the Pharmacy & Therapeutics Committee; Identifying, assessing, reporting ADR's and maintaining records of aforementioned; Providing pharmaceutical services to the inpatients.

In order to gain the faith and confidence among the clinicians, academic institutions should come out with the strategies to improve the skill of the budding clinical pharmacists. Also they must incorporate the students in identifying the medications errors from the lowest level i.e. identifying the nursing errors, administration errors and compliance errors despite of identifying the prescriber's errors in the beginning itself. Identifying the errors at these lower levels will definitely improve the quality of clinical pharmacists. The acceptance of the clinical pharmacists in Indian healthcare settings will eventually improve once the confidence of clinicians is attained in the potential of clinical pharmacists. (Adam, J. & Wager, E., 2005)

#### **MEDICAL WRITING**

The profession of medical writing is a process of communicating the clinical as well as scientific data and information to a range of audiences in a wide variety of formats. Medical writing deals with regulatory and clinical writing as well as scientific communications. Regulatory and clinical writing involves writing of ICH GCP compliant Clinical Study Reports (CSRs) from Phase I to IV, as well as CSR synopses for public disclosure; Study protocols; clinical and non clinical sections of the common technical documents (CTD) including summaries and overviews for EU and US regulatory authorities; Investigator Brochures; patient safety narratives; Patient information including Informed Consent and

Patient Brochures; Pharmacovigilance documents such as Periodic Safety Update Reports (PSUR); Standard Operating Procedures (SOPs) covering all aspects of drug development including the design, conduct and reporting of clinical trials and the outsourcing of Sponsor responsibilities to a Contract Research Organization (CRO) Medical writers combine their knowledge of science and their research skills with an understanding of how to present information and pitch it at the right level for the intended audience (Adam, J. & Wager, E., 2005).

Scientific communications includes writing the conference materials (abstracts, poster presentations and slide sets); manuscripts; editorial support; journal/conference submission; Product website content (for both scientific and patient audiences); educational material for patients, healthcare professionals and pharmaceutical industry personnel; Medical marketing reviews and reports; literature reviews; publication planning (Quanticate.com, n.d.). Working in medical writing gives an overview of the entire clinical development process, so it's an ideal starting point for other careers in the pharmaceutical industry, such as regulatory affairs, clinical research, document management, and marketing. The medical writing teams work in collaboration with the team of biostatisticians, pharmacovigilance officials, project management teams, and clinical data management teams to deliver accurate, timely, and cost effective documents to the highest ethical and scientific standards. Thereby, medical writers form an integral part of the scientific documents approval process.

## PHARMACOVIGILANCE

According to World Health Organization (WHO) 2002, Pharmacovigilance (PV) is the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other possible drug-related problems. Pharmacovigilance reporting system is the core data-generating system of pharmacovigilance, relying on healthcare professionals and patients to identify and report any suspected adverse effects from medicines to their local or national pharmacovigilance centre or to the manufacturer. It is also referred to as Post-marketing/ Safety surveillance/ Spontaneous reporting systems (Who-umc.org, n.d.). PV is

particularly concerned with ADRs, which are drug responses that are noxious and unintended, and which occur at doses normally used for the prophylaxis, diagnosis or therapy of disease, or for the modification of physiological function (Report E. Effective communications in Pharmacovigilance, 1997). Post marketing PV uses tools such as data mining and investigation of case reports to identify the relationship between drugs and ADRs. The drug regulatory agencies have the responsibility of having a well-established PV system to monitor ADRs during the drug development phase and during the life time of a marketed drug (G Suke, Kosta and Negi, 2015).

Indian Pharmacopoeia Commission (IPC) is an autonomous institution of the Ministry of Health and Family Welfare which sets standards for all drugs that are manufactured, sold and consumed in India. The Pharmacovigilance programme in India is coordinated by The Indian Pharmacopoeia Commission and conducted by the Central Drugs Standard Control Organization (CDSCO). The key responsibility of the IPC is to maintain and develop the Pharmacovigilance database consisting of all suspected serious adverse reactions to medicines observed. IPC functions as a National Coordination Centre (NCC) for Pharmacovigilance Programme of India (PvPI). NCC is operating under the supervision of steering committee which recommends procedures and guidelines for regulatory interventions. The main responsibility of NCC is to monitor all the adverse reactions of medicines being observed in the Indian population and to develop and maintain its own pharmacovigilance database (ipc.gov.in, n.d.).

Pharmacovigilance offers numerous opportunities for budding clinical pharmacist in government as well as private sector. In government sector an individual can start his/her career with Technical Data Associate (TDA) in CDSCO with aforesaid reporting to Drug Inspector. The responsibilities of TDA includes - Handling of Severe Adverse Events (SAE)-Death and Injury reports reported to regulatory authority within the stipulated timelines; Writing medically relevant safety narrative of cases and checking for the completeness of the case; Causality assessment of the events and its relatedness to the Investigational product/trial, etc. Moreover the individuals can also

choose career as Patient safety-Pharmacovigilance associate in IPC under the ministry of health and family welfare.

### CLINICAL RESEARCH

Doctors and scientists often oversee clinical research trials to help cure different types of diseases and conditions, and test pharmaceuticals and treatments. For a clinical trial to be successful, a lot of work is put in. Clinical research trials require a various people working together to execute a proper trial (Clinical Research Fastrack, 2018). Despite strict regulations implemented recently, India is growing as a hub for clinical research, which has led to increased demand of professionals in this area. In coming few years there will be huge demand of professionals in this industry and thereby it is emerging as an amazing career choice that contains a large growth possibility (Clinical Research Fastrack, 2018). The various opportunities in Clinical Research involve – Clinical Research Coordinators (CRC), Clinical Research Associates /Field Monitor/ Clinical Monitor/ Trial Monitor, Clinical Research Scientist, The Clinical Quality Assurance Auditor (CQA), Clinical Safety Analyst, Medical Writer, Regulatory Affairs Associates, Clinical Data Management, Medical Science Liaison, etc. The work profile for all these positions varies with personnel requirements in the clinical trials and extends from the initiation to its completion. The work involves various categories from clerical documentation to the scientific data management as well the qualitative and regulatory auditing. For those interested in pursuing a career in clinical research, the list of job opportunities seems endless.

### HEALTH ECONOMICS AND OUTCOME RESEARCH

Health economics and outcomes research (HEOR) primarily revolve around the necessity for pharmaceuticals companies to compellingly demonstrate the value of their products in regard to efficacy, affordability and demand. Due to the increased importance of health economics and outcomes research, there is huge demand for the suitable applicants in this sector. This, combined with lack of individuals with the necessary skill set, has led to a worldwide skills shortage and talented professionals. It is generally recommended that the best way to get into the field of health economics

and outcomes research is to work in a consultancy; this will help an individual to attain practical experience and opportunities for career progression. The work profile involves - developing proposals and managing projects with an objective to evaluate and demonstrate a product's value, while ensuring completion to agreed timescales and budgets; Contributing to the development decisions of a specific product by providing assessments and related evidence throughout a project; Facilitating and executing research studies to support both new and existing products; Developing HEOR strategies and managing projects for multiple products; Assessing and formulating reimbursement policy strategies, as well as implementing those strategies accurately and in a timely manner (Hays.com, n.d.).

### ACADEMICS AND RESEARCH

Academic field is one of the best areas where one can keep updating individual knowledge and work for the development of the budding pharmacists. Moreover an academician can also engage in the quality research work for the development of the society. Today in India over 200 colleges are offering courses in Pharmacy Practice and Clinical Pharmacy including both Pharm D as well as M Pharm (Pharmacy Practice/ Clinical Pharmacy) programme, thus creating a vast opportunity for the individuals interested in updating their knowledge and who are willing to work for the development of society. However apart from the academic institutions, the M Pharm/ Pharm D graduates who are willing to engage in research work for the societal development can also apply for the various positions in the government organizations such as Department of Science and Technology (DST), Indian Council of Medical Research (ICMR) and Clinical Development Service Agency (CDSA) for the eligible posts. Apart from these Indian Organizations, Internationally varied opportunities are available for the Pharm D/ M Pharm (PP/ CP) graduates to work in World Health Organization (WHO) at various scientific as well as professional posts. However working in these organizations requires competitive eligibility criteria, where the most desirable qualification involves experience in public health as well as societal development. Moreover, higher qualification such as Ph D as well as qualifying examinations such as National Eligibility Test (NET) or its equivalent

Graduate Pharmacy Aptitude Test (GPAT) also provides a higher weightage in the aforementioned organizations.

### CONCLUSION

Opportunities for the individuals involved in the field of clinical pharmacy are wide scattered and no opportunity is small. In order to accomplish

something, always take a hard way as it helps to build up ones moral strength and simultaneously equips one mentally to face the challenges in the career building. The present situation might be discouraging for the budding ones despite of various loop holes in the governing authorities. Still, there is a wide scope and demand for the graduates in clinical pharmacy.

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