

## Career prospects for MD pharmacology postgraduates

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### Abstract

The field of pharmacology is a vastly promising one. MD Pharmacology is a good subject in those wishing to join the academia, conduct research, become a clinical pharmacologist or become a pharmaceutical physician. The role of a pharmaceutical physician include careers in medical advisor, medical writer, clinical development and pharmacovigilance. There is less exposure regarding the pharmaceutical industry career aspect during the MBBS undergraduate program. Career decisions should only be made after a complete and comprehensible picture is made available as job satisfaction translates to a better life.

**Keywords:** Pharmacology, Career prospects.

### Introduction

An individual while evaluating his or her career prospects evaluates several objectives, namely his or her set of skill and strengths, interests, passions and work-life balance. Choosing a career path without complete information and proper counselling can be difficult. An Indian medical graduate, often, does not have the complete view of the opportunities that MD Pharmacology can provide. Popular reasons for choosing MD Pharmacology include passion for the subject, basic clinical research, teaching, affinity for corporate culture, aversion to clinical practice, or better work-life balance.

Reportedly, 24 medical colleges will be established in India by the year 2021-22<sup>1</sup> which will open up job opportunities for those seeking to join the academia. In the 21<sup>st</sup> century, teaching need not even be limited to traditional classroom as current trends of digital educational portals have become lucrative business opportunities.

MD Pharmacology opens doors to becoming a physician-scientist, a medical personnel involved in translating basic science research into clinical practice.<sup>2</sup> In pharmacology research is centered around in-silico research, molecular changes in cells brought about by drugs, stem cell research, animal research, pharmacogenetics, among others. Newer frontiers for research include big data, machine learning and artificial intelligence in the fields of pharmacogenomics, pharmacovigilance and clinical trials.

A clinical pharmacologist may be involved with drug metabolism studies, pharmacokinetic-pharmacokinetic profiling, or pharmacogenetic research. He or she may also be associated with a hospital where he or she will be expected to advise on adverse drug reactions, drug-drug or drug-food interactions, clinical trial methodology and research, drug regulatory policies and oversee a therapeutic drug monitoring center.<sup>3</sup>

The pharmaceutical industry remains a viable option for many MD Pharmacology postgraduates. Industry internships during the 3 year postgraduate training program can help develop necessary skills. A medical professional hoping to join the pharmaceutical industry can hope to pursue a career in experimental or translational medicine,

clinical pharmacology, clinical research physician, regulatory affairs, medical affairs, health economics and outcomes research, pharmacovigilance and medical writing. An MD pharmacologist may even take up leadership and management positions in a pharmaceutical industry.<sup>4</sup> A brief overview of the various opportunities are hence discussed.

A physician working in experimental/translational medicine is involved in proving the viability of a molecular target in terms of the disease of interest by designing and executing early clinical trials. Physicians involved in clinical pharmacology study safety, pharmacokinetics, drug interactions and effect of formulations, dose, regimen, and route of administrations.<sup>4</sup> A clinical research physician is responsible in ensuring efficacy and safety in phase 3 and 4.

Physicians working in medical affairs play an important role in scientific communication, clinical research, new product launch and ensuring optimal drug costs.<sup>5</sup> They train sales representatives, directs the marketing professionals in terms of product placement, critically appraises drug promotional literature and regularly updates himself or herself with regulatory guidelines and scientific advances.

Physicians in regulatory affairs keep themselves abreast with country specific laws and regulations related to research and manufacturing of drugs concerning quality, safety and efficacy.

Pharmaceutical physicians in pharmacovigilance identify safety signals and respond to trends related to drug safety in terms of adverse drug reactions, drug-drug interactions, drug-food interactions, adverse reactions and formulate risk management plans. Special population groups – pediatric, geriatric and pregnant women- are also monitored.

Physicians associated with health economics and outcomes research compare the costs and benefits of the new drug with existing drugs in the market and the overall impact of the drug on the individual, society and healthcare systems.

Medical writing includes scientific documents which can be review articles, research articles, or drug-promotional literatures.<sup>6</sup> A medical writer provides an updated, unbiased,

accurate and comprehensive medical scientific knowledge to healthcare professionals and consumers.

Every field in medicines holds promises to a successful career and doing honest, good work is also a reward in itself. An individual who evolves with time and constantly creates value for himself or herself will never find a dearth of opportunities.

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