

The pharma sector has plenty of job opportunities for young graduates as India is the largest producer of generic drugs globally

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As diseases like dengue, typhoid and chikungunya spread their virulent tentacles across the country, more and more people are beginning to look at alternative medical remedies for themselves. In fact, the complexities of modern medicine, with thousands of drugs being developed and dispensed every day, has created an increasing demand for trained pharmacists and a massive expansion of the pharmaceutical industry.

Pharmacists are specialised health professionals who work on developing and preparing different medicinal drugs used in the prevention and cure of diseases. They also study the properties, usage and effects of various drugs and test drugs for purity and strength.

Moreover, pharmacists dispense drugs and medicines prescribed by physicians, surgeons, dentists and other specialists.

#### Work scope

**Production and manufacturing:** Pharmacists who work in drug manufacturing and pharmaceutical companies are involved in the production of the medicines. This involves the production and manufacturing not only of drugs and medicinal formulae but also biotechnological products, surgical dressings, medical devices, equipment, ayurvedic/homeopathic/unnani medicines, veterinary medicine, as well as cosmetics, soaps, toiletries and dental products. If you have entrepreneurial skills you can set up your own small manufacturing unit for preparing the basic chemi-

icals or compounds for larger pharmaceutical companies.

**Analysis and testing:** This involves working in medical analytical laboratories, and supervising or preparing the solutions and compounds that are mixed together to form powders, tablets, capsules, ointments and so on. It also requires testing of reactions of the drugs before they are introduced in the market for public consumption. Quality control (QC) and Quality Assurance (QA) is an integral part of Analysis and testing to ensure that the quality of pharmaceutical products produced are as per standard specified in National or other approved pharmacopoeias.

#### Research & development:

Many pharmaceutical companies have set up research and development centres to build their own formulae for medicines which can be manufactured after testing and analyses. Pharmacists with M. Pharm and PhDs are required for research and development of new drugs, process development, formulations, clinical trials and toxicology studies.

**Marketing:** The sales and marketing personnel in the pharmaceutical industry are known as medical representatives or business executives. Unlike other consumer products, new drugs and medical products manufactured by pharmaceutical companies are introduced through doctors and medical practitioners.

#### Scope

Pharmacy is an exciting field of career opportunities. At present, India is the fourth largest producer of pharmaceuticals in the world, and the largest provider of generic drugs globally. Moreover, the Indian pharmaceutical market size is expected to grow multi-fold, driven by increasing consumer spending, rapid urbanisation, and rising healthcare insurance among others. In addition, the thrust on rural health programmes, life-saving drugs and preventive vaccines also augurs well for the pharmaceutical companies.

So, if you are looking at a career in medicine, have strong analytical skills, inquisitiveness, and a strong sense of responsibility, if you are able to evaluate and handle data, work accurately and systematically, and concentrate for long periods of time, here is a career that can be both challenging and rewarding.

#### Institute watch

- National Institute of Pharmaceutical Education & Research (NIPER), Mohali, and at Hyderabad, Ahmedabad, Hajipur, Kolkata, Raebareilly & Guwahati
- University Institute of Pharmaceutical Sciences, Panjab University
- Delhi Institute of Pharmaceutical Sciences & Research, Delhi University
- Faculty of Pharmacy, Jamia Hamdard University, New Delhi
- Department of Pharmaceutical Science, Dr. H.S. Gour University, Sagri, MP
- Jadavpur University, Kolkata
- Department of Pharmacy, BITS, Pilani
- Department of Pharmaceutical Engineering, IIT-BHU
- Department of Pharmaceutical Sciences, BITS Mesra, Ranchi

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## PHARMACEUTICAL SCIENCES



#### A word of caution

Vocational courses in pharmacy are considered illegal by the Pharmacy Council of India, so before enrolling in any programme you must check the credentials of an institute offering courses in pharmacy.

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Medical representatives must pay regular visits to doctors, dentists, hospitals, clinics, nursing homes and health centres to promote these products. Pharmaceutical sales and marketing is a highly technical field and most pharmaceutical companies prefer to recruit trained pharmacy graduates.

**Retail pharmacists:** Most professional pharmacists are involved in retailing of drugs in a pharmacy or chemist outlet. Retail pharmacists prepare and dispense drugs on prescription and are expected to provide over the counter advice on the use of the medicines prescribed, as well as handle the business and marketing aspects of running a chemist shop. A licence from the state Drugs Control Authority is necessary

to start a retail pharmacy business.

**Regulatory bodies:** The pharmaceutical sector, from manufacturing to sale of medicines, is regulated by the central and state government through a process of licensing and inspecting. The Food and Drugs Administration (FDA) is the regulatory body that deals with governing and implementing the rules and regu-

lations for the drug and pharmaceutical industry. Pharmacy graduates can join this department which recruits drug inspectors and drug controllers, usually through the central or state public service commission.

#### Getting in

If you have completed Plus II or equivalent with physics, chemistry and biology/mathematics then you are eligible for the Bachelor's degree in Pharmacy or BPharm, which is of four years duration, as also the Diploma in Pharmacy which is for two years. Newly introduced is the six-year PharmD, integrated Doctorate in Pharmacy for those looking towards a research career in pharmacy. Admission to most universities is made on the basis of the results of an entrance exam, or the JEE for the participating insti-

tutes.

With a diploma or bachelor's degree in pharmacy you can work as retail chemists, drug inspectors and in certain areas of manufacturing in pharmaceutical companies. The Pharmacy Council of India has prescribed the Diploma in Pharmacy as the minimum qualification for registration as a "registered pharmacist", to work in medical dispensing stores.

However, for greater career growth and mobility it is advisable to also take up the master's course (MPharm) which is of two years' duration after BPharm.

There are many universities and colleges that offer pharmacy at the diploma and degree levels recognised by the Pharmacy Council of India. Most universities offer the course, including BITS, Pilani, Delhi University and Panjab University.

#### Job prospects

Most pharmacy graduates are employed as pharmacists in hospitals, retail chains or independent chemist outlets. Those who complete a diploma in pharmacy can work as retail chemists, sales representatives in medical stores and hospital pharmacies. A graduate pharmacist is recognised by the Pharmacy Council of India as an approved chemist in the pharmaceutical industry and in manufacturing, as well as in R & D work. They can also be involved in re-packaging of drugs and chemicals, or work as manufacturing chemists for cosmetics manufacturers.

Pharmacists also work to develop new ideas and products or materials for use in the pharmaceutical field.

With the growth of the pharmaceutical industry in India, and entry of multinational research organisations, this is an exciting area of tremendous opportunities.

Those with an academic

bent of mind can go into research or teaching or work in research organisations, government departments and educational institutions. They can also work in the government offices, the National Drugs and Pharmaceuticals Development Council, and with the Customs department as Drug appraisers, or as narcotic inspectors, or in the department of drugs control.

With growing advancement in the field of medicine there are also new areas of work for pharmacists with postgraduate qualifications for work in activities like clinical research, intellectual property rights, pharmacovigilance and so on.

As more and more medicinal products and therapies are added onto the health system, research organisations and pharmaceutical companies, research organisation, regulatory bodies, regulatory process outsourcing, and knowledge process outsourcing bodies are continuously involved in expanding the boundaries of knowledge through scientific study of the effects, risks, efficacy and benefits of a medicinal product or pharmacological therapy.

Food and drink companies also employ pharmacy graduates to work in a range of roles within R & D and quality control, while an MBA after B Pharm can extend that to include sales and marketing, and management.

— The writer is Director Careers Smart Pvt Ltd, New Delhi

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