

Career Paths in the Pharmaceutical Industry

In 15 years, the global pharmaceutical industry has more than tripled its sales, which stood at \$643 billion in 2006; Canada ranked 8th, with a 2.6% market share. The numbers in this sector are dizzying: it costs tens of millions of dollars and more than 10 years to bring a new product to market (and as much to market it). It is therefore easy to imagine how long the drug chain must be, and accordingly, how diversified the jobs.

Overview of the Canadian pharmaceutical industry

The **pharmaceutical industry** is concentrated in Quebec and Ontario, with 90% of the labour force. In the past ten years, however, Nova Scotia, British Columbia and Saskatchewan have made significant headway. The market includes such leaders as Bristol-Myers Squibb, Merck Frosst, Novartis, Pharmaco, Pfizer, along with numerous SMEs in **special niche** markets.

Growth forecasts are optimistic, and rightly so, thanks to an ever-increasing demand—the result of the aging population, biotechnology (in 40% of drugs by 2010) and generics. However, strong competition from emerging countries and an increase in the number of expiring patents have forced the Canadian pharmaceutical industry to focus on profitability by cost and risk sharing; a collaboration between private companies, government and university research labs and hospitals; and finally, subcontracting for certain functions (manufacturing, packaging, labelling, regulatory affairs).

Pharma sector: Each link has a job to do

Research and development, which represents about 17% of current pharmaceutical industry jobs, employs research directors and managers, quality auditors, R&D technicians and quality control lab managers. These highly qualified professionals come from various fields (in the **pharma sector**, chemists, biologists and computer specialists work side by side) and require have good communication and leadership skills.

Almost one quarter of pharmaceutical employees work in production, which accounts for a wide variety of jobs: raw material control, packaging material, manufacturing, quality control of finished products, release of manufactured batches and packaging. All these jobs share high standards—necessary to guarantee the safety and quality of drugs.

Pharmaceutical product marketing involves a colossal investment of financial and human resources—40% of the industry workforce. Marketing budgets are bigger than R&D budgets; in the U.S. these respective budgets were US\$57.4 billion vs US\$31.5 billion in 2004. One has to keep in mind that this industry sells a truly special product, one which requires hiring people with leading-edge scientific, regulatory and marketing skills. Sales are handled by medical sales representatives who call on doctors and pharmacists, and whose working conditions include salaries of up to \$120,000 and generous benefits. These jobs are increasingly difficult to fill; you have to be an excellent salesperson, but also like and know how to explain the product in simple terms.

Distribution jobs account for barely 2.5 % of the **pharmaceutical industry workforce**. Distribution is performed by distributors, wholesale distributors and finally pharmacists, who perform an intellectual act when the prescription is filled. This involves analyzing the prescription, preparing the dose to be administered, and informing and counselling the client on proper use.

Required education

Graduates with a **college diploma in laboratory technology** work primarily as technicians in hospitals, where there is a shortage of labour, or in the biotechnology field in promising openings. If you have a **bachelor's degree in chemistry**, you can work in a lab for a pharmaceutical company, in biotechnology or in the medical or environmental sectors as a research officer, analytical biochemist, quality control officer, or as a teacher or trainer. Some 30% of these graduates go on to obtain a master's degree. **A bachelor's or master's degree in pharmacy** is for clinical pharmacists who want to get into biopharmacy. These graduates will generally work in university research centres or the private sector as research assistants for around \$50,000. Those who go on to do a PhD degree to become pharmacologists **can earn between \$100,000 and \$150,000**.

In Quebec, 29 multinational companies employ 7,000 people, 22 generic drug manufacturers employ 2,900 people, 85 biotech firms employ 2,700 people and some 20 contract research firms employ 400 people.

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