



Careers in the pharmaceutical industry

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Publication date: 03 Sep 2008, BMJ

Pharmaceutical medicine became a recognised specialty in 2002 and offers a challenging and rewarding medical career. It provides the opportunity to advance the therapeutic armamentarium available to clinicians, and the satisfaction that you are helping patients worldwide. After working in the NHS for five years I switched to the pharmaceutical industry and found my knowledge and skills transferable.

How does the pharmaceutical industry work?

Activities in the industry differ depending on the stage in a drug's development. Before a drug can be marketed the industry has to demonstrate appropriate manufacturing standards and establish the drug's risk-benefit profile (using information from toxicology and clinical trials). The prospectively collected safety and efficacy data are put before the regulatory authorities, who evaluate whether the efficacy demonstrated outweighs the risk (or potential risk). Where the balance is favourable the drug may be approved for marketing. If it is approved, post-marketing activities include marketing for any indications agreed with the local regulatory authority and continuous safety monitoring. Additional clinical trials (phase IV) may be undertaken. Most drugs don't make it to the market, so their research and development costs are recouped by the few that do.

What roles are available to doctors?

The industry adopts a multidisciplinary approach and the roles available to the pharmaceutical doctor are varied. Pre-marketing research roles (clinical pharmacology and clinical development) entail working on phase I-III clinical trials; post-marketing roles (medical affairs/marketing) ensure accuracy of promotional material and input into phase IV clinical studies, and may involve training medical representatives. Other roles include drug safety officer (pharmacovigilance) to monitor drug safety and changes to a drug's risk-benefit profile. Regulatory roles are within the regulatory authorities (for example, the Medicines and Healthcare products Regulatory Agency in the United Kingdom) or within companies, to ensure regulatory requirements are met. Health outcomes/economics is an expanding area and evaluates the cost effectiveness of drugs, which helps obtain recommendation and reimbursement from the National Institute for Health and Clinical Excellence.

Examples of roles and activities within companies

- Clinical pharmacology—early phase development (phase I and IIa)
- Clinical development—later phase trials (phase IIb and III) to obtain approval to market drugs
- Medical affairs and medical marketing—dealing with drugs on the market, reviewing promotional material, and inputting into post-marketing clinical trials (phase IV)
- Drug safety (pharmacovigilance)—evaluating overall safety and risk; compiling reports for the company and regulatory authorities
- Regulatory affairs—ensuring company meets regulatory requirements
- Health outcomes—dealing with quality of life and economic evaluations (pharmacoeconomics)

Working environment

Responsibilities depend on the size and culture of the organisation, with greater subspecialisation in larger companies. The “big pharma” environment entails integration with many teams, and daily meetings are common. Working closely with experienced colleagues you will rapidly develop an understanding of the industry. Small companies provide more role diversity and an entrepreneurial environment, with freedom to progress your ideas. Clinical research organisations undertake outsourced work (phase I or international phase II and III trials) and give the pharmaceutical doctor hands-on experience of running clinical studies.

What is a typical working day like?

There’s probably no such thing as a typical day in the pharmaceutical industry. Depending on your role, your day will probably start between 8 and 9 am and finish around 6 to 7 pm. You may have late calls with your international offices, which can usually be taken at home. My day often entails writing and responding to emails in the morning, possibly two or three meetings (some multidisciplinary), researching the internet, writing or reviewing various company reports or protocols, and putting together plans and strategies to achieve the company’s goals.

What is the workload like?

Work intensity fluctuates, but don’t think that pharmaceutical medicine is an easy option. You often have deadlines to meet and have to balance the wants and needs of other departments with yours. International travel is quite frequent, but the industry provides a comfortable way of seeing the world. It can be a stressful environment—something you are used to as a medic.

Is the industry ethical, and how transparent is it?

It can be frustrating to read the negative opinions in the press, but most pharmaceutical doctors share the view that the pharmaceutical industry does research to an impeccable standard and is ethical, and although questions may surround the cost and methods of marketing, some form of proactive dissemination of product information is necessary to ensure the latest risk-benefit profile is recognised by clinicians. As a pharmaceutical doctor you won't provide the sandwiches at lunchtime meetings (or pens), but you may be responsible for writing or overseeing promotional material and ensuring this complies with local guidelines (for example, the code of practice of the Association of the British Pharmaceutical Industry).

The industry is becoming more open with the Freedom of Information act and information available on the internet. Clinical trials are now listed (for example, www.clinicaltrials.gov), and companies may be asked to present at open forums. I presented clinical data to a Food and Drug Administration advisory committee in the United States. The meeting was broadcast internationally and open to the press, public, and clinicians. The data gathered had to stand up to the highest scrutiny before marketing approval was granted.

The pharmaceutical industry operates in a competitive environment and therefore some degree of confidentiality has to be maintained. Safety data, however, should always be transparent.

What about job security?

The industry can't offer the security provided by the NHS because of greater exposure to political, economic, and technical changes. Career security is good within the industry, however, with considerable flexibility, no limits on available positions, and its worldwide expansion. The industry always needs medics and once you have gained some pharmaceutical experience, that experience can be valuable to another company.

With regard to the recent economic downturn, the pharmaceutical industry tends to be relatively resilient to recession. Some smaller companies are finding difficulty obtaining funding, with initial public offerings becoming more difficult and the venture capitalists streamlining their investment portfolios. It is worth inquiring (from your recruitment consultant) about the level of funding and projected spending, certainly for small companies. Larger companies reduce their workforce from time to time. Medics are not immune, but their roles are more secure than most. When redundancy does occur, companies typically look after their employees well. They can be generous with the severance package (with up to £30 000 being tax free), and often employees find alternative employment before completing their notice period. With the various roles available to pharmaceutical doctors and the pivotal part they play in the industry, jobs are usually available for them.

What about job satisfaction?

The job reward comes from completing positive clinical trials, gaining regulatory approval to market your drug, ensuring your drug's safety, developing a successful risk management plan, or even establishing the product's pharmacokinetic profile to take it to the next stage of development. Treating patient populations worldwide (rather than

individuals) provides the satisfaction that you are making a difference. It does involve a different mindset though. The benefits of working in an environment where tasks are performed quickly, things tend to run efficiently, and you focus on the job you are good at make life easier and more satisfying. The industry takes evidence based medicine to the highest level. The concept of medicine being a non-exact science does not sit well here.

What about training?

I gained my certificate of completion of training last year, and training was provided mainly on the job with some external courses. If you are eligible I would recommend registering on the pharmaceutical medicine specialty training scheme (previously known as higher medical training). The Faculty of Pharmaceutical Medicine's website covers this in detail (see Further information). Most companies encourage training as it is in their best interest to make sure you have access to all the latest information. Doctors registered with the General Medical Council can sit the diploma in pharmaceutical medicine after working in the pharmaceutical industry for two years. Be warned, this is by no means an easy exam and you will need to prepare as for any other postgraduate exam.

What about pay?

Your salary will probably be slightly higher than your NHS pay. Benefits such as bonus, car allowance, payment of professional subscriptions, laptop, and mobile phone improve the total remuneration package. In addition, the company may issue share options, which can be lucrative if your company does well.

The biggest hurdle is getting into the industry. Once you have pharmaceutical experience under your belt, your value can go up quite rapidly.

Further information

- Faculty of Pharmaceutical Medicine: www.fpm.org.uk
- Association of the British Pharmaceutical Industry: www.abpi.org.uk
- British Association of Pharmaceutical Physicians: www.brapp.org

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