

SECTION I

Overview of Pharmaceutical Medicine

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1 The Practice and Practitioners of Pharmaceutical Medicine

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Pharmaceutical medicine is unquestionably a young medical specialty. The first university chair in pharmaceutical medicine is less than 10 years old, and there are no great buildings or institutions dedicated to it, unlike venerable medical specialties such as chest medicine, neurology, physiology, pharmacology and so on. Possibly because of its youth, this is a specialty that can be misunderstood by those outside it. Even among practitioners of pharmaceutical medicine, there can be surprise when they consider their own diversity.

Nonetheless, elements of what we recognize today as the practice of pharmaceutical medicine have existed for a long time. Withering's identification of *Digitalis purpurea* as a treatment for what was then called 'dropsy' and the clinical trial of citrus fruit conducted by Lind are examples of drug discovery and investigation. Sequential clinical trial designs have been borrowed from as far a-field as the discipline of engineering and date from the mid-twentieth century. The techniques shared with the fields of epidemiology and public health are obvious and also well established. Every prescription written in ordinary clinical practice is a clinical trial of some sort, where $n = 1$, because human beings are anisogenetic; this even applies to identical twins as they age or are exposed to different environments. Ever since the need to demon-

strate efficacy, tolerability and purity in drug products (and their equivalents in diagnostics and devices), pharmaceutical medicine has become evidence based; it is interesting to note that the more venerable medical specialties are now imitating the supposed 'new kids on the block' with the recent emphasis on evidence-based approaches to the patient.

It is therefore not surprising that the diverse and overlapping discipline of pharmaceutical medicine is populated by practitioners with varied educational backgrounds. There can be no doubt that clinical experience is always a good prelude to a career in pharmaceutical medicine. But dental surgeons, medical practitioners, nurses, pharmacists, physiotherapists, psychologists and many other members of the allied health professions have all found satisfying careers in this specialty.

Few medical specialties involve working in teams with as large a number of other professions as of pharmaceutical medicine. For example, general practitioners regularly work with nurses, health visitors, administrators, hospital colleagues and social workers; radiologists might add radiographers and physicists to this list and delete the health visitors and social workers. But, by way of comparison, the following list of nouns, all of which have their own professions, comprise pharmaceutical

medicine (in no particular order): ethics, chemistry, pharmacology, computational modeling, pharmaceuticals, project planning, toxicology, regulatory affairs, logistics, quality control engineering, biostatistics, pharmacogenomics, clinical trials, politics, economics, public relations, teaching, pharmacovigilance, marketing, finance, technical writing, data automation, actuarial analysis, information science, publishing, public health, international aid and development, intellectual property and other types of laws. However, this is not an exhaustive list. Surely, there can be no other industry with as many diverse professionals as this one where all have the welfare of other human beings as their ultimate concern? And for those with a life-long thirst to learn on a cross-disciplinary basis, this breadth of intellectual interaction is a magnet.

Conversance with, if not advanced capability in, these specialties should therefore be an early goal of any career in pharmaceutical medicine. Those who remain in the industry thereafter usually value their initial generalist experience. But eventually, for most practitioners, the opportunity will exist either to remain as a generalist in pharmaceutical medicine or to sub-specialize within one or more areas in the list shown above.

But, perhaps the greatest difference between this specialty and all other specialties is the value placed on versatility, adaptability, communication skills and teamwork. Physicians and pharmacists must learn that in pharmaceutical medicine, they are unlikely to be as predominant as decision makers as they were in clinical practice. Those who can become an expert in some subject and be respected for it by people both inside and outside the company, even though they may never have heard of that particular disease or drug before three months ago, will do well if they can match such knowledge with superior inter-personal skills. Knowing when to lead, when to follow and when to get out of the way, rather than presuming a leadership role in all situations, will always be valued in this specialty.

Finally, what about those who do not stay in the speciality? Any clinician who spends just two or three years in pharmaceutical medicine but then returns to his or her clinical calling, will have benefited, if only having learned something about

oneself and what one does not like to do at work! But, nonetheless, there will usually be an opportunity to gain some management experience and skills and to look at the therapeutic enterprise from a different angle: Appropriate scepticism with regard to the wanted and unwanted effects of drugs, and the ways they may be properly and improperly promoted, is best learned inside the industry and applied outside it. 'Clinical re-entry' after two or three years of pharmaceutical medicine will not be associated with being out of date in terms of knowledge and skills base, although re-entry after 10 years almost certainly will. Those attempting the latter should anticipate the need for re-training.

1.1 Organizations and educational systems

Most countries in the developed world have one or more national societies or academies devoted to the specialty of pharmaceutical medicine. All hold education and training as central to their mission, whereas some societies will engage in regulatory or political debates when particular issues arise.

The first formal post-graduate qualification to acquire in pharmaceutical medicine is a Diploma in Pharmaceutical Medicine (DipPharmMed). It requires two years of part-time study and tests the knowledge basis for the specialty. This diploma has been examined by the Royal Colleges of Physicians (RCP) in the United Kingdom for more than 30 years, and its possession qualifies the holder for membership in the Faculty of Pharmaceutical Medicine (MFPm). The Belgian Academy has more recently introduced a diploma which is recognized reciprocally with that in the United Kingdom, and accordingly, there is periodic exchange of examiners. Switzerland is likely to be the next, and progress toward an analogous goal ('Board certification') is being made in North America. At least two years' experience in clinical medicine and prescribing is a matriculating qualification for these diplomas; in countries where the roles of pharmacists, physician's assistants and nurses include prescribing responsibility, these

professionals should enquire from the relevant Academy or Royal College whether they may also sit this examination.

Beyond the diploma, the European Economic Area (the European Union plus Iceland, Norway and Liechtenstein) will probably soon recognize pharmaceutical medicine as a medical specialty on the official list and national medical registers. Achieving the Certificate of Specialized Training (CSST) will require completion of a modular, part-time program of Higher Medical Training (HMT) for which the diploma will be the matriculating qualification. Whether or not holding the CSST, it will also become possible to revalidate specifically as a pharmaceutical physician.

International compatibility and recognition of these qualifications would seem essential in a profession whose activities are being increasingly globalized. Many employment opportunities in pharmaceutical medicine are with companies that have become international conglomerates. Intra-company transfers and international job applications can only be facilitated by universally recognized and accredited qualifications.

Many other qualifications are also of benefit in pharmaceutical medicine, even if the holder was already a physician, nurse or pharmacist. These will be more or less specific to that long list given above, many of which have their own diplomas and university degrees. Human resources departments

have to be well informed about the diversity of formal recognitions that may be held by those who can contribute to the industry and its regulation.

Lastly, is there any evidence for all this optimism? In the year 2000, the American Academy of Pharmaceutical Physicians (AAPP) polled its members on their career choices and factors associated with satisfaction. More than 90% of the members indicated overall satisfaction with their choice of pharmaceutical medicine. This proportion was higher than any other that has been reported by learned societies from similar surveys in other medical sub-specialties in the United States.

Further reading

- Fox AW. 2001. What is pharmaceutical medicine? *Clin. Res.* **1**: 28–30.
- Smethurst D. 2004. Pharmaceutical medicine: making the leap. *Student BMJ* **12**: 45–58 (see also <http://www.studentbmj.com/issues/04/02/careers/66.php>, accessed 28 July 2005).
- Stonier PD (ed.). 2003. *Careers with the Pharmaceutical Industry*, 2nd edition. John Wiley & Sons, Ltd: Chichester (ISBN 0-470-84328-4).
- Useful web sites on careers and/or qualifications (<http://>): www.fpm.org; www.acrp.org.

