



Pharmaceutical Medicine and Medical Education in the UK

It is many years since I have taken such a keen interest in undergraduate medical education. In my current job at the Postgraduate Medical School of the University of Surrey, I am leading a team in a bid for a new undergraduate medical school in the next round of such allocations that will be arising over the next few years. What I am discovering is how different medical undergraduate training is now compared to when I or even my son were students.

Very few schools now offer anything like the traditional programme of pre clinical sciences followed by the clinical training years. The training is much more structured and follows fairly rigid patterns in the teaching each topic (cardiology, obstetrics etc), and there is less opportunity to learn from the cases that present through an acute take.

On the other hand it also offers much more flexibility, and it is this that has allowed three Faculty members to assist in the integration of pharmaceutical medicine into the undergraduate curriculum

This is an exciting and challenging development and one that should be welcomed. It is more than just an opportunity to set before students the work that we do and try to encourage them learn more about the specialty. Our colleagues in clinical pharmacology and medicine have stated that there are too few opportunities for students to learn about therapeutics in the curriculum as it is currently structured. We should take any offer to participate in the undergraduate programme to help remedy this. Clearly in the short timeframe allocated within the undergraduate timetable it would not be possible to teach the whole spectrum of therapeutics, but it would be possible to help reinforce the general principles of the subject and to focus on the importance of pharmacovigilance and risk benefit ratios.

I have been fascinated reading the articles written by Dr Ruth Hargreaves, Dr Jackie Napier and Dr Oswald Morton and would urge everyone to study them. I hope that if any other members of the Faculty are aware of such developments in universities in their area or allied with their companies, that they will explore such opportunities. Working with students is stimulating, provides a challenge and offers rewards both personal and for the specialty and beyond. As ambassadors for pharmaceutical medicine, we can help to raise the standards of practice for future generations of physicians.

Dr Brian Gennery

President 2001 – 2005

A new industry-academic partnership -

An introduction to the process involved in preparing a drug development plan

Dr Ruth Hargreaves

Medical undergraduate teaching in pharmacology has traditionally focussed on pharmacokinetics and therapeutics with little attention given to the broader discipline of pharmaceutical medicine, the drug development and regulatory approval processes. As part of a new industry-academic partnership we are hoping to redress this balance by offering interested students at Brighton and Sussex Medical School the opportunity to understand the steps involved in the preparation of a drug development plan 'from molecule to patient'.

Brighton and Sussex Medical School is one of four newly created UK medical schools which opened to its first intake of medical students in October 2003. This new Medical School is keen to develop innovative ways of delivering its curriculum and invited us to work with them to submit a short teaching programme in Pharmaceutical Medicine (Student Selected Component – 'SSC') to deliver to Year 3 medical students commencing in October 2005.

The course comprises eight tutorial style half-day sessions with a small group of students and will also include a visit to Pfizer's Research and Development site in Sandwich. At the end of the programme the students will be required to give a short presentation of what they have learned. Students will be required to work together as a team to produce an outline drug development plan for a new drug based on their research and tutorial work. Their task will be to produce a programme suitable for an HIV drug, for example, from discovery through to the marketplace to expose them to some of the major issues encountered in the real life drug development process. We suggested this therapy area because it has some interesting challenges and is of particular relevance in Brighton which has a large population of HIV positive patients.

Programme objectives

1. An overview of the steps involved in the drug development process 'from molecule to patient'.
2. An understanding of the regulatory and safety frameworks, clinical trial design & implementation and how the industry interacts with the NHS.
3. A broad overview of therapeutics in a specified therapy area.
4. An introduction to Evidence Based Medicine.
5. An understanding of the pharmaceutical R&D process - a visit to the Pfizer Global Research and Development site at Sandwich

We have based the programme on the Diploma in Pharmaceutical Medicine syllabus and will take the students through the drug development process in chronological order. They will be asked to carry out guided background research through web-based learning and tutorials will provide the opportunity for specialists in pharmaceutical medicine to help them to understand some of the issues.

- Structured overview of the stages in the drug development process in tutorial format with guided web-based research
- Background information on the chosen therapy area from a drug development perspective will be provided
- Access to information/websites providing regulatory, safety and clinical trials regulation will be provided



We hope this teaching programme will help doctors of the future better understand the complexity, rigour and risks of the drug development process and as a result appreciate the benefits and limitations of drugs they will prescribe. We also hope to generate broader interest in and understanding of pharmaceutical medicine at the undergraduate level and encourage students to develop a genuine and informed interest in the research agenda.

For further information on this initiative, please contact
Joanna Hahn, Pfizer Global Pharmaceuticals,
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Drs David Roblin, John Huggins, Chris Hitchcock,
Pfizer Global Research and Development, Sandwich.

Professor Jon Cohen, Dean, Brighton and
Sussex Medical School, Falmer, Brighton.

Pharmaceutical Medicine for Undergraduate Medical Students

Dr Oswald Morton

Ask most general practitioners or consultants “What is Pharmaceutical Medicine?” and the likely reply is “It’s a form of pharmacology” or “It’s to do with pharmacy”. Very few doctors know that it is an important medical specialty; nor do they know how broad are the areas it encompasses and how expert its practitioners need to be.

A few years ago I was invited to the opening of a new department at the London Hospital (now combined with Barts as Queen Mary’s School of Medicine). The department being inaugurated was the Epidemiology and Education Unit. In conversation with the Director, Dr Comfort Osonnaya, I broached the subject of the ignorance of the medical profession about pharmaceutical medicine and suggested to her that an introduction to the subject should be taught at undergraduate level. She was interested and said it could be taught as a Selective Study Module (SSM) as part of the M.B. finals. I was asked to create an SSM entitled ‘An Introduction to Pharmaceutical Medicine’ for submission to the Medical School authorities. The SSM that I submitted included the following:

The aims of this module are to

- Introduce the medical speciality ‘Pharmaceutical Medicine’
- Describe what Pharmaceutical Medicine comprises
- Provide an historical review of major contributors to the discovery of medicinal treatments
- Provide an overview of Pharmaceutical Medicine’s contributions to medical practice
- Provide an overview of the medical area and others that it includes
- Provide an overview of pharmaceutical research and development

- Gain an understanding of concepts underlying clinical trials
- Gain an understanding of basic concepts of advertising and promotion
- Provide knowledge of essential interfaces
- Provide knowledge of legal accountability
- Give an introduction to the educational pathway to specialist accreditation
- Give an introduction to the Faculty of Pharmaceutical Medicine

Learning outcomes

At the end of this module, the students should have an understanding of

- The role of Pharmaceutical Medicine in medical practice
- History of major contributors to medicinal treatments
- The work of pharmaceutical companies including basic features of medicines discovery and development and the value of ‘molecular roulette’
- Aspects of clinical trials including the meaning of double-blind; double-dummy; statistical power, statistical significance, rating scales, visual analogue scales
- Basic concepts of tests for statistical significance, sequential analysis
- The meaning and function of pharmacovigilance
- Assessing the worth of published papers
- Pharmaceutical advertising and promotion and the assessments of advertisements
- Writing expert reports
- The functions of The Medicines and Healthcare Regulatory Agency (MHRA), Proprietary Association of Great Britain (PAGB), Association of the British Pharmaceutical Industry (ABPI)

- The functions of the Committee on Safety of Medicines and the Medicines Commission
- Categories of Prescription Only Medicines, Pharmacy Medicines, General Sales List, cosmetics and toiletries, herbal remedies and medical devices
- The Faculty of Pharmaceutical Medicine of the Royal Colleges of Physicians
- Postgraduate training and the Diploma in Pharmaceutical Medicine

The module was accepted, and I was appointed an Honorary Clinical Lecturer in the Epidemiology and Education Unit.

To date three 5th year students have selected the module and undertaken the course, which is intensive and lasts a little over two weeks. As well as being taught by me in a series of interactive sessions at the Medical School, the students visited important bodies such as the MHRA, ABPI, PAGB, GlaxoSmithKline and the Faculty. The interactive sessions included practical work, such as assessing published papers, evaluating a clinical trial protocol and writing a clinical expert report. I assessed the students on what they had learned by my ‘informal’ questioning, by the quality of their work in the exercises done in class and by the submission of written work that I had set for them. The students were required to complete the SSM for me to mark for their finals. The marking system, set by the Medical School, was based on the students’ learning abilities, their written work and on their attendance and punctuality. I am pleased to say that all passed.

I hope that in future, the Pharmaceutical Medicine SSM will be taken by a larger number of students and, perhaps, be introduced into other medical schools.

Breaking down the barriers

Dr Jackie Napier

I am unusual amongst pharmaceutical physicians, in that I decided on my future speciality whilst still a medical student. My interest was sparked by an invitation to visit a pharmaceutical company in the first term of an intercalated BSc in Pharmacology, possibly one of the first examples of positive interaction between industry and medical students. I felt immediately that I had found my niche, and from then on I did everything I could to guide my career towards my chosen goal.

I soon learnt that it did not pay to advertise my ambition to my tutors or colleagues, and my experiences of coming 'out of the closet' and announcing my move into industry were published by the British Medical Journal as a Personal View in 1997 (BMJ 1997;315:1630). After its publication, I was surprised to receive a deluge of correspondence from other aspiring entrants to industry, many seeking advice and all telling me that the attitude of the medical hierarchy had not improved in the intervening seven years since I had left the NHS. Pharmaceutical medicine was still never mentioned as a possible career option, and attitudes had hardened towards anything and anyone linked to the pharmaceutical industry.

Eight years on from writing that article, I am delighted that the situation is gradually changing. Until very recently, no medical school would have considered incorporating pharmaceutical medicine into its curriculum. This year my company, Schering, has had preliminary discussions with two medical schools about running an optional six week in-house module whereby groups of up to four students would rotate through different departments, getting involved in day-to-day activities wherever

possible. Examples might include a sales call, a training session for representatives or a study team meeting.

Without a doubt, the recognition of Pharmaceutical Medicine as a speciality by Parliament in April 2002 has done much to facilitate these initiatives, in part by making pharmaceutical physicians 'respectable' amongst our peers in other disciplines (or, at least, more respectable than we were previously!) Achieving this has not been easy, and I speak as someone who became one of the first registered specialists in May 2005. There are undoubtedly further developments to take place in the Higher Medical Training programme, especially given the huge diversity in the roles of pharmaceutical physicians and the varied size and interests of the companies in which we work. However, it is likely that the process will naturally evolve with experience as more of us become registered as specialists and give feedback to the Faculty and our junior colleagues.

Educating medical students about the pharmaceutical industry and the standards expected of its employees, medical and non-medical, can bring many benefits to both sides. Hopefully some myths about the industry will be dispelled, these having arisen largely through ignorance and the historical lack of openness within industry itself. Input from the students may well challenge some of our own attitudes and should provoke constructive discussion about how we could improve the ways we interact with doctors in the NHS. Finally, it is possible that some of the students will be inspired, as I was, to seek a career in pharmaceutical medicine, and be encouraged and supported to do so by the wider profession.

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