Clinical pharmacology and clinical pharmacy: a marriage of necessity

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The relationship between clinical pharmacology and clinical pharmacy has been periodically discussed over the past 40 years. The goal of this commentary is not to rehash old arguments but rather to point out how acutely each profession needs the other in 2012 and beyond. Global economics, a demand for quality cost effective drug therapy, a pharmacological armamentarium of increasing complexity and new choices for the best and brightest students combine to drive clinical pharmacology and clinical pharmacy together.

This commentary was invited on the basis of a presentation at the American College of Clinical Pharmacology Annual Meeting in Chicago, Illinois, USA in September 2011. The presentation focused on the US situation, so I apologise in advance for any comments that might not pertain to the situation in the UK and Europe. However, I think that the situation that I will discuss very much pertains to the American and the UK/European situation.

The focus of this discussion is critical problems facing both professions that should drive them together at the present time. In the case of clinical pharmacology, the lack of a critical mass of practitioners to deliver clinical pharmacology’s public health commitment may very well serve to weaken and ultimately destroy the profession. In the case of clinical pharmacy, the struggle to bring cutting edge science into clinical pharmacy practice may sentence the profession to mediocrity in a decade that will see large numbers of ‘doctorate’ level practitioners in nursing and other health professions.

What is clinical pharmacology, and does clinical pharmacology have a public health commitment?

Professions are best represented by their societies, so the vision, mission and definition of clinical pharmacology can come from a website such as the American Society for Clinical Pharmacology and Therapeutics (ASCPT). ASCPT is one of the largest organisations in the world dedicated entirely to clinical pharmacology. The ASCPT definition of clinical pharmacology is provided on their website, and directly refers to a 2006 British Journal of Clinical Pharmacology article written by Sir Colin Dollery.

I would encourage you to read this excellent history of clinical pharmacology. The answer to ‘What is clinical pharmacology?’ is directly addressed by Sir Dollery, and it is (a) a laboratory discipline of pharmacokinetics, drug metabolism and pharmacogenomics, (b) a design and data analysis profession of experimental protocols, drug utilisation and pharmacovigilance and (c) a clinical profession of ‘hands-on’ patient care, clinical investigation of drug interactions and adverse effects, and consultancy as an expert in drug therapy. As Sir Dollery explains, this wide expanse of knowledge and expertise is both a strength and a weakness. As an example, the US Food and Drug Administration Office of Clinical Pharmacology consists of 150 clinical pharmacologists/pharmacists, and we continue to struggle with having the expertise to address new and emerging science and therapies.

So there is little question that clinical pharmacology has a public health commitment for providing expertise for the most complex drug therapies in a ‘hands-on’ manner. A quick check of the mission and vision statements of the two US clinical pharmacology organisations, ASCPT and the American College of Clinical Pharmacology, confirms that clinical pharmacology has a responsibility to patient care. The European Association for Clinical Pharmacology and Therapeutics is a bit more subdued in its aims, but still suggests that improvement of drug therapy in patient care is a major tenet held by the organisation.

Clinical pharmacology certainly had its roots in innovative patient care and clinical trials. Sir Dollery describes this as ‘The age of excitement’ for clinical pharmacology, and the list of clinical pharmacologists leading new hospital services at that time reads like a list of legends of the profession. However, this was during the 1950s and 1960s, and Sir Dollery himself admits that the expansion of clinical pharmacology was fuelled by expanding clinical service and research budgets. The 1990s brought the restructuring of the healthcare industry, and the disappearance of clinical pharmacologists from hospital wards. Given the current global economic situation, which is leading to new restrictive economic healthcare models, the suggestion made in 2006 that the government fund the traditional physician model of clinical pharmacologists in hospitals is beyond consideration now and in the future.

Clinical pharmacists are the new clinical pharmacologists in the patient care setting

Although the origins of clinical pharmacy were different than that of clinical pharmacology, the two professions essentially reside in the same space today. The American College of Clinical Pharmacy’s definition of clinical pharmacy embraces all of the parts of Sir Dollery’s...
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physician training in the USA. On a global scale, in the USA with a bachelor’s degree, 90% of pharmacy students enter pharmacy school in the USA at this time. Since more than 8000 PharmD graduates yearly would be the entry level degree, resulting Pharmacy mandated that the PharmD level in the USA. In 1990, the number of people educated at the doctorate level in the USA. Doctors of nursing will be involved in managing drug therapy through evidence based patient management. Bringing pharmacology and the new breakthroughs in drug development into patient care is essential, and clinical pharmacists are uniquely positioned to do this.

Clinical pharmacology similarly needs clinical pharmacy practice were developed in the US in the 1970s and 1980s, and clinical research directed by clinical pharmacists was being funded by the National Institutes of Health in the USA from the 1980s onward. The UK Clinical Pharmacy Association and the European Society of Clinical Pharmacy were forming about that same time, and the European Society of Clinical Pharmacy’s definition of clinical pharmacy matches the American definition, with the exception of research involvement.

The American College of Clinical Pharmacy (ACCPharmacy) and the American College of Clinical Pharmacology (ASCPT) have a leadership role in this interaction. I think that our professional societies can have a leadership role in this interaction. Clinical pharmacology organisations benefit through joint programming with clinical pharmacy organisations by increased attendance at their training programmes and in their membership. Clinical pharmacy organisations benefit through joint programming by bringing the highest quality regulatory, academic and industry dosage adjustments required by renal or hepatic dysfunction are primarily generated during drug development by clinical pharmacologists. Solving complex patient drug problems requires cutting edge scientific knowledge, and increased opportunities exist for clinical pharmacists to collaborate with clinical pharmacologists to address these problems. The marriage of clinical pharmacy and clinical pharmacology keeps the science in patient oriented pharmacy services, and that is essential for delivering the highest quality services and for recruiting the best people to clinical pharmacy/pharmacology.
**Key messages**

Clinical pharmacy and clinical pharmacology have many reasons to work together to further patient care related to drug therapy.

Many clinical pharmacists want to distinguish themselves, and training with and collaborating with top clinical pharmacologists is certainly one method of doing that. I would recommend that clinical pharmacists attend clinical pharmacology programming and consider membership in clinical pharmacology organisations. Clinical pharmacology organisations should seek out clinical pharmacists who have a high level of clinical practice and clinical research.

A critical axiom of strategic planning for any profession or organisation is that if you are not moving forward, you are in fact moving backwards. Clinical pharmacology and clinical pharmacy should carefully consider their current situation, and make this a marriage that society and patients everywhere will benefit from.

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**References**


