

# Clinical pharmacology and therapeutics in a changing world

COMMENT ON A COLLEGE REPORT AND SUMMARY OF RECOMMENDATIONS

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Clinical Pharmacology and Therapeutics (CPT) is a heterogeneous discipline whose range of contributions encompasses the clinical care of patients; clinical toxicology; the use of medicines in the community (pharmacoepidemiology); drug safety (pharmacovigilance); the economics of prescribing (pharmacoeconomics); advice to government agencies on the licensing and use of medicines; the teaching of undergraduates and postgraduates; basic research in molecular medicine, cellular pharmacology and drug metabolism; and the highly specialised area of new drug evaluation within the pharmaceutical industry. Its potential influence is enormous. Indeed, there are so many varieties of clinical pharmacologist that, were Charles Darwin alive today, he might be tempted to draw an analogy with the many species of finch that he observed in the Galapagos Islands, each evolving in isolation, so different one from another that a common heritage is sometimes hard to discern.

Yet during the 1980s and 1990s the specialty has faced a number of threats. In some academic institutions, amalgamation of the discipline with medicine or pharmacology and suspension of the vacated chairs led to a reduction in the specialty's influence, and sometimes to its disappearance as an independent discipline. In the NHS, the exciting expansion promised during the late 1970s faltered, through insufficient funding and limited appreciation of the specialty's value, and consultant appointments were made only by the largest health authorities or those with a university connection. The paucity of openings at senior level has led to dwindling recruitment and many trainees have either taken up posts in alternative clinical disciplines or moved abroad. In the pharmaceutical industry, the lack of a clearly defined career structure for clinical pharmacologists has reduced recruitment into the vital area of pharmaceutical research and development, leaving the industry short of qualified specialists to evaluate potential new medicines. The consequences of these events have been serious for the specialty, and the perception has been growing that its future is insecure.

Clinical pharmacology is essentially an academic discipline. Its original *raison d'être* was research into the action

and disposition of drugs in man. As its scientific base expanded and its principal tenets came to be taught, the discipline earned its place in medical school curricula as a vital link between pharmacology and therapeutics. Its contribution to clinical care has almost always occurred through provision of, or by association with, an organ-based or disease-based service in a secondary care setting. Where they exist, specialists in CPT have certainly made their presence felt, but they have been insufficiently numerous for their influence to be appreciated nationwide. It is regrettable that when government is seeking improvements to the standard of health care, many of which could be secured by more cost-effective use of medicines, the cadre of specialists best placed to advise on these matters is too small to respond to the challenge.

Rather late in the day, CPT came to realise that many doctors, especially in general practice, had not successfully bridged the gap between undergraduate pharmacology and practical therapeutics, and were being faced with a staggering growth in the number of new chemical entities, with scant objective guidance on when and how to use them.<sup>1</sup> Pioneering experiments in the Netherlands, using a problem-solving approach to pharmacotherapeutic teaching, had shown how medical students could acquire the skills necessary to choose and use medicines rationally, and pointed the way.<sup>2-5</sup> But addressing all the needs of trained prescribers was too big a task. Apart from involvement in local postgraduate teaching programmes and sporadic forays into individual health centres, the influence of clinical pharmacologists on the use of medicines in primary care has occurred largely because of their involvement as contributors to educative periodicals distributed to general practitioners. There has been no durable effect on prescribing behaviour. Set this modest influence against the crowded pharmaceutical marketplace, the burgeoning costs of new medicines, and the great thirst for knowledge among prescribers for objective information about the optimal choice and use of medicines, and one must conclude that, as a specialty, CPT has underplayed its hand.

## RCP working party

Faced with these harsh realities, the College set up a Working Party to address the issues and produce recommendations on the way forward. Its terms of reference were:

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1. To advise on the development of CPT to enhance the health of the population and meet the needs of government and industry.
2. To review education and training requirements and the provision of expertise for universities, the NHS, pharmaceutical and other industries with particular regard to future manpower requirements and career structures.

The Working Party considered the roles of the specialty and the challenges facing it in:

- the NHS
- the universities
- the pharmaceutical industry
- the provision of advice to government and its agencies
- relating to other specialties in medicine

The Working Party also considered training in the specialty with respect to the future needs of the NHS, academia, and industry.

### Challenges

Several challenges face the specialty. In the NHS, these include making it easier for NHS Trusts and Health Authorities to avail themselves of CPT expertise; and optimising the use of CPT skills in monitoring drug utilisation and drug safety. In universities, the challenges include:

- integrating the teaching of pharmacology and therapeutics and implementing an agreed core curriculum;
- extending the teaching of CPT into the pre-registration year;
- using new methods to provide targeted postgraduate education in CPT in both primary and secondary care, and monitoring its effects;
- maintaining a steady stream of young researchers through the specialty; and
- responding to the changes in research methodology arising from the new technologies.

In the pharmaceutical industry, the key challenge lies in reorganising and harmonising training to address the need for manpower expansion, and improving the career structure to encourage retention.

### RECOMMENDATIONS

The outcome of the Working Party's deliberations can be considered beneath two headings:

1. The training of specialists in CPT;
2. The role of these specialists in:
  - the training of medical students
  - the continuing education of trained doctors; and
  - the facilitation of cost-effective prescribing in the NHS

### Training specialists in CPT

A coordinated approach to the recruitment, training and retention of clinical pharmacologists in the NHS and

universities is necessary, aiming towards the systematic provision of expertise in CPT throughout the country. This means making the discipline more attractive to junior doctors choosing a specialty, consolidating the (already high) standard of training, and increasing the number of specialist posts in universities, the NHS and industry to prevent trainees looking for safer boltholes elsewhere.

The formal endorsement by the Specialist Training Authority of training programmes that combine CPT with organ-based disciplines, such as Respiratory Medicine or Cardiology, with or without General (Internal) Medicine (leading to triple or dual certification, respectively), has opened the gates to those wishing to train in CPT with a view to exercising their specialist expertise within another clinical discipline. Other organ-based disciplines are likely to form similar pairings, and should be encouraged to do so. This development should increase the number of trainees exposed to CPT, as well as the scope of its influence.

Another flexible approach to training introduced recently, intended to increase the recruitment of clinical pharmacologists to the pharmaceutical industry, is the creation of posts that involve periods of training in industry as well as in an academic department. This initiative, funded jointly by the Association of the British Pharmaceutical Industry and the NHS Executive, has made a slow start, perhaps because of limited awareness and confidence among potential trainees, but deserves to be nurtured for long enough to become established. The Working Party was also attracted to the suggestion that joint appointments at consultant level between industry and universities might encourage retention of qualified staff in industrial posts.

### Specialists in CPT as educators

Although there have been specialists in CPT in most medical schools for many years, charged with the teaching of clinical pharmacological principles in relation to therapeutics, it is only recently that a core curriculum for undergraduate CPT has been developed.<sup>6,7</sup> This should encourage a consistency of standards across the UK and the Working Party was keen to recommend its early adoption, but warned that implementation might have manpower implications that universities would need to address.

In the area of postgraduate education the medical profession has allowed itself to become so reliant upon sponsorship from the pharmaceutical industry that one wonders how meetings could otherwise take place. The extent of this dependence is unhealthy. It is not merely inconsistent with any claim to an unbiased approach to the selection of medicines, but it exposes the profession to the accusation that their use of medicines is no longer determined primarily by the needs of the NHS. The Working Party recommended a reduction in the extent of industrial sponsorship, coupled with the development of innovative educational programmes in therapeutics that encourage independence of thought and action when choosing and

using medicines. Specialists in CPT are well placed to advise on the content and delivery of such programmes.<sup>8</sup>

Cost-effective prescribing is of major and increasing importance to the NHS. If expensive new medicines are to be afforded, it is essential that any unnecessary and inefficient use of existing treatment be curtailed. A great deal has been achieved in primary care by medical and pharmaceutical advisors to Health Authorities, and by GPs themselves – and in secondary care by the development of hospital formularies and clinical guidelines – but much remains to be done. Specialists in CPT can have significant impact at all levels of the service, by advising on rational drug selection to secure maximal health gain within the available budget. The Working Party recommended that joint appointments between Health Authorities and NHS Trusts could be a highly economic move that would benefit all parties.

### The way forward

The Working Party's report describes the enormous scope of CPT and makes a convincing case for manpower expansion. It illustrates perfectly to potential trainees just how varied a training in CPT can be in equipping the specialist to perform as clinician, scientist, teacher, government advisor, or any combination of these. But this same versatility has proved a handicap for the popular image of the specialty. If CPT is to find the way forward it needs to establish a popular identity and agree its priorities. An appeal for support will be successful only if people understand what a clinical pharmacologist is and does, and can be persuaded that the country needs more of them.

Manpower expansions require careful planning. A concerted effort should be made to ensure that senior house officers know what the specialty can offer them. Readers of this journal could do much to help here by drawing their trainees' attention to the existence of CPT as a specialist option, training in which can now be combined with an increasing number of organ-based disciplines. Attracting more trainees and creating more training posts must go hand in hand, and will require a combined initiative by the Clinical Section of the British Pharmacological Society, the Specialty Advisory Committee via its Regional Advisors, and Postgraduate Deans. A gradual increase in the number of specialist posts in universities, the NHS and industry must be timed to coincide with these developments, so that trainees have posts to go to when their training is completed.

Specialists in CPT responsible for teaching medical students should mount a combined effort to encourage the adoption of the core curriculum in every medical school, acknowledging the resource implications, so that prescribing skills can be inculcated during the pre-registration year with the confident assurance that there is an identifiable foundation of knowledge on which to build.

More evidence must be collected and published to demonstrate the value of specialists in CPT to the NHS, in providing advice on the selective introduction of medicines and guidance on their most appropriate therapeutic use. All specialists in CPT who work in or for the NHS must re-examine their role as educators and find innovative ways to get their messages about rational prescribing across in both primary and secondary care. This must include a vigorous attempt to reduce the pharmaceutical industry's present stranglehold upon the funding of continuing education.

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