

# The place of research in the training of a physician

Recent headlines tell us that all is not well with clinical research—'Clinical research: disturbing present, uncertain future' [1]; 'Decline in clinical research' [2]; 'a structure almost guaranteed to overproduce mediocre research' [3]—and this at a time when medical science is advancing more rapidly than ever before, with major developments in subjects such as medical genetics, cancer biology, the immunology of infectious disease and pharmacology. Moreover many physicians view their period of research as the most exciting years of their working life. The pressure of examinations had receded; there was time to stand back from the demands of clinical practice; and they had the chance to develop a core of knowledge on which they might build creatively for the rest of their career. So why the groundswell of discontent? On the one hand academic clinical departments face cuts in staff and funding and find it increasingly difficult to compete at an international level; on the other, many clinicians who have successfully completed general professional training and who plan to become hospital physicians have come to regard research as another uncertain hurdle to be crossed before they may achieve senior registrar status.

The plight of academic units has already been well aired [4]. Tight restrictions on government spending have hit universities and research councils hard. Research is poorly funded but this is not the only reason why Britain has failed to exploit fully the scientific talent and inventiveness of medical graduates. The profession has been slow to come to terms with the new sciences which are altering the nature of medicine and is ambivalent in its support for basic research. Doctors seeking a career in medical research recognise that they are likely to lose in terms of career opportunities, financial reward and professional status. As a result many return to clinical practice; and too often the apogee of achievement is a faculty position in a small UK department without the 'critical mass' of support necessary for an effective or fulfilling research programme. Nevertheless the recent initiatives of the MRC and the Wellcome Trust provide hope for the future. The Clinical Scientist scheme (a 4-year award following a 3-year training fellowship) and the Wellcome Senior Fellowship programmes should provide up to 25 places a year for medical scientists. It is now necessary to ensure that the end-products of these vital

schemes are not lost in small units of rigidly departmentalised medical schools. How this might best be achieved has been explored in an important lecture by Sir David Weatherall [5].

The plight of embryo hospital physicians has a different cause. Central control of the number of consultants in the NHS had led to similar control of the number of trainees for each specialty; personal patronage is out of fashion, so those wishing to enter a popular specialty have to join a race; the rules are simple—acquire MRCP and then make an impression by writing papers and presenting data at national and international meetings; finally produce a thesis within 8 or 9 years of qualification which opens the way to a senior registrar post and ultimately consultant status.

It is generally believed that a period of research is valuable in the training of a physician. The Health Service needs well trained, critical and innovative clinicians to maintain the standards of District General Hospitals. A period of research allows the trainee the opportunity to study some aspect of medicine in depth; to acquire an ability to read critically and judge the quality of published papers; to develop new skills such as how to design a study, how to manage a project efficiently, how to collect and process data, how to appraise results, how to write reports and how to present oral communications. It may be argued that the element of competition in research ensures that the most able doctors survive and that this best ensures the quality of services in District General Hospitals. The arguments are persuasive but unproven. Pleas have been made for a critical assessment of the value of the kind of research done by most trainees [6] and for alternative forms of academic activity [7]. Many research programmes are essentially opportunistic with limited scientific support. Such programmes often generate mediocre data as those who attend the heavily sponsored and overcrowded specialist meetings are well aware. A College survey [8] of doctors who had gained MRCP showed that 286 (86%) had attempted some research but more than a quarter failed to produce presentable results. At the time of the questionnaire only 138 (43%) had registered for a higher degree, and 18 of these had already abandoned their plans. It may be argued that this is simply the result of trainees 'testing the water'. They obtain promotion or move on to other specialties. But evidence from survivors of the system suggests that this is not the whole answer.

Recently, I sought the opinions of 50 senior registrars regarding the research component of training to be a physician [9]. Nearly all had published at least

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one paper, and most had or thought that they would soon have a higher degree. Ninety-five per cent stated that they would like to continue with some original work even though 40% undertook the period of research solely to achieve their career ambitions.

These survivors (winners) might have been expected to offer favourable views on a system that had served them well but 80% had adverse comments. Despite this, a similar high percentage believed that a period of research or further study must be regarded as of value in the training of a physician. Most believe that this period would be best integrated into the programme of specialist training. The majority were critical of their own period of research: only 40% were introduced to research techniques in an efficient manner; most were just left to get on with it; less than half regularly saw their chief in a research environment; and only a quarter received what they regarded as adequate supervision. Funding for research was very much as has been described elsewhere [2], the pharmaceutical industry providing 40% of the support and the MRC/Wellcome Trust 25%. Charities and the NHS provide the rest, and most trainees draw on more than one source of financial support. Most of those on grants from the MRC or the Wellcome Trust were pleased with their research training, but even amongst these there was some dissatisfaction with the arrangements for clinical research. Overall, 16% thought that the system had worked well for them but not for others, and 66% made adverse comments including some which showed that for them research was anything but an exciting and educationally regenerating experience:

'Large amount of fragmented, repetitive and superficial work.'

'Too many reluctant scientists and an extraordinary volume of mediocre research.'

'Ill-conceived projects which waste months or years.'

'A drain on valuable resources.'

'A depressing experience.'

'A chief who uses research fellows to boost the ego of his unit.'

'I got a DIY MD . . . after rewriting in the light of comments by the examiners . . . ideas which should have been available to me at the start of the project.'

Such adverse comments might easily be used to denigrate the value of research in the training of physicians and encourage those who seem determined to squeeze research registrar posts out of the system. But it is important to remember that nearly all those who responded to the questionnaire were convinced of the value of their research years. Thus there seems to be a need for senior members of the profession to assess the way in which research might best fit into the training of physicians. *Achieving a balance* and the 1990 Health Act have not helped. The one has sought to balance the numbers in training against the likely available posts by

imposing tightly controlled training programmes with minimal flexibility; the other is concerned with the delivery of health care as a competitive business. Neither pays more than lip service to the need for research and development [10]. What might be done?

1. We might start by examining how to meet the needs of the two groups: the professional research workers who need to maintain clinical skills whilst being protected from routine clinical work, teaching and administrative chores; and the specialist clinicians who, during training, need to learn from first hand experience what research is about. In teaching hospitals leading units might profitably integrate the work of career physicians and clinical scientists. Small academic units need to build to a critical mass if they are to make an effective research contribution. In District General Hospitals specialist clinicians will only rarely have the opportunity of continuing detailed clinical research. Some may be able to contribute to joint projects and all should work together to determine how best to provide health care.

2. Committed clinical scientists require a properly structured training starting as early as possible. It seems necessary to set aside 2-3 years for such training. (The Cambridge and Newcastle MB/PhD programmes may offer appropriate models for catching promising students.) Once trained, the clinical scientist should have clear opportunities for career advancement with adequate professional and financial reward for continuing research.

3. The future specialist clinician needs to be selected on the basis of clinical and organisational skills as well as innovative ability. There should be ample opportunity for these skills to be assessed during general professional training which in turn might be better organised by the development of integrated rotations (3 or 4 years) on a Regional basis.

4. The trainee specialist clinician should then be provided with a planned period of further study and experience in research. A much wider range of options might be made available, including research into the delivery of health care, the efficacy of clinical audit and the organisation and running of the Health Service. A higher degree might be regarded as optional. The early period of research should be closely supervised and perhaps monitored by application to a relevant specialist group along the lines of an MRC training fellowship.

5. There should be opportunities for the latecomer to research to enter an academic career and for the unproductive research worker to turn to a clinical or alternative career.

6. The entrepreneurial consultant interested in research should be persuaded to become part of a multi-disciplinary team. It is important to raise money but it is equally important to ensure that research trainees are offered adequate supervision and educational opportunities and that a proper infrastructure

for modern effective research is built up and maintained. All organisations offering money for medical research should be encouraged to assess rigorously research projects and facilities and to seek independent evaluation of the results obtained.

7. The programmes for specialist accreditation need to make much greater allowance for the growth areas of clinical research which cross the boundaries of traditional clinical disciplines. Rigid training programmes are likely to produce narrow-minded physicians.

8. The profession should enter serious discussion with the Department of Health and the government on how to release enough money to increase the number of consultant posts in a way that will not lead to a proportionate rise in all other services. Nothing should be sacrosanct—not even salaries and merit awards. Only with more consultants will it be possible to provide the hospital doctor with an education as well as an apprenticeship.

Meanwhile I would advise those who seek research posts as a means of advancement in medicine to choose with care the unit in which they plan to work. They have to be aware that at the end of the twentieth century external commentators continue to remark on the innate conservatism of British medicine [11] and perhaps would agree with Flexner who, in 1910, wrote:

'The English consultants are cultured, charming and able . . . excellent physicians, occasionally distinguished contributors to scientific knowledge . . .

but the system does not seek out and does not reward effort or achievement in a scientific direction . . . ' [12].

At present the future for research in the training of physicians is uncertain. Vigorous efforts will be needed to protect and nurture what must be regarded as an invaluable part of professional education.

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