

ARCHIVES OF DISEASE IN CHILDHOOD

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Annotations

What's to be done about the malaise in science training in paediatrics and child health?

The paper by Raine in this issue of the journal¹ on the results of his analysis of the experiences of young paediatricians in obtaining the degree of MD between 1984–93 is not only thoughtful and provocative, but also a scathing indictment of our specialty in the support given to the brightest and most highly motivated of our young colleagues in pursuing training in clinical research. His article makes depressing reading, with a catalogue of difficulties and a litany of the hurdles experienced by those who managed to achieve the doctorate in due course. Since the paper does not give any information on the experiences of those who fell by the wayside and failed to deliver an MD, it is likely that the total picture is very much worse than that articulated.

Raine highlights a number of important issues, and they can be categorised into (a) the circumstances of the MD student, (b) the quality of the supervision given, and (c) the requirements and inefficiencies of different universities in processing the theses. The following deserve special emphasis.

It is thoroughly unsatisfactory that only 29% of those in research posts were able to submit the MD thesis by the end of the post. The fact that up to 80% of research time was spent on non-research related activities, including regular on call commitments, reveals the abuse of post holders to support service delivery. With this work load it is hardly surprising that so few theses were completed before the expiry of the post. Altogether 46% of submissions required revision. The need to resubmit while holding a full time clinical post probably accounts for the inordinately long length of time taken to obtain the MD—nearly a third of candidates did not obtain their MD until they were consultants, with a median time of 5.5 years from completion of the research post. These dismal statistics point to a lack of rigour not only in planning the timescale of the project—time must be built in to allow completion of the thesis before the expiry of the research post, but more importantly, in the quality of the initial submission.

It is disconcerting to read that one in five supervisors had neither an MD nor a PhD. How is it possible for a research fellow to be effectively supervised if the supervisor has not experienced personally the difficulties and discipline of preparing a thesis? The large number of theses that

required revision and resubmission is also symptomatic of poor supervision, and this is further reinforced by the fact that 48% of research fellows met their supervisor less than once each month.

The time taken to obtain the MD is further compounded by the inefficiencies of the universities and their complex and differing regulations surrounding the supplication for the doctorate. There is, clearly, a need for universities themselves to reach a corporate view on the requirements for the MD and improve the efficiency of the process if the currency of the degree is to have any credibility. It is extraordinary that despite this litany, so many MDs were awarded! However, over one in 10 paediatricians who obtained a doctorate published no papers after the MD was awarded. Raine suggests that this reflects little interest in research *per se*, and that obtaining the MD was simply a hurdle to be crossed on the road to a consultancy.

Raine's paper addresses only one facet of the experiences of young colleagues engaged in higher doctorates. To obtain a much broader perspective, a similar survey should be completed retrospectively of those paediatricians who obtained a PhD, combined prospectively with an analysis of MD and PhD students registered at the start of training to assess the attrition rate and the reasons for non-submission of theses. Whatever the magnitude of the total picture at present, none the less, Raine's study paints a thoroughly unacceptable scenario for modern scientific training in paediatric medicine.

Is this a symptom of a wider malaise?

Raine's paper coincides with the publication of the report by Sir Rex Richards and his task force on clinical academic careers across all specialties.² This also makes gloomy reading, particularly against a national crisis in academic recruitment with 56 vacant chairs in important specialties, and in the performance of clinical departments in the most recent research assessment exercise of the Higher Education Funding Council.² Dissatisfaction in research and academic training is clearly widespread and is having a devastating impact. Richards argues that clinical academics are required to "maintain the thriving academic and research base which contributes so much to undergraduate teaching and postgraduate education as well as to

acquiring new knowledge of disease processes and improving the quality of patient care". These sentiments are no less true of paediatrics and child health and we ignore them at our peril.

That there is a major problem in our specialty is emphasised in the recent anonymous editorial in the *Archives of the Diseases in Childhood*,³ which reported the unhappy state of British paediatric clinical research at present, a view strongly reinforced by others^{4,5} and supported by the deliberations of the Association of Clinical Professors of Paediatrics (ACPP) in its two most recent business meetings. Raine's paper on the deficiencies of the research training experience provides further ammunition for those of us who argue that there is a serious malaise in the stature and performance of British research in paediatrics and child health.

While recognising that the reasons for this crisis are complex and that there are no easy or quick remedies, none the less, the starting point for any improvement has to be the provision of robust and credible programmes with which to train our young colleagues adequately in the science base for paediatrics and child health. This will be essential not only for succession planning as the present senior academic staff retire but equally for the development of an evaluative culture in our specialty. The difficulty of succession planning was drawn forcefully to our attention in our institution two years ago, when new money was provided to create two new senior lectureships in important paediatric subspecialties. Despite a worldwide trawl, we were unable to appoint to either specialty a colleague who had the training to deliver the performance required of a senior lecturer in the present funding climate. This experience prompted me to perform an informal survey of all senior members of staff in the North Thames region who hold university titles of senior lecturer, reader, or professor. While recognising that some of these titles may be personal or honorary, none the less, I calculated that over 100 senior colleagues are in post, most of whom can be expected to retire within the next 5–10 years.⁴ Where are the successors likely to be found? It would be reasonable for them to be found in the ranks of the lecturer grade, but a concurrent survey of lecturer posts held in the seven North Thames teaching institutions shows that there were, until recently, only 20; of these, none was in community child health, few had secure funding, and only a minority had a formal auditable training programme with protected time to develop research as well as clinical skills. There is, therefore, a serious mismatch between the numbers of senior staff and the middle grade academics who are best placed to be the senior academic staff and specialist consultants with research responsibilities of the future.

I conclude, therefore, that unpalatable though the fact may be, none the less, the teaching institutions in central London will face a major shortfall soon in recruitment to academic posts, and since that shortfall cannot be made good by recruitment from other centres in the UK (which face equally intense pressures) the inevitable conclusion has to be that we must invest nationally now in the scientific training of the brightest of young people who will become the leaders of the future, and give them a framework for career development which is not only attractive, but which delivers job satisfaction. Raine's paper emphasises the urgency in addressing this issue.

The prescription to cure the problem is complex and difficult, but I would propose the following components of a way forward.

The need for a cultural change in the attitude towards training for research

In recent years there has been a welcome focus on clinical service training for senior house officers and registrars. This has transformed recruitment and career prospects as well as the quality of the training. Such training is now well organised through the appointment of local, specialty, and regional tutors and through specialist training committees which report to postgraduate deans. I argue that there is now a need for an equal transformation in the organisation and audit of training for research which demands a cultural change in the attitude of all involved in the training of junior colleagues. The need for this focus is exemplified by the fact that at the most recent meeting of the North Thames (East) specialist training committee, only five minutes out of an agenda lasting some two hours related to the needs of research trainees and lecturers! I propose that similar processes to those shown to be effective in improving clinical training should now be applied urgently to research training.

Why do any training in research?

Of course, it is important to ask the question why do research at all? Raine in his paper concludes that many who obtain an MD perform no further research and publish no papers, implying that the attainment of an MD has been seen to be essential for career progression.¹ I argue that this view needs to be challenged and would propose, perhaps heretically, that the holding of an MD (let alone a PhD) should not be an essential prerequisite for a non-specialist hospital or community child health consultant post.

This does not, however, mean that general trainees should not have any exposure to the rigours, discipline, and interpretation of research. If Sir Michael Peckham's vision of the NHS being transformed into an evaluative culture is to become a reality, it is of essential importance for young colleagues to have formal training (against a benchmark standard) which will prepare them for a life time understanding of research methodologies, the evaluation of scientific papers, and the evidence base for their clinical practice.

One means of ensuring such exposure is through participation in an MSc course such as that piloted at the Institute of Child Health and Great Ormond Street Hospital (M El Habbal, S Strobel, unpublished). In this model, all medical paediatric registrars who rotate through Great Ormond Street Hospital are offered the opportunity at the start of their rotation (usually in a peripheral centre) to enrol as a formal MSc student of the University of London. During the two year day release programme the students are given formal teaching and training in the fundamentals of good research practice, in the interpretation of research data, in evidence based practice, and in the definition of a personal research project. This concept is now in the third year of its implementation, and has proved to be immensely popular and successful with registrars, the quality of the work generated during the course being of a very high standard indeed. I would argue that the majority of future consultants can be given a rigorous exposure as part of Calman training to the research process without necessarily holding a full time training fellowship leading to an MD. This would overcome the pursuit of mediocre, poorly supervised projects as a passport to the consultant grade. This view needs to be supported by those involved in consultant appointments advisory committees.

One important advantage of our MSc programme is that through a well taught and structured insight into research, a number of the students have been so fired by the excitement of research that they have gone on to obtain training fellowships in open national competition to extend their

experience, and to aim for academic or teaching hospital positions in due course, for which the holding of a doctorate should usually be essential.

The needs of the research fellow

The dilemma highlighted by Raine’s paper is how to improve the experience of those paediatricians who wish to gain a deeper and broader understanding of research through a dedicated period of time as a research training fellow. What can be done to improve this experience?

The starting point has to be the definition of the needs of the research fellow. I propose five essential requirements, namely, a research project, money to support a salary, a supervisor, an appropriate training environment, and an exit opportunity into the next stage of career training.

There should be little difficulty in defining the research project. Any self respecting regional academic centre should have a shelf full of potential projects ready to dust down and give to a fellow. There is every reason to encourage these projects being done in collaboration with orbiting district general hospitals and community trusts.

Research funding is, of course, a major headache and is likely to remain a formidable obstacle for the foreseeable future. It is unreasonable to expect young colleagues to generate ideas themselves which have sufficient insight to be credible competitors for local, let alone national, funding. It follows, therefore, that the potential fellow needs to hang on the coat tails of an established investigator who can generate research funding. This leads into what I argue is the most important aspect of this discussion, namely, the roles and responsibilities of supervisors.

The supervisor is key to the success or failure of the fellow’s project. The responsibilities are substantial, but as so vividly documented by Raine are often shamefully prosecuted at present. The supervisor is mentor, counsellor, strategist, and role model for the fellow. It is an onerous responsibility that demands the commitment of time. The supervisor must be a credible scientist with a track record of success. Moreover, with the implications of Calmanisation, the supervisor must be able to counsel the fellow on long term career opportunities in the discipline. This could create an immediate conflict of interest, with concern for the development of his or her own team being potentially at odds with the reality of career opportunities for the fellow, particularly in the smaller subspecialties. It could be argued that because of this potential conflict of interest, each fellow should have two supervisors, one for science and one for counselling and career development.

In the ideal world, no fellow should begin a research project without enough secure funding to guarantee at least two, and preferably three, years of full time study. This timescale is essential if one of the goals of the training is to ensure that a thesis is complete by the end of the fellowship. Time must be built into the project plan at the outset to allow completion and submission of the thesis before moving on to the next post, and the abuse of time in supporting clinical service must cease. In practice it is often difficult to guarantee funding at the outset but the responsibility of the supervisor must be made explicit in supporting the fellow and to apply for ongoing funding after a “pump prime”. Some departments, notably at University College, London, have an admirable track record of using the lecturer post to provide an initial one year of “proper” research experience thereby enabling the candidate to be a credible applicant for national training fellowships at the end of that time and to offer a re-entry point after the fellowship.

The training environment is of crucial importance. Ideally it ought to be in an institution with a critical mass of researchers that is large enough to support not only scien-

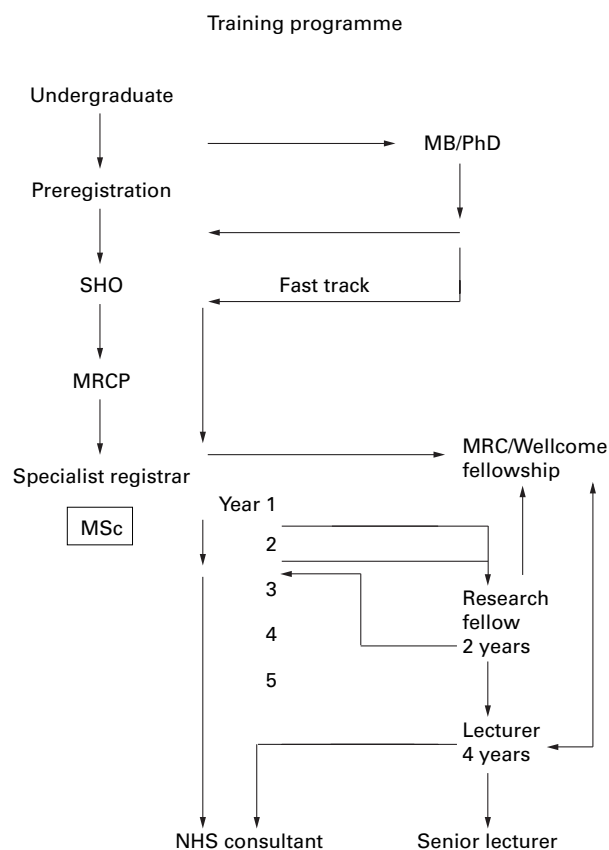


Figure 1 A training “map” for paediatrics and child health; SHO = senior house officer.

tific expertise, but also an ethos and a camaraderie in the cohort of fellows and lecturers. In our institution we have created formally a clinical research fellows and lecturers committee which is owned, organised by, and accountable to its members. This committee is proving to be extremely important in the interface with the hospital’s postgraduate medical education committee, with the regional postgraduate dean, and others.⁵ The committee has generated a series of training opportunities in leadership skills, time management, business case preparation, etc, all of which are essential aspects of the training of our future senior staff. The franchise for membership has now been extended to all research fellows and lecturers working in paediatrics and child health in North Thames, and it is a model I commend to other regions.

In our institution, all MD fellows are registered internally, with an obligation to enrol as an MD student at the University of London in order to obtain all the benefits of the institution. All MD students are regarded to be equivalent to PhD students in the allocation of two supervisors per student with a formal programme of appraisal and counselling accountable to the subdeans for education, and the postgraduate education committee. With this approach, we intend to ensure that the MD programmes, which are usually timetabled for two years of whole time study, should have high scientific standing and credibility. Fellows are counselled at the outset over choice of MD or PhD, the latter demanding three years of study, usually with more basic science or laboratory involvement.

A legitimate preoccupation of research trainees is the exit opportunity into the next phase of career development. The heads of the seven North Thames academic departments and institutions have proposed a training “map” which has been accepted in principal by the postgraduate dean (fig 1).

This outlines possible career tracks for academic, specialist, and general trainees. Of central importance is the lecturer grade. I argue that this grade is the critical second of three stages in a research career. The first is the fellowship to doctoral level. The second, the lecturer post, offers up to four precious years during which the incumbent is given every opportunity to begin developing skills in generating grant income for original ideas and supervising the work of others, skills which are prerequisites for applying for the third stage, a senior lectureship in due course. I argue that it is the abuse of the lecturer in being regarded to be an "ordinary" registrar which is one of the main reasons for the poor standing of British academic medicine. Equivalent rigour needs to be applied to the training of lecturers who wish to develop a career in medical education.

Improvements in the cultural expectations of lecturers must be matched by more precise manpower planning for academics in general, and in subspecialties in particular, in order to provide hard fact to young investigators in planning their research topics, and in generating confidence of the end point of the training. Innovation is needed in generating seven year training programmes which progress seamlessly (depending upon performance) from research fellow to senior lecturer or specialty consultant.

What are the responsibilities of senior members of the specialty?

There is clearly a massive agenda to be tackled, and this has to be lead by senior colleagues. Action has already been taken in the last 12 months through the offices of the ACP to work closely with our new Royal College of Paediatrics and Child Health (RCPCH) to improve the standing of science in our specialty. Thus, the voice of the ACP has been given prominence in the new committee structure of the RCPCH, particularly through the creation of a Science Advisory Committee chaired by the Academic Vice President, Professor Richard Cooke. Its task is to provide advice, both strategic and practical, on matters relating to the development of a high science profile in the college and specialty. There will be a need for dialogue with non-clinical scientists and with research active NHS consultants in the RCPCH's specialty groups.

The RCPCH itself has created an Academic Panel which I have the privilege to chair, with a fourfold remit. First, to provide advice on entry into the Specialist Register through the academic route; second, to provide guidelines and criteria against which a period of time in research would be recognised as an appropriate component of specialist training; third, to provide the means for the counselling of individual junior staff in the structure of a research career, and finally, to provide guidelines for individual specialties on the training programmes for research within that specialty. This is a formidable work load, which will require much further thought. However, one possible way, for example, of delivering advice on research training could be through the formal appointment of Regional Advisors for

Research Training, and linked to the registration of research fellows and a requirement for documented regular appraisal.

The Academic Panel is at the earliest of stages in its development and further reports will be made as appropriate through the RCPCH. None the less, these steps reflect a commitment from the British professoriat in paediatrics and child health, and from the College to address seriously at a national level the requirements for training in science.

Regional centres must be more proactive role in defining training programmes, monitoring the activity, and auditing the product. Perhaps it is going too far at this stage to propose that centres and units themselves should be accredited for research training. A more sensible approach might be to produce agreed minimum quality standards for training which research fellows and lecturers can expect to be delivered.

Finally, there must be a much greater requirement for academic unit heads to be more vigorous in the process of research organisation and rigorous in monitoring the quality of supervision if our specialty is to deliver the numbers of trained scientists that will be needed for the new millennium. Ultimately, it is the quality of supervision upon which the whole edifice of research performance is built.

Conclusions

Raine's paper documenting the difficulties of obtaining an MD reflect but one facet of a highly complex problem. Of the threat to the future science of paediatrics and child health there can be no doubt. This is an issue which affects every paediatrician, not just those in erudite disciplines and rarefied regional centres. Improving the health of children depends upon research, and the delivery of services demands an evaluative culture. At last, there is a growing recognition of the urgency of the problem, and steps are now being taken at a national level to improve the profile and the reality of research training. There is much to be done, and despite the despondence expressed by others,⁵ I am optimistic that with good will, hard work, and above all commitment, the prospects for our trainees should be brighter than they have been for years.

The views expressed in this paper are personal and do not represent any official statement of the ACP or the RCPCH.

A AYNLEY-GREEN

*Institute of Child Health,
30 Guilford Street,
London WC1N 1EH*

- 1 Raine J. Current means of obtaining a MD degree in the UK. *Arch Dis Child* 1998;78:174-7.
- 2 Richards R. *Clinical academic careers*. Report of an independent taskforce. Committee of Vice-Chancellors and Principals, 1997.
- 3 Anonymous. UK paediatric clinical research under threat. *Arch Dis Child* 1997;76:1-3.
- 4 Aynley-Green A. *The science base of paediatrics and child health—crisis or opportunity?* A paper presented to the Association of Clinical Professors of Paediatrics, 1996.
- 5 Chaudhry B, Winyard P, Cale C. Academia: the view from below. *BMJ* 1997;315:560-1.

Parents, parenting, and family breakdown

Most couples undertake the serious business of parenting with the belief that they will be able to provide their children with emotional and financial security. The major shifts in family life associated with social and economic changes have made these goals much harder to achieve. An increased emphasis on the desire for individual fulfilment

may result in parents making decisions which they hope will improve their own lives, but which their children do not always view as positive. There have been frequent and simplistic attempts to explain the growing insecurities shown by children in educational and social settings simply by blaming changing family structures. Paediatricians,