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Reviving academic medicine in Britain

We now have a management plan, but who will make it happen?

Education and debate
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Without high quality research there can be no high quality evidence on which to base effective health care. But in Britain the infrastructure which generates that research has long been sick.[1 2] Three papers in this week's journal, a recent meeting, and a new report suggest some treatments. At a symposium on careers in academic medicine organised by the BMA's Joint Consultants Committee and the Department of Health last October, researchers, teachers, trainees, and funding bodies agreed on the problems and sketched out a plan. A report due out in April from the Academy of Medical Sciences should move the plan a step nearer to realisation, by detailing a new career structure for clinician-researchers. The question now is who will make it happen?

Recruitment of doctors to academic posts is at an all time low.[2] Especially in surgery, junior academic training positions cannot be filled, and in some specialties senior lectureships, readerships, and even chairs are empty. Bright medical graduates are unwilling to choose a career path which promises little in the way of training structure, job security, flexibility, or financial reward, and are opting instead for the better security, career, and pay offered by purely clinical posts.

At October's meeting two deans, Cyril Chantler and Stephen Tomlinson, identified 10 key problems that must be addressed if the endangered species of clinician-scientist is to be saved (see box). Pay and conditions have not kept up with the NHS, and an academic may end up £22 000 worse off after five years than a clinical colleague. It is harder than ever to excel in the dual role of clinician-scientist, squeezed between regulatory clinical initiatives such as clinical governance on the one hand and ever tighter research assessment on the other. The few who brave these disincentives find career structures rigid, discouraging career changes or interdisciplinary research and hostile to those who need to work flexibly. Training progress is based on a tally of procedures carried out, rather than on individual assessment of competencies acquired.

To make matters worse, the mechanism for measuring research quality—and allocating research funds—is "misleading, unscientific and unjust."[3] It seems to favour molecular science over clinical and health services research; it has no means of capturing the clinical impact of research, as distinct from its academic influence; and even in its measurement of academic impact it is crude, relying on the flawed measure of journal impact factor.[4] Nor has it any mechanism for recognising new areas of research.

Among the solutions proposed at October's meeting was a radical reform of career structure, pay, and conditions, supported by new funding. There were also calls for new curriculums responsive to the needs of the public rather than driven by purely academic interest; greater cooperation between NHS trusts and universities; and fairer ways of assessing the quality of research output, capable of nurturing new research fields as well as reinforcing existing areas of strength.

The research assessment exercise is key in assessing research quality, and on p 636 Tomlinson argues that the research community now has a unique opportunity to help reform it because funding councils are now reviewing research policy and funding in the run up to the next research assessment exercise in 2001.[5] On p 630 Savill summarises proposals from the Academy of Medical Sciences, to be published in April, to address the disincentives to academic careers.[6] The academy proposes a new two phase career structure, where a flexible doctoral phase leads on to an individually tailored, nationally funded "training fellowship" with enhanced pay. Only by enshrining and protecting the concept of clinician scientist in this way, argues Savill, can the haemorrhage of potential scientists into non-academic posts be stemmed and the ability of medical research to fill knowledge gaps be secured.

Since the Richards report summarised the malaise in academic medicine in 1997,[2] piecemeal reforms have been introduced. Contracts have been modified here, structured "job plans" or joint appraisal by universities and trusts introduced there; but what is

Problems with academic medicine

- Recruitment and retention
- Financial disincentives
- Insecure and inflexible career structures
- Anxieties about future of clinical research
- Adverse effects of research assessment exercise
- Inadequacies in NHS funding for research and teaching
- Rapid change
- Increased workloads
- Outdated and inappropriate contracts
- Recruitment gap in academic general practice and public health medicine

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lacking is coordination at a national level, and a mechanism for implementing central initiatives in individual academic centres. These require national coordination with government involvement, argues Catto (p 633).[7]

The main imperative to get academic medicine right comes from patients. Clive Wilkinson, speaking on their behalf at the October meeting, demanded to know why the public should support investment in medical research. "You have to show the public that the system their taxes are funding is working to deliver better quality health care and better qualified staff. Health funding is under pressure, and some people are going to have to give things up in order that we can deliver on NHS commitments. The public understands that research is essential; but it needs to be on their terms—not on the basis of what is comfortable to academics."

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1 Rees, M. Who wants a career in academic medicine? *BMJ* 1997;315:74.
2 College of Vice Chancellor and Principles. *Clinical academic careers. Report of an independent task force*. London: CVCP, 1997.
3 Williams G. Misleading, unscientific, and unjust: the United Kingdom's research assessment exercise. *BMJ* 1998;316:1079-82.
4 Seglen PO. Why the impact factor of journals should not be used for evaluating research. *BMJ* 1997;314:497-502.
5 Tomlinson S. The research assessment exercise and medical research. *BMJ* 2000;320:636-9.
6 Savill J. More in expectation than in hope: a new attitude to training in clinical academic medicine. *BMJ* 2000;320:630-3.
7 Catto G. Interface between university and medical school: the way ahead? *BMJ* 2000; 320:633-6.

Evidence based screening for Down's syndrome

We should be prepared to re-examine entrenched practices

An important lesson in all medicine, but particularly illustrated in screening programmes, is the continued need to review and audit. Serum screening for Down's syndrome, introduced by many health authorities in the past decade,[1-3] is a good example. The original demonstration projects compared the detection rate when Down's syndrome was identified after serum screening with earlier data derived from screening targeted towards pregnancies in older women.[2] Howe et al from Southampton now challenge some of the assumptions (see p 606).[4] They found that the Down's syndrome detection rate in one Southampton maternity hospital averaged 68% (and at least 41% in the pregnancies of women aged less than 35), *without* using serum screening. The higher detection rate without serum studies undermines the cost benefit arguments for such screening and raises questions about what to do next.

One reason for this higher than expected detection rate is a change in the age distribution of pregnant women. In the Southampton study 10% of pregnancies occurred in mothers older than 35, compared with 6% a decade ago.[1] Because of this, the proportion of conceptions with Down's syndrome would increase, as would the detection rate. There has also been an increase in the proportion of fetuses with Down's syndrome, or other trisomies, detected using ultrasound markers of chromosome anomaly.[4-7] In our Nottingham genetic service ultrasound abnormalities are increasingly the trigger for placental biopsy or other intervention.

So, how do we go forward? Should health authorities cease serum screening in favour of more targeted ultrasound facilities? Should serum screening be restricted more, perhaps to pregnancies in women under a certain age? A sensitive question would be whether couples whose screening for chromosome anomalies at the local antenatal clinic was provided by the NHS based on the most relevant evidence should be able to purchase additional testing. Though I would not favour such an option, there does need to be a greater involvement in decision making by pregnant women and their partners.[8] Let us begin by ensuring that women whose tests (by whatever technique) are "screen negative" are not left with the impression that there is no risk at all. Conversely, those who are screen positive must know that their risk is increased, based on a threshold, but the baby is still likely to be normal.

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To the couple who plan, or have embarked on, a much wanted pregnancy the things that matter are any initial risks, the ambience of the antenatal clinic, the availability of the information needed to decide on any tests, and, if uncertainties crop up, an easily accessible account of the options available as well as the gestational age at which a clear diagnosis can be established. The couple's decisions must be informed. In this context it was alarming that nine years ago 12% of antenatal records for pregnancies where the subsequent diagnosis was Down's syndrome did not document whether counselling had been given about risks, prenatal tests, or the available options.[9]

Couples whose pregnancy is shown by screening to be at greater risk, and the few in whom serious fetal abnormalities are confirmed, must be given the information in an appropriate setting and in such a way that they can make the decision that is best for their family. Doctors often allow insufficient time to tackle the sensitive disclosure of possible or confirmed bad news. Since this is partly a training issue, we have developed seminars for senior medical students in Nottingham on breaking bad news (Raeburn JA, Walker D, Raeburn AR, unpublished), but information already exists which every obstetrician, fetomaternal medicine expert, and geneticist should study.[10] In general clinicians are not good at providing patients with opportunities to take informed decisions, especially when the concepts or procedures are complex.[11]

Those planning a pregnancy and the professionals who help them all need to ensure that relevant risks are addressed using evidence based methods. A forthcoming report of the National Screening Committee will make recommendations about screening in pregnancy for conditions such as Down's syndrome. Also, several comparative studies of serum screening and nuchal thickening as discriminators for pregnancies at higher risk will shortly report their results, as well as studies on

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