

Academic medicine: time for reinvention

Wholesale review of research and teaching is required

EDITOR—The *BMJ* of 1 November and Clark and Smith in their editorial focus on the crisis in academic medicine with the tagline “Medicine’s capacity to research, think, and teach is collapsing.”¹ I do not disagree, but I am concerned that all of the articles predominantly emphasise research and those who are employed as medical academics.

To focus mainly on those with a formal academic contract of employment and particularly on those who do substantive research is to look at only part of the problem.

Many consultants and others employed by the NHS have important teaching and research responsibilities, and clinical teaching is often delivered largely by “non-academics.” An assumption prevails that these areas are largely the province of medical academics, and the *BMJ* seems to be perpetuating this view. Good research and good teaching are somehow assumed to go together, when that is not necessarily the case. Neither are they mutually exclusive.

The problem is that across medicine doctors are struggling to maintain a commitment to research and teaching as well as an ever increasing commitment to service delivery. The new consultant contracts in England, Scotland, and Wales may help to better define the non-clinical duties of NHS and academic staff alike, but they are also in danger of being squeezed out in favour of delivering services and meeting targets.

Nothing short of a wholesale review of the way research and teaching are delivered will address these problems. Sorting out research, and only research done by medical academics, is at best papering over the cracks.

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Medical education especially needs help

EDITOR—Clark and Smith’s call to revive academic medicine is laudable.¹ The form that research into health care as a discipline and industry takes, be it scholarly inquiry or commercial pursuit, will vary and rebalance itself constantly according to environmental pressures. However, medical research, laboratory or clinical, is unlikely to ever become extinct or purely commercial.

I say this because the output of medical research can be easily measured in terms of grants, publications, and patents. So long as these tangible measures are in place, medical research and researchers will be rewarded. The rewards should therefore be made enticing enough for healthcare staff to be drawn to research and for the desired research to be performed.

Unfortunately the same cannot be said of medical education, the other part of academic medicine. Few reliable measures of teaching excellence currently exist, and those that do rely heavily on subjective assessments by superiors, peers, and students or exclusive modes of recognition such as awards that carry scant attraction for clinicians. Indeed, career advancement of clinical academics depends more on research output than teaching.²

The continued production of doctors probably depends more on the quality of students who enter medical training than the quality of the teaching they receive. I wonder whether consumers would accept the same academic “rigour” being applied to the training of airline pilots, or the same quality control in medical education being used for automotive production lines.

Medical research may require revitalisation. Medical education needs a lot more.

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2 Stewart PM. Academic medicine: a faltering engine. *BMJ* 2002;324:437-8.

Medical education, training, and research are under threat because academic medicine is undervalued

EDITOR—As surgical trainees teaching anatomy at a leading university, we welcome the recent editorial highlighting the current crisis faced by academic medicine.¹

This crisis has serious consequences beyond research and its practical application.² Basic medical sciences must inform evidence based medicine to optimise clinical management. All doctors need a firm and comprehensive basic science education. As experts, academic medical staff are integral in providing this education.

Non-academics should possess skills such as the critical appraisal of papers to lessen the gulf between academics and other doctors. Otherwise a two tier profession is created with a generation of doctors devoid of specialist intellectual interests and less inclined to think as they practise.

The crisis threatens postgraduate medical education. Trainees wishing to undertake a formal research period or pursue an academic career are denied designated posts approved for training. Basic science jobs such as anatomy demonstrating are not officially recognised by the surgical royal colleges as training posts.³ Specialist training reforms have left academia undervalued in the target based culture that dictates medical practice.

Trainees wishing to undertake research, teaching, and writing should be encouraged to develop and nurture these skills throughout their career. Academic consultants are desperately needed in the United Kingdom: 10% of posts are unfilled.⁴ Recruitment problems will remain if research is poorly paid with insecure funding.

We believe that a change in infrastructure and in attitude towards the value of academic medicine must accompany improved funding and facilities. The profession and society at large should encourage and reward innovation, scientific imagination, and creative thinking among doctors if a system of medical education of international renown and a vibrant first class research community are to be maintained in the United Kingdom.

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Leadership and money are needed

EDITOR—Clark and Smith’s focus on internal and external funding and leadership is paramount in improving the state of academic medicine.¹

Academic health care has deteriorated because academicians are poorly remunerated (compared with their peers) for their academic work, unless they partner with industry. Unfortunately, industry’s *raison d’être* seems to be the promotion of therapeutics or diagnostics rather than of education for education’s sake. Thus all education partnered with industry is potentially tainted by the underlying profit motive.

Additionally, research productivity is important for much of the academic advancement in faculties of medicine and health science. Because there has been a disinvestment from clinical research by government organisations, researchers who wish to proceed through the ranks via research must increasingly rely on industry funds to support their work. Again, all such work is potentially tainted by the profit motive.

Yet the researchers who are able to forge the ties with industry are the educational leaders. Although all faculties of medicine and health science have expert educators and teachers, they often remain small cogs in a larger machine. They deliver well intentioned (and often important) research, curriculums, and teaching encounters but are usually overshadowed by the more powerful and better funded researchers who lead. These leading researchers speak to (and influence) medical students, postgraduate trainees, and practising clinicians. They ascend the academic ranks and make important policy decisions for divisions, departments, faculties, and the community. They are academic medicine.

For academic medicine to revitalise it needs leadership and money. However, the money must be both substantial and independent of industry directives. Similarly, the leadership must consist of that extremely and increasingly rare breed: a visionary who sees research, education, and clinical teaching as equally important, who has been successful at some or all of these, and who has managed to be so without the strong ties that bind many of us to industry.

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Academic medicine is failing women

EDITOR—The question “Why is academic medicine failing?” could be rephrased “Why

is academic medicine failing women?”¹ One reason is the recruitment and retention of senior female academics, and the other is the application of gender issues to medical research.

The failure of academic medicine to come to terms with clinical workforce interests and population healthcare issues is exemplified by the role and aspirations of female students, potential female clinical scientists, and women as patients. Recognition of the high quality skills of female science students and their subsequent loss during early postgraduate years has led to a reappraisal of the culture of a male dominated hierarchy in universities.² The same process has yet to be applied to medicine.

What exclusions are academic medical women facing, and to what extent does this impact on the crisis in academic medicine, where men dominate and the NHS is an alternative employer? The obstacles of childrearing are very clear. It is a myth that great discoveries are made by scientists before the age of 40 years. The biological clock for women may be different; “life starts at 40 years” may be an attitude to consider.

Today’s female doctors are demanding improved working conditions, better equity, and less hierarchy at work. They see their female counterparts in academic medicine with fewer resources and awards, less space, and lower salaries than male doctors. A BMA working paper identifies the monitoring tools required to support equity in the workforce and considers that a fair representation of women in scientific institutions can bring benefits to academic medicine.³

If women continue to be excluded in the university system, as the evidence from science faculties suggests, academic medicine will be unable to meet the challenges of medicine in the 21st century.

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- 1 Clark J, Smith R. BMJ Publishing Group to launch an international campaign to promote academic medicine. *BMJ* 2003;327:1001-2. (1 November.)
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Academic research should wind down, not up

EDITOR—Clark and Smith announce a crisis in academic medicine and call for an international campaign to re-establish its credentials.¹ This assertive policy marks a turning point for a discipline that has to date adopted a defensive posture in the developing healthcare environment.²

Unlike healthcare research, where the impact on service delivery has been minimal, research in academic medicine has delivered many important innovations. But, unfortunately, academic research still reflects a store in which researchers are busy



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filling shelves with a comprehensive set of all possible relevant studies that a decision maker might some day drop by to purchase.³ The endeavour is characterised by a voluminous literature, invariably driven by the dictates of funding spirals and accreditation exercises and, in many cases, irrelevant to the efficient production of health against a background of limited public resources.

This retail perspective on research overlooks two important economic insights.

Firstly, life is lived on an exponential curve. The law of diminishing marginal returns means that increments in benefit become smaller with additional increments of resource allocation. As the pharmaceutical sector is beginning to discover, the flat portion of the curve may have been reached in medical research.

Secondly, the principle of opportunity costs means that an investment should be valued in terms of its next best opportunity forgone. Although medical science has had many spectacular successes, its contribution is secondary when compared with behavioural and environmental factors.^{4,5}

The resources that Smith and Clark argue for so passionately may produce greater health gain if diverted into areas other than health care. We need to start winding down investment in academic medicine, not talking it up.

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Hogwarts may be a useful analogy for improvement

EDITOR—Stewart discusses how to improve clinical research.¹ The Harry Potter books may help to understand clinical academics and clinicians and perhaps highlight areas for improvement.

Most clinicians are the Hagrids of the clinical world. They prefer to get on with the job and are usually good at it. They find it hard to deal with the often confusing language of research and harder still to

apply it to their understaffed and underfunded services.

Clinical academics are the professors at Hogwarts. Professor Lucius is found mostly, but not exclusively, in many Mediterranean countries. This type of professor is likely to have obtained the position through political slyness or family ties but never because of the quality of research. He or she loves the power, the additional prestige, and the revenue that the title of professor brings.

Professor Gilderoy Lockhart has chosen an academic career for its ample scope for hedonism. Never really able to cope with real medicine, professors like him have chosen just to talk about it, which they usually do well. Their name will appear on scientific papers of sponsored clinical trials for which they are unlikely to have seen a patient.

Albus Dumbledore is the good professor who has the progress of science at heart rather than his own ego. Professors like him are good clinicians for whom research is merely an integral part of everyday practice and who strive to provide patients with the best possible care.

Clinical academics must of course be composites of these professors. However, the representation of the three professors in universities, executive commissions, and grant funding bodies will ultimately determine the quality of the clinical research produced. If Professors Lucius and Gilderoy Lockhart predominate, clinical research is inevitably doomed.

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What really matters?

EDITOR—I share the hopes and concerns that Stewart expresses in his article.¹ I will illustrate a wider context that medicine as a profession needs to consider in promoting effective medical research.

- Should research methods be a core subject of undergraduate training rather than an uneasy bolt-on?
- Might consultants often now functioning with diminishing support be less interested in research spanning 20 years than surviving to retirement in 10?
- Is research funding being spent wisely and placed with clinicians who have the expertise to deploy it effectively and who do not have the ulterior motive of simply escaping the sometimes unattractive clinical arena?
- Are researchers with a clinical commitment best placed to regulate the gradient osmosing funding from the research to the clinical domain? A clinical responsibility makes it difficult to be more than semipermeable.

I support Stewart's desire to return research findings to the patient, with the aim of improving outcome. Isn't this why we are here as a profession?

But let us take a trip forward a little. As a grumpy old man I often air my concerns

about falling standards. I am able to illustrate my concerns by wondering about the level of care that will be afforded me in my dotage.

How relevant to me then will be the research that has kept me lucid and so painfully aware of the lack of empathy offered to me by the carer who fails to smile warmly and bolster my dignity as he or she wipes my arse? Time may tell.

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Public health sciences need strengthening in developing countries

EDITOR—Bhutta's editorial highlights well the poor state of health systems and public health, and subsequent poor population health, in developing countries.¹ The opportunity offered by *BMJ's* campaign to revive academic medicine,² or more inclusively academic health care, needs to be captured, debated, and built on, particularly in developing countries, where this problem is greatest.

The key to taking this debate further would be to bring to public health sciences in developing countries the rigour and respect that is necessary to improve health systems and the health of populations. In India, for example, substantial talent is increasingly being tapped internationally, and systems have not been developed there to optimally use this talent for long term societal development. Thus India has brilliant basic scientists and clinicians but a poorly developed public health research and teaching system that lacks originality and substance and prevents fundamental improvements in population health. Currently, no coherent agenda exists for original and relevant research in the core disciplines of public health or in major visible public health problems.³⁻⁵ Without substantial original research, teaching in public health is not surprisingly bland and theoretical.

Without a cultural shift the development of research and teaching in public health sciences in India and many other developing countries will continue to fall far short of the requirement to improve population health. However, this shift will not come through hope alone or romanticising such ideas. The improvement in public health sciences will come about only if these sciences and their application earn respect through providing the substance that they are capable of.

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Encourage overseas based researchers to return to improve academic medicine in the developing world

EDITOR—Although the obstacles to global health posed by inadequate health research capacity, particularly in developing countries, are well documented,¹⁻⁴ bureaucratic barriers preventing overseas based health academics in developed countries willing to return are hardly addressed.

Firstly, recognition of academic qualifications is an issue. Current practices of most medical councils in developing countries apparently indicate that recognition of academic qualifications operates primarily on the principle of reciprocity. Consequently, some "innocent" overseas medical academic graduates from reputable universities invariably get caught in the ideological crossfire relating to reciprocal (non-) recognition of certificates.

Advocates of a revival of academic medicine in the developing world may mediate to neutralise this obstacle by providing an international grading system that ranks medical research centres and medical and public health schools at universities by an aggregate of measures, analogous to the US stockmarket "Standard and Poor's 500" list. Such a measure would provide a more objective and readily accessible international comparison of medical and health qualifications.

Secondly, local health academics seem unwilling to accommodate their overseas counterparts in developing country universities and health research centres. Although the official reason for rejecting applications from suitable overseas health academics is non-availability of funds, local academics may be circumspect about employing overseas applicants who might eventually supplant them professionally and administratively in the departments they currently head.

Helping universities and international health agencies to create vacancies for academic medicine, funding their advertisements in international journals, and facilitating a more transparent system of processing applications for such advertised positions should minimise this obstacle.

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Teams are crucial for future clinical research

EDITOR—Bell has done a great service in raising the urgency with which a strategic rethink of clinical research is needed.¹ It is three years since very similar recommendations were published by Peckham's Foresight panel, including, for example, a national strategy for clinical trials,² but rather than showing progress, during these years health science for practice has deteriorated further.

Efforts by the NHS, research councils, and health charities to plan together strategically have been undermined by a rogue stakeholder, the Higher Education Funding Council for England, which has been determined to do its own thing. As the council puts it, in its latest review, there is no similar mechanism for encouraging collaboration between higher education institutions and research organisations outside the health education sector—that is, in health care.³ Whereas the NHS makes a massive contribution to teaching and learning for higher education, the Higher Education Funding Council for England simply will not consider the diverse development needs of teaching hospitals and primary care trusts.

If homegrown research is to thrive, we cannot "afford to look back nostalgically" to past roles.⁴ Published clinical research is overwhelmingly produced by teams, and clinical teams include nurses and allied health professionals who should contribute as partners (not handmaidens) to innovative research. Even more crucially, for the future of clinical research, patients should influence and be seen to influence research funding and the uptake of research findings. Good preliminary work has recently been shown here by Involve (www.invo.org.uk).

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Research needs researching

EDITOR—We agree with Bell that advocating funding for clinical research needs to become evidence based.¹

With colleagues we recently explored the relations between basic research, clinical research, and clinical practice.^{2,3} In the first report we tried to replicate Comroe and Dripps's seminal study as reported in *Science* in 1976,⁴ tracing back from current clinical practice to the knowledge behind the advance.² Comroe and Dripps concluded that 40% of all research articles judged to be essential for later clinical advance were not clinically oriented at the time of the study and that 62% of key articles reported basic research. Their paper has often been used (albeit at times implicitly) in support of the increased funding for basic biomedical research in the United Kingdom and elsewhere over the past two decades.

We found we were unable to repeat the study method, thus confirming earlier doubts about it⁵ and raising questions about its reliability, validity, and applicability, at least for current circumstances.

In recognising the difficulties in tracing backwards from clinical practice, we undertook a preliminary study that tries to work forwards by tracing the impact of a range of research conducted 20 years ago.³ In this study we explored several methods that could help to identify the benefits from previous research and thus potentially be used to develop an evidence base to support funding decisions for research and development.

Our work has only begun to scratch the surface of this important but complex issue. Nevertheless, we think that research funding agencies should accept the need for a firm evidence basis for their policies and therefore support researching research, as Smith put it in 1987.⁵

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Shorter training and shortage of doctors detrimentally affect research

EDITOR—As a specialist registrar who successfully applied for research funding, I would add the shorter training and general shortage of doctors in the NHS to Bell's list of factors detrimentally affecting research.¹

The time limited training as a specialist registrar meant that I had only a limited window to write up and submit applications. Yet overstretched departments were often reluctant to grant study time to work up those applications. From their perspective there was little to show for the time granted—that is, no audits and no papers. Little central support was given at the deanery, occupied with the task of shoring up clinical training against competing demands.

These remain systemic problems affecting a little publicised bottleneck into research: at the application and pre-entry point. Judging by how well the NHS is handling its current staffing problems, I seriously doubt these problems can be overcome in the near future. I suspect clinical research will remain moribund for a while yet.

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Non-clinician scientists are the missing clinical links

EDITOR—An Academy of Medical Sciences report and recent articles have outlined a decline in capacity to undertake clinical research and identified the need to reconsider funding.¹⁻³ This has occurred despite a reorganisation of NHS research and development that aimed to create an NHS culture valuing research. The highlighted changes in university appointments, which have encouraged clinical academics to engage in more basic research, have perhaps also been accompanied by neglect of the role of other NHS staff willing and critically able to support research activity.

Surprisingly, non-clinician scientists in medical research were not mentioned at all, although they were the focus of an earlier academy report.⁴ That report urged "an imaginative approach ... to questions of funding long-term posts for contract research workers" and identified other problems experienced by non-clinically qualified research staff in a clinical environment. These included exclusion, now further apparent from the academy's most recent report.³ These researchers contribute significantly to the clinical research effort and deserve greater consideration in the current debate.

Pressures on both clinicians and non-clinician scientists to engage in more funda-

mental research have been accompanied by deterioration in the infrastructure necessary for effective clinical research. New clinical research facilities address this to a degree, but to a large extent they are not where the patients are and they lack the infrastructure that might be provided in well resourced and organised teaching hospitals, with access to a range of good laboratory and investigational resources.

Can we hope that corrective measures will avoid the attractions of fashion and bandwagons in favour of a more integrated approach that will engage all areas of activity and all parties?

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MRC aims to give NHS evidence from randomised clinical trials

EDITOR—The public in general and NHS patients in particular ought to benefit from advances in knowledge about prevention, treatment, rehabilitation, and care. Important progress has been made in disseminating relevant information through the National Electronic Library for Health and the National Institute for Clinical Excellence (NICE), but more investment in randomised clinical trials is needed to test the validity of hypotheses and findings derived from basic research.

The Medical Research Council remains the largest public funder of clinical trials and has steadily increased its investment in randomised clinical trials (figure). But the total numbers of non-commercial randomised trials in the United Kingdom has declined worryingly, including those supported by the NHS research and development programme.¹ Given the needs of the NHS, the overall public support for randomised clinical trials remains modest com-

pared with that for other areas of biomedical science. Substantial investment is needed in infrastructure, staff, and other resources if the number of trials is to keep up with the need.

Recent reports by the Academy of Medical Sciences and the Bioscience and Innovation Growth Team, for the Department of Trade and Industry, recommended initiatives to ensure that research to assess the effects of new treatments in practice is conducted as efficiently as possible after discovery in the laboratory.^{2,3}

The MRC recently set out its future strategy for supporting clinical trials and intends to make clinical research a high priority in its proposals for the spending review 2004.⁴ It stands ready to play a central role in a strengthened commitment to clinical trials.

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Summary of responses

EDITOR—Since we launched our international campaign to promote and revitalise academic medicine, over 60 rapid responses to the cluster of articles published on 1 November 2003¹⁻⁵ have been received. Many were sent from England, several from medical students and trainees, and a notable number came from outside the United Kingdom—reminding us that concern about the fate of academic medicine is very much a “universally relevant” issue. Nearly everyone agreed that academic medicine is suffering, and all offered opinions as to why.

Most criticised the lack of adequate government funding of universities and research centres, which was said to foster a dependency on industry. If academic medicine is not valued publicly, argued a general practitioner from Australia, the pursuit of knowledge and truth for its own sake will not be respected. Academic clinicians were said to be poorly remunerated compared with their non-academic peers unless they partner with industry. While many decried the “tainting” of medical research and education by “the profit motive of industry,” at least one commentator felt that a free market within academic medicine should be allowed to flourish.

Several commentators drew the distinction between clinician academics and non-academics; we were told not to forget about doctors in the NHS, for example, who do some research or teaching in addition to their clinical duties. Doctors in most countries seem to be struggling to maintain

a commitment to research and teaching as well as meeting the ever increasing demands of service delivery. At least two responders emphasised the inextricable link between academic medicine and a functioning healthcare system. They said that without a revival of academic medicine our health systems cannot function as needed.

The situation for academic medics may be more dire for those from traditionally marginalised groups (including women) and working in developing countries. Several respondents appealed for our campaign to be as inclusive and global as possible.

A retired clinical scientist points out that the same issues vexing academic medicine today were identified a quarter of a century ago, so in terms of a revitalisation strategy, “more of the same” will clearly not do.

To continue the dialogue about how best to revitalise academic medicine, we are publishing a theme issue in October 2004. Please send us your submissions by 30 April 2004.

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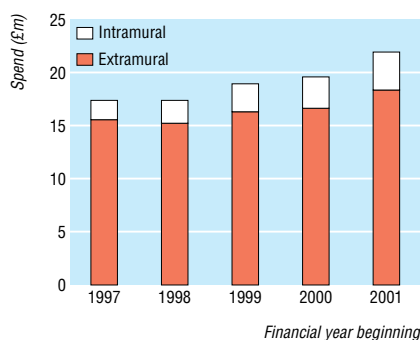
United Kingdom research governance strategy

Reforming clinical research and development in England

EDITOR—The National Cancer Research Institute does not set the research strategies of its partners, as Kerrison et al say.¹ They also do not grasp its mission, which is to double the number of patients entering cancer clinical trials by 2005 (a target it has already surpassed).

They suggest that the formal research networks in cancer were set up as a result of the outcomes of the Pharmaceutical Industry Competitiveness Taskforce. The institute was created as a result of the high political profile after the publication of the EURO-CARE II data and the subsequent partnership with major governmental and non-governmental cancer research funders. The taskforce's conclusions post-date establishment of the institute.

The suggestion that “the private sector will have an important role in identifying and implementing research priorities in other disease groups” seems misleading. The private sector, while bringing substantial and welcome funding to cancer research, does not set the overall NHS research priority. Industry by its very nature is partisan and concerned only with commercially viable areas. Government, charities, and the NHS have wider concerns for all cancer research.



Annual expenditure of the Medical Research Council on randomised controlled trials (excluding cancer trials in long term follow up)

The statement that these partnerships will provide “much needed strategic direction” and the apparent concern that industry will somehow lead the United Kingdom down the US path also needs careful scrutiny.

The jury remains out on whether changes to cancer networks will improve strategic direction. Indeed, current organisational changes may lead to the opposite. With fiscal control in primary care trusts and with the need for strategic health authorities to hit substantial service targets, research and development could become a low priority. Furthermore, the new cancer research networks are accountable for their spending, and public funding is not being siphoned off into commercial research. Industry does, however, have legitimate concerns about the cost of conducting clinical trials in the United Kingdom that need to be addressed.

Kerrison et al state that, “Research governance means a change of emphasis from professional codes of conduct to legal rules.” This implies that either new laws will be enacted to make performance of the research governance framework a legal duty or the framework will form a contract between, say, a charity and a university—neither of which is correct.

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Competing interest: The views expressed in this letter are RS’s own.

1 Kerrison S, McNally N, Pollock AM. United Kingdom research governance strategy. *BMJ* 2003;327:553-6. (6 September.)

Authors’ reply

EDITOR—Sullivan is correct that partnerships with industry such as the new networks will need careful scrutiny. Subsequent to the influential Baker report in 1999,¹ every government report on research and development and higher education has emphasised the role of industry in NHS research, the most recent being the Bioscience Innovation and Growth Team’s report.²

New networks and other bodies have been created to “form a platform to bring in other players from industry and the science base on a collaborative basis to maximise opportunities for innovation and research.”³ For example, the National Cancer Research Institute, established to take a strategic oversight of cancer research in the United Kingdom, also has industry represented on its board. The overall policy goals of the institute—namely, the drive to increase subject recruitment to clinical trials and to translate new products more quickly to trials—are consistent across the Pharmaceutical Industry Competitiveness Taskforce, National Cancer Research Network, and National Translational Cancer Research Network. Others have noted that these increased collaborative relationships with industry will alter the strategic direction of research.^{4,5} Like Sullivan, we too have concerns over the current organisational change in the NHS.

In our second paper we show how the Department of Health’s draft research

governance strategy is a response to increasing legislation, such as the Data Protection Act, Human Rights Act, Human Tissue Bill, and EU Clinical Trials Directive. Studies falling under these regulations must be conducted according to the rules laid down by the regulator, not to the investigators’ own rules. By April 2004 our trust will have to have in place framework agreements with over 200 organisations with which it has collaborative research relationships.

Irrespective of whether it is the government’s intent to formalise research, implementation of the research governance framework will have the effect of transferring the control of research from individual clinical researchers to institutions.

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Author’s reply to letters on death in heat waves

EDITOR—Although air movement alone will not always prevent heat stroke in air close to body temperature if the air is saturated¹ or if sweating is impaired—for example, by drugs with anticholinergic actions²—air movement is an essential component in preventing heat stroke. Recent advice specifically related to heat stress in Britain over the next decade included not only a fan but moistening of clothing, open windows, light clothing, and avoidance of physical exertion.³

Moistening clothing substitutes for sweat. In moving air this allows evaporative cooling even of people with impaired sweating and in air warmer than body core temperature. In British (and most other) heat waves outdoor air is well short of saturation. Relative humidity was 22% near Faversham when the record temperature of 38.5 °C was recorded there last summer.

Air conditioning can virtually eliminate heat related mortality even in a subtropical climate.⁴ However, its capital cost and energy consumption are high, and it is not widely installed in countries such as Britain, where high temperatures are infrequent. Once heat stress does occur, cool baths are effective, but repeated immersion is less likely to be acceptable to elderly and ill people than moistening

exposed skin and air movement from an open window. In case of doubt a simple test will show whether this or any other measure is helping: if it makes people feel cooler and more comfortable, it almost certainly is.

The design and management of buildings for hot weather is a different, but important, issue. As Pauleau points out,⁵ buildings can warm more slowly than outdoor air during the day, and closing windows for part of the day will then help. However, solar radiation and heat production by people and cooking can make buildings warm faster than outside air. Closed windows then accelerate the warming, as well as letting humidity rise.

Sunlight entering through windows, high occupancy, and low thermal mass and insulation are major factors promoting rapid warming. A lounge with picture windows and full of elderly people on a sunny day is a particular risk, even if the people are shaded from direct sunlight. Incidentally, outdoor slatted shutters are more effective than indoor curtains against solar heating. The shutters prevent radiation entering the building to produce greenhouse warming, while indoor curtains do not.

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Review of *Hear the Silence*

Confusion has resulted from conflating two questions into one

EDITOR—Much of the confusion about measles, mumps, and rubella vaccination and autism is caused by the conflation of two questions into one. This is exemplified in the responses from parents with affected children to the reviews of *Hear the Silence*¹⁻⁴ and a little in the response from the editor of the *Lancet*.⁵

As things stand, anyone who has doubts on giving their child measles, mumps, and rubella (MMR) vaccine should have the same doubts on giving their child measles vaccine alone, as a single vaccine. Parents who fear MMR are generally willing to give single measles vaccine because they know that any risk of that vaccine is outweighed by the risk of measles, a condition that makes children much sicker than modern parents find tolerable even when it is uncomplicated, and that kills or maims them when it is complicated.

Presumably the risk parents tolerate on behalf of their child includes the tenuous, speculative risk of autism after the single

vaccine. If they are willing to give single measles vaccine then they can only be unwilling to give MMR if they believe that there is some evidence suggesting a difference in late side effects between measles vaccine in MMR and measles vaccine alone, and there is absolutely no such evidence.

This is why almost no public health and child health doctors view the single vaccines alternative as the middle ground, the compromise area. A programme attempting six separate single virus injections per child (on top of all the other immunisations) could only harm attempts at population herd immunity, as well as causing pain and increasing fear in individual children.

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Public needs to know why adverse reactions to vaccines occur

EDITOR—The one size fits all approach to vaccination causes more needless deaths than a mere film, both from serious reactions to the vaccines and by breeding distrust of vaccines in general.¹ It will not achieve its goal (herd immunity and the prevention of deaths from disease) as the public grows ever more sceptical and self informed.

The message from previous public health debates—for example, bovine spongiform encephalopathy—is clear: acknowledge problems, research them, develop strategies to combat them, and the public will trust you. Ignore the personal testimonies, vaccinate all regardless, and vilify those who rock the boat, and you will breed yet more distrust.

Money must be put into researching why adverse reactions to various vaccines occur in a few cases. That is the way to combat public fear and falling uptake.

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*Richard Horton, editor of the *Lancet*, responded to the reviews of *Hear the Silence*, and his response at bmj.bmjournals.com/cgi/eletters/327/7428/1411-a#43238 forms one of the main threads of the debate. The 40 other responses posted by the time we went to press on 18 December 2003 are also readily accessible at bmj.bmjournals.com/cgi/content/full/327/7428/1411-a#responses and bmj.bmjournals.com/cgi/content/full/327/7428/1411#responses

Further nurses' notes on ER

EDITOR—Lenzer's article describes efforts to persuade *ER* to treat nursing more accurately and fairly.¹ Warner Brothers says its show goes to great lengths to portray medical situations accurately. To the extent *ER* is accurate about technical medical elements such as diagnosis and treatment, it leads viewers to believe that other healthcare elements on the show are equally true to life—including the portrayal of nursing. This is not accurate and does a grave disservice to an autonomous profession in crisis.

Awful working conditions are the most obvious current factor in the shortage. The economic decisions behind such working conditions reflect, at least in part, a misunderstanding of nursing heavily influenced by the mass media. If the persistent handmaiden image deters today's more empowered women, consider how it continues to hamper the recruitment of men. Even today, only about 6% of North American nurses are men.

We at the Center for Nursing Advocacy have never argued that *ER* is the sole cause of the shortage, but we believe that popular media products like it contribute to the shortage by influencing how people view health care. A recent Kaiser Family Foundation study concluded that it was worth the effort to make entertainment programmes such as *ER* as accurate as possible because of their potential influence on the public.² On the other hand, the authors emphasised that fictional depictions could lead to viewers obtaining inaccurate information or taking away critical misperceptions about health topics.

No nurses are involved in the preparation of *ER* scripts—a point not disputed by those responsible for the show. It means little therefore if real nurses are on the set showing the actors who play doctors how to defibrillate or if the show's technical directors (all doctors) respect nurses in some general sense, so long as the show that employs them misrepresents nursing to over 20 million households each week.

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Saddam Hussein's medical examination should not have been broadcast

Images were designed to humiliate

EDITOR—The US administration in Iraq was wrong to broadcast images of Saddam Hussein undergoing a medical examination. That there was no other film footage to show to the world's media that Saddam Hussein had been arrested is inconceivable. The only

conclusion therefore is that these images were deliberately selected to humiliate.

Article 3c of the Geneva Convention prohibits outrages on personal dignity, including humiliating and degrading treatment, and article 13 states that prisoners of war must be protected against insults and public curiosity.

This recent episode must be seen in the context of the ongoing inhumane treatment of prisoners in Guantánamo Bay and the killing last month of 15 children by American forces in Afghanistan. It shows to the world that military and economic power differentiates states and world leaders rather than differences in their respect for human rights.

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British television should not have followed suit

EDITOR—I agree with Roberts (letter above) that it was wrong of the US administration in Iraq to broadcast images of Saddam Hussein undergoing a medical examination.

It was also wrong of British television companies to broadcast those images, and I emailed the BBC immediately to register my complaint. British television companies had the choice whether to broadcast these images. I hope that the medical profession in the United Kingdom will express its strong disapproval of their action.

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Doctors are not released from duty of care because of whom their patient is

EDITOR—I agree completely with Roberts (letter above).

Two wrongs don't make a right, and just because Saddam Hussein has committed many evil acts does not release doctors from the duty of care: if we were allowed moral judgments we might have many fewer patients.

The doctors who examined Saddam Hussein should have insisted on privacy, dignity, and confidentiality for their patient.

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