Ruminations of a geriatric Emeritus Regius Professor of Medicine

David Weatherall

Sir David Weatherall
MD FRCP FRS,
Emeritus Regius Professor of Medicine,
Weatherall Institute of Molecular Medicine,
University of Oxford

Clin Med 2009;9:104–7

ABSTRACT – The potential for the holder of a senior academic post to influence the medical world is usually enshrined in their job description. Even though Oxford University failed to provide one, this account of 25 years of undirected activity suggests that such posts can influence events, albeit to a limited extent and not always in the expected direction.

KEY WORDS: bioethics, clinical science, medical education

When I was requested to describe the potential of the positions that I had held at the University of Oxford to influence the medical world, my first reaction was to consult my valued friend, *The Chambers Dictionary*. Its definition of 'influence' provided plenty of scope, ranging from 'exertions of friends who have useful connections' to 'the occult power or virtue supposed to flow from stars and planets'. However, I decided not to endanger the reputation of *Clinical Medicine* and selected a less controversial definition, 'the power of producing an effect, especially unobtrusively'.

The potential for influencing medicine through the clinical, educational and research activities expected of the holder of a senior post in a medical school is self-evident. However, the effect of such influence, and the extent to which it depends on the particular post and school from which it emanates, is much more difficult to assess with any semblance of objectivity.

Clinical practice and education

By far the greatest potential range of influence of a professor of medicine is the result of training generations of medical students and young doctors. The objectives of medical education, while easily stated by anybody who has been a patient, are very difficult to achieve: any success is largely dependent on the environment in which students work and the role models to which they are exposed.[1] A professor must ensure that their department sets high clinical standards and that, by their day-to-day engagement in clinical practice and teaching, they become and remain an integral part of the clinical scene. Many believe that, given the added pressures of organising first-class research and heavy administrative duties, no one person can achieve these ends. But if academic departments are to promote their major role as links between sick people, the research laboratory and the community, leadership of this kind is absolutely essential.

When I arrived at Oxford in the mid-1970s the pattern of medical education was fairly traditional, with a particularly strong base in the preclinical sciences. Having worked at Johns Hopkins Hospital (Baltimore, MD, USA) as a young doctor, and having friends who were involved in the fundamental changes in medical education emanating from McMaster University and Harvard Medical School, and later having to comply with the spirit of *Tomorrow's doctors*, there was constant pressure for change.[2] My students have always told me that the way in which they were taught was far less important than the enthusiasm and dedication of their teachers. And I have always believed that, after a good grounding in the basic medical sciences, they should go through an intense period of training in how to communicate with, and listen to, sick people and achieve complete competence in physical examination. Hence, rather than trying to set new trends, the team focused on maintaining strong traditions of clinical teaching, while modifying the programme in a modest way based on what seemed more sensible aspects of the endless reforms. I have discussed the changing role of science in medical education elsewhere, a subject that was constantly in our minds.[3] The rigidity of the examination system was also modified to some extent, a topic that is also described elsewhere.[4] Since the paper to which I refer almost had me ejected from the Royal College of Physicians I will not dwell on it here. Suffice to say, my polemic on our national obsession with endless formalised examinations and, in particular, the limited value of our ritualistic clinical examinations appears to have had no influence whatsoever!

Reflecting on this period, one of the greatest challenges was to try to protect unusually gifted young people from the numbing uniformity that some of the reforms in medical education were demanding. Because they often follow unusual careers, a medical school must protect and mentor its brightest and best as potential leaders in whatever fields of medi-

Fig 1. The Weatherall Institute of Molecular Medicine, University of Oxford.

cine they wish to follow. But the message that training young people for a profession as wonderfully diverse as medicine requires equal diversity in the activities and organisation of the medical schools who train them, never seemed to be fully understood by those who were overseeing these changes.

While it is gratifying to see how many of these young people are now holding senior posts in clinical practice or medical research, or performing equally well in the community, such was the quality of our students that it is impossible to determine whether their successes are due to anything that we did for them. In the absence of any way of measuring the protean qualities required of a doctor we can only hope that we did them no harm along the way.

Research

In Oxford in the early 1970s, research in clinical epidemiology, public health and some aspects of patient-based studies was extremely strong and it was vital that this work was encouraged and supported. However, since the early 1960s it had become apparent that remarkable advances in molecular and cell biology would have an increasing role to play in medical research in the future. Yet at the University of Oxford, as in most British universities, there was very little interplay between the clinical and preclinical science departments and no facilities for more basic work in the clinical laboratories; the modest progress of my own team in this new field was only made possible by the generosity of the Medical Research Council (MRC) in establishing the Molecular Haematology Unit in 1979. But there was nowhere to send young doctors for training in these evolving fields of biology and, similarly, nowhere for young non-medical scientists who wished to direct their skills at medical research using this new technology.

In the mid-1980s approaches were made to the MRC and other donors to fund the development of a centre in which young medical and non-medical scientists could work together and be trained in the application of the tools of molecular and cell biology for medical research. The senior staff were to retain a base in their clinical or science departments as a further attempt to unify the clinical and basic sciences. There was to be no particular theme, and anyone with a sensible clinical question which required this new technology was welcome. The Institute of Molecular Medicine (Fig 1) opened in 1989 and within 10 years housed over 400 young people working in areas such as molecular haematology, human genetics, immunology, molecular parasitology, and cancer. Later, similar institutes began to appear and, in Oxford, scientists from the institute played leading roles in establishing complementary facilities, including the Wellcome Trust Centre for Human Genetics, the Centre for Clinical Vaccinology and Tropical Medicine and others. Although visitors to the institute always seem to be most interested in its large tea room, in which its scientists meet daily to discuss their work and which has been widely copied, it does seem to have fulfilled its original objectives.

There seems little doubt therefore that, given the right moment and a particular need, it is possible to influence the evolution of research, albeit modestly, by new initiatives and the quality of work in individual university departments. Developments of this kind can act as a catalyst, not only within the same university, but, if they work, nationally and internationally.

Did this experience offer any lessons about the best approach to train those who wish to pursue careers as clinical scientists? Undoubtedly our best results were obtained when young people spent a year or two broadening their clinical horizons after qualification in medicine, after which they then spent several years of intensive training in whatever branch of research interested

them, in many cases leading to a PhD or related degree. On both sides of the Atlantic there has been growing enthusiasm to combine medical with research training in the form of MD/PhD programmes. However, as well as diluting both aspects of the training, this approach exposes the students to research before they have had a chance to have a serious look at the clinical world and decide in which direction their research would best be directed; a complete focus on clinical training followed by an intensive period of research training seems to achieve the best balance for a potential clinical research worker. Recently I have had the enormous pleasure of being a member of the annual external review team for Harvard Medical School and my breakfast conversations with their extremely talented MD/PhD students have not changed my mind on this important issue.

Global health

Having become fascinated with medicine in the developing countries as a national serviceman, it was evident in the 1970s that British medical schools had very limited activities in this increasingly important field. On arrival in Oxford we established a 'tropical day', at which every clinical student was expected to attend a meeting where an imported expert in tropical medicine talked to them and provided laboratory demonstrations of revolting worms, snakes and other delicacies from warmer climes. This may have helped to persuade more of them to spend their elective periods in the developing countries and, in some cases, to pursue careers in this field.

In 1978, after discussions with the then Director of the Wellcome Trust, Peter Williams, on how we might evolve long-term partnerships between Oxford and a developing country for research and capacity building, we flew to Bangkok and established the Oxford-Mahidol-Wellcome Programme. At its instigation I suspected it might last a year if we were lucky, but we have already celebrated its 25th anniversary and it is still going strong. Following its success the trust supported the development of similar long-term partnerships in Kenya and Vietnam. The Oxford Tropical Network now employs around 400 workers, many of whom have connections with global health programmes throughout the world, and are international leaders in tropical medicine, and regular advisors to the World Health Organization (WHO) and related bodies. This venture has made a genuine difference to the control and management of major tropical diseases, malaria for example, and has helped to build and improve services for healthcare in many countries.

A programme that is currently being developed is a natural extension of these partnerships and is based on many years experience of collaborating with countries in Asia to help them to develop expertise in the control and management of thalassaemia, a disease that kills thousands of children in tropical countries. We are now trying to evolve South/South partnerships in Asia, based on the concept of twinning countries in which there is genuine expertise in this field with those in which no such skills exist – Thailand with Cambodia, and India with Bangladesh for example. In short, we are organising a three-year pilot programme to see whether the development of an Asian Thalassaemia Network of this kind is a cost-effective way of improving the lot of children with these conditions in countries where no services exist.

Bioethics

Any university department which pursues modern biological research cannot ignore the increasingly complex ethical issues raised by the rapid advances in this field. In 1985, concerned with reports of a premature attempt at gene therapy by an American scientist, the MRC were approached and a small working party was established to develop related guidelines, which were later accepted by research councils throughout Europe. This led to the establishment of the Clothier Committee and the development of sound guidelines for research in this field in the UK. Given the extraordinary pace of development of the medical sciences it also became clear that the UK would require a bioethics organisation that was completely independent of government, the medical establishment, and other outside influences. After informal discussions with like-minded colleagues, and with the invaluable help of Lord Flowers and the Nuffield Foundation, the Nuffield Council for Bioethics was established in 1991. This has been extremely successful and is much envied by many overseas countries. Even small influences in developments of this kind, evolving naturally from specific research interests within academic departments, may be of value.

Other outlets for influence

These few modest examples of potential influence that come simply from doing one's job as an academic clinician exclude other opportunities that might come one's way which, arguably, have greater scope for changing the world of medicine, high office in the medical establishment or government for example. I have always rationalised my lack of desire for posts of this type by the belief that I could make more useful contributions by focusing on my Oxford and global activities and by maintaining my independence. Close colleagues would undoubtedly add political ineptness and an unfortunate habit of sleeping throughout committee meetings.

Some chores with the potential for influencing events cannot be avoided however, trusteeships or membership of granting bodies, chairmanship (a euphemism for writing extensive reports) of committees of enquiry on a variety of topics for government or bodies like the Royal Society and WHO. How much influence all this has is very hard to assess; judging by some of the reports I have written recently, not much.

Is influence modified by a particular post in a particular university?

Although medicine has been taught at the University of Oxford since the 14th century, and its Regius Professorship of Medicine was founded in 1546, it was only able to provide a complete training for doctors after the second world war following the formation of its clinical departments, through the generosity of Lord

Nuffield, and the establishment of its Nuffield Chairs.[5] Like most ancient institutions, the quality of its work and hence its influence has waxed and waned over the centuries; for long periods its Regius Chair of Medicine appears to have been held by ineffective and alcoholic clerics. But some of the university's great names, for example Osler, Garrod, Krebs, Florey and Chain, ensured its place in the history of the medical and biological sciences. Whether the extraordinarily talented staff and students, not to mention the particularly high quality of the NHS and related staff, that greeted me when I came to Oxford in 1974, had come together in one place as a result of Oxford's illustrious history, or by the attractions of the social life and wine cellars of its ancient colleges, is not clear. But whatever the reason, an aggregation of professionals of this ability were bound to influence medicine across a wide variety of fields. All that a timorous newcomer could do was to try to ensure that any gaps were identified where such influence might be extended. In truth, the margin between long-ingrained wisdom and inward-looking self-satisfaction can be extremely small, particularly in ancient institutions. Much of any success or influence that medicine in Oxford has achieved in the recent past in no small part reflects a policy of continuous revitalisation by external appointments to its science and medical departments.

There are, of course, other features of the Oxford scene that might tend to potentiate its influence. Long before it became unnecessary due to the appearance of Inspector Morse, Oxford had ensured its national and international recognition by prefixing its products, accent, and institutions by the name 'Oxford'. *The Oxford book of Oxford* is a typical example of such immodesty. As an editor of the first of the series of textbooks treated in this way, *The Oxford textbook of medicine*, I helped to perpetuate this custom. Within successive days immediately after its publication I received phone calls from agitated doctors complaining about the absence of accounts of how to treat intractable hiccups, pigbel and priapism. Clearly at least one 'Oxford' product was already having a very limited influence on the major health problems of the world.

Postscript

While there may be a tendency for the work of academic clinicians in ancient and therefore better known universities to have more influence, the effect is probably small. Anyone who pursues the extraordinarily rewarding activities of clinical practice, teaching and research must influence the medical world, albeit in a small way, whether by intent or accident.

While it is not essential that every medical school attempts to evolve a particularly strong science and research base, it is vital that at least a few develop in this direction. A few years ago and rather clumsily, I tried to summarise the problems of combining the worlds of clinical practice and basic science:

> *The principal problem for those who educate our doctors of the future is how, on the one hand, to encourage a life-long attitude of critical, scientific thinking to the management of illness and, on the other, to recognise that moment when the scientific approach, because of ignorance, has reached its limits and must be replaced by sympathetic empiricism. Because of the dichotomy between the self-confidence required at the bedside and the self-critical uncertainty essential in the research laboratory, it may always be difficult to achieve this balance. Can one person ever combine the two qualities? Possibly not, but this is the goal to which medicine must aspire.*[1]

Considering the extraordinary complexities of living organisms in general, and sick people in particular, that have been unearthed in the short time since this was written, the problems of combining clinical practice with research seem to be even greater today. But unless at least some institutions attempt to influence the future development of medicine by trying to train and nurture such people, it will be extremely difficult to ensure that the extraordinary potentials of the current biological sciences become available for the better treatment of our patients.

Acknowledgments

Any influence that Oxford has had on the practice of medicine over recent years is due entirely to the excellence of my colleagues and generations of students and graduates who are far too numerous to name. I thank Jeanne Packer for her help in preparing this essay.

References

1 Weatherall DJ. *Science and the quiet art.* Oxford: Oxford University Press and New York: W.W. Norton, 1995.
2 General Medical Council. *Tomorrow's doctors: recommendations on undergraduate medical education.* London: GMC, 1993.
3 Weatherall DJ. Science in the undergraduate curriculum during the 20th century. *Med Educ* 2006;40:195–201.
4 Weatherall DJ. Examining the undergraduate examination. *Lancet* 1991;338:37–9.
5 Dewhust K. *Oxford medicine.* Oxford: Sandford Publications, 1970,