A nephrologist on sabbatical leave in the USA

Report of a Medicine-Gilliland Travelling Fellowship

August 1993, and a late summer heatwave grips New England as I stagger off the transatlantic flight into Boston airport—temperatures in the high 90s and humidity to match. Armed with a Medicine-Gilliland Travelling Fellowship and generous sponsorship from pharmaceutical companies, replete with enough paperwork to satisfy even the US immigration authorities that I plan neither to foment insurrection nor outstay my welcome, I am all set for the culture shock of medicine, American style. The next five months will take me to Boston and beyond with visits to Providence, Rhode Island, Memphis, Birmingham and Seattle before I return home. They will also take me from the tropical humidity of August through a staggering beauty, crisp and mild fall to a tundral winter with unremitting subzero temperatures and feet of snow piled on the side of every highway from mid-December until I depart in early February.

Background

Why America? I had somehow become a consultant nephrologist without the BTA ('been to America') tag on my CV, so had never had the opportunity to see at first hand American clinical practice or the great machine of American biomedical research. As well as the sabbatical pleasures of time to think and read, to observe and talk with like minds about clinical nephrology, I was also keen to make a return to the laboratory bench to get some direct experience of molecular biology.

Boston—laboratory work

After a few days in the August heatwave, finding somewhere to live, buying a car and struggling to understand the foreign language which is colloquial American, I set to in the laboratory. I worked on an established project looking at proto-oncogene expression in cultured glomerular epithelial cells. After the best part of 10 years telling others what to do in the lab rather than doing it myself, the return to the fray was predictably stretching, but I gradually became familiar with a range of molecular techniques and was reminded of the divide between understanding a method on paper and mastering its nuances in practice. I rapidly learnt also that DNA can be a fickle friend and that molecular biology, like all scientific techniques, is a dismaying mixture of logic on the one hand and intuition based on experience on the other. When confronted with a problem of method and seeking help from a scientist alongside me, I could not predict whether the answer might be "Do it this way instead for the following logical reasons based on our knowledge of the biology of DNA" or "Do it this way because it always seems to work and I don't know why". Fortunately those same scientists were unfailingly patient and helpful. If they wondered, as I presumed they must, what on earth I was doing struggling to return to lab work, they were far too courteous to say so.

The other great virtue of a return to the bench in a strange place is the return to the 'bottom of the pile'. After being, at home, the person at the apex of the clinical and research groups, whose decisions are followed, and carrying an inherent status as a consultant, it is suitably humbling to be the ignorant newcomer who needs to ask and ask again to learn how things are done.

One's own chosen bench project is, of course, a small part of the sabbatical experience. The strength of the group I was visiting was its broad base in renal pathophysiology. As well as the glomerular laboratory, other members of the faculty working in the same labs had established programmes in ischaemic tubular cell injury, in animal models of autoimmunity and in epithelial receptor function. The daily chatter, the understanding of their experimental strategy, the observation of apparently complex techniques which are actually quite simple (and vice versa) are all part of the intellectual stimulus of a sabbatical.

The choice of seminars and visiting lectures was also wide-ranging. I elected to take a seminar series in immunology, with the strategy that if I at least understood the title it should be worth attending! This was very stretching and broadly successful, although more than once I was left struggling to grasp an introductory slide assumed by the speaker to represent common public knowledge, while speaker and remainder of audience disappeared like fox and hounds down an arcane burrow to which I could not find the entrance.
The research environment in New England

The intensity of intellectual scientific activity in the Boston area is remarkable—fourteen universities within the metropolitan area including, of course, many with international reputations. Three of the four 1993 Nobel laureates in physical and life sciences, announced while I was there, had done their definitive work in Boston. There was a quiet conviction around that Boston is the hub of the medical intellectual universe; in some ways that may be right. Certainly the extent of the resources—laboratory space, equipment, personnel—was impressive and at times frankly intimidating. What can British medical research offer against this tidal wave of activity and investment? After three months I thought that the answer to this question was ‘nothing’; but I was wrong. As always in research, it is not quantity that counts but quality, and particularly quality measured as applicability to the clinical world.

Unfortunately there are now pressures in US medical research which resist such clinical application. Bureaucracy and litigatory fear make it difficult to establish human research projects. The natural progression that leads from in vitro and animal studies to questions to be answered directly in human disease is therefore often broken, so that it becomes easier to do another animal experiment than make the leap to a clinical study. Uncertainty that a particular clinical study will be completed in a given time makes it an unattractive prospect for the clinical academic whose salary will depend in part on obtaining the next grant.

There are also strong forces in the grant giving system which encourage experimental work to be still higher ‘tech’: a feeling that work will not be funded unless it is replete with molecular and transgenic techniques; the temptation to use a sophisticated technique when a simpler one will do; to design an expedient project that will be funded rather than a crucial experiment that needs to be answered.

Having seen the American system at close hand, I still feel that British clinical scientists can match transatlantic activity if they play to their strengths and ask the right questions.

Health care—US style

By an unplanned coincidence a few weeks after I arrived, President Clinton announced to Congress his wife’s plans for health care reform. The disquiet, uncertainty and occasional frank panic which his initial policy description invoked were reminiscent of the first wave of discussions in the UK five years ago at the first appearance of the White Paper: ‘broad brush’ policy appearing with great haste from political think-tanks in Washington, causing the profession to devote much time and energy preparing ripostes, often self-evident at the ‘grass roots’ where it was seen that theory just could not be put into practice.

The speech to Congress was a model of political skill. None could disagree that it was unacceptable for the United States, proud of its egalitarian constitution, to tolerate an insurance based health care system which leaves nearly a quarter of the population uninsured, yet costs more than 12% of GNP, or argue with the principle that free health care at the point of delivery was an ideal to keep in mind.

But is a change attainable? I fear not. Powerful interests which resist change include:

- the important proportion of doctors for whom the present system allows huge financial rewards in private practice
- the legal system which feeds off the litigation which private medicine generates. If surprised that the American Medical Association turned down the administration’s offer of a shift to a ‘no-fault’ system for physician’s liability, it should be appreciated that the majority of US doctors are now insured by physician-owned malpractice insurance companies
- the health insurance industry which owes its existence and its high profitability to the system
- the strongly held convictions of middle America that the US has the best health care in the world; that it must be better than ‘socialised medicine’ (the popular pejorative among middle class Americans for our NHS) because it has been paid for by the individual; that the uninsured are so dead to the poor that financial impossibility; that anyone who becomes ill wants the best from their personal investment in health insurance, and the best must be the ‘highest tech’.

This last conviction is not the sole province of the lay public. A recent article in the New England Journal of Medicine contrasted the rates of coronary angioplasty and bypass grafting in two Californian populations—one in private health care, the other in a managed health care system. I (and I suspect more British physicians) took the much higher rates in those privately insured as prima facie evidence that physician remuneration and patient expectation may collude towards unnecessary intervention. Not so, I was told by an academic physician, it proves precisely the opposite: managed health care restricts the access of ordinary people to the high rate of coronary intervention which represents the best care which they deserve.

Lessons for NHS reforms

While the Clintons try to pull American health care towards our concept of universal free delivery, our own NHS reforms push our system towards the American model. What lessons are these to learn as the two meet in mid-Atlantic? There are features in American hospitals I would not have recognised five years ago which are now aped enthusiastically in UK hospitals; concern with ‘front of house style’—the conviction that a good hospital must have an entrance like a hotel foyer; glossy news sheets promoting the virtues of the
institution; ‘mission’ statements at every corner to encourage the workforce.

American hospitals are paralysed by financial bureaucracy, imposed both from within the hospital and from the insurance companies; a sea of paper and a flotilla of administrators pursue every consultation or admission. The number of hospital administrators has nearly trebled in the US between 1968 and 1990. Above all, the watchword is competition. In Boston major teaching hospitals compete for patients, duplicate high tech services, seek ways to outflank each other to preserve their financial security. And it is hard to recognise a strategy for ensuring planned health care delivery; the market place holds sway. The virtual nonexistence of general practice in many parts of the States and the lack of planning must mean that many parts of the inner cities are underdoctored in a country which many would argue is, in total numbers, overdoctored. In Manhattan, for example, there are 3.3 doctors per 1,000 population, while across in the Bronx there are only 0.2 per 1,000.

Organisation of American academic medicine

There was much to admire and envy in the academic set-up which I enjoyed in Boston: the physical intimacy of offices and laboratories, not always seen in the UK, guarantees day to day interaction and cross-fertilisation between physicians and scientists; the protection from administration for all except the chief of the department, or those with ambitions to be chief; the freedom from clinical responsibilities for much of the time—two or three months a year on call for most, five or six months a year for a minority not committed to the laboratory; freedom from the heavy coalface work endured by British nephrologists. In Boston, eight consultants look after a dialysis programme of less than a hundred patients (in Leicester four consultants for four hundred); and a weekly clinic with no more than five or six patients to see in a morning.

It is not surprising, therefore, to expect the American system to be scientifically productive, but its lack of tenure for faculty staff, perceived as a stimulus to productivity, is also a weakness. The frisson of uncertainty for some is the demoralising grind of insecurity for those who find the challenge of generating their own salary from grant support exciting for only a few years and are then driven out into private practice while still at their peak as investigators.

American specialty training

Can a year of clinical training as a fellow in a specialist academic unit be enough? The contrast with the five years or more in the UK asks many questions, particularly as we move towards a four year unified training grade. At its weakest the British apprenticeship model becomes unstructured training—learning is by osmosis in the face of burgeoning clinical experience, the path is trodden alone, experience is gained slowly and sometimes painfully. At its best, a year of American training accelerates the process. Consultant input is high (when only on-call three months or so each year, senior staff find it easier to plan their time to make themselves fully available). Clinics are small and are as much a teaching exercise as a service delivery. Weekly case conferences, a priority for all, attended by a large number of senior staff, generate lively debate on contentious clinical management issues, but in practice those debates were often fuelled by the literature rather than personal experience. There are lessons to be learnt from the system, but the one overwhelming advantage of the British style is the sheer weight of clinical experience, irreplaceable if one believes that clinical acumen is an instinctive process fed by experience. Better to have seen it before than to have read about it or talked about it.

Visits beyond Boston

In Providence I learnt much from hearing about a relatively small hospital under some financial duress; very different monetary circumstances from the heavily endowed major Boston institutions. There was also the chance to cross friendly swords with an experimental pathologist who believes my present approach to the pathogenesis of IgA nephropathy is irreparably flawed. After a crisp debate we agreed to differ.

In Providence also I was unexpectedly offered a case on which to deliver an opinion. After four months away from clinical medicine I shake the dust off my diagnostic antennae as the intern begins to recount a complex and ill-fitting history. I clutch at familiar territory as it becomes clear that this is a case of ACE-inhibitor induced renal failure. Good—I prepare a few well judged words as I wait for a gap in the history. But there is more to come—the poor patient undergoes a series of unpredictable and catastrophic developments and passes on to the ITU and ventilation. At every turn there is a new diagnostic dilemma; the excitement of the chase becomes the sweat of uncertainty as I struggle to find some wise quips. (Why did I try to impress them at the beginning of my seminar with the scale of my clinical activity at home?) At least there is no denouement, they have not made a diagnosis either; I still await the letter to tell me the final outcome of the case. It is good to know that they meet impossible clinical problems ‘over there’ just as we do here from time to time.

My visit to Memphis was a time of contrasts. A newly built children’s hospital with gleaming facilities and an Art Deco foyer in pink, grey and white with gleaming stainless steel stairways. But, as an antidote to the laboratory world of Boston, the opportunity to discuss with a paediatric nephrologist a large study built on the old fashioned skills of clinical epidemiology. After an unexpected observation that two patients with IgA nephropathy are cousins, a vast affected pedigree is
identified in the remote hills and villages of Eastern Kentucky. Other individuals are traced, birth registers searched, family trees established, urine tested, blood taken. The research office is covered with large scale maps scattered with pins. A resource generated from traditional clinical method has now produced the opportunity to apply contemporary molecular genetics in order to unravel the genetic susceptibilities of this common form of glomerulonephritis.

In Memphis, also, the motel where Martin Luther King was assassinated, preserved as it was that day in 1968: almost unbearably poignant in the 25th year since his death. At the other end of Memphis stands Gracelands, the home of Elvis Presley. Monuments to the two great icons, one black the other white, standing separate in a city where more than half the population is black, and black and white by choice continue to live separate lives. But a lively city where I completed my visit late on a Saturday night in the unique atmosphere of BB King’s Blues Club on Beale Street, where, so I was told, the blues were born.

Birmingham, Alabama, is a town transformed by medicine in an initiative on a scale inconceivable in the UK. An old steel town shorn of its dead steel industry (rusting steel plants litter the horizon in views reminiscent of parts of Sheffield or Corby), it would be a ghost town but for a strategic decision to establish a medical centre. The University of Alabama at Birmingham medical campus now occupies a site more than 10 blocks square in the heart of the city which houses a whole clutch of internationally recognised research groups. It is by far the major employer in the city. I spent a stretching and enlightening day with IgA immunologists, defending my data and my ideas against their sharp insights: an important and demanding contrast to talking with nephrologists, however much they may try to think like immunologists.

Also in Birmingham I had a feeling of familiarity as I spent time with physicians busy with a huge clinical service, in this case the renal transplant programme for the whole state of Alabama, twice the size of the largest UK unit. Discussion, as always, revolved around the advantages of concentrated expertise and critical mass against the disadvantages for patients of statewide travel. Such a huge unit, of course, gives marvellous opportunities for clinical research. For once in the States I heard the confession that they were underachieving in this regard because of clinical workload and limited staffing levels. They were correct; I felt quite at home.

Lastly to Seattle, a quiet and easygoing city after the frenetic pace of the East coast, and a most beautiful setting surrounded by sea and snowclad mountains. I visited a department doing world class work on glomerular injury. But after the large scale of every laboratory and facility I saw in Boston, here were laboratories no larger than those in my own department and staff of equivalent numbers. So it is possible.

What does sabbatical leave achieve?

I hope that the professional and intellectual refreshment I gained from my time away is self evident in this report. I have no doubt that I will be a more effective and productive investigator over the next few years because of it. I have also soaked up many lessons, both overt and subliminal, about the delivery of healthcare and its relationship to teaching and research which I trust will make me a better critic of bad reform and a more willing advocate of good change. By observing the contrasts, I have come to appreciate more than ever the virtues of the NHS and British academic medicine, returning determined to help protect and foster them.

But there are other sabbatical gains to be appreciated. The chance to be free from evenings of clinical work, committee drudgery and paperwork. The chance therefore to talk to one’s wife, spend time with one’s children, to discover the lost art of reading novels. The chance for a few months to live in, not merely visit, a different culture and to come to appreciate its weak points (television, beer, noise) as well as its strengths. In New England to have late summer weekends on the beaches of Cape Cod, to relish the picture book beauty of the fall, the deep snow and the wonderful toboganning and skiing which go with it. To travel to work by ferry across Boston harbour and enjoy the galleries, theatres and bookshops of Boston. And above all—the New England lobsters.

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