medical science will make possible. New things happen first at the periphery; the NHS needs to be able to respond quickly to those stimuli that can be shown to be right and to help that decision to emerge. Nearly forty years ago one of our most eminent physicians of the day, speaking to the British Association, opined that medical science had advanced exceptionally in the preceding decade, but that that must not be expected to continue. Let none of us again think that can be true.

A physician's reflections on 50 years of the NHS

The 1940s and how it all began

When my classmates and I graduated in the Edinburgh Medical School on 12 July 1948, I do not think that we had much appreciation of the enormous significance of what had transpired seven days earlier: the inception of the National Health Service (NHS). What was it like then and what has happened since?

First, I have to acknowledge the good start we had as undergraduates, through being taught by dedicated teachers who transmitted attitudes and values that are still retained. As clinical students we were exposed to much didactic organ-based teaching, but this was mellowed by excellent bedside teaching, generally given by the most senior staff, leading to our having a thorough grounding in clinical method. My old Chief used to say, 'If you take a good history and do a careful examination, the rest might not be too difficult or too expensive. This is still true.'

There was then no requirement to do preregistration hospital jobs and many of the class went straight into general practice. Those of us who did take a house officer post, immediately had extensive responsibilities, with no senior house officers or registrars to lean on. We were already able to do minor surgery, give simple anaesthetics, set fractures and deliver babies. It was a tradition that these skills were learned while 'junioring' in the teaching hospital units at nights and working in district hospitals during the long summer vacations. It was vital then to be a 'basic' doctor, not only because of the immediate postgraduate duties, but also because most of the men would shortly have to do National Service and could end up in some isolated outpost of the Empire where they would just have to get on with it.

General medicine and the medical specialties

During this early period, the specialties, apart from neurology, were only just beginning to emerge and there were few special units. Most hospital practice was in general wards and the throughput of patients by today's standards was slow. Cardiology was mainly centred on rheumatic heart disease; rheumatic fever usually meant the patient had to spend three months in hospital. I do not recall seeing or being taught on a single patient with myocardial infarction as a student, although we knew about angina. I did, however, see a few as a house officer; at that time 12-lead electrocardiography was emerging and myocardial infarction meant six weeks in hospital for the patient. Mitral valvotomy and ligation of a patent ductus arteriosus was beginning. Gastroenterology, apart from the acute abdomen, seemed to be mainly intractable peptic ulcers, with many patients going on to partial gastrectomy. Respiratory physicians had to deal with a heavy load of bacterial pneumonia and were particularly committed to tuberculosis for which no treatment was yet available. Nephrology was but another term for Bright's disease.

Therapeutic developments

There were, however, stirrings of what were to be enormously important advances in treatment. We had only a

References

1. Ministry of Health. Report of the Inter-departmental Committee on the remuneration of consultants and specialists. (Spens Report). London: HMSO, 1948.
2. Report of the Royal Commission on Medical Education (Todd Report). London: HMSO, 1968.

Address for correspondence: Sir George Godber, 21 Almoner's Avenue, Cambridge CB1 4NZ.
limited range of effective medicines, but sulphonamides were already becoming more sophisticated. We first encountered a new medicine, of which we had heard vaguely, in an unexpected way. In the summer of 1944 a degree examination was postponed in Edinburgh so that the men in the wartime Officers Training Corps (most of us) could help disembark a trainload of Normandy casualties, Germans included; many were badly wounded and some wore luggage labels bearing the word 'Penicillin'. Folic acid was synthesised in the following year.

During World War II, in conditions of military secrecy, nitrogen mustard was used in a few patients with terminal malignant disease and found to have some beneficial effect; this was published in 1946 and was the spur to the evolution of cytotoxic chemotherapy. In 1948, when we graduated, vitamin B12 was isolated from liver, and Hench produced cortisone. And so we were seeing the beginnings of a therapeutic revolution that has accelerated in a breathtaking way.

The 1950s and 1960s

Medical and nursing careers

The new staffing structure of the NHS was slow to emerge. There was a shortage of junior training posts in hospitals. This led to large numbers of experienced doctors emigrating to North America, Australia and other parts of the Commonwealth particularly in the 1950s, a choice made by approximately one-third of my own class. Those who remained in the UK generally had to mark time in several posts before reaching consultant status. However, the result, not appreciated at the time, was that this generation of doctors gained a considerable grounding in general medicine and surgery.

The Salmon Committee's report of 1966 on senior nurse staffing structure had a lasting impact. It is indecent to say too much about our sister profession on whose partnership we depend so much. However, many of us regret the demise of the matron and the ward sister, both of whom were now to be known by numbers. But more importantly, the changes meant that the good caring ward sister had to contemplate becoming an administrator in order to gain promotion and some improvement in her modest stipend.

Clinical science

The rapid development of new antibiotics led to a dramatic change in the pattern of bacterial infections, and for the first time, an effective and curative treatment became available for tuberculosis. Later, vaccines for poliomyelitis emerged and virtually eliminated the disease in the UK. Other advances included: a wider range of anti-tumour drugs; great increase in laboratory research; the advent of radioactive isotopes in investigation and treatment; the beginnings of imaging with ultrasound (to be followed in the 1970s and 1980s with CT and, later, MRI scanning); the first descriptions of visible chromosome abnormalities in man; effective cardiac surgery; detailed understanding of immune function, an essential precursor to organ transplantation; and at last, successful control of a common major disease, hypertension. This cryptic and selective list illustrates how several new specialties were being spawned which cut across the traditional organ-based ones and the medical/surgical divide, eg immunology, genetics, oncology and nuclear medicine.

Medical education and training

The report of the Royal Commission on Medical Education (the Todd Report) was presented to parliament in April 1968 after 3 years' deliberation. Interestingly, the total expenditure by the Commission was only £79,052, of which some £17,000 was spent on special surveys and printing. Its many recommendations were far reaching and a few are worth highlighting.

The Commission recognised that the influence of universities, on which medical education had come to be based, was mainly at undergraduate level. Accepting that practical instruction needed to be incorporated at an early stage of training, the requirement for apprenticeship was seen to be mainly at postgraduate level, but this was at that time largely haphazard and disorganised. With the great growth in knowledge, it was felt that all doctors, general practitioners, as well as consultants, should continue to gain further expertise. Hence, the undergraduate period should seek to produce not a finished doctor, as in the 1940s, but a broadly educated person ready for further training and continuing education. As a result of recent and unforeseeable future advances, changes in the pattern of medical services and the rising demands of society, the Report concluded that there would need to be at least a doubling of the number of doctors. Special proposals were made for London, seeking better integration of medical schools and postgraduate institutions, and throughout the country a closer marriage between teaching hospitals and the NHS was recommended. There was also a strong desire to improve relationships between hospitals, general practitioners and local authority services. The Report's main emphasis, however, was on detailed guidance for the postgraduate period: vocational training in general practice, and, for hospital based staff, a period of general professional training, followed by a prescribed specialty training in the main disciplines in approved posts. A section of the Report dealt with the low quota of women admitted to medical schools, arguing that there should be no gender bias; the criterion for admission should be the perceived ability of the candidate to profit from the course and become a good doctor.

Coincidentally, at the end of the 1960s (1969–1972), the Royal Colleges of Physicians finally agreed to a common MRCP examination. This put an end to the rising, but unproductive, fashion of 'multiple diplomatosis'.
The 1970s

The growth of specialisation and administration

Although a few recommendations of the Todd Report were already in hand in this decade, for example, the new medical schools at Southampton and Nottingham and later Leicester, most were to receive careful attention in the next few years. The effects and results are still apparent.

In addition to the expected intake of the newly established schools, existing medical schools also set about increasing their intake of students, in some cases dramatically. The aspiration was to raise the yearly output of graduates from around 2,000 to 4,000. The gender difference gradually abated and the ratio of women to men is now 1:1 nationally, and sometimes greater.

The medical Royal Colleges established Higher Specialist Training Committees to develop training programmes and inspect training posts. Gradually, new specialties were assimilated, eg palliative medicine, a discipline that might have had difficulty in finding a place in the earlier years, became a recognised subspecialty of general (internal) medicine. Not only was there now a Royal College of General Practitioners but more academic appointments in general practice were beginning to emerge. A Faculty of Public Health Medicine was established later, to be followed by Faculties of Occupational Medicine and Pharmaceutical Medicine.

Whereas in Scotland all the hospital services were administered by regional health boards, this was not so in England and Wales, where teaching hospitals stood outside the regional board system, being administered by boards of governors directly responsible to the Department of Health. The early 1970s saw major revision with the creation, in England and Wales, of regional health authorities delegating the administration of all health services to area health authorities. Scotland was to remain largely unchanged being regarded as one region with local health boards, responsible to the Scottish Home and Health Department.

Paying for the burden

Not surprisingly, the increasing responsibilities and workload of the health professions began to tell, and morale has been declining ever since. It also became clear that with the great expansion of provincial medical schools and the building of new hospitals, a review of funding was urgent. This led to the creation in England of RAWP (Resource Allocation Working Party) and a similar body in Scotland, which set about the painful equilibration of funds. These bodies also recognised the higher costs of teaching hospitals, compared with so-called non-teaching hospitals. The reasons for this are fairly obvious: teaching accommodation and facilities, increased staffing, case mix, laboratory services, specialist units, slower throughput of patients and the emphasis on research activity. However, in the absence of any easily measurable criteria, the special costs were based on the number of clinical students in monies known as SIFT (Service Increment for Teaching) in England and Wales and ACT (Additional Cost of Teaching) in Scotland. This extra funding was introduced in 1977 and over the years has accounted for some 5–10% of a health authority’s or health board’s budget.

Around this time, junior staff asked for, and received, overtime payments for duties during unsocial hours. Many whose professional career had started with the NHS, believe that this was the beginning of a slide in the esteem of the profession. It is sad that other ways could not have been found to handle the junior doctors’ burdens and the disparity between disciplines, but that was not to be.

The 1980s and 1990s

Meeting the costs of teaching and research

No attempt was made for the first ten years to identify what happened to SIFT and ACT; it was simply consumed in the general funding and ‘knock for knock’ mutual support. University clinical staff contributed to the health services, and NHS staff to teaching. It was not until the publication of the NHS White Paper, Working for patients, that the proposed NHS trusts and medical schools had to be more transparent about their cost structure and how their resources were being used. Among the early effects of the White Paper, attempts have been made to identify the SIFT and ACT components in teaching hospital budgets and to analyse the amount and quality of teaching. Attention is also being given to the virtual exclusion of general practice from funding and to the proper recognition of the increasing and valuable involvement of district general hospitals in clinical placements.

The Culver Report Supporting research and development in the NHS followed in September 1994. The Committee recognised that the NHS funded research and development from numerous and diverse sources and recommended replacing them with a single and explicit funding stream which was to be part of SIFT and ACT monies, but removed from health authorities’ and health boards’ budgets, and which had to be competed for. They also recognised that primary and community services had fared less well than hospitals in developing a research capacity and recommended that funds must also be accessible to professionals working in these areas.

The NHS of the future: a personal view

The several consecutive NHS reforms have not been an unqualified success and it is pleasing to learn of moves to trim down the original plans by amalgamating hospital trusts and by arranging general practices into consortia. The enormous and wasteful expansion of bureaucracy is not a myth. While there has to be more audit of the use of funds both in the NHS and medical schools, detailed nit-picking is time consuming and an element of ‘knock for
knock' might once again have to be accepted. The financial constraints and efficiency savings both in the NHS and higher education, which have been applied since the 1970s and 1980s, are causing serious problems and more resources will certainly be required if standards are to be maintained.

The long waiting lists both for outpatients and for surgery, are also not a myth, nor are the great burdens of attendances at the A & E departments and of emergency hospital admissions. The latter are to be addressed in the expectation that the organisation of acute hospitals is to be rationalised, acute bed numbers reduced, and health care moved more into the primary care and community sector. Many have tried to analyse what has gone wrong. The ageing population is one factor but not the only one. Early discharge from hospital has led to the so-called 'revolving door syndrome' which is aggravated by the lack of social services in the community. General practices seem to be overwhelmed, presumably because public expectations are getting out of hand. Night calls have increased greatly and this at a time when general practices are joining together for night work; inevitably, the doctor on duty will not have the detailed knowledge of patient and family that applied formerly. The impact of EC directives on hospital junior doctors' hours, and the restructuring and shortening of postgraduate training, is yet to be felt. Features of the present discontent are seen in more colleagues applying their energies to private practice and more to retiring early from the NHS.

If the number of tertiary referral hospitals and large DGHs is going to be reduced, there will have to be major changes in present practice. One solution being advanced, which will not be inexpensive, is the establishment of community hospitals between the primary care health centres, leaving the major hospitals, where general practitioners might have a small number of beds, to undertake certain investigations and do a range of surgical procedures. In such places consultants could also do outreach clinics and participate in some services. The more progressive health centres, with a range of specialist skills, are already taking the initiative on their own premises. The skills and responsibilities of our nursing colleagues are also being widened and harnessed but this coincides with major concern about establishment and recruitment in the nursing profession.

It is impossible to foresee where health care will continue to advance. More surgery will be undertaken on a day-case basis aided by evolution of minimal access key hole procedures. In medicine, the use of designer drugs, which probably began with folic acid antagonists, and became particularly significant with β-blockers and the H2 receptor antagonists, will be an exciting way forward. So far, the work on the human genome has had limited impact at the 'coal face' of clinical medicine, but is justifiably expected to have profound application in preventive medicine and in therapy.

Turning to the medical Royal Colleges, there is increasing harmony and symbiosis, but the responsibilities for postgraduate training and continuing medical education are becoming very onerous. The old rivalries and prejudices die hard but the different disciplines overlap so much that we cannot live without each other. If the Fair Maid of Norway, heiress to the Scottish throne of Alexander III and due to marry Edward, heir to Edward I of England, had not died on her way from Christiania, we might have had a United Kingdom and a UK Academy of Medicine centuries ago. This is still a hope for some time in the future, but it will be difficult to achieve, not least because of our historical and geographical pride and all the scattered Colleges' real estate.

The future of medicine begins in our medical schools. It is virtually impossible to gain admittance at present unless an applicant has multiple A grade passes in A-levels or Scottish Highers. Medicine needs intellectual high fliers but much of health care also has to do with patience, compassion and communication skills. These attributes are not mutually exclusive but while the latter can be enhanced by teaching and example, I believe that they are developed at a fairly early age. Hence, I favour widening the academic requirements a little and interviewing all potential candidates who might be offered a place. Even in a short interview, it is possible to get a feel for the person who is likely to make a good doctor, which might not emerge from the UCAS application form.

Finally, I regret the passing of the traditional professor of medicine. Now with so much university funding depending on research excellence and with all the new commitments for medical staff, teaching is in danger of slipping further down the list of priorities. Most appointments to academic posts have to be seen as enhancing the research profile of the medical school, but one post, the professor of medicine, should be retained for someone who has had a rounded experience, who has enjoyed his or her own research days, but will now devote his or her remaining time to encouraging research in others and masterminding the clinical training of the nation's future doctors.

References
1 Ministry of Health, Scottish Home and Health Department. Report of the Committee on Senior Nurse Staffing Structure. (Salmon Report). London: HMSO, 1966.
2 Report of the Royal Commission on Medical Education, 1965–8. (Todd Report). London: HMSO, 1968.
3 Secretaries of State for Health. Working for patients. London: HMSO, 1989.
4 Culyer A. Supporting research and development in the NHS. HMSO: London, 1994.

Address for correspondence: Professor John Richmond, 15 Church Hill, Edinburgh EH10 4BG.