

THE ROCK CARLING FELLOWSHIP

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POSTGRADUATE
MEDICAL
EDUCATION

John Lister

THE NUFFIELD
PROVINCIAL HOSPITALS
TRUST

The Rock Carling Fellowship
commemorates the late
Sir Ernest Rock Carling
for many years a Governing Trustee
and Chairman of the Medical
Advisory Committee of the
Nuffield Provincial Trust.

It was stipulated that each holder
of the Fellowship will seek to review
in a monograph the state of
knowledge and activity in one
of the fields in which Sir Ernest
had been particularly interested,
and which is within the purposes
of the Trust.

The arrangements provide that
the monograph will be introduced
by a public lecture given at a
recognised Medical Teaching Centre
in the United Kingdom.

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Introduction

My brief was to write a monograph on postgraduate medical education, describing its development over the last thirty years, its strengths and its weaknesses in relation to recent developments in medicine and specialisation and with my views on necessary future developments.

I noted that the suggested period began about the time of the Christ Church Conference on postgraduate medical education which was held under the auspices of the Nuffield Provincial Hospitals Trust in 1961 (1). This Conference had a major catalytic effect on the development of postgraduate medical education, but I decided that in order to see the period in proper perspective I would need to look rather further back than 1961.

I also realised that since medical education is now recognised as a continuing process extending from the time of entry into medical school, through the period of postgraduate education and training, and then throughout the whole period of a doctor's practising life, I could not consider postgraduate medical education in isolation from undergraduate medical education on the one hand or from continuing medical education on the other.

The Goodenough Report (2) considered that postgraduate medical education constituted all forms of organised training experience designed to advance the knowledge of those who are already registered medical practitioners. It would therefore include the training arrangements for all those intending to become specialists as well as the provision of refresher courses for general practitioners.

It is now more usual to recognise postgraduate medical education as taking place from the time a medical graduate becomes fully registered with the General Medical Council (GMC) until he or she becomes eligible to practice independently as a consultant or as a general practitioner. Continuing medical education is undertaken by established practitioners so that they may remain up to date and competent to practice.

I am conscious that there is a difference in meaning between the terms education and training, although they are sometimes

used loosely and interchangeably (3). Training, often on the apprenticeship model, is characterised by a sequence of instruction followed by practice under supervision with feedback on performance and assessment of competence. It involves the acquisition of specific skills aimed at achieving technical competence and prepares the doctor to respond competently to familiar problems and situations, often with little critical thinking (4).

Education on the other hand is a broader concept and involves specific teaching and learning strategies, which in contrast to training encourages critical thinking and the ability to solve unfamiliar problems by the application of the knowledge gained from such teaching and learning.

During the undergraduate period the emphasis is on education, but the postgraduate requires both further education and specific training. There is some overlap between these two activities and it is, therefore, rather easy to use the terms somewhat loosely, but I have tried to avoid doing so.

The reason for regarding medical education as a continuum is not only because medicine is a life-long study but because the requirements for each phase are so dependent on what has been provided in the earlier phase or will be provided in the later stages of education and training.

Thus the Royal Commission on Medical Education (Todd Report) (5) commented that the absence of adequate arrangements for postgraduate professional training had probably had an important influence on the retention of the obsolete concept of undergraduate education with its unattainable objective of producing the omnicompetent practitioner. This objective was only finally jettisoned by the passing of the Medical Act of 1978 after which the qualifying examination was no longer defined as an examination in medicine, surgery and midwifery.

The report went on to say that 'we start from the premise that every doctor who wishes to exercise a substantial measure of independent judgement will require a substantial postgraduate training and the aim of the undergraduate course should be to produce not a finished doctor but a broadly based man who can become a doctor by further training ...' (para 12, p 23).

The Commission believed that positive measures were needed to create a climate in which doctors would have a desire for continuing medical education. Compulsion would not create the

necessary receptive spirit but undergraduate and postgraduate training should foster the concept of the need for continuing medical education.

In his splendid book on the evolution of medical education in the nineteenth century, Charles Newman was stating a profound truth when he said that the main difficulty in medical education is not what to teach or how to teach it, but to make up one's mind about what one is trying to produce (6).

He prognosticated that by the end of the twentieth century medicine would be more scientific and that the profession would be more homogeneous and more regulated. His prognosis has proved to be largely correct and it is only too clear that the training received by undergraduates of today may be quite inappropriate for much of their practice in 20 years time. The pace of specialisation is unlikely to slacken and the base for the generalist may well shift from the hospital to the community, and the profession may indeed become more homogeneous with less demarcation between the roles of some consultants and general practitioners.

Training must clearly be orientated to current practice, but one of the most important attributes which must be fostered in students at all stages is the ability to adapt for change and to be able to recognise the need for change.

The scientific and technological advances of the last thirty years have brought about radical changes in the practice of medicine and surgery and the escalating cost of medical health care has led to changes in the management and structure of the National Health Service (NHS) to which doctors have had to adapt.

The introduction of the NHS in 1948 was a traumatic experience for the medical profession, but after initial disputes were resolved, a satisfactory working relationship was established between the profession and the State and the system worked reasonably well, both for patients and for the doctors. Major reorganisations in 1974 and 1982 caused further disruption, but it was the introduction of the reforms embodied in the NHS and Community Care Act of 1990 with the separation of purchasers and providers of health care, the introduction of an internal market and the establishment of autonomous Trust hospitals which has led to a period of unprecedented turmoil in medicine with a sense of instability within the profession and uncertainty

about the future pattern of medical practice and of medical education and training.

Meanwhile, the number of applicants for medical school places though falling, continues to exceed by far the number of available places. They all submit applications with high academic attainment and deans anguish as they try to select fairly and wisely. They can perhaps take comfort from the fact that they are not selecting recruits for a single occupation as medicine offers a whole range of crafts and disciplines from which medical graduates can choose a career according to their aptitude or inclination. At the time of entering medical school most of the successful applicants are well motivated and keen, but they have little idea of what the future holds.

No doubt members of all professions mature as they progress from the status of student to that of established practitioner, but it may be that medicine is a particular case in this respect for it can truly be said that in the course of a life-time in the profession 'one man in his time plays many parts', hopefully maturing as he or she passes from one stage to the next.

Thus the student emerges from medical school having spent five years striving to master the complexities of biomedical science and acquiring basic clinical skills.

The young doctor then becomes the houseman, full of enthusiasm and overloaded with information but quite lacking in experience as he struggles to survive the terrors of the pre-registration year. The senior house officer (SHO) begins to see a clearer view of the future and those who have chosen a career in general practice enter vocational training schemes. Those seeking careers in a hospital specialty undertake a series of SHO posts to broaden their experience in preparation for taking the specialist examination appropriate for their chosen specialty. The SHO then graduates to registrar and becomes identified as a trainee specialist, finally obtaining a senior registrar post from which he will eventually be appointed to a career post as a consultant. Only then will he be able to exercise his skills and accept full responsibility as an independent practitioner within the NHS.

There is concern about many aspects of the training provided at all these levels. For the aspiring consultant, the course is long and the advance from one stage to the next is highly competitive,

but the core problem is the difficulty of reconciling educational requirements with service needs.

Any solution to this intractable problem has remained elusive and Sir Robert—later Lord—Platt questioned whether a structure designed for training in a specialty can effectively fulfil service needs, (7).

In 1944, the Goodenough Report declared that 'A nation embarking upon a comprehensive health service cannot afford to do without a comprehensive system of postgraduate medical education' (2).

It was many years before this pronouncement was heeded and indeed when I was a member of a hospital management committee in the early 1960s, and asked for a modest sum of money to improve an inadequate hospital library, I was told by a fellow medical member that I must understand that the NHS was for treating patients not for educating doctors.

Fortunately much has been achieved in the past 30 years and a more enlightened attitude now prevails and even though many problems still exist they are being addressed and there is a structure in place to tackle them. The danger is that the structure may be too complex with too many agencies and too many individuals involved in what one postgraduate dean described as a whole sub-culture of postgraduate medical education.

Teaching should be a stimulating experience for the teacher and learning should be rewarding for the learner. It can even be fun for both parties. Unfortunately talking and writing about teaching and learning and education and training can be appallingly dull.

The Evolution of Postgraduate Medical Education

It was during the nineteenth century that the present structure of the medical profession evolved and the present pattern of medical education began to emerge, as so well described by Newman (6).

At the beginning of the century the profession was in some disarray. The physicians, who came from better middle class families, aimed at becoming cultured, highly educated gentleman with an adequate knowledge of medicine, although many only had one year of training in medicine after their general education. They were few in number and tended the more influential members of society by advising rather than by doing. There was still some prejudice against the surgeons because of their long-standing association with a craft, but the London Company of Barbers became the Royal College of Surgeons in 1800 and membership of the College became a much sought after surgical qualification.

The education of the apothecaries who came from the shopkeepers class was almost entirely by practical apprenticeship, but they had to be able to read the Latin prescriptions of the physicians. Many held the diploma of the Society of Apothecaries and some also took the MRCS and were thus known as surgeon apothecaries.

In London, medical teaching was based on the teaching hospitals which were being established in the capital. Students were learning from walking the wards—a phrase described by Newman as more familiar than explicit. It seemed to involve looking at cases and hearing the remarks of the attending physician. There was little if any physical examination until the publication of Laennec's book on auscultation but thereafter diagnosis by physical examination became the great medical advance of the nineteenth century. It was the duty of the student to get his education rather than for his teacher to give it and lectures were

held at times convenient for the teachers such as 6–8 pm at Guys' and 7.00 pm at Bart's (8).

Surgeons usually spent 5 years in apprenticeship with a general practitioner and to be eligible to take the MRCS examination had to submit certificates of attendance at one course in anatomy and one in surgery, including one year in hospital surgical practice. The Bart's surgeon, Sir James Paget, undertook five years of apprenticeship with a general practitioner in Norwich for a fee of 100 guineas. He found the experience rewarding and commented that 'by being left alone to find out things for himself he had acquired an unusual disposition for scientific pursuits and an unusually educated power of observing' (9).

In Scotland medical education was more formalised and university based rather than being provided in association with hospitals. There were structured courses of lectures by duly appointed professors given over a three year period, both in general science and clinical subjects with a fair and thorough system of examination.

It was the Apothecaries Act of 1815 which imposed the first regulation of any form of medical curriculum for medical education and placed responsibility on a professional body for ensuring that it was followed. Thus the Society of Apothecaries was required to examine candidates for its Licentiate (LSA) which would grant licentiates the right to practice in any part of the country and forbade the use of the term apothecary by anyone not licensed. Before admission to the examination, candidates were required to show evidence of five years' apprenticeship and proper instruction in medicine, surgery and midwifery. The introduction of the examination had a considerable effect on medical teaching and stimulated the organisation of formal courses of instruction both in London and in the provinces where the first provincial school was established in Manchester in 1824.

Nevertheless, the Act proved insufficient to control the activities of unlicensed practitioners and the legal requirements to practice remained obscure. Furthermore, there was no official evidence available to the public as to who was qualified and who was not, although Churchill's medical directory in which doctors could record their qualifications was first published in 1845. There was public pressure for reform of the medical profession at this time and for some form of official register of qualified

practitioners, but no legislation ensued until 1858 when the Bill to regulate the qualifications of practitioners in medicine and surgery was introduced, proposing a General Council of Medical Education and Registration with representative and nominated members, all of whom were to be medical and answerable to the Privy Council. The Bill was not passed without opposition, particularly from the Royal College of Physicians but it finally received Royal Assent on 2nd August 1858.

The Council would be responsible for establishing a register of qualified doctors and for defining the qualifications and diplomas considered suitable for registration to practice anywhere in HM Dominions. Similarity of examination standards would be achieved by a system of inspection of examinations and Branch Councils would be established in Wales, Scotland and Ireland.

Initially it was possible to register a single qualification in medicine, surgery or midwifery but a further Medical Act passed in 1866 required that anyone seeking registration must have passed a qualifying examination 'such as sufficiently to guarantee the possession of the knowledge and skill requisite for the efficient practice of medicine, surgery and midwifery'—hence the term 'surgery' was used for doctor's offices.

When the 1858 Act was passed all twelve medical schools in London were established with provincial schools in Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle and Durham. The primary objective of the legislation was to ensure that a medical student on graduation should be a 'safe doctor' to let loose on the public and capable without further education to practice in any branch of medicine for the rest of his life.

The threat of inspection of examinations had a salutary effect and by 1867 the Council, legally known as the General Medical Council (GMC) since 1951, required the curriculum to include instruction in anatomy, physiology and chemistry, and systematic teaching in medicine, surgery and midwifery, but there was little overlap between preclinical and clinical studies.

Furthermore there was no conception of any need for post-graduate medical education or continuing medical education after completing the undergraduate course. Indeed the 1858 Act by its emphasis on the need to assure the public that new graduates were competent over the whole field of medicine, surgery and

midwifery actually inhibited the development of any form of postgraduate medical education.

By the end of the nineteenth century the standard of general practice in Britain was high and the physicians and surgeons were becoming recognised as consultants as the referral system between general practitioners and specialists became established. This was said to allow the physicians and surgeons to retain the hospital, whilst the general practitioner retained the patients (10). But as medical knowledge began to expand and specialisation began to develop the need for specialist training and the advantages of training in a critical academic and scientific atmosphere were recognised, and since the beginning of the present century there have been a series of major reports on medical education and on the provision of health services.

In 1921 the Postgraduate Medical Committee under the chairmanship of the Earl of Athlone investigated the need for facilities for postgraduate medical education in London—particularly for doctors from overseas. This Committee suggested (11) the establishment of a University Medical School devoted entirely to postgraduate medical education attached to a London hospital and associated with London University. It also proposed an Institute of State Medicine and recommended that additional postgraduate facilities should be provided at non-teaching hospitals.

It suggested that the specialist hospitals which had been established in London should be linked to the new postgraduate medical school and that a central office should be set up to co-ordinate and develop postgraduate medical education in London. These proposals were not implemented immediately, but in 1931 the Postgraduate Medical School was incorporated by Royal Charter in association with Hammersmith Hospital, and formally opened by King George V in 1935. One of the reasons for choosing Hammersmith hospital was acceptance of the essential condition that postgraduate and undergraduate teaching should not take place in the same school—though later reports (5, 12) argued that postgraduate institutions should not exist in isolation from undergraduate schools.

The British Postgraduate Medical School became a school of the University of London in 1934 and established itself as one of the most advanced schools in the Commonwealth and has exerted

great influence in changing the attitude of British doctors to medical education and the way it should be organised.

The next major stimulus for the development of postgraduate medical education came when the Interdepartmental Committee on Medical Schools chaired by Sir William Goodenough made its recommendations in 1944 (2). In this most perceptive report it was proposed that following graduation there should be a compulsory pre-registration year during which six months would be spent as a surgical house officer and six months in a medical post—one post being spent in the teaching hospital and the other in a hospital specially approved by the university for the purpose of training pre-registration house officers.

The report also emphasised the need for postgraduate training for aspiring specialists and the need for refresher courses for general practitioners and envisaged all hospitals being included in a grand educational design based on the teaching hospitals. Each university was advised to establish a board of postgraduate studies and appoint a postgraduate dean to organise postgraduate education and training.

The Committee recommended that the British Postgraduate Medical School should be incorporated in a federation, with a series of postgraduate institutes based on the specialty hospitals in London. Each institute would be separately incorporated under the Companies Act and would have its own governing body independent of the associated special hospital and would be advised by an academic council.

The British Postgraduate Medical Federation (BPMF) was established as a school of the University of London in 1947 as a federation of 12 institutes with their special hospitals and the Postgraduate Medical School, which was granted royal status in 1966, and reverted to being an independent school of the university in 1974. A central office was set up to co-ordinate the activities of the Institutes and to offer advice to postgraduates, particularly those coming from overseas and to those returning from service with the Armed Forces. This office was later to become the base for the postgraduate deans of the metropolitan regions and thus became responsible for co-ordinating the whole field of postgraduate education and training throughout these regions.

The Goodenough Report (2) had stressed the need for post-

graduate deans to meet to exchange views and determine policy and Sir Francis Fraser, the first director of the federation, initiated such meetings which led to the establishment of the Conference of Deans of Postgraduate Medical Education of the Universities of the United Kingdom.

The recommendation that a compulsory pre-registration year should be introduced was incorporated in the Medical Act of 1950 and the requirement became mandatory in 1953. This brought about the most fundamental change in the training of doctors since the Act of 1858 and acknowledged the totally unrealistic assumption of the Act that doctors on graduation could be fully competent in all aspects of medicine, surgery and mid-wifery. The pre-registration year became in effect the final year of basic medical training during which time each medical school remains responsible for its graduates and must furnish a certificate of satisfactory completion of the pre-registration requirements on the basis of which the GMC will grant full registration.

The introduction of the pre-registration year also marked the beginning of a system of formal graduate education and training in the United Kingdom.

2

Training and Manpower

Medical education and training must take place within the structure and framework of the health care system of the country concerned and should be so directed that the medical needs of the population are met and the reasonable aspirations and expectations of those in training are fulfilled.

In Britain the fortunes of medical education and its beneficiaries are now inextricably dependent on the fortunes of the NHS which is the monopoly employer of medical manpower. It has evolved from a system based on primary care provided by a large number of general practitioners and specialist care provided by a much smaller number of consultants or specialists who were traditionally based in teaching hospitals and in voluntary hospitals in the larger centres of population.

As the NHS developed, the hospital service was greatly expanded in response to the rapid advances in all aspects of medicine and surgery but specialist care continued to be provided by a relatively small number of consultants supported by ever increasing numbers of junior hospital doctors ostensibly in training.

The reasons for the disparity between the numbers of doctors in training and the number of career posts in hospital specialties have been both financial and political, but the career aspirations of many of those in training have been frustrated by the rigidity of the career structure and uncertainties about future manpower planning.

Forecasting the demand for future medical manpower has always been notoriously difficult and often unreliable, but in 1944 the Goodenough Committee (2) suggested that the establishment of a National Health Service would almost certainly require an increase in the number of doctors. In the late 1940s the intake of British medical students was about 2,000 per annum and the Goodenough Committee predicted that with an annual medical school intake of about 2,500, the numbers of doctors in practice in Britain would increase to about 50,000 by 1953. In fact in

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1955 there were about 53,000 doctors in practice and in 1957 the Willink Committee (13) concluded that there was a risk of over-production of doctors in the future and recommended that the annual medical school intake should be reduced by 10 per cent. By 1960 there were doubts about the assumptions and conclusions of this report and in particular the committee appeared to have under-estimated the population growth and the rate at which the NHS was expanding (14).

In 1961, therefore, the Health Departments reviewed the conclusions of the committee and the data on which they were based and the government, through the then University Grants Committee, recommended that the medical schools should increase their intake of students and in the academic year 1963-64 the number rose to 2,150.

The Royal Commission on Medical Education gave further urgent consideration to the question of medical school numbers and based its predictions of future need on the extrapolation of past trends. It was noted that the ratio of doctors to population had shown a steady rise of 1.5 per cent per annum since the early part of the century and, assuming that this increase would continue and could be afforded, the Commission recommended, in its report in 1968, a substantial increase in medical school numbers (5). As a result the government agreed to a target of 3,700 places by 1975 (15), later increased to 4100 to be achieved by the late 1970s (16).

After discussions with individual universities, a target of 4080 was eventually agreed, the increased number of students to be accommodated by expanding existing medical schools and in new schools at Nottingham, Southampton and Leicester. Medical school intake has continued to be based on the target figure of 4080 per annum, confirmed as appropriate in a departmental Green Paper in 1978 (17) though never quite achieved.

Having determined the size of the annual intake of medical students thought necessary to meet the future needs of the population, it has proved much more difficult to establish a career structure which would provide an efficient service in all specialties including general practice and also provide well-organised training programmes for young doctors.

The Spens Committee, primarily advising on remuneration (18), envisaged in 1948 that all posts between house officer and

consultant would provide appropriate training opportunities largely on the traditional apprenticeship model of British medicine. Three intermediate grades were recognised for which the term senior house officer (SHO), registrar and senior registrar were eventually adopted. While holding more junior posts, trainees aspiring to a specialist career would study for a higher qualification in medicine or surgery, hoping to obtain a senior registrar post about four years after graduation. During the tenure of their senior registrar posts, trainees would accept increasing responsibility and after three or four years would be eligible for appointment to the staff of a hospital as a fully training consultant at about the age of 32.

Unfortunately the educational status of the more junior posts was soon eroded as the service demands increased and by 1951 only senior registrar posts were recognised as being primarily for training.

At that time, competition for consultant posts, particularly in general medicine and general surgery, became intense and many applicants were unsuccessful after multiple applications, and medical emigration, particularly to North America became a worrying phenomenon with the net loss of several hundred doctors from Britain each year. Eventually by declaring those senior registrars who had been in post for more than four years 'time-expired' and terminating their appointments, the number of senior registrars was brought into balance with the number of anticipated consultant vacancies. But the numbers of SHOs and registrars were allowed to increase throughout the country in order to provide support for the consultants whose numbers increased much more slowly.

As a result, a log-jam developed in the progression of doctors through the grades of SHO and registrar so that the period of so-called training became greatly extended, with the age of appointment to consultant posts being delayed until the late thirties or even early forties, compared with the age of 32 as envisaged in the Spens Report.

In 1969 it was agreed between the health departments and the profession that the training of specialists should take only as long as the needs of training required and should lead without undue delay to a consultant post (19). To achieve this it was agreed that the number of training posts must be controlled and in 1971 it

was suggested that the problem could be solved by a sustained process of differential growth with consultant numbers growing faster than training grade numbers (20). It was calculated that growth rates of 4 per cent per annum for consultants and $2\frac{1}{2}$ per cent for the junior grades would produce a better balance in the career structure by 1978.

In 1972 the Central Manpower Committee for England and Wales was established to advise the health department on the allocation of new consultant, senior registrar and registrar posts in accordance with this aim. In Scotland, a similar task was undertaken through the Advisory Committee on Hospital Medical Establishment. Unfortunately the targets were not achieved and the House of Commons Social Services Committee report on Medical Education (the Short Report), in 1981 (21) revealed that between 1968 and 1979 there had been a 28.6 per cent growth in consultant numbers in England and Wales—an annual growth rate of only 2.0 per cent whilst the number of juniors had increased by 61.5 per cent, substantially more than the target of $2\frac{1}{2}$ per cent annual rate which had been set.

Furthermore, it was noted that the NHS was heavily dependent at that time on overseas doctors who had come to Britain ostensibly for training, but often found themselves rendering a service in unsatisfactory posts in unpopular specialities. In 1980 53.5 per cent of all registrars and 48 per cent of all SHOs in England and Wales were born overseas, although about 85 per cent planned to return to their own country.

In its report the Short Committee expressed concern, not only about the poor career prospects of junior staff and the inadequate training many were receiving, but also about the quality of patient care, which they perceived as being compromised by so much of it being provided by doctors in training rather than by fully trained consultants. The committee recommended, therefore, that the ratio of consultants to training posts should be increased by expanding the consultant grade and by reducing the number of training posts in most hospitals and in most specialities.

The government welcomed the committee's report, but while accepting the argument that more patient care should be provided by doctors in the career grades, many consultants were concerned about the adverse effect that the change would have on their own work-load and on-call commitments. Perhaps not surprisingly

therefore, progress in reforming hospital medical staffing has been slow and the problem of reconciling the career aspirations of those in training with the need to provide continuous safe 24-hour cover, particularly in the acute specialties, has remained largely unresolved.

Indeed, the numbers in the registrar grade continued to expand in response to pressure for more registrars to meet service needs and for more honorary posts to be recognised for research registrars. As a result the imbalance between the numbers of registrars and the number of vacancies in the senior registrar grade became a matter of urgent concern. Department of Health manpower projections in 1985 indicated that without further change the numbers in the registrar grade would continue to increase faster than the rate of consultant expansion and the average time spent in the grade would increase to more than four years by 1993.

A ministerial working group was therefore set up in 1985 with the objectives of finding an effective method for encouraging consultant expansion; finding a mechanism for reducing the number of registrar posts, and particularly the number of UK graduates in the grade, and finding a way of providing essential support for consultants in the acute specialties without training doctors for non-existent posts.

The same year, the Joint Planning Advisory Committee (JPAC) was set up after discussions between representatives of the health department, the Joint Consultants Committee, the Committee of Vice-Chancellors and Principals of the Universities of the UK and the Medical Research Council. The initial remit of this committee was to advise the Health Department for England and Wales on the total number of senior registrars required nationally in each specialty, but this remit was later extended to include similar advice on registrars, both NHS and honorary. Membership of the committee included representatives of the profession, academic and research interests, representatives of NHS management and observers from the health department.

The report of the Ministerial Working Group was published in 1986 as a Consultation document entitled '*Hospital Medical Staffing—Achieving a Balance*' (22) and the Working Group was later reconvened as a Steering Group to oversee implementation of its recommendations.

The report suggested that the rate of expansion of consultant numbers would be increased by providing central funding for additional new posts in the acute specialties of medicine, surgery, trauma and orthopaedic surgery for a limited period; by converting any senior registrar posts identified as surplus to training requirements to the consultant grade and by reviewing the registrar staffing of consultant firms whenever a consultant retires with a view to converting a registrar post to a consultant post, if appropriate, on service grounds. A new intermediate level of service grade, later designated staff grade, would be established to undertake routine service tasks inappropriate for trainees.

JPAC would continue to review senior registrar numbers in relation to anticipated consultant vacancies and would also advise on the appropriate number of registrars required to fill vacancies in the senior registrar grade. It was recognised that this review would inevitably lead to a steady reduction in the total number of registrar posts in some specialties in the light of the number of posts required for training future consultants and the likely training requirements of overseas doctors.

Although the proposed measures to increase the number of consultants were generally welcomed, there was concern about the implications of a reduction in registrar numbers. Consultants in busy district hospitals were concerned about the effect on their pattern of work, whilst those working in academic medicine were apprehensive that the proposals would make the needs of research subordinate to crude manpower predictions. Furthermore, the proposals could lead to a rigid career structure which might deter young doctors from side-stepping off the career ladder to undertake periods of research.

In view of these concerns the Steering Group set up an Academic and Research Group to consider how the need for the overall control of registrar numbers could be reconciled with the special needs of academic medicine. This group agreed that the reduction in honorary registrar posts should be broadly in proportion to the reduction in NHS posts, but in order to retain some flexibility it was proposed that there should be a central reserve from which posts could be allocated in exceptional circumstances.

With the implementation of the proposals in *'Achieving a Balance: Plan for Action'* (23) newly appointed registrars eligible to pursue a career in the UK would be designated career registrars,

while those from abroad and not so eligible would be designated visiting registrars.

Regions would be given quotas for career registrars in each specialty, which would be determined by the health department on advice from JPAC. Interim quotas would be set for achievement within five years from 1988, with final quotas set for ten years. Initially there would be no restriction on the number of visiting registrars. It was hoped that registrar posts would be incorporated into rotations, wherever possible including experience in both university and district general hospitals. Furthermore, it was not intended that regions should distinguish those posts suitable for career registrars from those suitable for visiting registrars. If possible they should be on the same rotation. Separate allocations, again on the advice of JPAC, would be made for university posts and for research registrars with honorary contracts.

It was recognised that the reduction in the number of registrar posts for those eligible to work in the UK would increase the competition for these posts and lead to an increase in the average time spent by trainees in the SHO grade. Some expansion of this grade which had remained 'frozen' since 1982-83 was therefore envisaged.

It was also recognised that the implementation of the proposals would sharpen the distinction between general professional training at SHO level and higher professional or specialist training, which would begin at registrar level and be completed at senior registrar level.

Unification of the registrar and senior registrar was seen as a logical outcome of the proposed changes, but more radical changes in the career structure of the NHS are likely to be necessary if the aspirations and expectations of those in training are to be fulfilled.

Critically, this is the framework within which all medical education and training must take place.

Stimulus of the Christ Church Conference

POSTGRADUATE CENTRE MOVEMENT

Although formal postgraduate medical education may be a recent phenomenon, many long-established medical societies throughout Britain have contributed to the continuing medical education of established practitioners and provided opportunities for general practitioners and consultants to meet. Similarly the specialist societies have made an immense contribution to the advancement and dissemination of new knowledge and most consultants regard their specialist societies or associations as the most valuable source of new knowledge in their field.

In the provinces the oldest surviving medical society was founded in Colchester in 1774, followed by Plymouth in 1794, with many others being founded in the nineteenth century. Student societies were established in a number of medical schools, the earliest being the Royal Medical Society in Edinburgh which was founded in 1737 (24, 25).

The Medical Society of London was founded by John Oakley Lettson in 1773 with a membership initially limited to 30 physicians, 30 surgeons and 30 apothecaries, reflecting the underlying objective of such societies, which was to promote friendship amongst their members (26).

The Medico-Chirurgical Society of London, founded in 1805 by a group of doctors who seceded from the Medical Society of London, was granted its Royal Charter in 1834 and in 1907 combined with seventeen specialist societies to become the Royal Society of Medicine. Since that time the society, through its specialist sections, has achieved both a national and international reputation for the high standard of its academic programmes (27).

The Fellowship of Medicine was established in 1918 to provide opportunities for postgraduate training, particularly for medical officers returning from War Service. Since 1925 it has published

the *Postgraduate Medical Journal* which continues as the Fellowship's vehicle for promoting postgraduate medical education (28).

Opportunities for more formal postgraduate education have been provided by the British Postgraduate Medical Federation and its specialist institutes and by the Royal Postgraduate Medical School. The Royal Colleges also hold lectures and courses, some orientated towards their higher examinations and others being mainly for the benefit of established practitioners.

But as the NHS developed, it became clear that there was a need for the local provision of facilities for postgraduate education and training and it was the Conference held by the Nuffield Provincial Hospitals Trust at Christ Church, Oxford in December 1961, under the chairmanship of Sir George Pickering, Regius Professor of Medicine (1), which stimulated the development of such activities. This conference made a remarkable impact and a number of factors contributed to its successful outcome. First, the timing was opportune; second, the participants who represented important and influential bodies were committed to the task of identifying the need and thirdly, having identified the need they defined objectives which appeared to be attainable within a reasonable period of time.

By 1961 many of the initial disputes between the profession and the politicians had been resolved and a number of benefits of the NHS were becoming apparent. One of the most notable was the upgrading of district hospitals. This upgrading was achieved largely by modernising old hospitals and staffing them with well-trained young consultants who showed considerable enthusiasm in developing their departments in order to provide a good district service.

Many established contacts with teaching hospitals and accepted students for periods of elective study. Some such students would apply for house officer posts in the same hospitals at a later date.

At this time, however, there was concern about the status of general practitioners who were becoming isolated from the hospitals. Prior to the introduction of the NHS many general practitioners held appointments in their local hospitals but when formally trained consultants were appointed their bed privileges were withdrawn and even direct access to laboratory and radiology departments was restricted. Within the hospitals themselves the emphasis had been on developing district services and on

increasing the number of junior staff in order to provide support for the consultants. There was a wealth of clinical experience for these juniors but facilities for training and study were lacking in all but a very few district hospitals.

It was against this background that the Christ Church conference was held. The participants included representatives from the Royal Colleges, the University Medical Schools, the Ministry of Health (as it then was), NHS employing authorities, the University Grants Committee and consultants in the provinces.

They recognised that the timing of the conference was opportune and the need for action was apparent. Not only was it important to establish training programmes for young British graduates but it was important to ensure that graduates from abroad who came with high expectations were provided with a solid foundation for their future professional work.

It was therefore recommended that all posts from senior house officer to senior registrar should be regarded as training posts and that facilities both for postgraduate training and for continuing education should be provided in all district hospitals. To meet these needs the primary objective would be to promote an educational atmosphere in the regional hospital unit. This should be stimulated by the appointment of clinical tutors who would be responsible for co-ordinating all postgraduate activities in the district. They would need adequate administrative and secretarial support. All consultants should be encouraged to recognise their responsibilities for training junior staff. Essential physical facilities would include a seminar room, a library and an office for the clinical tutor and his secretary. A lunch room was also considered important as it would provide a focal point where hospital medical staff and general practitioners could meet.

The conference recognised the need for a strong and widely representative Regional Postgraduate Committee to co-ordinate postgraduate activities throughout the region, with a postgraduate dean appointed by the faculty of the university concerned acting as convenor. Detailed financial arrangements were not considered but it was felt that a modest investment would yield a handsome return.

The concept of building postgraduate medical centres was quickly accepted. Postgraduate deans were appointed in those regions where there was not already a dean in post and clinical tutors were appointed in the districts. The Nuffield Provincial Hospitals Trust and the King's Fund provided generous grants in

order to finance the building of prototype centres in selected parts of the country.

Initially there was no authority for the use of exchequer funds for postgraduate medical education and most of the early centres were built as a result of the initiative of groups of enthusiastic consultants in district hospitals. Often there would be a leading activist in the group who would emerge as the most obvious choice for clinical tutor. These consultants mobilised the support of their colleagues and conducted energetic fund raising appeals, often with the help of leading local industrialists. In many districts the consultants and general practitioners made generous contributions themselves and such evidence of self-help encouraged donations from local industry. In some cases educational trusts were set up with supportive laymen as trustees.

The success of the appeals varied from one district to another, so that there was considerable diversity in the type of accommodation that could be built. There was a sense of urgency to implement the recommendations of the Christ Church conference and many modest centres were built providing the minimum requirements to meet the immediate need (29). Some districts received quite large donations for their projects and were thus able to build much larger and better equipped centres.

There was continuing concern about the source of finance for maintaining and staffing these centres until the publication of HM(64)69 which recognised that it should be the responsibility of the NHS to meet the cost of postgraduate and continuing medical education for doctors working within the service.

Revenue allocations were therefore increased to cover the cost of secretarial help, honoraria for clinical tutors—initially only £100 per annum—and the work of postgraduate deans. Capital expenditure had to be met from existing allocations and the needs of postgraduate education had to be considered with other competing demands. Nevertheless, many hospital authorities were able to collaborate with those raising funds for postgraduate centres by contributing amounts equal to the sums raised privately up to an agreed limit.

Thus the majority of the early centres were built as the result of a partnership between the hospital authorities, doctors and private enterprise.

The number of centres increased rapidly and a national survey carried out in 1968 (30) revealed that 311 clinical tutors had been appointed throughout England, Wales, Scotland and Northern Ireland. Questionnaires were sent to each of these tutors seeking information about their accommodation. 221 (71 per cent) of the questionnaires were returned indicating that there were then at least 74 centres, either purpose built or in converted premises, with 37 more being planned, while 53 tutors were using improvised hospital accommodation.

Expenditure on the early centres was remarkably modest. Adequate facilities were often provided for less than £5000 by converting existing buildings, while the capital expenditure on the majority of the early purpose built centres ranged from £10,000 to £40,000. By 1978 there were more than 200 centres in existence (31).

The opening of a postgraduate centre in a district hospital was found to bring immediate benefit both to the hospital and the district it serves. First and foremost it provides a meeting place where hospital staff, both senior and junior can meet on common ground with their general practitioner colleagues. Hopefully the library will be used by general practitioners as well as by hospital staff and hopefully both groups will attend the weekly clinical meeting, or grand round, which often becomes the central feature of the programme.

The appointment of clinical tutors and the provision of suitable accommodation was, of course, only the first stage in implementing the recommendations made at the Christ Church conference. Structuring a suitable programme for hospital trainees and planning appropriate sessions for the continuing education of general practitioners is a considerable challenge. The needs of the two groups are quite different and their programmes have to be separately planned.

The provision of satisfactory training programmes for junior medical staff has been particularly difficult to achieve and the inadequacies of present arrangements are well recognised. In many district hospitals the numbers of junior staff are too small to make it possible to arrange a viable structured programme. Many residents complain that they are too busy to attend regular sessions. Teaching activities for juniors have therefore tended to be planned by each department on the basis of departmental meetings, ward teaching and journal clubs. Most centres hold symposia and study

days on specific topics and the larger centres run courses for those trainees preparing for higher examinations.

Most district postgraduate centres now have well stocked libraries with at least a part-time librarian who is able to give good advice about books and journals and who usually has access to modern methods of information retrieval. It can be said that the provision of postgraduate centres has introduced an educational atmosphere within district general hospitals which was the primary objective identified by the Christ Church Conference.

Furthermore, the building of the first generation of postgraduate centres was a development unique to the United Kingdom—no similar type of educational facility being seen in other countries. On the grounds of cost alone, however, it is unlikely that many isolated postgraduate centres will be built in the future. The pattern is more likely to be that a hospital education centre will be included in all new hospitals and inevitably it will be, at least partly, for multi-disciplinary use. In such cases the requirements for postgraduate medical education will need to be defined and certain areas granted priority for medical use.

Sharing the use of a large auditorium is reasonable and a multi-disciplinary library will justify more staff and better facilities to the advantage of all. The trend towards this type of education centre has been evident in recent years and must be considered as an evolutionary process.

The concept of providing postgraduate medical centres presented an exciting challenge for each clinical tutor, but they had no training in educational method or curriculum design. Many already had heavy clinical commitments and cheerfully undertook the additional work as enthusiastic amateurs in what was virtually non-existent time. The success of district postgraduate activities depends upon the sustained enthusiasm of clinical tutors and their postgraduate centre administrators, many of whom have shown quite outstanding dedication to the task.

The National Association of Clinical Tutors, set up in 1970, has contributed greatly to the professional development of clinical tutors in the field of medical education and has given valuable advice to national bodies on the needs of those most actively involved.

The National Association of Postgraduate Medical Education Centres Administrators was established in 1978. It has become a

most useful forum for postgraduate centre administrators to exchange their views and has certainly achieved its objective of promoting a high standard of postgraduate centre administration which has been a distinctive feature of the movement.

STRUCTURE OF POSTGRADUATE MEDICAL EDUCATION

Over the years since the Christ Church conference, a complex structure for the organisation of postgraduate medical education has evolved.

The Royal Colleges and their Faculties have had a long-standing responsibility for maintaining standards of postgraduate education through their examination systems, which set high standards for those seeking entry into specialist training, and by defining criteria for the approval of posts and training programmes.

In the early 1960s the Royal College of Surgeons of England appointed advisers for each region in England and about the same time a number of district surgical tutors were appointed on an experimental basis with funding provided by the Nuffield Provincial Hospitals Trust (32). There are now surgical tutors in all health districts. The Royal College of Physicians of London appointed regional advisers in 1969 but did not appoint College tutors until 1987.

The other Colleges and Faculties have also adopted the policy of appointing advisers and district tutors, but the regional advisers in general practice are appointed by the universities and are on the staff of the postgraduate deans.

The postgraduate deans have a broad remit, being responsible for the overall co-ordination of postgraduate and continuing medical education throughout their regions and act as chief executive officers of their regional postgraduate medical education committees. Membership of these committees varies, but always includes representatives from the universities, the Royal Colleges, hospital consultants, general practitioners and the regional director of Public Health Medicine.

These committees are responsible for determining regional educational policy, for ensuring that the educational content of training posts meets the requirements of Colleges and higher

training committees and for approving pre-registration posts and monitoring the progress of senior registrars.

In most districts there is a local postgraduate committee on which all district College tutors and general practice tutors will serve, the chairman frequently being the district clinical tutor. These committees plan the educational programme for the district and the College tutors collaborate with the clinical tutors in providing career advice and counselling for junior medical staff and in assessing their progress.

When the White Paper, *Working for Patients*, was published in 1989 (33), there was anxiety that these arrangements might be disturbed and that the proposed reforms would have an adverse effect on medical education and research, particularly in self governed Trust hospitals, which would be granted autonomy in respect of the employment of staff and the services they would offer.

On the other hand, it was stated in the White Paper that the Government was committed to maintaining the quality of medical education and research and that junior doctors' posts would continue to need educational approval from the relevant Royal College both in directly managed and Trust hospitals.

It was encouraging therefore that Mr. Kenneth Clarke, the then Secretary of State for Health, declared in a speech to leading members of the medical profession on 10th. July 1989 (34) that:

... the quality of care which the NHS can deliver rests entirely on the high standards and excellence of the training, education and teaching which it provides. We therefore need a framework for postgraduate education and for the continuing education of our doctors, and that includes general practitioners, which will maintain and indeed improve our existing high standards.

The following year, it was announced that there would be defined protected budgets for postgraduate and continuing medical education which would be held by regional postgraduate deans who would make allocations to clinical tutors for funding educational programmes in their districts (35). Further details of a revised framework for postgraduate medical education were described in a paper from the NHS management executive in 1991 (36). Regional postgraduate deans, previously appointed by the universities, would in future be appointed jointly by the universi-

ties and regional health authorities and would be fully accountable to the RHAs for their budgets.

Clinical tutors would continue to be appointed by the universities and would continue to be responsible for running the postgraduate centres. Their greatly extended role would be recognised in a new job description and their honorarium would be replaced by an additional sessional payment (37). They would have administrative responsibility for the educational budgets at unit level and would be accountable to the dean for the discharge of their educational duties. There would still be a need for a locally based postgraduate committee to support the clinical tutor.

It was emphasised that while the NHS would be responsible for funding postgraduate medical education, the maintenance of standards would continue to be the responsibility of the Royal Colleges, the Higher Training Committees, the universities and the GMC, with which close co-operation would be required.

The regional budget for postgraduate medical education would include the salaries of the postgraduate dean, any associate deans and their support staff, and the salaries of regional advisers in general practice. It would also include the payments for clinical, dental and general practice tutors and for study leave for junior staff, and from April 1993 it would include the cost of the educational component of approved training posts.

Postgraduate deans would commission and fund the direct cost of programmes both in directly managed units and in Trust hospitals and it was anticipated that educational contracts would be negotiated between regional postgraduate deans as purchasers, and clinical tutors as providers, of district educational activities. Postgraduate deans would also set educational objectives and monitor the outcome of educational activities and would establish links with audit committees to ensure that any relevant findings are incorporated into the education programmes.

CO-ORDINATION OF POSTGRADUATE MEDICAL EDUCATION

The need for a central body to co-ordinate the activities of the bewildering number of individuals and institutions involved in the field of postgraduate medical education was foreseen at the Christ Church conference (1).

Following discussions between the Committee of Vice-Chancellors and Principals, the Royal Colleges and the Ministry of Health, a conference was held at the Royal College of Physicians in October 1966, when it was agreed to establish a committee to develop an overall policy for the co-ordination and supervision of training in the NHS (38, 39). As a result, the Central Committee on Postgraduate Medical Education was set up in 1967(40). Membership initially came from the Royal Colleges and universities in England and Wales but was subsequently extended to include the Scottish Royal Colleges, and representatives from the Scottish universities and it became known as the Central Committee on Postgraduate Medical Education (Great Britain). The first chairman was Sir Robert Aitken and the Nuffield Provincial Hospitals Trust made a substantial grant to enable the committee to establish a secretariat.

Although mainly advisory in character, the committee acted as a clearing house for all information on the organisation of postgraduate medical education in the NHS and provided support and advice to regional postgraduate committees. It also maintained contact with the Committee of Vice-Chancellors and Principals, the Colleges, and the Health Departments.

At the time the committee was established the Royal Commission on Medical Education was already considering the need for postgraduate training and in its report (5) expressed serious concern about the lack of co-ordination of the activities of the large number of bodies involved. It recommended that a Central Council for Postgraduate Medical Education should be set up to exercise general oversight of postgraduate medical education and training in Great Britain.

Its functions would be similar to those of the existing Central Committee, but its membership, which would be determined by the Secretary of State for Health and Social Security, would be wider and would include representatives, not only from the Royal Colleges and the universities, but also from the profession and the NHS. The Council would provide a national forum for the discussion of all matters relating to postgraduate medical education and training and would provide the Government with an authoritative source of advice.

These recommendations were accepted by the Government, but because there are separate NHS Acts for Scotland and

Northern Ireland, three councils for postgraduate medical education were set up in 1970 to succeed the Central Committee—one for England and Wales, one for Scotland and one for Northern Ireland.

The Council for Postgraduate Medical Education for England and Wales set up an advisory committee of postgraduate deans and an advisory committee on general practice for the regional advisers. Both committees provided valuable links between the Council and the regional postgraduate committees. Studies were carried out on a wide range of problems, but while the reports of the Council were well received, it became apparent that its purely advisory role rendered it ineffective in bringing about change. Eventually the Royal Colleges, which had taken such an active part in establishing the Central Committee, became sceptical about the role of the Council for England and Wales and in 1987, following a review of its function, the Secretary of State decided to disband it. The Scottish and Irish Councils have been more successful and they both continue as before and a Council for Postgraduate Medical Education was set up in Wales.

After much discussion it was concluded that a new body was needed in England to advise on issues concerned with the practical implementation of educational standards where the issues went beyond the responsibilities of any one of the Colleges.

The Standing Committee on Postgraduate Medical Education (SCOPME) was therefore set up by the Secretary of State for Health in 1988 with the following terms of reference:

to advise the Secretary of State on the delivery of postgraduate medical and dental education, taking into account both the standards promulgated by professional bodies and the potential difficulties of reconciling service and training needs, to identify particular problems and to develop realistic solutions to these in consultation with relevant interests; and to report regularly.

The chairman and members of the committee are appointed by the Secretary of State and although members cover a wide range of educational and service interests, they are not representative of specific institutions. Furthermore, the committee has no direct links with the Colleges or the universities and reports directly to the Secretary of State, either on issues which it has been asked to consider, or on problems which it has identified and which the Secretary of State has agreed that it should study.

Much of its work has, therefore, been carried out by working parties on specific topics. Thus the committee commented on the possible implications of the NHS reforms for medical education (41) and has reviewed NHS expenditure on postgraduate education and has studied such problems as SHO training, the uptake of study leave and the educational aspects of medical audit. Conferences and workshops have been held to discuss their findings (42, 43, 44). The committee also made recommendations for a new infrastructure for postgraduate medical education in a purchaser-provider environment (45), many of which were adopted by the NHS Management Executive (36).

These are certainly useful achievements but the remit of SCOPME is restricted to advising the Secretary of State on specific issues and it makes no attempt to co-ordinate the activities of the many institutions and individuals concerned with postgraduate medical education.

Nevertheless the need for a co-ordinating body remains, but it is difficult to envisage one which would succeed where the Council for Postgraduate Medical Education failed; this may be an issue which could be considered by the Conference of Royal Medical Colleges and their Faculties. Representatives of the Colleges began meeting informally when the NHS was introduced in 1948 but as the number of Colleges increased the need to formulate a corporate opinion on mutual problems became apparent and the Conference was established in 1975. There are now seventeen participating Colleges and Faculties. Individual membership consists of the Presidents of the Colleges, the President of the Faculty of Public Health Medicine and the Deans of the Faculties of Dental Surgery and Occupational Medicine (46).

The Conference (see Table 1) unites the Colleges and their Faculties on all matters relating to clinical standards and patient care and considers a wide range of issues, many of which are related to education and training. By virtue of their independence from government the Colleges can exert great influence, but even now the Conference is a relatively informal body with changing individual representatives as presidents assume and demit office.

But there is clearly a great need for strong united leadership in medicine and it has been suggested that this could be provided more effectively if an Academy of Medicine were to be established. This is not a new suggestion but it is a controversial matter.

TABLE 1

**CONFERENCE OF ROYAL MEDICAL COLLEGES
AND THEIR FACULTIES**

	Date of Royal Charter or opening
Royal College of Surgeons of Edinburgh	1505
Royal College of Physicians of London	1518
Royal College of Physicians & Surgeons of Glasgow	1599
Royal College of Physicians of Ireland	1654
Royal College of Physicians of Edinburgh	1681
Royal College of Surgeons in Ireland	1784
Royal College of Surgeons of England	1800
Royal College of Obstetricians & Gynaecologists	1930
Faculty of Dental Surgery	1947
Royal College of General Practitioners	1952
Royal College of Pathologists (College in 1963)	1970
Royal College of Psychiatrists (Society in 1841)	1971
Royal College of Radiologists (Faculty in 1939)	1975
Faculty of Occupational Medicine	1978
Faculty of Public Health Medicine	1978
College of Anaesthetists (Faculty in 1948)	1988
College of Ophthalmologists	1989

The proposal for such an Academy, embracing not only the Royal Colleges but also other medical institutions was first made by Sir Arthur (now Lord) Porritt (47) but it was received without enthusiasm from the profession and never pursued.

It was discussed again at the Pembroke College conference in 1973 (48) when some of the issues raised at the Christ Church conference were followed up—but once more without great enthusiasm.

Nevertheless, if such a body could be developed from the Conference of Royal Medical Colleges and Faculties, it might secure the support of the profession and become an authoritative advisory body on a wide range of issues. It would have the advantage of being a national body and in the field of medical education it might perhaps succeed where the English Council for Postgraduate Medical Education failed.

Undergraduate Medical Education and the Pre-registration Year

It is nearly fifty years since the Goodenough Report (2) stated that the load of work of undergraduate medical students must be lightened by the elimination of all that is redundant and belongs to the province of the specialist, but in spite of exhortations to instruct less and educate more, medical schools have been slow to revise their curricula. Indeed, John Ellis said in 1956 that the only consistent objective of the undergraduate curriculum was to remain comprehensive (49) and Rosemary Stevens commented in 1963 (10) that the undergraduate curriculum was almost unchanged from several generations earlier.

By introducing the mandatory pre-registration year the Medical Act of 1950 acknowledged the need for further training after graduation, but it is only since the Medical Act of 1978 that the qualifying examination has no longer been defined as an examination in medicine, surgery and midwifery and the concept of graduating omniscient doctors finally eliminated. Furthermore it was this Act which provided for the establishment of a committee of the General Medical Council to be known as the Education Committee having the general function of 'promoting high standards of medical education and co-ordinating all stages of medical education.'

For the first time the GMC was thus given specific responsibilities in the fields of postgraduate and continuing medical education.

The Education Committee also assumed responsibility for determining the extent of knowledge and skill required for granting a primary UK medical qualification, for determining the standard of proficiency required from candidates at qualifying examinations and for determining the pattern of general clinical training during the pre-registration year.

In its first recommendations on basic medical training in 1980 (50), the Education Committee defined the purpose of under-

graduate education as being 'to provide all doctors by the time of full registration with the knowledge, skill and attitudes which will provide a firm basis for future vocational training'. By the time of graduation, therefore, a graduate must have sufficient knowledge of the structure and function of the human body in health and disease, of normal and abnormal behaviour and of techniques of diagnosis and treatment to enable him or her to assume the responsibility of a pre-registration house officer and to prepare for vocational training for general practice or for another speciality, followed by continuing medical education throughout his professional career.

The Education Committee emphasised the need to blend the scientific and humanitarian approach and to recognise that medicine is a life long study. Students should also acquire a concern for the welfare and dignity of their patients, an ability to recognise their own limitations and a willingness to seek help and to appreciate the importance of establishing good working relationships with colleagues and other health care workers.

These recommendations were noted by medical schools but there was no immediate change in undergraduate education. A new discussion document was circulated by the Education Committee in 1991 (51) which began by applauding the appropriateness of the 1980 recommendations but lamenting the limited extent to which they had been implemented. Thus the undergraduate curriculum is still grossly overburdened and there is still too much emphasis on the passive acquisition of knowledge rather than on the promotion of the capacity for self education.

The most significant change in medical education in the last few decades has been in the postgraduate sector and in the requirement for specialist training and accreditation following the completion of training programmes approved by higher training committees.

The objective of basic medical training is therefore no longer to produce a safe general practitioner capable of taking full clinical responsibility for all types of cases, but to produce doctors with an attitude to medicine and learning that will fit them for their professional calling and commit them to a life of self-education. Pressures to liberate the curriculum from factual overload are balanced by pressures to incorporate new material, but many subjects could be transferred to the postgraduate period.

The 1991 discussion paper (51) suggests that much didactic teaching should be replaced by the provision of learning opportunities and the stimulus to acquire knowledge because of its inherent interest or relevance to a problem to be solved. To facilitate a more selective approach to learning the Education Committee has recommended that the future undergraduate course should be based on a core curriculum complemented by a 'selected options model'. Students would spend two-thirds of their time on core subjects and one third on selected options. The core curriculum would include the teaching of clinical methods, practical skills, patient care, the art of communication and an understanding of the normal and abnormal structure and function of the human body. They would select 3–6 options from a wide range of learning opportunities offered by the Faculty. They would be given advice in selecting their options and guidance while carrying out their work.

The Education Committee recognises that if these proposals are adopted, students on graduating will not all have the same knowledge or experience, but hopefully they will have acquired an appropriate approach to learning and will be fully equipped to embark on their pre-registration year.

THE PRE-REGISTRATION YEAR

From Graduate to Clinician

The pre-registration year constitutes of what is perhaps the most vital period of training in the professional life-time of a doctor. The general clinical training during this time completes basic medical education and falls under university governance even though the training may take place in a hospital remote from medical school. The year forms a bridge between medical school and postgraduate medical training and it is at this stage that the attitude of young medical graduates towards their patients, their colleagues and the profession they are entering are developed.

The year should be a stimulating educational experience, but unfortunately many factors conspire against achieving successful education and training during this time. The proposal to restructure the undergraduate curriculum on the basis of a 'core plus options' model will make it essential that these difficulties are overcome.

The approval of posts for pre-registration purposes is the responsibility of the medical school in each NHS region and this task is usually delegated to the postgraduate dean.

When the mandatory intern year was introduced in 1953, the number of posts had to be increased to ensure that all graduates had the opportunity of obtaining appropriate pre-registration experience in medicine and surgery. Inevitably the experience and training were variable, depending on the work of the unit to which the house officer was attached and on the motivation of the consultant in charge to teach and to train. In many teaching hospitals the experience was limited because of specialisation and broader experience was available in district hospitals.

In 1968 the Todd Report (5) noted that there was much dissatisfaction with some pre-registration posts and with the inadequacy of supervision and the time available for study. The report said (para 63/64) that the intern year should be regarded as a period of training in general clinical methods. After 5 years in Medical School the young doctor was seeking real responsibility rather than more formal educational activities.

He should be under the supervision of a consultant of high standard who has time to give thought to the most appropriate method of teaching and can systemically plan and carry out the instruction required to give the young graduate a good clinical training.

Reviewing the situation seven years later the Merrison Committee (52) found (para 94) that the inevitable competition between service to patients and the education of doctors was having an adverse effect on pre-registration training. Some young doctors were being given responsibilities they were not ready to assume and others were given duties irrelevant to their training needs. Some posts were unsuitable because they were too specialised and there was little evidence that the educational function of the pre-registration year was being considered.

The Merrison Committee concluded (para 99) that there was inadequate definition of the educational aims of the pre-registration year and inadequate understanding of the proper interaction of service and training. There should be more effective recognition that the young doctor is at a stage where further education takes the form of a supervised exposure to responsibility.

In order to improve the quality of training of newly qualified

doctors, the Merrison Committee (para 117) proposed that the pre-registration year should be replaced by a two year period of graduate clinical training, with a corresponding reduction in the length of the undergraduate course. The educational objective of graduate clinical training would be to make a clinician of the graduate in preparation for further training as a specialist or general practitioner. Universities would need to be granted extra flexibility to enable them to omit subjects from the undergraduate curriculum which would be provided during graduate clinical training. Changes in organisation would be needed to ensure that medical education became in reality a continuum.

These proposals were not adopted, and in spite of GMC recommendations in 1987 and 1992 for a code of good practice for pre-registration posts (53, 54), this period of training remains an area of great concern.

The inadequacies of the pre-registration year are well documented. Hours of duty are excessively long (55, 56), stress levels are high (57, 58), and facilities for counselling are variable (59). Writing of his experience in his first post, one house officer admitted that he was quite unprepared for the task, but fortunately he had a supportive SHO and registrar who made him less afraid (60).

The lack of supervision is the most serious and consistent criticism of pre-registration posts. This was highlighted, tragically, by the conviction for manslaughter of a house physician and a senior house officer following the death of a patient to whom a cytotoxic drug (Vincristine) had been administered intrathecally instead of intravenously. Neither house officer was sufficiently experienced to be undertaking cytotoxic therapy without proper supervision, which was not provided. In passing sentence the judge commented 'It seems to me that you could have been helped much more than you were. This could have ensured that this particular tragedy never happened' (61).

The extent of the mismatch between the expectations of house officers and the reality of their jobs was vividly revealed in a study carried out by Dowling and Barrett (4). They interviewed a group of pre-registration house officers and their consultants to assess both the service and the educational content of their posts. They found that the pre-registration year was dominated by service work to the virtual exclusion of education. Most of the house

officers interviewed complained that they had to perform many menial tasks such as repetitive phlebotomy and electrocardiography in the absence of technicians, and clerical duties which could be undertaken by ward clerks. Many did not find their hospital environment conducive to learning. Rapid rotation through different posts, large numbers of short-stay patients and the introduction of shift work made study difficult, while poor accommodation and unsatisfactory catering arrangements led to a feeling that they were neither valued for their services nor respected as individuals. With few exceptions, the clinical training was unplanned, unstructured, infrequent and provided mainly by other junior doctors, particularly SHOs and by nursing staff.

Consultants on the other hand, referred to learning as one of the main objectives of the pre-registration year and believed that house officers should learn through their work experience as part of an apprenticeship system. The perception of the pre-registration year was thus quite different in the eyes of house officers and consultants, many of whom clearly underestimated the lack of supervision in many aspects of their house officers' work. Few consultants and even fewer house officers seemed familiar with the term educational supervisor, or indeed with GMC recommendations and few house officers had met the district clinical tutor or even knew of his or her existence.

Nevertheless, Dowling and Barrett concluded that in spite of the lack of educational planning and organisation, pre-registration house officers do learn a great deal. They grow in confidence, learn practical aspects of patient care and learn how to initiate investigations and work the system. The danger is that they may acquire confidence without competence.

The introduction of induction courses on the first day of pre-registration house officer appointments has gone some way to allay the anxiety and apprehension of taking up such an appointment. Many courses have been criticised for their emphasis on hospital management and a more friendly approach in one hospital was recently described (62). New house officers arrive on the day prior to the start of their appointment and spend the whole day learning how the hospital works from the clinical tutor, the postgraduate centre administrator and from incumbent and departing house officers. They are introduced to the patients they are taking over, find how their firms work and receive a copy of

the house officer's pocket handbook which is edited by a group of house officers who refine it every six months. The University of London now publishes a list of duties inappropriate for house officers and defines the standard of accommodation which should be provided (63). But it is recognised that there is a need for a determined effort to improve the educational content of the pre-registration year and the Council of Deans of UK Medical Schools has made proposals which were recently summarised by Peter Richards (64).

As previously proposed by Merrison (52), the pre-registration period would be extended to cover two years with improved practical supervision and training, matched by a reduction in the duration of the undergraduate course. A novel feature would be that each post would be shared by a first and second year house officer. Structured educational programmes would be introduced and the hours of duty would be reduced below 72 hours per week. Medical Schools in partnership with their postgraduate deans would set up first and second year educational programmes covering many aspects of the task of being a doctor. Continuing strands of professional and academic education would span the two years.

Reactions to these proposals were mixed. The Chairman of the Medical Students Group of the British Medical Association expressed surprise that the pre-registration year is supposed to have an educational content and commented that his recently qualified colleagues did not recognise this aspect of their jobs (65). The competence of pre-registration house officers to act as front-line primary clinicians was questioned (66) and it was suggested that many lack the necessary skills to take advantage of their educational opportunities. To correct this would require a radical revision of both pre-clinical and clinical educational practice (67). Doubts were expressed about the wisdom of delegating the task of supervising the work of the most junior house officers to those only one year more senior, since lack of proper supervision was one of the main reasons for dissatisfaction with the pre-registration year, (68) but Richards pointed out (69) that the best tutor for many practical procedures and other basic responsibilities is often a slightly more senior fellow apprentice.

In its most recent recommendations the GMC Education Committee (54) stated that it wished universities to exert greater

control over the educational content of pre-registration posts and the monitoring of the progress of house officers and the Council of Deans has now considered a range of options to improve general clinical training during the pre-registration year (70).

The need to reduce the hours of duty, to eliminate inappropriate tasks, to improve the level of supervision and to provide more formal education was recognised. The deans considered that the option of extending the pre-registration period to two years would create more problems than it would solve, while the North American intern/resident programme has the disadvantage of requiring too early a commitment to a speciality. They recommended, therefore, that the educational content of the existing pre-registration year should be strengthened and planned on a coherent basis throughout the year. Not only individual posts but hospitals and their programmes should be accredited by universities for PRHO training, with minimum periods of formal education of one hour daily or one half-day each week being required for such accreditation.

– Hospital consultants and managers must recognise and demonstrate their commitment and support for the primarily educational functions of the pre-registration year if they are to retain their PRHO posts. Contracts of employment should include the name of the educational supervisor and a specification of the time assigned each week for formal education. Similar recommendations have been made before; it is urgent that they should now be implemented.

5

Specialist Training

On becoming fully registered medical practitioners doctors may prescribe drugs and sign statutory certificates, but they must undertake further training before being considered competent to practice independently in any field of medicine.

Prior to the introduction of mandatory vocational training, many of those opting for a career in general practice would seek an assistantship without further hospital experience, but intending specialists have always undertaken further training in a series of hospital posts.

As already pointed out, the pattern of such training is inevitably dependent on the hospital staffing structure, but although educational status was nominally restored to SHO and registrar posts after the Christ Church Conference in 1961 (1), the educational potential of these posts has always been compromised by the extreme difficulty of reconciling the training needs of postgraduates with the service needs of the hospitals. Thus, the Todd Report (5) noted in 1968 that 'in every branch of medicine young doctors have been dissatisfied with the absence of information about the prospects offered by alternative careers, the lack of clearly defined paths towards these and the inadequate or uncoordinated provision of training' (para 59).

In order to establish a more structured form of postgraduate training, it suggested that following full registration there should be a period of general professional training, embracing the SHO and registrar grades lasting about three years, followed by a period of further training in a specialist field, which would be of variable duration according to the specialty concerned.

General Professional Training

The initial concept of general professional training was that those aspects of early postgraduate training which are equally applicable for consultants and for general practitioners should be identified

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so that co-ordinated training programmes incorporating a series of posts appropriate for any specialty could be developed. Most young doctors, however, are reluctant to deviate from posts not directly related to their first choice of specialty for fear that their *curriculum vitae* may not appear competitive when applying for a more senior post in that specialty. They are also aware that the acquisition of the higher qualifications relevant to their specialty is an essential requirement for entry into higher training and seek posts offering appropriate experience. For these reasons few aspirants to a career in hospital medicine have been attracted to multi-disciplinary SHO rotations.

Thus, although the Royal College of Physicians of London (71) will recognise up to six months in general practice or community medicine, pathology, psychiatry, surgery or obstetrics and gynaecology as acceptable experience for general professional training, most of those aspiring to a career in a medical specialty will seek an SHO rotation incorporating a number of medical sub-specialties which will provide a good preparation for taking the MRCP (UK) examination. Similarly, those hoping to follow careers in surgery, obstetrics and gynaecology or paediatrics will seek posts which will prepare them for the FRCS, MRCOG or paediatric membership examinations, but trainees in obstetrics and in radiology must spend 12 months outside their chosen specialty. In psychiatry there are now many well structured training schemes for general professional training in preparation for the MRC Psych (72).

On the other hand, the introduction of Vocational Training Regulations for General Practice in 1979 marked a significant advance in this field, requiring trainee general practitioners to spend two years in rotating hospital posts and one year in an approved training practice.

Posts for general professional training must carry educational approval which is granted by the relevant Royal Colleges in England, Wales and Northern Ireland and by Regional Postgraduate Committees in Scotland and trainees may not be appointed to posts which are not approved. Each College publishes criteria for the approval of posts and visits hospitals to inspect the training facilities and to interview incumbent trainees and the supervising consultant staff. The Royal College of General Practitioners does not grant individual approval to posts but participates in visitations

with other Colleges and is particularly concerned with the relevance of posts for vocational training for general practice. These visits provide an important opportunity for monitoring standards, detecting deficiencies in training and for obtaining evidence on the state of the morale of both senior and junior staff. They also provide the opportunity for Colleges to establish contacts with those working in regions and districts which are distant from London.

On the debit side, visits are time consuming for visitors and disruptive for the hospitals being visited, particularly when different Colleges make visits in quick succession. Some form of joint accreditation system is required and if more structured training programmes are to be developed, it would be more appropriate to approve programmes rather than individual posts. Meanwhile, withdrawing educational approval from posts which do not meet prescribed criteria is the ultimate sanction available to Colleges, but this can create serious problems for hospitals and consultants striving to provide a service, often under difficult conditions. Granting limited approval and making extensions of approval for the normal five year period contingent on deficiencies being remedied is often the best way of effecting improvement.

Having been given responsibility for co-ordinating all stages of medical education, the Education Committee of the GMC has published recommendations on the Training of Specialists (73), which are intended to complement those of the Royal Colleges and the Joint Higher Training Committees. The committee believes that the term basic specialist training more closely describes the period between full registration and higher specialist training than general professional training, though some bodies such as the Royal College of Physicians prefer to retain the latter term.

The committee re-affirmed that much of the training and skill gained during basic specialist training is essential to the practice of medicine in any specialty. The acquisition of communication skills and the art of teamwork are equally important for all specialties whilst the extent to which practical skills appropriate to examination, investigation and treatment are learnt during specialist training will depend on the specialty concerned.

During the early years of specialist training the committee believes that trainees should broaden their experience as they

assume increasing responsibility under supervision and commends the principle of structured multi-disciplinary rotations.

As with pre-registration house officers all trainees should have a named educational supervisor to ensure that their educational needs are met and that they receive unambiguous feedback about their progress. Unfortunately, the objectives defined are difficult to attain and there has been persistent criticism of the training of SHOs. Like pre-registration house officers they have long hours of duty, poor living accommodation, fragmented training programmes and may be subjected to considerable stress (74). Surveys of the training experience of SHOs have revealed their deep dissatisfaction with existing arrangements.

In a survey of 200 SHOs in medical specialties carried out by the Standing Committee of Members of the Royal College of Physicians (75), two thirds of the 179 respondents (89.5 per cent response rate) were dissatisfied with their training. Many were unable to attend such teaching sessions as were arranged because of routine duties.

A larger survey of SHOs in six different specialties in the South East Thames Region (76) found no evidence of a systematic approach to their teaching or training. Furthermore the experience of training which they reported was considerably bleaker than was perceived by their consultants. Dominance of the service commitment appeared to be the focal cause of the problem and the authors believe that for both teachers and learners the free competition between service and training will always be resolved in favour of service. They do not believe that this issue will be resolved until service and training are recognised as different functions.

The Advisory Committee of Deans of the Council for Post-graduate Medical Education in England and Wales set up a working party to review the problems of the SHO grade and recommended that a curriculum based on the section on 'Attributes of the Independent Practitioner' in the GMC Education Committee's recommendations, should be devised for SHO training (77).

The Royal College of Physicians has also proposed that educational objectives for the SHO grade should be agreed and that a core curriculum should be defined (78). College tutors and regional advisers would collaborate with clinical tutors and post-

graduate deans in providing educational activities and for ensuring that opportunities and time are made available so that trainees may participate in such activities. To achieve this objective, which is supported by all Colleges, it seems clear that some protected teaching time must be made available in the regular weekly time-table of both consultants and trainees.

Higher Professional Training

Having completed general professional or basic specialist training and obtained the relevant higher qualifications, trainees can proceed, by competition, to higher professional training which now takes place in registrar and senior registrar posts. In all specialties there are Joint Higher Training Committees (HTCs) or equivalent College committees to oversee higher training in the specialties concerned. (Table 2). The Joint Committees were set up by the Royal Colleges, including the Irish Colleges, the University Associations of Professorial Heads of Departments and the Specialist Societies. Most of the committees also include representatives of the Departments of Health, the Medical Research Council, the Association of Medical Research Charities, postgraduate deans and doctors in training—either as members or observers. This broad membership has enabled them to assume responsibility for setting standards for higher training throughout the UK and also in the Irish Republic.

The main function of the higher training committees is to lay down criteria for training in the individual specialties and to approve posts and training programmes in hospitals, academic departments and research units and in the fields of public health medicine and occupational medicine, which provide proper facilities for higher professional training in terms of consultant supervision, staffing levels, clinical experience and opportunities for research.

Most committees either encourage or require trainees to enrol when they embark on higher training. Certificates of accreditation are granted to trainees on satisfactory completion of their higher training except in the specialties of psychiatry and pathology. The psychiatrists believe that the practice of accreditation may lead to undue rigidity in training and the Royal College of Pathologists regards success in the final examination for member-

TABLE 2

HIGHER TRAINING COMMITTEES

Anaesthetics

Joint Committee for Higher Training of Anaesthetists

Dentistry

Joint Committee for Higher Training in Dentistry

General Practice

Joint Committee on Postgraduate Training for General Practice

Medicine and Sub-Specialities

Joint Committee on Higher Medical Training

Obstetrics & Gynaecology

Royal College of Obstetricians and Gynaecologists Higher Medical Training Committee

Pathology

Royal College of Pathologists Education Committee

Psychiatry

Joint Committee on Higher Training in Psychiatry

Radiology and Radiotherapy

Royal College of Radiologists Higher Medical Training Committee

Surgery and Sub-Specialities

Joint Committee on Higher Surgical Training

ship of the College (MRC Path.) assignifying satisfactory completion of training as it is taken towards the end of senior registrar training. On completion of training the majority of trainees in the medical specialties are granted accreditation in general (internal) medicine and in a sub-specialty (dual accreditation).

The Joint Committees on Higher Training in Medicine, Surgery and Psychiatry have all set up specialist advisory committees (SACs) to define the content of the specialty training programmes, to inspect posts in the specialty and to consider applications for enrolment and accreditation.

In most specialties the minimum period of higher training is four years, which is the normal tenure of senior registrar posts, but most registrar posts are now recognised for higher training and previously some retrospective recognition was usually granted for relevant experience in the registrar grade.

It is clearly illogical for the duration of training to be uniform for all specialties and ideally the period of training should be no longer than is necessary for trainees to acquire the specific skills required of their specialty and to become competent to assume independent clinical responsibility in their chosen field.

Recent trends for the duration of training to be extended in some specialties have been due partly to the increasing complexity of modern medicine and the need to acquire technical skills, but the delays experienced by many registrars in obtaining senior registrar posts and by some senior registrars in obtaining consultant posts have allowed training programmes to be extended to fill the time available on the principle of Parkinson's law (79). When the registrar and senior registrar grades are fully integrated in a continuum of higher professional training, it should be easier to construct training programmes for each specialty with appropriate content and of no longer duration than is necessary to meet the real requirements of training.

It is considered important that trainees should obtain experience not only in a teaching centre but also in district general hospitals and for some higher training committees—notably the JCHST—this is a mandatory requirement. In many cases this experience may be obtained during the earlier stages of higher training, possibly during the tenure of a rotating registrar post.

Higher training committees also recognise the value of a period of experience gained overseas. In some cases an overseas rotation-forms part of an approved senior registrar training programme; in other cases trainees make their own arrangements or may be awarded a travelling fellowship. Unfortunately the opportunities for working in North America, where so many British graduates

have received part of their postgraduate training, appear to be diminishing but there should be increasing opportunities for establishing links with Europe.

Some trainees are reluctant to go abroad either because they fear that they may lose their place on the training ladder or because they are uncertain whether the experience gained overseas will be recognised towards their accreditation. Although both fears are understandable, they are largely unfounded. Some credit is nearly always granted by higher training committees for overseas experience, which tends to enhance rather than jeopardise a trainee's prospects for promotion.

Higher training committees also co-operate with postgraduate deans under the provisions of the Department of Health Personnel Memorandum PM(79)3, in making arrangements for part-time training programmes for doctors, most frequently married women, unable to undertake whole-time training on account of domestic commitments (110). Part-time training programmes, which must be for a minimum of five sessions each week, are approved on an individual basis and the total duration of training required is determined by the relevant training committee. The assessment of the progress of trainees during higher training is usually undertaken by postgraduate deans and Regional Postgraduate Committees but SACs will often seek feedback from the trainees about their training. Senior registrars who have not obtained a consultant appointment after being more than four years in post will receive counselling and career advice from their postgraduate dean.

The Role of Research In Training

It is generally agreed that an understanding of the principles of research and the ability to assess critically the results of published work are essential attributes of the specialist. Active participation in research is the most effective means of acquiring such skills, enabling trainees to develop an inquiring mind, to learn how to design studies, manage projects, collect data, appraise results, write reports and present oral communications at scientific meetings (80).

Such research experience may be gained at any stage of

postgraduate training, but most commonly takes place during registrar and senior registrar training. Higher training committees lay considerable stress on the importance of a research component in the training of specialists and will recognise approved research experience as contributing towards the period of training required for accreditation.

Unfortunately, while many postgraduates will undertake research in order to provide material for a higher degree, others have tended to regard the acquisition of some research experience as yet another obligatory step on the training ladder. Furthermore, the opportunities for well funded, well supervised research projects are limited, particularly in district hospitals, and their educational value is often questionable.

These problems were well illustrated by a survey carried out by the Standing Committee of Members of the Royal College of Physicians (81). In this survey 596 doctors who had passed the MRCP (UK) were asked to complete a questionnaire on their research experience and 337 (56 per cent) responded. 85 per cent had undertaken some research and 21 per cent had spent more than 500 days in full-time research. 160 (48 per cent) claimed to have done research work appropriate for a higher degree and 59 (18 per cent) had obtained an MD degree, 12 (4 per cent) a Ph.D. and 14 (4.1 per cent) an M.Sc. Half of those obtaining a Ph.D. did so before passing the MRCP (UK).

Many respondents had apparently failed to derive clear benefit from their research experience. Thus 25 per cent of them had neither published nor presented the results of their research, at least 20 per cent of those working for an MD degree abandoned the project and over a third of those obtaining an MD took more than five years to do so. Those working for a Ph.D. or M.Sc degree were more successful—probably because of the formal supervision and defined topics.

The majority (80 per cent) believed that research experience is highly regarded by the appointment committees for consultant posts, but two-thirds of the respondents did not think it would necessarily make them better doctors. Inadequate funding, poor support from seniors and employing authorities and unsatisfactory supervision were common complaints. Most believed that research experience is likely to be most effective when integrated with specialist training programmes.

Training For Academic Medicine

These findings and comments are relevant and disturbing in relation to research experience for those trainees destined for careers as NHS consultants. They are equally relevant and even more disturbing for those aspiring to careers in academic medicine—either as basic medical scientists or as physician scientists.

In delivering the Commencement Address at Johns Hopkins Medical School at the time of its centenary celebrations in May 1990, Sir David Weatherall spoke of the problems facing academic medicine—particularly in Britain—and considered the relationship between scientists and clinicians (82). He believed that the most important future medical advances would come from molecular and cell biology and related basic sciences and because of their complexity it is no longer possible for any one individual to be a competent clinician, teacher and research worker.

On the other hand he questioned whether basic new science should be left entirely to full-time scientists and pointed out that most of the recent success stories of molecular medicine have stemmed from departments in clinical schools and from medically qualified workers, some in active clinical practice. But those training to be modern scientists would need to spend adequate time in full-time research and the development of their careers in modern biological science raised questions about the pattern of medical education and the future organisation of medical departments. Thus, the medical school curriculum should provide students with a solid grounding in biochemistry, cell and molecular biology and neurophysiology, but subjects like anatomy and whole-organ physiology could be better taught in the clinical setting, thus integrating pre-clinical and clinical training.

Aspiring clinician scientists should be exposed to research while medical students and have the opportunity of opting for intercalated MB/Ph.D. courses such as those which have been introduced at Cambridge.

After completing general professional training and obtaining a higher qualification those graduates considering a career as physician scientists should take a break from clinical training for several years and spend this time on whole-time research, learning the

tools of their trade. Having completed such a period of training a small number will opt for careers in basic medical science without returning to clinical practice, but the opportunities in this field are few and limited to university departments and appointments made by the Medical Research Council and some of the major medical charities. Most trainees will return to clinical practice and gain accreditation and having undergone such a vigorous training both in basic scientific research and in the clinical field they will be fully equipped for careers in academic medicine in a research team and with limited clinical work in their chosen specialty. Many so trained would become future leaders in academic medicine, but to provide such training and career opportunities the resources available for academic medicine would need to be expanded.

Government would have to be persuaded to recognise this but meanwhile the future of academic medicine seems threatened by the competitive work place approach to health care delivery following the 1990 reforms (33). Weatherall believes that academic medicine must respond not only by setting high standards in clinical practice, teaching and research but also by taking the lead in the new clinical sciences of medical audit, research on outcome and on information systems. In this way academic medicine could contribute to the NHS by identifying the most effective use of resources.

These issues have also been considered by the Academic Medicine Group (AMG) set up on the initiative of Sir Raymond Hoffenberg when President of the Royal College of Physicians. The group was formed in 1986 under the auspices of the University Hospitals Association in order to provide a forum in which those concerned with academic medicine might analyse specific problems and make recommendations. The group is an affiliation, consisting mostly of doctors, drawn from many institutions whose common interest is the maintenance of high standards of clinical training and scientific research in medicine.

In their first report (83) the group pointed out that academic medical staff in the UK carry most of the responsibility for undergraduate medical education and share an important role with their NHS colleagues in training future consultants, since most training in research takes place in clinical academic units or

in the NHS departments in teaching hospitals which are closely associated with such units.

Cuts in university funding have led to the loss of about 25 per cent of full-time academic medical staff over the last decade with the result that standards of medical education and research output are both threatened.

In the past the strength of academic medicine has been its capacity to attract some of the most gifted students and postgraduates. Sadly, careers in both academic medicine and in many NHS hospital specialties are becoming less attractive. Talented individuals have been choosing other careers, particularly general practice, for which the training period is shorter and more structured and where there is the opportunity for obtaining a career post with a good income at a relatively early age. This is in striking contrast to the long and arduous training for academic medicine with its uncertain outcome and the frustration of the annual struggle for clinical academics to obtain parity of pay with their NHS colleagues (84).

The AMG believes that in order to revitalise British academic medicine it is essential that new posts are established and a proper career structure created for particularly talented individuals who wish to devote most of their time to research.

Meanwhile, in order to ensure that the training of a physician scientist is not inordinately long, the higher training committees will need to be more flexible in their requirements for accreditation, in particular in relation to the duration of the clinical training normally required. They should also ensure that the content of training programmes can be modified to meet the needs of the physician scientist, introducing mandatory training in basic science when appropriate and recognising cross-disciplinary experience and unusual training programmes outside the purview of their existing specialist advisory committees.

Accreditation and Certification

Accreditation of those trainees who successfully complete the prescribed period of higher training has been a controversial issue.

A system of vocational registration by the GMC was first advocated in the Todd report (5). Such registration would signify 'a reasonable minimum of informed competence in a specified

field and should therefore be granted on the basis of general professional training and a specified period of further training and experience' (Para 160).

This concept was endorsed in the Godber Report on the Responsibilities of the Consultant Grade (85), which pointed out that in the absence of any form of vocational registration the Advisory Appointments Committees for consultant posts were the only bodies competent to assess the suitability of an individual for a consultant appointment.

At the time that the Royal Colleges and Faculties were setting up the higher training committees it was thought that the GMC might establish some form of specialist register, not only to enable the public to identify trained specialists practising in the UK, but also to identify those specialists whose training would allow them to practice their specialty in other countries of the European Community. For these reasons it was thought that it would be advisable for higher training committees to issue certificates of accreditation to trainees on satisfactory completion of their specialist training programmes and it was assumed that those holding such certificates would be eligible for inclusion in any specialist register.

In fact the GMC did not set up any form of specialist register at that time, but the Merrison Committee noted in 1975 (52) that accreditation has no legal standing and it is not a mandatory requirement for practising as a specialist. The committee recommended, therefore, that a statutory specialist register should be set up and maintained by the GMC.

Once again there was no move by the GMC to introduce such a register, possibly because the profession was cool towards the proposal. Meanwhile the status of accreditation remained unclear, particularly in relation to eligibility for consultant posts. The JCHMT has always insisted that accreditation is not a mandatory requirement for appointment to a consultant post, the responsibility for such an appointment resting with the Advisory Appointments Committee, which includes an assessor from the appropriate Royal College who advises on the credentials of applicants. The JCHST agrees but considers that in highly competitive specialties it is unreasonable to consider applicants not accredited in preference to those who are.

The situation was changed radically when the GMC did

introduce an indicative specialist register on 1 January 1991, largely because of pressure from the Monopolies and Mergers Commission. After wide discussion it was agreed that those who had completed specialist training would be entitled to have the suffix 'T' inserted after their names in the medical register. Evidence of such training would depend upon an individual being granted accreditation or equivalent certification by one of the accrediting bodies, or being appointed to a consultant post on the recommendation of an Advisory Appointments Committee with the agreement of the College or Faculty representative.

Inevitably there have been complaints both from trainers and trainees about what they see as the rigid requirements for accreditation of some higher training committees.

Such complaints may come from trainees who have followed an unusual training programme, possibly in research, but these can usually be resolved and the JCHMT has an ad hoc committee to consider such cases. Other complaints come from those who have not fulfilled the normal criteria for accreditation and do not hold consultant appointments and are thus not eligible for the suffix 'T' in the medical register but are engaged in specialist private practice and need to satisfy the private insurance companies that they are of consultant status. Each of these cases has to be considered on its merits and if accreditation cannot be granted it may be possible for the relevant College to give an opinion on the status of the individual concerned which is acceptable to the private health insurers.

The complexity of the issues surrounding accreditation was highlighted when a doctor who was refused accreditation by the JCHMT sought a judicial review after which the High Court directed the committee to reconsider its decision (86). The judge accepted the doctor's claim that the committee's decision was invalid because it was based on the fact that he had only held locum senior registrar posts, but the requirement to hold a substantive post was not made clear in the JCHMT training handbook current at the time that he began training. The judge also accepted Counsel's submission that it was contrary to natural justice for the committee to have taken 'soundings' from the doctor's consultants without his having the opportunity to respond to any adverse comment. More important, however, was the conclusion of the judge that the committee had been perverse

in denying this doctor accreditation although it had pronounced him eligible for a certificate of specialist training to meet the requirements of the EC directives. In fact, the two certificates are not comparable, the minimum duration of training required for a European certificate of specialist training being shorter than that required for accreditation, with no requirement for trainees to undergo general professional training or acquire a specialist diploma before embarking on specialist training. This was acknowledged on appeal. Nevertheless, the EC challenged the legality of both the British system of accreditation and the indicative specialist register introduced by the GMC (87).

The question to be determined, therefore, was whether the UK could continue to demand a higher standard of training to determine eligibility for the suffix 'T' in the medical register than that which leads to specialist status in other European countries, or whether accreditation and specialist certification must become identical and legally equivalent to other specialist qualifications within the EC.

In order to resolve this matter a Working Group was set up under the chairmanship of the Chief Medical Officer at the Department of Health to review current arrangements for specialist training and accreditation and to advise on what action is necessary to bring Britain into line with EC law (88).

In its report (89) The Working Group concluded that a new Certificate of Completion of Specialist Training (CCST) would need to be introduced. This Certificate would be granted by the GMC on the advice of the appropriate College that a doctor had completed a training programme meeting the requirements of the EC directives to a standard compatible with independent practice and eligibility for consideration for appointment to a consultant post.

The award of such a certificate or the equivalent qualification from another EC member state would be shown on the medical register by the insertion of the suffix 'CT' as a specialist indicator, together with the relevant specialty, the year of award and the member state in which certification was granted.

In its submission to the Working Group, the Junior Doctors' Committee (JDC) of the British Medical Association confirmed its commitment to a single specialist grade as being the most certain means of ensuring high standards of specialist medical care

(90). The committee also called for a single specialist training grade for each specialty with trainees being identified by a manpower number and by their year of seniority in the training programmes as exists in many training programmes in the United States, where trainees are identified by the year of training—Postgraduate Year (PGY) 1–2–3. The duration of training would be specified by each specialty and would take account of the fact that minimum periods of specialist training varying from 3–5 years according to specialty are specified in the European directives (91).

The United Kingdom would be free to determine the duration of training for each specialty but on satisfactory completion of the training, UK citizens who have graduated from a British medical school, would be eligible for a UK Certificate of Completion of Specialist Training (CCST) which would then be the only certificate of specialist training granted to specialists in Britain and would entitle them to practice their speciality throughout the Community. Non-EC nationals would need to be granted a certificate recognising an equivalent status.

It is anticipated that in most specialties the period of training would be shorter than most trainees spend in specialist training at the present time. Trainees would be able to enter a specialty training programme on the basis of open competition immediately after full registration, though some might wish to structure their own basic training.

The first two years would be broadly based training relevant to the particular specialty, similar to present general professional training or basic specialist training and analogous to the 'common trunk' training in Europe. The first year of such training would be equally appropriate for general practitioners undertaking vocational training.

Following satisfactory completion of basic training, trainees would progress to higher training. During basic training there should be a process of open continuous assessment which would play a greater part in assessing trainees than examinations, but both elements would be considered before further career progression.

During higher training, trainees would develop the additional skills required for specialist practice, receive instruction in the principles of research and evaluation and possibly undertake a period of research.

The JDC was not convinced of the need for exit examinations and considered that any such examinations should be structured to test the competence of the training programmes in preparing trainees for the examination and should reflect this by a high pass rate.

Having completed their specialist training and been granted their CCST the JDC believes that young specialists should be able to make a smooth transition from the status of trainee to that of consultant. In order to reconcile the concept of all trainees passing through structured training programmes with a reduced duration of specialist training followed by 'a smooth progression to consultant status', there would need to be a large increase in the number of consultant posts and the JDC suggests that an immediate increase in consultant numbers could be achieved by redesignating the most senior of senior registrars as consultants, at the same time closing an equal number of training posts.

The proposals from the JDC have merit and many of them have been embodied in the report of the Working Group, but it is important that they should take account not only of the training needs of those seeking a career as specialists within the NHS, but should also provide opportunities for those wishing to enter academic medicine or other fields of medical practice. The present system has been criticised for its rigidity and there is a danger that the concept of a single path for specialty training could introduce an alternative form of rigidity. Furthermore, changing the traditional names of posts and identifying trainees by a training number and their year in the training programme will not alone improve their career prospects. One postgraduate dean used to say that trainees did not want counselling or career advice—they wanted a job! Career prospects in hospital medicine can only be improved when the large expansion of consultant posts agreed to be necessary is actually brought about.

6

Vocational Training for General Practice

The introduction of vocational training for general practice has been one of the major achievements in the field of postgraduate medical education in recent years (92), but although it did not become a mandatory requirement until 1982 the need for postgraduate training for general practitioners was recognised much earlier. Indeed, the Spens Committee recommended in 1946 (18) that any doctor wishing to enter general practice should spend at least one year as an assistant to an experienced general practitioner, and the British Medical Association also identified the need for definitive training for general practice (93). As a result the trainee practitioner scheme was introduced in 1948 and received central funding.

This scheme, which was entirely optional, enabled trainee assistants to spend a year in general practice, but there was criticism that trainees were sometimes used as an additional pair of hands and the system of selection did not always identify the best trainers. In 1952 an experimental two year training scheme was set up in Inverness with two year supernumerary SHO appointments providing concurrent experience in hospital and general practice (94, 95).

Then in 1959, a two year programme was started in Wessex with the help of a grant from the Nuffield Provincial Hospitals Trust (96, 97). One year was spent in a hospital—six months as an established SHO in obstetrics and gynaecology and six months as a supernumerary SHO in a series of different hospital departments. The second year was spent in general practice.

In 1964, the first half-day release course for young general practitioners was started in Canterbury (98). The course extended over a two year period and the syllabus included topics unlikely to have been covered by medical schools or during house-officer training.

The same year the College of General Practitioners set up a

Working Party 'to consider how it can organise and help others to organise vocational training for general practice in Great Britain and Ireland'. As a result the College proposed that following the pre-registration year, trainee general practitioners should spend two years in rotating hospital posts and two years in a training practice (99). The need for such training to become mandatory was emphasised in a report on vocational training by the Nuffield Provincial Hospitals Trust in 1967, which criticised the existing arrangements for training general practitioners (100), but it was not until 1979 that the vocational training regulations were introduced (101).

These regulations became fully effective in August 1982 since when all new principals in NHS general practice have been required to hold certificates showing that they have acquired the necessary experience as detailed under the regulations. These require a minimum period of three years' training after full registration in educationally approved posts, one year in an approved teaching practice and two years in approved hospital posts, usually in the senior house officer grade. The hospital experience must include a period of six months in at least two of the following specialties: Accident and Emergency Medicine or General Surgery; General Medicine; Geriatrics; Paediatrics; Obstetrics and Gynaecology and Psychiatry. It is noteworthy that by virtue of these regulations, general practice became the only specialty within the NHS for which a definitive postgraduate training programme is required by law.

Prior to the introduction of the regulations, the arrangements for the supervision of vocational training were already becoming more formalised (102). Part-time Regional Advisers in General Practice were being appointed in each region either by the university or by the Regional Health Authority and served as part of the staff of the postgraduate dean. Trainers were appointed by the General Practice Sub-Committees of Regional Postgraduate Committees which determined criteria for appointment, which might include attendance at a local trainers' workshop and more controversially the possession of the MRCP. Local course organisers were appointed from 1972 with the particular responsibility for organising the half-day release courses which became an essential part of vocational training. Regional Advisers in England and Wales met regularly through the Advisory Committee on

General Practice of the Council for Postgraduate Medical Education in England and Wales until it was disbanded in 1988; they now meet in the Committee of Regional Advisers for General Practice in England (CRAGPIE). Separate arrangements exist in Scotland, Northern Ireland and Wales.

Other aspects of vocational training such as the standard of training practices are monitored by the Joint Committee on Postgraduate Training for General Practice (JCPTGP), a national body which was set up jointly by the Royal College of General Practitioners and the General Medical Services Committee (GMSC) of the British Medical Association in 1976. This Committee sets national guide-lines for training practices and carries out inspections of training programmes throughout the United Kingdom, aiming to visit each region in alternate years. The JCPTGP is also the body responsible for issuing certificates to those trainees who have completed their training in accordance with the requirements of the Vocational Training Regulations.

The examination for membership of the Royal College of General Practitioners (MRCGP) has come to be regarded as a useful diploma to be acquired at the end of vocational training, but this is a controversial matter, some arguing in favour of such an exit examination with others contending that any requirement to take an examination during the brief year in practice is an unnecessary distraction. Nevertheless, about 80 per cent of the candidates for the examination are trainees or within one year of completing vocational training.

There is no doubt that the successful development of vocational training for general practice has been due to the enthusiasm of a number of general practitioners who dedicated themselves to the task of establishing general practice as a speciality in its own right with a well defined training programme. Because there was no existing programme they were not constrained by any established practice and trainers were encouraged to adopt an innovative approach. Much of the training during the practice year has been based on five key areas identified by the Royal College of General Practitioners—Health and Disease; Human Development; Human Behaviour; Medicine and Society and the Practice (103). There is emphasis on the need for trainers to define goals and objectives, to assess the needs of individual

trainees and evaluate their progress as they strive to acquire the knowledge, attitudes and skills appropriate for general practice.

There has been some criticism of the training experience of the two years in hospital posts. This has been due partly to the difficulty of obtaining a good 'mix' of posts for general practice trainees, especially in paediatrics and obstetrics and gynaecology and partly to the persistent difficulty of reconciling service and training needs in the hospitals (104). There have also been complaints that the hospital training is not orientated to the needs of future general practitioners. This has been attributed to the fact that most consultants have no direct experience of general practice and hence find it difficult to help general practice trainees to appreciate the relevance of their hospital experience to their future work as general practitioners (105). On the other hand, one of the stated aims of training future general practitioners is to ensure that they become clinically competent and during their period of hospital training the main emphasis should be on helping them to achieve this aim.

Nevertheless, there is clearly a need for a dialogue between hospital consultants and course organisers and trainers, who should always be welcome in the hospital to ensure that general practice trainees obtain the maximum possible benefit from their hospital experience.

In recent years the status of general practice has risen and many of the most able medical graduates are now attracted to the discipline. Vocational training, which has been widely acclaimed as a successful enterprise, may well be a contributory factor, but other factors, including the shorter period of training compared with that required for the hospital specialties and the reasonable certainty of becoming a principal around the age of thirty with an adequate income and acceptable working hours, have made general practice an attractive career. Furthermore, general practice has been favoured by the policies of successive governments which have encouraged the shift in emphasis of health care from the hospital to the community. The development of group practices with well equipped and well staffed premises has broadened the scope of general practice and enhanced the practitioner's working environment.

Arrangements for vocational training can be well accommodated within this model and much of the success of the scheme

is due to the fact that trainees and trainers dedicate time each week to teaching—and it is worth noting that trainers and course organisers are paid for their teaching responsibilities.

It is generally assumed that vocational training will raise the standard of general practice. This is a reasonable assumption but it was interesting to note a comment that the long term benefits have not yet been demonstrated (106). Perhaps an audit of vocational training would be an appropriate exercise.

Women in Medicine

Although nearly 50 per cent of students admitted to British medical schools are now women and their examination results tend to be better than those of their male colleagues, they are not as successful in their career progress as men and their career achievements do not match their expectations. Thus, they perform well as house-officers and proceed satisfactorily through the senior house officer grade, but their progression through the registrar grade is slower than that of men and they are under-represented at senior registrar level and in 1989 only 15 per cent of all consultants were women.

The number of women consultants varies between the specialities. In 1989, 25 per cent of consultant paediatricians and 21 per cent of dermatologists were women, but in the acute clinical specialties there were far fewer women consultants with only 3.2 per cent in all surgical specialties and only 1.0 per cent in general surgery. In general practice 22.8 per cent of principals were women but in the speciality of public health medicine there was a predominance of women with 61 per cent holding career posts.

In order to identify the problems of women during training and the factors preventing them from participating fully in medicine in the career grades, either as hospital consultants or as principals in general practice, the Department of Health commissioned Dr. Isobel Allen of the Policy Studies Institute to make a study of the careers of a group of doctors of both sexes. After receiving her report the Department set up a Working Party to review her findings and to consider what measures could be taken to improve career prospects for women in medicine (107).

In Dr. Allen's study (108, 109) three cohorts of medical graduates were interviewed, 226 having graduated in 1966, 210 in 1976 and 204 in 1981. Of the total group of 640 doctors, 314 were male and 326 were female. The interviews were carried out in 1986, which was 20 years, 10 years and 5 years respectively into the medical careers of the doctors in each cohort and they were structured in such a way as to compare the experience of men and women graduates as they progressed through the training grades

in pursuit of their careers in their chosen specialties. Most of those interviewed had been enthusiastic when they had entered medical school, the women possibly being more motivated towards a medical career than the men.

Career advice at most schools had been grossly inadequate and conveyed little idea of the medical course and virtually none about the length of postgraduate training and the rigors of life as a junior hospital doctor.

When they entered medical school, more than 50 per cent of the doctors interviewed had had no idea of the speciality they hoped to follow, but 20 per cent had hoped to become hospital consultants and another 20 per cent hoped to become general practitioners. Of those wanting to become consultants, 40 per cent hoped to train for a surgical specialty which represented 13 per cent of all the men, but only 4 per cent of the women.

Doctors remember being influenced in their choice of specialty by the attitudes of the consultants who taught them. A few had charisma and they were impressed by those who made a subject seem interesting. Others were described as arrogant and pompous and appeared to delight in humiliating and frightening students.

Doctors from the earlier cohorts remember being discouraged from seeking a career in general practice because it was considered to be a second rate option for failed hospital doctors. The more recent graduates had received better general practice teaching in medical school but they were still conscious that most of their teachers had a bias towards hospital medicine.

Career advice at medical school had been quite inadequate for the 1966 and 1976 cohorts and only 20 per cent of those graduating in 1981 received any formal advice.

Many of those interviewed admitted that they had failed to appreciate that qualification was only the beginning of the long road to becoming a trained doctor. Many of the women felt that they had been subjected to some degree of discrimination of a sexist nature. At medical school this would often take the form of remarks about the unsuitability of certain careers, particularly in surgery, for women. Later, when applying for posts in the training grades, women had more frequently been asked about their plans for marriage, having a family and caring for their children, than their male counterparts. Nevertheless, in spite of their domestic

family commitments, the majority of women doctors are able to work whole-time whilst in training posts and in whatever career posts they subsequently obtain. Of all the 640 doctors interviewed in Dr. Allan's study, 75 per cent were working whole-time and 19 per cent part-time, with 60 per cent of the women being in full-time posts; women graduating in 1981 were more likely to be working whole-time than those graduating in 1966 and 1976.

During their early years of postgraduate training most women doctors work whole-time with very few in part-time SHO posts. In the survey only 6 per cent of those working as hospital registrars and 10 per cent of general practice trainees were working part-time, but one-third of the senior registrars were doing so under the terms of the Department of Health Memorandum PM(79)3 which provides opportunities for part-time training in the NHS for doctors and dentists with domestic commitments, disability or ill-health (110).

Applications for these posts are invited once a year on a national basis with an allocation of a limited number of posts by speciality and by region. Successful applicants, selected by a National Assessment Committee, must find a post locally, offering not less than five sessions each week, which has to be granted educational approval by the appropriate higher training committee and funded. The applicant must then be formally appointed by a senior registrar appointments committee. The higher training committee will determine the duration of part-time training required for the trainee to become eligible for accreditation.

This part-time training scheme is now being extended to the registrar grade and it is suggested that there should be a 5 per cent top-slicing from the national quota of registrars for part-time posts. It has also been suggested that the terms of PM(79)3 should be broadened to bring them into line with the European directive on part-time training (111) by incorporating the phrase 'well founded individual reasons' as additional eligibility for part-time training arrangements.

Those women whose domestic commitments prevent them from taking any professional work, but who intend to undertake substantial work at a later date, can take advantage of the Women Doctors' Retainer Scheme (112). This scheme enables such doctors to undertake a maximum of two paid sessions each week, usually as clinical assistants in hospital or as assistants in general practice; they

also receive a small honorarium to enable them to subscribe to a journal and maintain their registration with the GMC.

More specific part-time training programmes have been arranged for women in some parts of the country, notably in the Oxford region, where personalised training programmes have been constructed for individual doctors. Part-time training in psychiatry has been particularly well developed in Oxford, where flexible programmes of the same quality and with the same training content as whole-time posts have been made available. The schemes are planned and co-ordinated and the progress of the trainees is closely monitored.

Another recent initiative is a scheme introduced by the Royal College of Surgeons in collaboration with the Department of Health which it is hoped may help women to overcome some of the difficulties of a career in surgery. The women in Surgical Training (WIST) scheme is to be open to all women doctors who have passed Part I of the revised FRCS examination, whether working whole-time or part-time. Participants will compete in the normal way for surgical posts, but they will benefit from the availability of advice and counselling from a local College advisor and from a peer support group. Consultants will be invited to associate themselves with the scheme through which it should be possible to follow the progress of women in surgery, to identify the obstacles they face and the way they are overcome, and to determine the effect of part-time training on their career progression.

Whatever effect these various initiatives may have on the recruitment of women doctors into a broader spectrum of medical and, hopefully, surgical specialities, there are clearly many women doctors who have family commitments which make it difficult for them to meet the rigorous demands of postgraduate training. Nevertheless, it is essential that every effort is made to enable women doctors, who will soon comprise 50 per cent of medical graduates, to participate more fully in the practice of medicine and to ensure that their expectations are realised.

To bring this about will require not only better advice and counselling for women at all stages of their medical careers, but will also require some institutional changes with improvements in the career structure and a more liberal attitude towards training, and particularly part-time training, by some of the Royal Colleges and higher training committees.

Overseas Doctors

The United Kingdom has a long tradition of welcoming overseas graduates for postgraduate training. Many come with the intention of taking examinations for specialist diplomas and the majority plan to return to their own countries after a period of training in the UK. Unfortunately the expectations of many have not been fulfilled because they have been unable to obtain good training posts and they have filled vacancies in the less popular specialties, where their service contribution has been invaluable, but where training opportunities have been limited. Many excellent graduates have come from Australia, New Zealand, Hong-King, Malaysia, Singapore and the West Indies and their participation in the training activities of British hospitals has been of mutual benefit. They have the advantage of sharing a common language, but many of those coming from India, Pakistan and the Middle East have not been proficient in English and their professional standards have been variable.

During the 1960s and the 1970s the NHS was heavily dependent on overseas doctors because the numbers of UK graduates were insufficient to fill the large numbers of junior hospital posts. Thus in 1970, 60 per cent of all senior house officers and 58 per cent of registrars were born overseas (32).

Since the mid-1970s the number of overseas doctors in the training grades has declined because of the increased output of British medical schools and because of changes in the regulations for the registration of overseas doctors with the GMC and the introduction of new immigration rules by the Home Office.

Prior to the Medical Act of 1978 there was reciprocity between the GMC and about 90 universities and medical schools throughout the world, and particularly in the old Commonwealth, providing for the mutual recognition of primary medical qualifications. In 1980 this reciprocity was withdrawn and since then only those universities considered by the GMC to be requiring equivalent standards for their primary qualifications to

those required in Britain have been recognised for full registration. Only 22 medical schools are now so recognised and their recognition is subject to annual review.

Graduates from other universities overseas who are seeking registration with the GMC must now pass the Professional and Linguistic Assessment Board (PLAB) test unless they are exempt.

The Board was set up in 1979 when temporary registration was replaced by limited registration and the examination comprises a test for the comprehension of spoken English, an examination in clinical problem solving and an oral test.

The failure rate has always been high. Thus in 1984 there were 2175 attempts and only 554 successful candidates (32); in 1990 there was little change with 2209 candidatures and 551 passes (113), but in 1991 this pass rate was higher with 2313 candidatures and 800 passes (114). Since the test was introduced, however, the standard of overseas doctors working in the NHS has greatly improved. Successful candidates are granted limited registration for a maximum overall period of five years, during which they must work under the supervision of a fully registered medical practitioner in posts with educational approval.

The GMC is now proposing to introduce a single form of registration for all overseas doctors which will be designated training registration, thus denoting its primary purpose of providing training opportunities for visitors from overseas (114).

In addition to the more restrictive rules introduced by the GMC for the registration of overseas doctors, the Home Office introduced a regulation in 1985 limiting the time that an overseas doctor can spend in the UK for postgraduate training to a maximum period of four years. Any extension beyond this time requires a work permit which will only be granted if there is no British graduate suitable for the post in question.

In order to encourage well qualified overseas doctors to come to the UK for further training, the Royal College of Physicians of London, the Royal College of Surgeons of England and the Royal College of Obstetricians and Gynaecologists have each developed overseas doctors training schemes (ODTS) on a double sponsorship basis. This involves a sponsor from the doctor's home country recommending the trainee as someone of promise and the host sponsor agreeing to adopt the trainee and to supervise his or her progress. Trainees accepted on the ODTS are excused

from taking the PLAB test but they are required to be capable of working at least at the level of an experienced SHO in his or her specialty. Although it may be possible for participants in the ODTS to obtain a higher specialist qualification, the four years of training allowed by the Home Office is not sufficient to enable them to obtain accreditation by a higher training committee. The British Council also acts as an agent for a variety of educational and training schemes and those overseas doctors selected for participation are also excused from taking the PLAB test.

In the past, many overseas doctors have spent too long in SHO posts in which they have been providing service rather than receiving training; many have become 'stuck' doctors either as SHOs or as registrars. The expansion of the ODTS should ensure that visiting doctors from abroad are of a high standard and the availability of registrar posts for overseas doctors under the terms of 'Achieving a Balance' (22) should provide them with better training opportunities.

Thus, although the number of UK graduates who may become career registrars is now limited, there is no immediate plan to limit the number of registrar posts available for visitors from overseas. Furthermore, it is intended that visiting registrars should be incorporated into the same rotations as those in which UK graduates participate, so that all registrars, whether from home or abroad, may enjoy the same educational opportunities.

Graduates of medical schools within the European Community who are nationals of one of the member states have the right of free movement within the Community and are eligible for full registration with the GMC and are entitled to practice on an equal footing with British graduates.

London

Special reference must be made to the role of the London teaching hospitals and postgraduate institutes. London has always played a dominant role in undergraduate medical education, with approximately one third of all UK medical graduates being trained at one of the medical schools affiliated to the university. The hospitals with which these medical schools are associated have also provided postgraduate training for large numbers of graduates aspiring to careers as consultants or in academic medicine. The Royal Postgraduate Medical School at Hammer-smith, the London School of Hygiene and Tropical Medicine and the Institutes of the British Postgraduate Medical Federation (BPMF) have all made outstanding contributions, both in the field of postgraduate medical education and in bio-medical research, for which they are recognised throughout the world.

For many years, however, there has been concern that there have been too many medical schools in London and it has been seen as a weakness that they and most of the postgraduate institutes and their special hospitals have had only distant relationships with the science faculties of the university.

Indeed, in 1968 the Todd Report (5) recommended that in order to establish a satisfactory relationship between the medical schools and the university, their number should be reduced from twelve to six and that they should each establish relationships with one of the multi-faculty institutions of the university.

There was much resistance to these proposals and no action was taken until the Flowers Working Party (12) endorsed many of the recommendations of the Royal Commission. As a result, the number of medical schools was reduced from twelve to nine by merging the Westminster and Charing Cross, Guy's and St. Thomas', University College Hospital and the Middlesex and a confederation was formed between St. Bartholomew's and the London Hospital Medical Colleges and Queen Mary/Westfield College. Four of the smaller Institutes of the British Postgraduate

Medical Federation (Dermatology, Laryngology and Otolaryngology, Orthopaedics and Urology) were merged with undergraduate teaching hospitals, the Institute of Obstetrics and Gynaecology moved to Hammersmith, the Institute of Dental Surgery was incorporated in a consortium with University College and the London Hospital Dental School and the Institute of Basic Medical Science became the Hunterian Institute at the Royal College of Surgeons.

In spite of these measures there has been continuing concern about the concentration of so many acute hospitals in central London with their medical schools, specialist departments, research centres and postgraduate institutes contributing to an expensive pattern of care for a diminishing population.

Believing that there was an urgent need for reform, the King's Fund set up a Commission in 1990 to make recommendations on the future of London's acute health services, taking account of the needs of undergraduate and postgraduate medical education. The Commission pointed out (115) that the expansion of hospital services outside London had had a major impact on the pattern of referrals of patients, so that by the late 1970s only 15 per cent of all cases treated in inner London's specialist units came from outside Greater London.

In spite of losing 3,700 beds providing acute services over the period 1982–1989, the number of beds was still higher in London in 1989 than elsewhere with 4.1 per 1,000 population, compared with 2.1 per 1,000 in outer London and 2.8 per 1,000 elsewhere in England. Furthermore, the trend towards specialisation has continued with each teaching hospital striving to provide a full range of specialist services leading to the duplication of specialist units in closely adjacent institutions and with little initiative to concentrate resources. This trend, together with the decline in bed numbers, has made it difficult for London teaching hospitals to provide balanced and comprehensive clinical teaching for their students and for their pre-registration house officers. Many medical schools have, therefore, established links with district hospitals both for undergraduate teaching and for their graduates seeking pre-registration house officer posts.

In contrast to the highly developed hospital services, the primary care and community services in London remain underdeveloped compared with the rest of the country. There are more

single-handed practitioners than elsewhere, more over the age of 65 and many work in unsuitable accommodation with inadequate support staff.

The key elements in the London problem are long-standing, but the reforms embodied in the NHS and Community Care Act of 1990 have rendered the situation critical. Within the purchaser-provider framework of the internal market, all hospitals must now compete for contracts from Health Authorities and from fund-holding general practitioners. Inner London hospitals are disadvantaged for two major reasons. Firstly, funds allocated to inner London purchasers will fall to reflect the relatively small number of local residents; secondly, new charges for capital assets will increase the cost of the London teaching hospitals, which are already greater than elsewhere, largely because of their high level of staffing. These two factors will make it increasingly difficult for these hospitals to attract contracts, not only from outside the capital, but also from the outer and inner London purchasing authorities.

The King's Fund Commission concluded, therefore, that there was an urgent need for radical changes in the structure of the health care services and in the pattern of undergraduate and postgraduate medical education in London. First and foremost there was a need to shift the emphasis on the delivery of health care from the hospitals to the primary care and community health services. This would involve the re-shaping of hospital-based acute services with a further reduction in the number of beds and a major development plan for primary care and for the community health services in London.

During the past decade the role of all hospitals has been changing rapidly in response to new technology, non-invasive investigation techniques, and less invasive surgical procedures leading to greater emphasis on out-patient investigation, day-care treatment and shorter periods of in-patient stay. The rate of change has accelerated since the introduction of the re-formed NHS with its emphasis on cost benefit analysis, audit and the internal market.

Inevitably, the pattern of hospital care will continue to change. The scope of out-patient facilities will expand further and in-patient services will be concentrated on the provision of intensive care for acutely ill patients, the investigation and management of

patients with complex disorders and the provision of a range of specialist services, including units for trauma and transplantation.

These changes will necessitate an extension of the role of the primary care service, with general practitioners taking more responsibility for the investigation and treatment of their patients and with community based centres being developed for convalescent care, rehabilitation and for the care of the mentally ill and the dying. Such developments will lead to changes in the working practices of general practitioners and other health care workers, all of whom will need to familiarise themselves with a range of diagnostic and investigative procedures and new treatments. There is also likely to be some relocation of the traditional hospital out-patient department to primary care settings, with some consultants visiting health centres for consultations with general practitioners and others basing their practices almost entirely within the community.

These changes will have a profound impact on all aspects of medical education and research and the King's Fund Commission recommended that the university should take steps to consolidate undergraduate and postgraduate medical education in four main centres of the university, at Imperial College, University College, Queen Mary/Westfield College and King's College. This would ensure that medical education in London would acquire a firm base within the university and medical students would obtain a grounding in the biological and behavioural sciences.

The Commission suggested that whilst the new Faculties would take responsibility for undergraduate and postgraduate medical education in London, they should not be linked to particular teaching hospitals as in the past, but should contract with health care providers in primary care, community based care and in hospitals throughout the Thames regions, to undertake different aspects of clinical medical education at undergraduate and postgraduate levels.

While the King's Fund Commission was still deliberating, the Government set up its own inquiry under the chairmanship of Sir Bernard Tomlinson 'to advise the Secretaries of State for Health and Education on how the relevant statutory bodies are addressing the provision of health care in inner London, working within the framework of the reformed NHS, including the balance of primary health services; and the organisation and provision of

undergraduate teaching, postgraduate medical education and research and development'.

The Tomlinson Report (116) recognised the same problems as the King's Fund and concluded that some of London's teaching hospitals would not be viable in their present form when purchasers plan their services on the basis of their assessment of the needs of their resident population.

The report identified the most vulnerable of these hospitals and recommended the closure of St. Bartholomew's Hospital; the closure of Guy's or St. Thomas'; the closure of Charing Cross Hospital in its present form, and the concentration of University College/Middlesex Hospital on one site. The report also recommended the merger of all the present undergraduate medical schools, except St. George's, in four faculties of medicine within the multi-faculty colleges of the university which teach medicine. St. George's already has a strategy for establishing links with higher education institutions in South London.

The report was also critical of the isolation of the specialist hospitals and their postgraduate institutes and believed that they would only achieve their full research potential by becoming integrated within multi-disciplinary colleges, thereby concentrating their research strength and meeting the distinctive needs of postgraduate medical education. Meanwhile it recommended that the Special Health Authorities (SHAs), at present centrally funded, should join the internal market, but their service overheads for teaching and research should be subsidised by a reformed Special Increment for Teaching and Research (SIFTR).

The postgraduate deans for the four Thames regions, who are responsible for co-ordinating postgraduate training for all junior doctors in their regions, are currently based at the BPMF but the report suggested that it would be more appropriate for them to have a base within their regions. In the field of general practice there was a need for improved facilities both for postgraduate training and continuing medical education and there was also a need for undergraduates to have greater exposure to teaching in a primary care setting, which at present comprises less than 5 per cent of student time.

In order to bring about these changes there would need to be joint planning between the university, the NHS and the University Funding Council. The Government appeared to welcome the

proposals and it was recognised widely that there is a need for change, but not surprisingly there were fiercely hostile reactions from those associated with hospitals identified for possible closure and from those concerned with the implications of the proposals for undergraduate and postgraduate training and for clinical research.

Dr. Malcolm Green, director of the BPMF, pointed out (117) that London is internationally renowned as a centre of medical experience, closely linked to its reputation for research, which must be maintained. He believes that the proposals must be seen in the context of a widely perceived decline in British research and development which also threatens clinical research.

London makes a large contribution to clinical research and any significant reductions would have a major national impact. He points out that clinical research needs patients and the internal market is having a major effect on patient flows. He believes that hospitals engaged in research should not have to compete primarily in the patient market, but rather in a clinical research market in which institutions with research grants would compete for funds to cover the patient costs necessary to carry out their clinical research programmes; such funds would be derived from the research component of SIFTR and possibly from supra-regional funds.

Should such a mechanism be developed into a national framework, institutions in London would be able to compete on an equal basis with others across the country. Without some secure mechanism for funding the patient costs of clinical research the service rationalisation proposed could cause the destruction of London's clinical research programme.

Implementation of the proposals would also cause major dislocation of the undergraduate and postgraduate training programmes in London, demonstrating again how the fortunes of medical education and training are inextricably dependent on the structure of the health care delivery system. Radical changes in the respective roles of the hospitals and the community health services and in the relationships between doctors and other health care professionals are inevitable, not only in London but throughout the UK and indeed in all developed countries. Adapting undergraduate and postgraduate education to these changes will be a major challenge.

Alternative Models for Postgraduate Medical Education

Because of the great difficulty of reconciling the needs of service with the needs of education within the existing career structure of the NHS, a number of alternative models for postgraduate medical education have been examined.

UNITED STATES

In the United States graduate medical education (GME) is provided through residency training programmes which are organised by specialty and confined to institutions with accredited programmes. The programmes, but not individual posts, are accredited by the Accreditation Council on Graduate Medical Education (ACGME), a body sponsored by the American Board of Medical Specialties (ABMS), the American Hospitals Association, the American Medical Association (AMA), the Association of American Medical Colleges (AAMC) and the Council of Medical Specialty Societies (118). Within the ACGME there are Residency Review Committees (RRCs) for each of the 24 specialties for which board certification is granted by the ABMS.

Institutions seeking accreditation of their residency training programmes should be accredited by the Joint Committee on Accreditation of Health Care Organisations and must meet certain general requirements set by the ACGME and each individual programme must meet the specific requirements of the RRC for the specialty concerned. The principal institutions providing graduate medical education are hospitals, but programmes may involve more than one institution and various types of settings which might include ambulatory care facilities, medical schools and other health agencies. All institutions seeking accreditation of their programmes must provide evidence of a commitment to medical education, both by the administration and by the teaching staff, and must provide the facilities and resources required to

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meet the educational needs of residents. Applications are considered by a combination of documentary evidence and site visiting.

Each programme must have a designated director who is certified by the specialty board in the discipline concerned or in possession of equivalent qualifications. The teaching staff participating in the programme must also be designated and should have a keen interest in teaching and be willing to devote the necessary time and effort to the educational programme and should participate in their own continuing medical education. The director and teaching staff are responsible for defining the goals and objectives of the educational programme which must be approved by the relevant RRC and accredited by the ACGME. The programme director is also responsible for the selection of residents, normally through the National Residency Matching Plan and for the evaluation of their progress and for the provision of counselling support.

To ensure that residents are properly supervised and supported in carrying out their clinical responsibilities, the programme director must prepare explicit written instructions on the lines of responsibility in the care of patients. Residents are expected to develop a personal programme of self-study and professional development with guidance from the teaching staff and they are expected to participate fully in the educational activities of the programme. As part of their training they will assume responsibility for teaching and supervising more junior residents and students. It is recognised that graduate medical education requires that residents must be directly involved in providing patient care, but the educational goals of training programmes cannot be achieved if residency training is orientated exclusively to the service needs of the institution. The ACGME urges, therefore, that all residents should receive a written description of the educational experience to be provided together with a written agreement concerning their duty rotas and other activities outside the educational programme.

In all specialties, training programmes combine didactic teaching with clinical and practical training and are expected to encourage the development of scholarly activities, which should include the pursuit of clinical research projects. Peer interaction is also seen as an important part of the teaching process and the number of residents participating in a programme must be

sufficient to stimulate meaningful discussions. Thus the RRC for internal medicine requires a minimum of 12 residents on each programme.

The duration of training for each specialty is determined by the relevant RRC. For internal medicine the period of residency training is three years, which will include rotations through a number of sub-specialties in order to provide an integrated educational programme in the broad field of internal medicine. On completion of this programme trainees become eligible to take the examination for board certification in internal medicine, for which the national pass rate is about 70 per cent. On obtaining board certification some residents will undertake further training in the specialty as chief resident, or enter a fellowship training programme and some will go into private practice, but the majority will seek further training in a sub-specialty in which they are likely to pursue their ultimate professional careers.

The duration of training programmes in paediatric and family practice is also three years and in obstetrics and gynaecology it is four years. In the surgical specialties the minimum period of training is five years, which must include at least $3\frac{1}{2}$ years in general surgery. Many surgical residents incorporate one or two years of fellowship training in their individual training plans and on becoming board certified many then undertake further training in a sub-specialty.

These programmes of graduate medical education are certainly more structured than those in Britain and enable graduates to complete their training more quickly and become eligible to enter independent practice at an earlier age than their British counterparts, but those who accept appointments in hospitals without training programmes will have no junior medical staff.

In the United States there is no longer a rotating intern year and graduates can enter residency training programmes at any time after obtaining the MD degree. Appointments for the first postgraduate year—designated PGY1, are made through the National Residency Matching Plan, the specialty having been selected during the last year of medical school. Subsequent postgraduate years are designated PGY2, PGY3, etc. although the terms resident, chief resident and fellow are still used in reference to specific appointments.

There is some concern at the demise of the traditional intern

year and the early stage at which graduates must select their specialty, but the major concern is the lack of incentives for graduates to pursue careers as generalists in the specialties of internal medicine, paediatrics and family medicine. The majority prefer to practice in one of the sub-specialities, which may be less demanding and will certainly be financially more rewarding, which is a compelling consideration for those graduating with debts of at least \$40,000 and often much more. The result is that there is a serious deficiency of physicians practising in the field of primary care (119, 120).

In the absence of a national medical manpower policy the RRCs have recognised that the number of physicians practising in each specialty can only be restricted by limiting the training opportunities and have tried to take account of manpower requirements in approving specialty and sub-specialty training programmes. Unfortunately their efforts have not been successful because of the appeal procedures allowed within the ACGME and because of the constraints imposed by the fear of being accused by the Federal Trade Commission of collusion to limit the trade of medicine. Similar problems have arisen when attempts have been made to withdraw accreditation from programmes considered unsatisfactory.

Thus, in spite of the merits of individual training programmes, the system appears to have the serious defect of not being able to provide the population with the number of generalist physicians required to meet their medical needs (121, 122).

CANADA

In Canada postgraduate training is almost exclusively university based, with accredited residency training programmes being confined to university teaching hospitals and affiliated hospitals. In each of the 16 Canadian medical schools there is an associate dean responsible for the administration of the schools' programme of postgraduate medical education (123). All residency training programmes are accredited by the multi-disciplinary Royal College of Physicians and Surgeons of Canada (RCPSC), with the exception of programmes in family medicine, which are accredited by the College of Family Physicians of Canada (CFPC).

Following graduation from medical school a pre-registration

year is required. Traditionally this has been a rotating internship, but many graduates now opt for straight internships, primarily in a single specialty with only three months rotating to other specialties. Such internships in internal medicine may reduce the minimum period of postgraduate training from five to four years for internal medicine and from six to five years for additional certification in a sub-specialty. Such certification is granted by the Royal College to candidates passing the examinations for Fellowship of the College in medicine (FRCPC) or in surgery (FRCSC). Eligibility for entering these examinations depends upon the satisfactory completion of residency training and a scrutiny of the candidates' training by the credentials committee of the Royal College. The pass rate for these examinations is about 80 per cent. After receiving their specialty certification from the College, postgraduates become eligible to enter independent practice and have no difficulty in obtaining staff appointments in community hospitals, where they will provide a service with colleagues, but with no junior medical staff. Those aspiring to careers in teaching hospitals or academic medicine will seek further training as departmental or research fellows. Certification of training in family medicine is granted by the College of Family Practitioners of Canada after a two year postgraduate training programme.

In Canada, as in the United States, it is training programmes which are accredited rather than individual posts and programme directors aim to provide a comprehensive training in the specialty concerned. Most programmes incorporate structured rotations to ensure that appropriate experience is obtained, but this experience may be limited because the time spent in some rotations is no more than one or two months.

In Canada, again as in the United States, postgraduates in residency training programmes receive much more formal training than those undertaking either general professional training or higher professional training in Britain. In general they are responsible for fewer patients and they are expected to attend specific teaching sessions each day. They are subjected to evaluation of their progress and they are invited to evaluate their teaching programmes and their trainers. Universities are visited and all their training programmes reviewed at intervals of six years by an outside team of surveyors set up by the Accreditation Committee

of the Royal College. Prior to the visit, programme directors submit extensive documentation on their programmes with details of teaching staff, clinical and academic activities and departmental publications. During the visit the programme directors and the postgraduates are interviewed and at the conclusion of the visit the chairman of the surveying team meets with the dean of the medical school and indicates the recommendations which will be made to the Accreditation Committee.

The system has served the citizens of Canada well, and because postgraduate education is funded primarily by the government and administered by the medical schools, the provincial governments have been able to use the budgetary process to exert control over the number of training posts available and to influence medical schools' decisions regarding the specialty mix. As a result, about 50 per cent of the doctors in Canada provide primary care and the specialty imbalance which is such a major problem in the United States is a minor one in Canada.

EUROPE

In view of Britain's membership of the European Community (EC) it is necessary to take note of the systems of health care and of training in other European countries. One of the essential principles of the Treaty of Rome was that there should be free migration within the Community so that citizens of member states should be entitled to live and work in any member State. Free movement of doctors was granted by the Council directives in 1975 (124) which enable nationals of any member country who are graduates of a recognised medical school within the community to practice in any member state, but the educational requirements for a basic medical qualification as defined by the directives have been largely ineffective in establishing uniformly high standards of medical education throughout the Community.

In order to enable specialists to migrate freely within the community it was also necessary for the directives to include provision for the mutual recognition of specialist qualifications. These provisions stipulated only minimal standards for specialist training which are exceeded in most states, but probably not achieved in a minority (125). Thus, the minimum period of specialist training from the time of graduation varies from 3-5

years according to the specialty, and those graduates who have undertaken such training may be granted a certificate of specialist training by the competent authority in the country concerned, which in the case of the UK is the General Medical Council.

In all European countries the nature of specialist training reflects the form of the health care system. Thus, in the UK where specialist practice is conducted almost exclusively by consultants in the NHS, training is designed to produce individuals with the knowledge, skills and experience for independent consultant practice.

In most other European countries, the majority of specialists work in private practice outside hospitals and are approached directly by patients, providing a service which is largely outpatient based and obtaining payment of their fees through the social security system. Such an arrangement clearly requires some means whereby patients and the social security system can identify qualified specialists, but specialist certification does not require so long a period of training as in the UK because the responsibilities of most specialists are different. Those intending to pursue a career in hospital medicine must undertake further training which usually takes place in hospital posts, involving supervised clinical responsibility, but in Italy specialist training takes place through formal teaching in a university with minimal clinical experience. Most countries have lists of recognised trainers and institutions with criteria for such recognition but the regular inspection of training posts occurs only in the UK, Eire and the Netherlands.

In the UK general practice is the only discipline in which completion of a specific training programme is a legal requirement for principals in NHS general practice. Similar requirements exist in Denmark, the Netherlands and France and an EC directive in 1986 made two years of postgraduate training—one year in hospital practice and one year in general practice—mandatory for doctors entering practice from 1995 (126).

The Advisory Committee on Medical Training (ACMT) was set up by the European Commission in 1975 in order to help ensure a comparably demanding standard of training in all member states of the Community (127). This committee includes representatives from the competent authorities, the universities and the practising profession from each member country and has

published a series of recommendations in three reports (128, 129, 130).

Important recommendations have been that each state should have a competent body to determine standards, inspect and recognise training institutions and award certificates of training. It has also been recommended that training should proceed by a common trunk from the general to the more specialised, and the need to relate trainee numbers both to the availability of training facilities and to the future need for specialists has been strongly emphasised. Unfortunately, these recommendations do not carry the authority of the EC directives and the standard of medical training remains variable across the Community.

Improvements may come from national initiatives and from the collaborative effort of European medical bodies such as the European Union of Medical Specialists (UEMS), an independent body representing the interests of specialists in Europe. Nominations to the Council of Direction and to the 28 monospecialist sections are made by the national medical associations of the member states.

One of the major aims of the UEMS is to study issues related to specialist training and practice, and through its monospecialist sections it is now establishing boards with the aim of harmonizing specialist training. The objective of the boards will be to set training standards for each specialty, to inspect and recognise training programmes and to award certificates to those who complete their training in a recognised centre. This is an ambitious objective and will be difficult to achieve, especially as the efficiency of the monospeciality sections is so variable.

The deficiencies of present training arrangements in most European countries were identified by the Permanent Working Group of junior hospital doctors (PWG), a body set up in 1976 to improve relations between junior doctors working in European countries and to exchange information on topics of mutual interest, such as medical education, specialist training and working conditions.

In a policy statement (131) representing the consensus view of trainees throughout Western Europe, the PWG has endorsed the recommendations of the ACMT and emphasised the need for trainees to have identified trainers who should provide role models of good practice and ensure that trainees receive appropri-

ate instruction in clinical and practice skills, taking increasing responsibility under supervision as their training progresses. They should also receive critical feedback on their progress and career advice.

Because of the diversity of medical training and health care delivery in the member states it would neither be possible nor desirable to define a uniform curriculum for postgraduate training in Europe. Nevertheless, the PWG emphasised the need for such training to provide a balance between clinical experience, structured teaching, opportunities for acquiring an understanding of the principles of medical research and encouragement to develop the habit of self-directed private study. The group intends to monitor the state of postgraduate training in Europe on a regular basis and will produce further reports on persisting deficiencies and on the successes or failures of any steps to remedy them.

Meanwhile, the free migration of doctors within the EC and the development of exchange schemes may provide stimulus for change but unfortunately such schemes are hampered by language barriers, unequal standards of training, administration problems and the lack of an educational infrastructure in many European countries.

The UK is fortunate to have a well established educational infrastructure and a strong tradition of clinical teaching. Furthermore the Royal Colleges are unique institutions which have played a major role in the maintenance of standards and are without parallel in Europe (132). The Conference of Medical Royal Colleges and Faculties has now established a European Committee through which it hopes to promote the professional and scientific image embodied by the Colleges and possibly encourage the creation of parallel institutions in other EC countries.

Continuing Medical Education: Medical Audit and Performance

Continuing medical education is the term used to cover those varied educational activities undertaken by established practitioners to keep themselves up to date with recent advances in order to maintain their competence to practice and further their professional development. Ideally this should be a self-motivating habit which has been acquired early in life and developed during the days of undergraduate and postgraduate education and maintained throughout life.

The need for continuing education is not confined to medicine and its importance is recognised by other professions such as accountancy, the law and by industry. Airline pilots are required to undergo regular assessment of competence and many service outlets such as post offices, building societies and even travel agents may delay their opening time for half an hour on one day of the week for staff training.

In medicine the spectrum of continuing education is broad, and much is unstructured and informal and depends on the specialty and on the needs of individuals. In its simplest form, the daily contact with colleagues is of great value in keeping up-to-date and is the surest protection against the dangers of isolation which can so easily impair the efficiency of the single-handed practitioner either in general practice or in hospital. Reading journals and attending meetings of local medical societies have been traditional methods of keeping up to date, while courses at local or more distant postgraduate centres provide more structured educational opportunities.

Continuing Medical Education for General Practitioners

The need for continuing education for general practitioners was recognised by the Health Department and funds were provided under the terms of the Health Services and Public Health Act of 1968 (Section 63) to enable postgraduate centres to put on

References begin on p. 111

appropriate educational activities. The amount of money available was limited and was allocated regionally to postgraduate deans, who distributed the funds to the clinical tutors in charge of postgraduate centres within their regions.

At one time the general practitioners' eligibility for seniority payment depended on attending a minimum number of educational sessions each year, but this was resented by the doctors and was discontinued in 1977, after which there was a noticeable decline in the numbers attending meetings at postgraduate centres. But there was criticism from the general practitioners about the content of the training programmes provided, largely by consultants, which the general practitioners claimed did not provide what they wanted. The importance of differentiating want and need was pointed out, but with the development of group practices much continuing medical education for general practitioners now takes place within the practices or in small group discussions in the postgraduate centres.

Educational activities are now approved, and often devised, by regional advisers in general practice and under the terms of their new contract, introduced in 1990, general practitioners are again required to attend a minimum number of approved sessions each year to be eligible for the Postgraduate Education Allowance which has replaced the seniority payments. General practitioners are entitled to this allowance if they have attended 25 days of accredited postgraduate education spread reasonably over the five years preceding the claim. There is a specific requirement that during this time practitioners should attend at least two accredited courses in health promotion and the prevention of illness, disease management and service management.

The restoration of such a financial incentive will doubtless ensure that general practitioners do attend a limited number of educational sessions each year, but many will be at venues outside postgraduate centres. Hopefully they will be appropriate, but one of the great advantages of the district postgraduate centres was the opportunity which they provided for general practitioners and hospital staff to meet on common ground and share in postgraduate activities of mutual interest. It will be a retrograde development if general practitioners and hospital staff should now begin to follow divergent paths.

A valuable educational opportunity both for consultants and

general practitioners can be provided by domiciliary consultations. Thus, a consultant visiting a patient in the company of a general practitioner receives an insight into the difficulties of managing patients at home and sometimes the difficulties of carrying out an adequate examination; the general practitioner is able to discuss the patient and his or her problem directly with the consultant in the environment of the patient's home, usually in the presence of relatives, and may learn from discussing the physical signs, diagnosis and management. The educational benefit of such consultations is obviously dependent on the general practitioner and consultant both being present; unfortunately changes in the patterns of practice, both in hospital and in general practice, have made it increasingly difficult to find mutually convenient times for joint consultations.

The justification for promoting continuing medical education depends on a belief that active participation in educational activities will increase the doctor's knowledge and raise standards of skills and consequently improve patient care. These are reasonable assumptions, but such benefit has been difficult to quantify either in terms of changes in practice following participation, or in terms of clinical outcome.

In an early study in North Carolina in 1956 (133) no association was found between the quality of care and attendance at programmes of continuing medical education, but a later study in 1967 (134) found evidence to suggest that physicians who attended courses were more competent than those who did not, carrying out more complete examinations, including ophthalmoscopy and pelvic examinations.

More recent studies in the United States (135) have also shown that those participating in programmes of continuing medical education may alter their clinical practice. Specific changes include a reduction in the number of laboratory and radiological tests carried out, or their more selective use, and changes in prescribing habits, with more generic prescribing and lower costs. There was also evidence of improved primary care and preventive medicine, but clinical outcomes in terms of morbidity and mortality were difficult to correlate with the doctors' participation in continuing medical education.

Traditional workshops and didactic presentations augmented by objective assessment of the needs of individual doctors by review-

ing case notes (chart audit) and knowledge testing appeared to be an effective means of inducing changes in practice.

A majority of the Boards of the American Board of Medical Specialties now grant time-limited certification and twenty-four States require participation in continuing medical education as part of a process of re-registration and licensure to practice.

Nearly 500 organisations are accredited by the Accreditation Council on Continuing Medical Education of the American Medical Association which grants a Physicians Recognition Award to those doctors who meet the requirements of attending 50 hours of approved continuing medical education each year (136).

Continuing Medical Education For Consultants

Apart from reading journals, attending departmental meetings and hospital grand rounds, and more recently medical audit meetings, most consultants in Britain have relied upon attendance at College meetings and conferences of their specialist societies for their continuing medical education.

Because of local staffing or funding problems, the majority are unable to take up their full entitlement of 10 days study leave each year and many even find difficulty in attending regular hospital activities. This is now becoming a matter of concern and several of the Royal Colleges are considering the need to formalise the participation of consultants in continuing medical education with the introduction of some mandatory requirements.

The Royal College of Physicians of Edinburgh (137) has proposed that an obligatory programme of continuing medical education should be introduced for all senior medical staff who would be required to take up their full entitlement of 10 days of study leave each year and participate in some educational activity for three hours each week as part of their contractual obligations.

Each hospital unit should have an academic organiser and an audit organiser who would be designated hospital College tutors and would be responsible for planning the educational and audit activities of the unit.

It is proposed that all units should be inspected to assess their continuing medical education programmes at intervals of three to five years. Two College visitors will be appointed to undertake each visit and eventually large numbers of consultants will become involved as visitors as well as being visited themselves. No

form of compulsory re-examination is proposed but the College hopes that the GMC may introduce a system of granting specialist certification for periods of five years, with renewal of certification being dependent upon fulfilling a commitment to continuing medical education.

A survey carried out for the Royal College of Obstetricians and Gynaecologists by the Department of Health and Public Medicine at the University of Nottingham Medical School has shown that 59 per cent of consultants in the specialty had not attended a consultants' conference at the College over the previous three years and their attendance at local meetings such as journal clubs, perinatal mortality meetings and consultants' seminars was variable (138). The College therefore proposes to develop a programme of mandatory continuing medical education for all Fellows and Members in active specialist practice.

A Board of Continuing Medical Education will be set up with a whole-time director, an administrative officer and a co-ordinator of publications. This Board will be responsible for providing or facilitating programmes and it is proposed that consultants should be expected to accumulate 250 cognate points over a five year period, with different activities attracting different numbers of points as determined by the Board. Specialist accreditation would be limited to periods of five years and re-accreditation would depend on achieving the target number of cognate points. Like the Royal College of Physicians of Edinburgh, the Royal College of Obstetricians and Gynaecologists hopes that the GMC will make specialist registration dependent on time-limited accreditation.

The Royal College of Physicians of London is also concerned that physicians should be demonstrably competent and has been considering the need to introduce some formal procedure to monitor the participation of individuals in educational activities (139, 140). The College does not believe that a re-certification examination would be acceptable to Members and Fellows; nor is there good evidence that such an examination would necessarily improve the performance or competence of practitioners.

The College favours, therefore, a system of credits similar to the cognate points system proposed by the Royal College of Obstetricians and Gynaecologists. Physicians would be expected to attend a range of educational activities, both in the field of

general medicine and in their own sub-specialty. These activities would include attendance at regional, national, and international meetings and active participation in regular hospital educational activities such as X-ray meetings, journal clubs and seminars, teaching undergraduates and postgraduates, taking an active part in medical audit, reading journals and participating in self-assessment programmes. Credit for each activity would be granted on a scale to be determined by the College and it is envisaged that the College would maintain a record of the involvement of individual physicians in continuing medical education.

The possibility that specialist registration by the GMC might be dependent on obtaining satisfactory credit for continuing medical education was considered but it was thought that a more immediately effective sanction would be to make the educational approval of all training posts—both for general professional training and for higher training—dependent on the supervising consultants' involvement in continuing medical education.

All these proposals will need the support and the co-operation of Members and Fellows of the Colleges. Having persuaded them to accept the proposals the main difficulties are likely to be finding the necessary time for educational activities, funding the study leave which all consultants should be taking up, and meeting the administrative costs which will inevitably be involved.

Medical Audit and Performance

The increasing emphasis on the need for all established practitioners to participate in some form of continuing medical education has been in part related to two other developments. First, the general introduction of medical audit, both in hospitals and in general practice, and second, the proposal by the GMC to introduce performance procedures for situations where a doctor's pattern of professional performance appears to be seriously deficient (141).

Many initiatives have been taken to promote high standards of medical and surgical practice. Several have been at the instigation of the Nuffield Provincial Hospitals Trust, which published a collection of essays on the evaluation of the quality of care in 1976 (142). The topics included a review of some of the existing activities in the field such as the Confidential Enquiry into

Maternal Deaths introduced in 1952 and the Scottish Consultants' Review of In-patient Statistics (SCRIPS), which provided consultants with data to enable them to compare certain aspects of their performance with that of the national average.

The need for doctors to evaluate patient care was also recognised by the Committee of Enquiry into Competence to Practice (Alment Committee), which was set up by the British Medical Association and the Royal Medical Colleges and their Faculties.

In its report (143) the Committee had reservations about the concept of medical audit, particularly if it were used as a means of standardising medical practice but it did agree that it is a necessary part of a doctor's professional responsibility to assess his or her work regularly in association with colleagues, as long as any such assessment is non-threatening and is seen to be essentially educational. This view was endorsed by the Royal College of Physicians in its first report on medical audit (144) which considered that audit must be regarded as an educational activity with the objective of improving patient care by achieving optimal outcome.

The government White Paper—*Working for Patients* (33)—urged the adoption of medical audit in all hospitals and in general practice, and defined the process as 'a systematic critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome for the patient'.

There is now general agreement that medical audit, so defined, should become part of routine clinical practice and that its use should form part of the training of junior medical staff. The possible range of audit activity is broad and may extend from random case reviews to an evaluation of specific areas of practice, such as the use of laboratory and radiological diagnostic facilities and the management of selected medical and surgical conditions. In order to maintain the enthusiasm and interest of medical staff it is essential that the educational aspects of this activity should be apparent and seen to be relevant to patient care.

The Confidential Enquiry into Perioperative Deaths, now a major national form of medical audit, (145, 146) was set up to enquire into clinical practice and to identify remediable factors in the practice of anaesthetics and surgery. The enquiry has shown that the standards of anaesthesia and surgery in Britain are reassuringly high, but it nevertheless revealed a number of cases where

perioperative deaths might have been avoided, even though many of the patients who died were elderly and poor operative risks. The enquiry found that in some units there were serious deficiencies in special care facilities for postoperative cases, that some inexperienced junior surgeons were operating without adequate supervision, and that surgeons were sometimes operating outside their field of expertise.

The Standing Committee on Postgraduate Medical Education in England (SCOPME) has also emphasised the need to recognise the educational potential of medical audit and stressed the importance of incorporating it within the educational environment of the postgraduate centre in collaboration with clinical tutors, College tutors and district medical education committees (44).

Many existing educational activities such as clinico-pathological conferences, case presentations and death and complications reviews are, in a sense, a form of audit, but specific deficiencies and educational needs, either of the group or of individuals, are more likely to be revealed by the process of audit. Lack of knowledge, though not a common cause of error, may become apparent; failures in communication, possibly the commonest cause of error, and deficient skills such as inexpert cardio-pulmonary resuscitation, may be identified and remedial action instituted.

Apart from identifying general and specific deficiencies in the medical or surgical care provided by hospital departments, it is recognised that medical audit may sometimes reveal evidence of persistent poor performance on the part of an individual practitioner. The GMC has stated that there will be no direct connection between medical audit and the performance procedures to be introduced, since the Council can only initiate procedural action on receipt of a complaint against a practitioner. On the other hand it would certainly be open to the NHS authorities to refer a matter to the GMC, arising from local audit procedures or in some other way, if it was felt that the matter was so serious that the doctor's registration should be reviewed. Nevertheless, the GMC hopes that in most cases where poor performance has been revealed by audit, local professional and managerial action will render such a course unnecessary.

At present there is little information about the time that consultants spend on their own continuing medical education, but all consultants are now expected to participate in a form of

medical audit agreed locally between the profession and management and it has been suggested that at least half a session each week should be assigned to educational activities including audit (147).

In order to ensure that participation in audit becomes an accepted professional obligation, it is important that the habit is acquired at an early stage in a doctor's career. All junior medical staff should, therefore, participate in medical audit and it should be a condition for the approval of training posts that there are formal arrangements for audit in the units concerned.

The Conference of the Royal Medical Colleges and their Faculties, which now has an Audit Working Group, has suggested that whenever possible medical students should also attend.

Apart from educating doctors, the most important objective of medical audit must be to bring about changes in practice for the benefit of patients, and it is this objective which is likely to be the most difficult to achieve.

It has already been noted that continuing medical education is not particularly effective in changing practice. It is also pointed out in the second report on audit from the Royal College of Physicians (148) that there is disappointingly little evidence that the publication of clinical guidelines influences practice. The report cites an example in Ontario, where guidelines agreed by 90 per cent of the obstetricians were published with the objective of reducing the caesarean section rate, which was considered to be too high. The fall after two years was so small that if the same rate of fall was maintained, it would be 30 years before the caesarean rate fell to the level in England and Wales which was thought to be more appropriate (149).

SCOPME believes that audit should be linked specifically with education, but it seems clear that if changes in practice are to be brought about, either as a result of educational activities or as the result of medical audit, there is a need for research to identify the educational tools and the audit tools most likely to stimulate clinicians to change their practice if it can be shown that improved patient outcome is likely to result from doing so.

In any event it is essential that both types of activity, whether primarily audit or primarily educational, should be interesting, informative and demonstrably useful; otherwise they will not command enduring support.

Teaching and Learning

The obligation for doctors to teach is enshrined in the Hippocratic Oath which stipulates that a doctor should: 'reckon him who taught me this art equally dear to me as my parents; to share my substance with him and relieve his necessities if required; to look after his offspring in the same footing as my own brothers and to teach them this art, if they should wish to learn it, without fee or stipulation; and that by precept, lecture and every other known mode of instruction, I will impart a knowledge of this art to my own sons and to those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none other' (150).

This tradition of teaching has been maintained throughout the ages and has taken various forms, the most characteristic form in Britain having been the system of apprenticeship.

Inevitably the standard of teaching by hospital consultants and academic staff has varied, some brilliant investigators and clinicians being poor communicators while other less academic consultants may be inspiring teachers. Students are the best judges of teaching ability and will flock to the ward rounds and lectures of the good teachers and avoid the bad.

The Todd Report (5) made the comment that most doctors will, at some time be expected to undertake some form of teaching and suggested that all young doctors should receive training to enable them to speak in public and to enable them to learn teaching techniques (para 74).

Consultants have recently been reminded of their obligations to teach in a health circular concerning their contracts, (151) and the responsibilities of clinical tutors for co-ordinating educational activities have been described in health service guidelines on their new contractual arrangements. (37) The extent to which tutors are already active in this field was indicated by the results of a questionnaire circulated to 300 tutors through the National Association of Clinical Tutors (152).

TABLE 3

RESPONSES FROM 140 CLINICAL TUTORS

	YES	NO
Formal Educational Activities		
Pre-Registration House Officers	98 (70%)	42 (30%)
Senior House Officers	104 (74%)	36 (26%)
Counselling SHOs	119 (85%)	21 (15%)
Assessing SHOs	70 (50%)	70 (50%)
Identified Educational Supervisors	119 (85%)	21 (15%)
Protected Teaching Time	83 (59%)	57 (41%)

One hundred and forty clinical tutors (47 per cent) responded to this questionnaire in which they were asked to state whether they were responsible for arranging any formal educational activities for pre-registration house officers (PRHOs) and senior house officers (SHOs); whether they were responsible for counselling SHOs and assessing their progress and whether each trainee had an identified educational supervisor. They were also asked whether any protected educational time was provided in their hospital and if so, how much. Finally, they were asked to comment on those areas of postgraduate education and training in which they were experiencing problems.

It can be seen from (Table 3) that 70 per cent of respondents were responsible for arranging formal educational opportunities for PRHOs and 74 per cent arranged such programmes for SHOs. Counselling for SHOs was provided by 85 per cent of the tutors responding, 50 per cent undertook some assessment of their progress and 85 per cent of trainees had identified educational supervisors.

Protected educational time was only provided in 59 per cent of the hospitals concerned, the time available was limited and often varied between specialties and with the grade of the trainee. One tutor proclaimed satisfaction at having secured one hour's 'bleepless' teaching time each week.

Eighty clinical tutors made pertinent comments on other problems. Service requirements nearly always took priority over teaching and many consultants carrying heavy clinical loads were reluctant to release their juniors for teaching sessions. Furthermore, although most consultants were keen to teach and most juniors were keen to learn, clinical tutors had noted a lack of commitment on the part of some consultants and some juniors did not attend teaching activities arranged for them, even during protected educational time.

The role of educational supervisors was another matter for concern. Thus, although 85 per cent of trainees had nominated supervisors, they were not always very active and one tutor commented that the title may be conferred, but the responsibility was often not shouldered.

Eighty five per cent of tutors also claimed to have undertaken counselling for SHOs but several admitted that the standard of career counselling was variable, that records were not always kept and some were even sceptical about the value of this activity.

Many tutors emphasised that the attitude of hospital management was crucial. In some cases managerial expectations relating to performance were eroding educational time, the current ethos being more concerned with management and politics than with patient care and education. Thus, education and training tend to be given a low priority by managers. On the other hand, some tutors had noted an improvement since the introduction of the NHS reforms in 1991 and hoped that managers, including those in NHS Trust hospitals, could be persuaded to place the needs of education and training higher on their agenda. Other issues mentioned were the relationship between medical audit and training, the pre-occupation of trainees with examinations, the diversity of the SHO grade making appropriate structured training difficult and the need for teachers to learn how to teach.

Tutors also referred to the conflicting demands on the time of consultants, including requirements to participate in medical audit and management and sometimes to accept responsibilities in their own Colleges. Staff changes resulting from the implementation of the recommendations in *'Achieving a Balance'* (22) and new duty rotas, following the reduction in the junior doctors' hours of work were other complicating factors. The central theme of the responding tutors was perhaps encapsulated in the succinct com-

ment of one tutor who summarised his problems as 'getting time for the juniors to be taught, getting some consultants to teach and getting some supervisors to supervise'.

In view of other data—suggesting that there is little provision of formal educational activities for junior hospital staff (153)—it is perhaps surprising that so many respondents claimed to be responsible for arranging such activities. On the other hand, it has previously been shown that the perceptions of those delivering instruction and those receiving it may be markedly different (4, 154, 155) and of course the response rate was less than 50 per cent so that the responsibilities of the non-responders are not known. Subsidiary questions might have elicited more detailed information, but even if some respondents may have answered too favourably there does appear to be some form of educational structure in many districts.

This reflects great credit on clinical tutors who have achieved so much in spite of considerable difficulties, but their achievement still falls short of what is required to meet the real educational needs of trainees. Indeed, it may be questioned whether it is possible to provide the structured training considered desirable within the context of the present career structure and staffing of the NHS and alternative models of graduate medical education such as those in North America might need to be considered.

In a perceptive review of present practice in medical education, Stella Lowry (156) pointed out that in spite of the merits of the apprenticeship model of training, there is a growing consensus that the broader functions of a medical education are not so easy to learn from someone untrained in educational methods. This has been recognised by the Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom, which has recently called for more training in educational methods for all university teachers (157). St. Bartholomew's Hospital Medical College now insists that all new appointees should attend at least one approved teaching course in the year after taking up a post.

In view of general concern about the inadequate provision of structured teaching for pre-registration house officers and senior house officers and the variable quality of the teaching, the Standing Committee on Postgraduate Medical Education (SCOPME) set up two working groups to consider how these

deficiencies could be remedied and circulated discussion papers summarising their views.

The first of the documents (153) described the results of a research study into the formal educational opportunities available for junior medical staff—particularly in the SHO grade. A research team surveyed the range of formal educational opportunities available nationally, defining such activities as having a primary educational purpose, occurring at set times in specified locations and having a predetermined content and process.

Some such activities are provided both by teaching hospitals and district general hospitals and also by the Royal Colleges, certain private providers and by the pharmaceutical industry.

In district general hospitals a range of activity is usually provided in the postgraduate medical centre with lunch-time and evening meetings, a weekly grand round and occasional formal lectures. Such activities are not directed primarily at SHOs, for whom formal teaching is mostly examination driven and provided through departmental meetings and small group teaching for trainees preparing for examinations for the MRCP (UK), the FRCS or the MRCOG.

Interviews with clinical tutors substantiated previous research findings that in most cases the learning 'needs of individual SHOs are neither discovered, conferred, nor met through hospital teaching. On the other hand, private providers were found to be more innovative in their teaching methods and undertake serious evaluations of their courses on the basis of feedback from participants.

A number of barriers to the uptake of the teaching opportunities available were identified, the central dilemma being the conflict of demands of patient care on the one hand and the need for education and training on the other.

Institutional factors, particularly in trust hospitals, were seen as being likely to compromise the uptake of educational opportunities by junior staff. The research team believed that it would be easier to prepare trainees for their higher examinations if each of the Royal Colleges would publish a syllabus for their examinations and were more open about their examination methods, marking system, failure rates and reasons for failure.

The wide ranging responsibilities of clinical tutors and post-

graduate deans were not underpinned by educational skills because of lack of training.

The team recommended, therefore, that educational expertise should be made available locally to achieve the goal of assured education for all junior hospital doctors who are training for a variety of careers in medicine.

The second discussion paper reported the conclusions of a working group which considered how hospital doctors and dentists could be taught to teach (158). This working group pointed out that hospital doctors are not taught how to teach, that the effectiveness of their teaching is not assessed and that there is little data on how much time they actually spend in teaching.

In the view of the group, improvements will only be brought about by creating a better learning environment in the hospital and by ensuring that learning and teaching become 'learner centred'. This involves the learner taking more responsibility for his or her learning, with the trainer acting as a mentor, facilitator and manager of educational resources, as well as providing some didactic teaching. The trainer must have an understanding of the needs of the trainees and an ability to create an educational environment in terms of time, facilities and support and an appreciation of the need for feedback and appraisal.

The working group recognised the need for some protected teaching time but warned that such ring-fencing of time for teaching could have a negative result if trainees were to see their protected teaching time 'as the time you learn while the rest of the time you work'. It is perhaps more important to recognise that in the clinical setting, time management is an important skill to be acquired by trainers, trainees and managers alike.

In order to improve their teaching skills it is suggested that trainers should attend courses in effective teaching methods. Trainers in general practice are required to do so and are expected to attend trainer workshops on a regular basis. In Wessex the postgraduate dean took the initiative in devising a scheme to involve clinical tutors and consultants in learning about teaching. With a senior lecturer in medical education, he attended a course based on training for general practitioner trainers and then set up workshops for clinical tutors who became accredited facilitators and in turn passed on the skills they had learned to

other clinical tutors and consultants in what was described as a 'cascade system'.

It is recognised that it may be difficult to persuade all consultants to regard the acquisition of teaching expertise as being as important as clinical management, research and audit, and some consultants may wish to opt out of this type of activity while continuing to teach opportunistically and by example.

In order to ensure that trainees do in fact obtain appropriate teaching, it is recommended that all trainees receive a training and learning contract defining the conditions under which they are to be trained. In such a contract their service and the training commitments would be clearly defined and trainees would be responsible to a named consultant for their clinical work and to a trainer or mentor for their educational supervision and regular assessment of their progress.

To be effective such contracts would need to be enforceable and disputes should be resolved at local level by the clinical tutor or College tutor or at regional level by the postgraduate dean or College regional adviser.

In order to promote high standards of teaching it is essential that expertise in educational methods should be accorded the same professional regard as clinical work and research and to achieve high standards in this field it is suggested that the Colleges should make an assessment of teacher competence during hospital visits to inspect and approve training posts and programmes. It is also suggested that postgraduate deans should appoint educational advisers to their staff who would teach trainers to teach as effectively as possible and would encourage a few enthusiasts to specialise further, taking responsibility for co-ordinating teaching in their departments. Teaching excellence should be recognised and rewarded and there should be sanctions against those individuals and units failing to meet their teaching obligations which would logically involve the loss of educational approval for their posts.

Future Prospects

The Christ Church Conference in 1961 (1) undoubtedly gave great impetus to the development of regional and district postgraduate activities with the opening of postgraduate medical centres in district hospitals throughout the country.

Since then much has been achieved and the concept that undergraduate, postgraduate and continuing medical education should be seen as a continuum has been accepted. Furthermore, the validity of the statement in the Goodenough Report (2) that any country embarking on a comprehensive health service must also have a comprehensive system of postgraduate education has been recognised and the NHS authorities have acknowledged that it is their responsibility to ensure that proper educational facilities are provided for all junior hospital staff and for trainees in general practice. But unfortunately all is not well.

Commenting on the proceedings of a conference held at Green College, Oxford exactly 25 years after the Christ Church Conference, Dr. Alex Paton (159) recalled the enthusiasm with which the Christ Church recommendations were implemented and compared the overwhelming impression he had gained at the follow-up conference that complexity, confusion and uncertainty had replaced the clear-sighted objectives of the early years.

Certainly, there is a multiplicity of agencies and individuals involved in the field of postgraduate medical education and a complex educational bureaucracy has developed which, as Paton points out, is often unintelligible to outsiders and preserves the status quo by deferring to vested interests and by accepting rigid requirements for training.

Thus, the universities are responsible for approving pre-registration house officer posts, the Royal Colleges and their Faculties (or the regional postgraduate committees in Scotland) inspect and approve posts for general professional training and conduct their specialist examinations and the higher training committees define

the training programmes for specialist training and inspect and approve higher training posts.

The process of hospital inspection has become laborious, repetitive and disruptive for the hospitals, which are inspected separately by the universities for pre-registration posts, the Colleges for general professional training and the higher training committees for specialist training. On the other hand, since visits normally take place on a five year cycle, many individual trainees are never interviewed by visiting teams.

There is a clear need to rationalise hospital inspections and to introduce a system for the accreditation of hospitals as suitable institutions for training by some form of joint hospital accreditation committee with representatives from the universities, the Colleges and the higher training committees. This would reduce the frequency of major hospital visits and would enable College visitors and SAC visitors to concentrate on reviewing specific training programmes rather than a series of individual posts. Discussion should take place to implement such an arrangement.

In spite of the improved facilities for postgraduate medical education, there is continuing evidence of deep discontent and disillusionment among hospital doctors at all levels of training. Stark evidence of this was provided in the BBC documentary on the experiences of a group of recent graduates from St. Mary's Hospital Medical School (160) and in her survey, Dr. Isobel Allen (108) found that 46 per cent of a cohort of 204 doctors graduating in 1981 regretted having chosen medicine as a career.

Many pre-registration house officers are overwhelmed by their work load and long hours of duty, though this should be alleviated by implementation of the recommendations in the Heads of Agreement statement (161). SHOs complain about inadequate supervision, unstructured training, the pressure of examinations and the lack of counselling, career advice and assessment of their progress. Those in specialty training posts, at registrar and senior registrar level complain about the long delays before they can achieve the status of independent practitioners.

At pre-registration and SHO level the core problem repeated time and again, both by trainees and trainers, is the difficulty of reconciling the needs of the service with the needs of education and training. The question which really must be faced is whether it will ever be possible to reconcile these needs and whether it

will ever be possible to provide structured training programmes of the type envisaged by the GMC, the Colleges and postgraduate deans, within the existing staffing structure of the NHS. Certainly, if implemented, the proposals for structured training programmes both for PRHOs and SHOs would be more demanding on the time of trainers.

In North America, as already noted, residents are only employed in those hospitals with approved training programmes supervised by programme directors who may spend up to half of their time on the direction of these programmes. In those hospitals without approved residency training programmes, the whole time and attending hospital staff provide specialist care, usually well supported by specialist nurses, physician assistants and other ancillary staff.

A move from a consultant led hospital service to a consultant provided service has of course been advocated in the UK (21) but it could not be introduced on any significant scale without a large increase in the number of consultants.

If, however, the Colleges were to become more stringent in applying criteria for the approval of posts, the number of posts from which educational approval would be withdrawn would increase sharply and alternative ways of staffing the hospitals would have to be found. Pilot studies for the introduction of North American type residency training programmes with a programme director and well designed curricula would be a worthwhile exercise.

On the other hand, it would be unfortunate if hospitals reverted to being regarded as teaching or non-teaching hospitals, or became either training or service hospitals because it is vital that the ethos of teaching and learning should be evident in all hospitals. Nevertheless, there are forces at work which could lead to teaching commitments being increased in some hospitals and reduced in others.

Thus, although it was agreed that training posts in Trust hospitals would require the same educational approval as those in directly managed hospitals, the Trusts have autonomy in the appointment of all staff and will undoubtedly review their junior medical staffing.

Furthermore, Trust hospitals are likely to be innovative in introducing changes in the pattern of health care delivery on the

lines envisaged by the King's Fund report on *London Health Care 2010* (115) with increasing emphasis on ambulatory care and in accordance with the proposals by the NHS Medical Executive for the integration of primary and secondary care (162) which would establish a pattern of 'seamless' patient care.

Indeed, the Central Middlesex Hospital NHS Trust has already introduced a patient focused model of hospital care (PFH) (163). This has been developed because operational analysis has shown that hospitals are orientated around the staff and the system rather than around the needs of the patient. Changes were needed to ensure that the hospital was able to meet the needs of the community and survive in a competitive market for the delivery of acute health care in a district which was overbedded, and with purchasers demanding a more responsive service.

All patient care will, therefore, be provided on a patient focused model. Within agreed protocols patients, care will be managed by multi-skilled, multi-disciplinary care teams led by an appropriately trained registered nurse. There will be a blurring of the traditional professional barriers and nurses in particular will have more responsibility.

The protocols, or anticipated recovery paths (ARP), will be developed by staff from all disciplines to encourage 'ownership' of the care plan, which will also be agreed by the patient.

There will be increasing emphasis on ambulatory care and 'clusters' of ambulatory care units will be developed within the hospital, with laboratory and other diagnostic facilities accessible for out-patients and for day case surgery and endoscopic procedures. Such units have already been established for orthopaedics and urology. It is planned to make minimal use of in-patient beds, which would be reserved mainly for intensive therapy and high dependency patients. Following in-patient treatment, patients might be discharged to hotel accommodation on the hospital site or referred for rehabilitation or convalescence in community units.

Clearly such changes, with their emphasis on a multi-disciplinary team approach to the delivery of medical care, will have a major impact on the role of medical and nursing staff and of allied health care professionals and will also have major implications for training.

Doctors are concerned that the introduction of protocols

will restrict their clinical autonomy, that the blurring of professional boundaries will also blur the lines of clinical accountability and that the traditional doctor-patient relationship may be jeopardised.

With so much emphasis on ambulatory care and day care surgery, the duties and the educational experience of house officers will undergo great change and they will have little opportunity to follow the course of a patient's illness during a hospital admission. But, if as the King's Fund report (115) suggests, the present model for district general hospitals is becoming outdated, they will become increasingly less satisfactory centres for training, more of which will need to take place in day care centres, and in primary and community health care settings, where the majority of patients will be treated. Medical students will also need to receive much more of their training in community settings.

The prospect of such radical changes in the pattern of health care will no doubt be seen by some as a threat to the independence of the medical profession, and the question that has to be answered is whether they are indeed in the interests of the patient, or are being pursued on economic grounds. They will certainly present a challenge and emphasise the difficulty noted by Charles Newman (6) of knowing what kind of doctors we are trying to produce and the importance, above all, of training them to be adaptable for change. Meanwhile, there is an urgent need to restore the morale of doctors in training and to dispel the disillusion that appears to be affecting so many.

The introduction of more structured training for pre-registration house officers and senior house officers, the reduction of their hours of duty, the elimination of inappropriate tasks, improved supervision of their work and the provision of better counselling and career advice should help to achieve this. But, as they progress through specialist training, registrars and senior registrars are concerned about the long duration of training and the uncertainty of obtaining a consultant post. It is essential that specialist training should take no longer than the needs of the specialty requires and that completion of training should lead without undue delay to a consultant post.

A chief surgical resident in an American university hospital once remarked that he had greatly enjoyed a year working in a

university teaching hospital in England, but could not understand how fully trained surgeons aged 35–38 were not able to practice independently. This problem is due to the fact that the NHS is the monopoly employer of medical manpower, that all patients in the NHS hospitals are under the care of a named consultant and that consultant numbers are strictly controlled. A consultant was defined in the Platt Report in 1961 (7) as 'a person who has been appointed by a statutory hospital authority by reason of his ability, qualifications, training and experience to undertake full personal responsibility for the investigation and treatment of patients in hospitals without supervision in professional matters by any other person'.

Whether such a definition will be sustainable in the new model of health care proposed may be questionable and although it has doubtless been of advantage to patients to be under the care of a named consultant, the fact that specialist status has been co-terminous with consultant rank has created problems (164).

Some changes in the responsibilities of the consultant grade will be an inevitable consequence of increasing their numbers to provide career opportunities for those completing training and it has to be recognised that changes in the pattern of health care as already discussed may have a radical affect on the number of consultants required. Security of tenure can no longer be taken for granted and limited term contracts are likely to be offered, but this will only bring medicine into line with most other professions and occupations.

Whatever the long-term future, however, there is a great need to seek to reconcile the activities of all those institutions and individuals concerned with postgraduate medical education and training and to ensure that trainees and trainers are aware of their different roles.

The General Medical Council, through its Education Committee, has the ultimate responsibility for co-ordinating all stages of medical education. In the field of undergraduate medical education it has been active in publishing documents on curricula and inspects examinations and visits medical schools, but it delegates the responsibility of approving posts for PRHOs to medical schools and postgraduate deans.

In the field of postgraduate medical education it has been more cautious, although it has stated its intention of establishing rela-

tionships with the Royal Colleges and other bodies responsible for postgraduate training similar to those which it has established with the undergraduate schools. A more hawkish stance by the Education Committee with regard to standards of postgraduate education would act as a stimulus for the Colleges and Higher Training Committees to review their procedures for the approval of training programmes and would encourage them not to hesitate to withdraw approval of any programmes found to be unsatisfactory.

As already stated, the role of the Colleges in postgraduate medical education has been to maintain standards by approving training posts, by conducting examinations to ensure a high standard of academic and clinical attainment by those in training and by running various types of course. In the past they have been criticised for being London based, mainly interested in their examination system and often appearing remote, if not threatening, to the trainees because of the examinations (165). The appointment of regional advisors by most Colleges was the first move to meet this criticism but they too were remote from trainees in peripheral hospitals and it was for this reason that Colleges appointed tutors in district hospitals.

Regional advisers work in close association with regional postgraduate deans and College tutors collaborate with clinical tutors at the periphery. Unfortunately many junior staff are still unaware of the role, and sometimes even the existence, of these individuals and they are certainly confused by their relationship with each other and one trainee described the postgraduate dean as a 'shadowy figure'.

The profile of postgraduate deans and of clinical tutors will doubtless be raised because of their budget holding responsibilities and consequent greater power to influence decisions. Nevertheless, it is essential that the role of regional and district education committees should be well publicised and the names of deans, advisers, clinical tutors and College tutors should be known to all trainees.

There is a danger that two parallel organisations could evolve, with postgraduate deans and clinical tutors representing the interests of the NHS and the universities in the organisation of postgraduate training with the Royal Colleges and their Faculties remaining responsible for the assessment of trainees by examina-

tion and for inspecting and approving training programmes. There is a clear need for closer co-operation between postgraduate deans and the Colleges and their faculties.

The Colleges must maintain their traditional role and they are in a unique position to provide leadership and independent advice to government on the educational needs of trainees in relation to the structure and clinical demands of the NHS. To provide effective leadership, the Colleges must be united. The Conference of Colleges and Faculties is becoming a more authoritative body and through its representatives participates jointly with the BMA in the Joint Consultants Committee (JCC) in discussions with the Department of Health (DOH) on all matters relating to the hospital service.

In spite of previous doubts about the proposal to establish an Academy of Medicine, it does seem that the time is now opportune to re-examine this proposition.

As already noted, the need for a central body for the general oversight of postgraduate medical education in Britain was recognised in the Todd Report (5), which recommended the establishment of a Central Council for Postgraduate Medical Education and Training in Britain. It was unfortunate that the Central Committee for Postgraduate Medical Education, which was established as a United Kingdom Committee, was replaced by separate councils for England and Wales, Scotland and Northern Ireland and that the Council for England and Wales did not prove to be effective and foundered.

The need for such a body remains and the Standing Committee on Postgraduate Medical Education does not meet this need precisely, because the Chairman and members are appointed by the Secretary of State for Health, its remit is narrow and its primary role is to advise the Secretary of State. This is not to detract from the importance of this role and the value of its reports, but an Academy of Medicine would have a broader membership and would be free to determine its own agenda and its advice would be authoritative. Membership of such an Academy would be a matter for wide discussion and consultation, but it would seem a worthwhile venture for the Conference of Colleges and their Faculties to take the initiative and open a debate on the feasibility of establishing an Academy.

Membership would probably be based on the corporate mem-

bership of Institutions and it could well extend beyond the Colleges themselves to include the universities and such bodies as the Medical Research Council, the Association of Medical Research Charities, the British Medical Association and possibly the Royal Society of Medicine and the Fellowship of Postgraduate Medicine. Apart from setting standards for postgraduate and continuing education, its remit would no doubt include an interest in health care policy, medical research and ethical issues.

By establishing liaison groups an Academy of Medicine could play a major role in reconciling many of the conflicting requirements of the General Medical Council, the NHS authorities, the universities and the Postgraduate Deans and the Colleges themselves.

Writing in support of such a proposal, Gordon McLachlan, when Secretary of the Trust, believed that ... 'a multi-disciplined national institution operating responsibly and independently on a national basis could well provide the intellectual counter-balance necessary to the weight exercised by what is in effect the public monopoly in health care'. But he warned that '... any additional bureaucracy however well intentioned its establishment, is suspect and above all costly' (166).

It would of course be necessary to ensure that any such Academy did not create an additional bureaucratic machine, adding to the confusion rather than reducing it. Nevertheless, I believe that Colleges should strengthen their leadership, either by introducing a more formal structure for the Conference of Colleges or by taking the initiative in seeking to establish an Academy of Medicine with broad corporate membership, which would promote the interests of medicine over a wide field, while focusing primarily on the maintenance of high standards of practice, particularly through postgraduate and continuing medical education.

Meanwhile we must surely look beyond the present mood of discontent to the future needs of the profession and the patients we serve. Postgraduate medical education has to be seen as a moving target which must accommodate to advances in bio-medical technology, changes in the pattern of health care delivery and consequent changes in the role of doctors and their relationships with each other and with other health care professionals. Those responsible for planning and delivering postgraduate medical

education must be able to adapt to these changes, must also be sensitive to the needs and aspirations of trainees and be prepared to adapt to innovatory changes in educational methods.

At the same time it is important to retain what is good in the British model of postgraduate education and training. Only recently a group of consultants responsible for training pre-registration house officers made a plea for the retention of the apprenticeship system (167) which has much to commend it, but it is of course dependent on the quality of the chief. In the past many charismatic consultants, in spite of their idiosyncrasies, provided excellent teaching and made a life-time impression on their residents. Today there is much lamenting the lack of such role models.

Some trainees have been concerned that their chances of promotion have depended on personal patronage (109), but we all need support or sponsorship and patronage places a responsibility on the patron as well as favours on the patronised. I remember being impressed by a comment in the obituary of a much respected surgeon—that nothing gave him more pleasure than seeing his young people 'getting on'—and my own chief taught me that one of the responsibilities of having juniors is to help them to further their careers. Whether this is support or patronage, it might be unwise to displace this tradition too hastily in favour of the currently favoured practice of continuous and objective assessment.

There also seems to be some danger of seeking to bring about change in postgraduate medical education by regulation rather than by motivation. There was no doubt a need to formalise the system, but there is certainly a surfeit of regulations, and without motivating both trainees and trainers the desired objectives are unlikely to be achieved.

Motivation is closely linked with morale, which has been distressingly low amongst many consultants and junior staff. Most consultants work hard but they have been depressed by the instability within the NHS and juniors have felt that the NHS has been an insensitive employer. Declining morale is infectious, but so is enthusiasm, and it is encouraging to find that in spite of all the reports of disillusionment there are many trainees who remain enthusiastic. They must be encouraged because the future of the profession depends upon them.

Disillusion with medicine is not confined to Britain. In the United States there has been some decline in the popularity of medicine as a career which Dr. Steven Schroeder (168) at least partially attributes to a troubled profession being associated with a troubled society.

Doctors are of course part of society and increasingly behave as other members of society, but medicine is a profession which demands dedication, skill and perseverance from its practitioners and as Dr. Carola Eisenberg, dean for student affairs at Harvard Medical College, pointed out (169) as she tried to dispel the gloom affecting some of the students there, it is absurd to suggest that the liabilities of a career in medicine outweigh the assets. Students can be assured that the practising physician will always be in demand and that there are few more satisfying callings.

In concluding, I cannot do better than quote the words with which Charles Newman concluded his book on medical education (6).

'The safeguard of the future lies in medical education, providing the professional spirit of putting the patient above the claims of fame, of research and of the state, is maintained.'

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