



**2003**

# **Academic neurology in the United Kingdom**

*Threats, opportunities and  
recommendations*

A report prepared by the Clinical Research and Academic Committee (CRAC) for the Association of British Neurologists.

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# Executive summary

This document focuses on issues relevant to present and future academic neurologists. Data were obtained for this report from several questionnaires circulated to heads of academic departments, consultant level academic neurologists and trainees (CRAC 1,2,4,5).

The report has 5 main aims:

## **1. To define the structure of academic neurology departments and the activity of academic neurologists in the UK.**

Key points emerging from the examination of the structure of academic neurology departments include: the perception that many are precarious in terms of critical mass; the paucity of clinical lectureships; poor administrative and infrastructural support; and the apparent transfer of a significant proportion of senior lecturers to NHS posts.

Most academic neurologists do 3-5 fixed clinical sessions per week, with 1-3 out-patient clinics and 1-2 ward rounds. The majority have 4-7 academic sessions in the working week; spend 6-20 hours on administrative tasks and 1-4 hours on teaching. Most academic neurologists work harder than required by their contract – working 10-40 hours in addition to the 40 hour working week. Subspecialty interests of UK academic neurologists are spread across 17 different areas. Ten themes emerged reflecting the perceived difficulties in combining a clinical and academic career in the current employment climate. While 20 percent of academics are generally happy with the current balance of their post, 40 percent would like to reduce clinical, teaching or administrative commitments to allow more time for research activity.

## **2. To highlight the contribution made by academic neurologists to Universities, NHS Trusts and patients.**

Section 6 of the report highlights the main roles of the academic neurologist; their value to the NHS in terms of patient care and research and development and their contribution to teaching. There will clearly be a continuing need for academic neurologists in the future given the changes in society in terms of age structure, disease patterns and public expectations of healthcare delivery; the expansion of medical education, and the increasing pressure on research resources.

## **3. To obtain a census of the perceptions of neurological trainees in relation to their experience of academic training and their future aspirations.**

Trainee neurologists appear enthusiastic about research, with many seeing this as a good way to develop a sub-specialty interest. The majority of trainees who responded to the survey considered that exposure to research had had a positive benefit on their career development and wished to continue with an academic interest in their future career. Several problems were raised which trainees would like to see addressed including: improvements to the career structure for aspiring academics and the flexibility of the NTN system; better support and mentoring during research; better opportunities for continuing research during clinical training and attention to the obstacles of funding difficulties; and the prolonged training required as a clinical academic.

#### **4. To consider the incentives and disincentives to an academic career in neurology and recent changes which have created new pressures.**

Major incentives for pursuing an academic career include: the opportunities for a varied and interesting career; the challenge of research and the intellectual environment of research units; the opportunity to make discoveries that may benefit patients; the opportunity to develop a network of collaborative interactions with colleagues around the world; and the pursuit of a research interest facilitating the provision of a first class clinical service.

Disincentives to the pursuit of a career as an academic neurologist result from increased pressures and diminishing levels of support. Important areas identified include: the difficulty of serving two employers; difficulties in obtaining research funding and ethical permission for research in the current climate; lack of research infrastructure support from Universities and financial disadvantages. In relation to trainees, disincentives include: the uncertain career structure for clinical academics as well as the length and lack of flexibility in training and the pressure to start research too early.

Recent changes which have increased the pressure on academics include the Research Assessment Exercise; changes in the NHS and in the training of junior doctors as well as increased demands for teaching time.

#### **5. To make recommendations for the components necessary to facilitate a successful and rewarding career as an academic neurologist, and to help preserve future viability of the academic sector of our specialty.**

The recommendations of this report are under 3 headings. First, the ABN should support several positive initiatives including measures to procure more time for teaching and to protect the research time of academics. Measures taken to minimise financial disincentives and to reduce time taken by multiple performance appraisals should be adopted. The effort to implement a better career structure for academics, eg through continued development of the clinician scientist scheme and the bolstering of the clinical lecturer grade, should be continued.

Other measures include recommendations on the ingredients of the job plans and the departmental structures likely to promote the successful combination of clinical and academic work.

Finally, measures are suggested which the ABN could implement through the clinical research and academic committee (CRAC). These include the establishment of a database of academic posts, new appointments and retirement projections as well as the portfolios of research activities in UK academic neurology units. To support trainees undertaking research and those who wish to pursue academic careers an improved mentorship scheme should be established. A series of 'how to do it' seminars/lectures giving advice about the steps in an academic career could be interdigitated with existing meetings and courses.

# Introduction

A clinical academic career can be one of the most exciting and rewarding in medicine. It provides an opportunity to combine a doctor's core role, caring for patients, with the rewards of research discovery and teaching. The prospects have never been brighter for medical research to improve prevention, diagnosis and management of disease, including many hitherto intractable neurological disorders.

The last 20 years has seen enormous change in the practice of neurology. Discoveries in basic neuroscience have enabled a better understanding of the molecular and pathogenic mechanisms underlying many neurological disorders. Diagnostic techniques have been revolutionised and there have been real advances in the treatment of many neurological disorders. Nevertheless, much remains to be done. The mechanisms of neurological disease are often still at best only partly understood, and for many disorders there are no opportunities to limit or prevent morbidity.

The development of more effective treatments requires activity in basic and clinical neuroscience. A key player in enabling these advances is the neurologist who combines a major commitment and understanding of research with the insights and analyses of clinical neurology.

But all is not well. Academic medicine is perceived generally to be in crisis. Neurology is no better protected than any other main-stream discipline from the impact of serial health service and training reforms, introduced without apparent awareness of their implications for academic medicine. Although the United Kingdom has a track record of past and present success in academic neurology, NHS and University employees have a mutual responsibility to work together ensuring that we continue to lead developments and allow our patients to benefit from discovery and application of advances in neurological research. Given the pivotal role of the academic neurologist in advancing the welfare of patients with neurological disease, close scrutiny of the ingredients necessary for a successful and rewarding career is warranted.

The present document, originating in a survey of academic neurologists and neurological trainees in the United Kingdom, focuses on issues relevant to neurologists currently in academic posts and those wishing to pursue a clinical academic career in the future. However, we fully recognise the essential links between NHS and academic neurologists. We also recognise and commend the major contribution made by neurologists in NHS posts to research and teaching. Without this support from NHS colleagues, academic neurologists would be unable to function effectively in their dual University and NHS roles.

# 2

## Aims and methods of this report

1. To define the structure of academic neurology departments, and the activity of academic neurologists in the UK.
2. To highlight the contribution made by academic neurologists to Universities, NHS Trusts, and patients.
3. To obtain a census of the perceptions of neurological trainees in relation to their experience of academic training and their future aspirations.
4. To consider the incentives and disincentives to an academic career in neurology and recent changes which have created new pressures.
5. To make recommendations for the components necessary to facilitate a successful and rewarding career as an academic neurologist, and to help preserve future viability of the academic sector of our specialty.

Information relevant to the preparation of this report was obtained by the preparation, dissemination and analysis of several questionnaires (CRAC 1, 2, 4 & 5) circulated in 2000-2002:

**CRAC 1** was sent to **heads of academic neurology departments** to obtain information about staffing, staff vacancies, undergraduate students and departmental funding and research publications.

**CRAC 2** was sent to **senior clinical academic staff** (professors, readers, senior lecturers and lecturers of consultant grade) undertaking at least one academic session per week funded by the University, irrespective of the source of funds. This questionnaire sought to obtain information about the individual funding, structure of the post held, distribution of activities, additional support available for clinics, emergency on-call duties, teaching commitments and hours worked.

**CRAC 4 and CRAC 5** sought to obtain information from **neurological trainees** on research and academic activities, their career aspirations and any problems encountered.

# 3

## Structure of academic neurology departments

The CRAC I questionnaire was an information survey for completion by heads of the 24 UK Academic Neurology departments. The response rate was 66 percent, ie information was obtained for 16 Academic Neurology departments. An analysis of these data is given in Appendix I available to view at the ABN website ([www.theabn.org](http://www.theabn.org)).

Key points emerging from surveying the structure of academic neurology departments are:

- **Critical mass:** many academic neurology departments appear precarious in terms of critical mass. There are a number of academic departments without academic posts below professorial level and indeed several lack a single professor. In the current climate, a sufficient critical mass is regarded as essential to enable effective research and to procure research funding.
- **Paucity of clinical lectureships:** there is a striking lack of clinical lectureship posts. Many have been converted into regular specialist training posts. This is of great concern, given that these posts have traditionally been one of the main routes to a clinical academic career, bridging clinical training fellowships and consultant grade academic appointments.
- **Poor administrative and infrastructural support:** many departments have poor support in terms of financial allocation from the host University and an administrative and technical infrastructure is needed to support academic activities.
- **Transfer of academic staff to NHS posts:** it is of obvious concern that 5/18 (28%) senior lecturer posts identified in the CRAC I survey, had transferred to NHS posts in a 5 year period.

# 4

## The activities of academic neurologists

Data derived for this section were obtained from the CRAC 2 questionnaire which was an information survey for consultant level staff with at least 1 paid academic session per week. 97 academic neurologists were identified and a response was obtained from 70 individuals (72%); 37 (53%) were professors; 5 (7%) were readers; 26 (37%) were senior lecturers; and 2 (3%) were MRC clinician scientists. Data analysis from the CRAC 2 questionnaire is shown in Appendix 2 which can be viewed at the ABN website.

Appendix 2 shows that most academic neurologists do 3-5 fixed clinical sessions per week, with 1-3 out-patient clinics and 1-2 ward rounds. The majority have 4-7 academic sessions in the working week; spend 6-20 hours on administrative tasks and 1-4 hours on teaching. Most academic neurologists work harder than required by their contract working 10-40 hours in addition to the 40 hour working week. Subspecialty interests of UK academic neurologists are spread across 17 different areas. While 20 percent of academics are generally happy with the current balance of their post, 40 percent would like to reduce clinical, teaching or administrative commitments to allow more time for research activity.

Several themes highlighted in the analysis of these data were reflected in the commentary section on perceived difficulties in combining a clinical and academic career. These are:

1. *The problem of balancing clinical and academic work:* academics consider themselves needing to spend time on clinical activities in order to avoid becoming de-skilled. Given the under provision of DGH services, out-patient waiting lists, changes in the NHS and training of SpRs, they often find that clinical demands are simply too great for them to function additionally as an academic delivering useful and publishable research. With multiple other demands leaving little time for research, and the balance of clinical and academic excellence increasingly difficult to sustain without adequate infrastructure support, many clinical academics are considering giving up their posts.
2. The personal pressure and *desirability of reducing or giving up general neurology commitments* in order to remain expert in a speciality and contribute to research.
3. The systematic *disruption to family life* of trying to perform adequately both in clinical and academic work given the increased scrutiny and audit of performance in each without recognition of the multiple levels – (within and outside the employing institutions) – at which academics are asked to perform.
4. The *lack of established administrative support* at secretarial, technical, scientific and clinical fellowship levels. No longer can the young academic appointee expect a steady and sustained rise to success through the complex research grant and centrally funded fellowships schemes and yet the Universities provide less and require more in order to sustain their own central activities.

5. Too frequent *requests for reports and assessments of activity* mostly with unnecessarily short deadlines and failure to recognise or allow for time taken up by repeated assessment exercises from multiple sources – RAE, TQA, annual University and NHS appraisals.
6. Lack of opportunity for *periods of catching up and sabbaticals* needed to prevent becoming de-skilled in research.
7. Lack of *financial rewards* compared with NHS and private practice, including a perception that the merit (clinical excellence) award system no longer values academic performance.
8. Increasing difficulties and complexities in *obtaining permissions and funding for research projects* through legislation, ethical constraints and research governance issues.
9. Problems perceived in relation to *trainee neurologists*: Calman trainees are now focused on clinical training and often show little inclination for research; it is more difficult to obtain suitable follow-on posts for academic junior doctors who have completed an initial period of training; and changes in training structure mean that there is less junior support for clinical work.
10. Perception that only a *small number of departments in the UK are producing high quality research*. In an increasingly competitive climate, others are squeezed out of the research market and become dependent on pharmaceutical investments around contract research.

# 5

## Trainees and academic neurology

Data for this section were obtained from two sources. CRAC 4 was sent to individuals at all stages of training. This questionnaire aimed to identify the nature of the research undertaken by neurologists in training; problems encountered by SPRs in continuing research during training; and to formulate an impression of attitudes to careers in academic neurology. Responses were obtained from 114 trainees (36%). Given the relatively low response rate, it is possible that the views obtained may not be representative of all neurology trainees. CRAC 5 was distributed more recently, and sought information from trainees yet to enter research (n=13); those currently in research (n=40); and individuals who had completed their first research training period (n=47). Together, 214 responses were received. The data emerging from the analyses of the CRAC 4 and 5 questionnaires are included in Appendix 3 which can be viewed at the ABN website.

Neurological trainees appear to be enthusiastic about research. Of those intending to do research in the future, 40 percent were motivated by the aim of developing an area of expertise. The 4 main areas of research pursued were immunology, neurodegeneration, neuroimaging, and genetics. Most trainees in research were funded by the Wellcome Trust, MRC or a charity, and the majority were intending to pursue a higher degree.

Of those who had been exposed to research, 57 percent considered that this had positively benefited their career. Of trainees currently in research, 75 percent were undertaking research prior to obtaining an NTN and many would have preferred to defer research until after a period of clinical training at registrar level.

Of trainees who had completed their initial research period, 59 percent were managing to maintain some research activity after returning to clinical training. The majority (89%) wished to continue an academic component to their career, although only 25 percent planned to do this from an academic appointment.

The data emerging from CRAC 4 and 5 have highlighted the following problems which neurology trainees would like to see addressed:

- Introduction of flexibility in the NTN system making it easier to insert research training within and not before entry to the SpR grade.
- An increase in the number of academic NTNs.
- Not making research *de facto* an absolute requirement for SpR appointment.
- Improving the lack of security in gaining a future NTN for a pre-NTN researcher.
- Better structure and support for research registrars, eg an independent advisor separate from research supervisor – extending the Academy of Medical Sciences mentoring scheme for clinician scientists to all clinical research fellows.
- Advice from CRAC and a policy of encouragement for those considering career academic posts.
- Continuity of research exposure while completing clinical training.
- An improved career structure for clinical academics.
- Attention to the disincentives arising from perceived obstacles to funding and the protracted period of clinical training before achieving status as an independent researcher.

# 6

## The value of academic neurology to NHS Trusts, Universities and patients

Academic neurologists bring a unique perspective to medical research. The experience of caring for patients shapes the approach that the clinical academic takes to research; complementing and enriching that of colleagues in basic science.

**The main roles of the clinical academic neurologist**, vital to health and neurological health services in the United Kingdom, are to:

- Pursue patient-orientated or basic research aimed at improved understanding or treatment of neurological disease.
- Develop and provide sub-specialist clinical services, informed by research advances.
- Bridge basic science and clinical medicine and translate the results of research into clinical practice.
- Work with colleagues and lead where appropriate on the structural organisation of teaching courses and curriculum development, as well as participating in the delivery of teaching of the clinical neurosciences to undergraduate and postgraduate students and doctors.
- Provide research leadership and supervise the research of young neurologists in training.
- Inspire a culture of inquiry in other neurology specialists.
- Undertake administrative and committee work required in the NHS and higher education.

**The value of academic neurologists to the NHS** is in clinical care and Research and Development:

- On average, academic neurologists spend 50-60% of their time working directly for the NHS.
- Neurologists funded through universities or major grant-giving bodies have been responsible for major advances in the understanding of common neurological disorders, and in developing new treatments to relieve the burden of disease and disability in the community.
- Academic neurologists have been responsible for changing clinical practice in the fields of stroke, multiple sclerosis, epilepsy, Parkinson's disease, motor neurone disease, dementia, peripheral neuropathies, muscle disease, and in many areas of neuropsychiatry – often by translating basic neuroscience using subspecialty clinical expertise, the understanding and implementation of molecular neuroscience, and the conduct of large-scale clinical trials. Academic neurology has also played an important role in pursuing clinical excellence, leading clinical teams in these and other sub-specialist areas of neurology.
- NHS Trusts having strong academic links are in a good position to inform service development and evidence-based practice, and to attract high-quality staff at all levels. Clinical academics are in a unique position to carry out research relevant to the needs of patients, contributing to NHS R&D. The activity of academic neurologists therefore has a major impact on the funding of Health Trusts.
- Hospital Trusts recognise that 'research and effectiveness' is a key component of clinical governance, as endorsed by the Commission for Health Improvement.

- Multidisciplinary research increasingly requires major investment from grant-giving bodies. These are competitive between disciplines but, despite time constraints arising from NHS service pressures, academic neurologists in the UK have been strikingly successful in winning major research funding awards in collaboration with other scientists. Academic neurologists have developed collaborations with biotechnology and Health Technology Development companies on the basis of their understanding of the basic and clinical neurosciences.

**Teaching.** A thriving academic and research base undoubtedly contributes much to undergraduate teaching and to post-graduate training and continuing education. Academic neurologists contribute in the following ways:

- The average academic neurologist spends 1-4 hours per week on teaching.
- Academic neurologists have been partners with NHS colleagues in developing the new medical curriculum.
- Some academic neurologists have developed special interests in teaching theory and methodology.
- Academic neurologists are the pathway to postgraduate training in clinical research; these responsibilities are increasingly onerous.
- Clinical academics are often needed to provide teaching and training on evidence-based practice to other professionals and to medical students.
- Clinical academics, including those in neurology, have a prominent role in the medical royal colleges and in continuing professional development of doctors at all stages of their careers. They are also involved in consultant appraisal and revalidation.
- Clinical academic neurologists have responsibilities for improving the public understanding of science and medicine.

**Continuing value of academic neurology in the future.** There will be an even greater need for academic neurologists in the future, based on changes predicted in both the NHS and University environments. Tighter management has impaired the ability of NHS consultants to pursue research on the same scale as in the past, devolving responsibility more firmly onto academics. This effect is reinforced by the increasing technical complexity of much current research which requires access to costly equipment and specialist infrastructure. Academics will need to address the needs of:

- *An ageing society facing many changes in disease patterns* with altered emphases and directions as increased understanding of the biology of disease arising from molecular genetics and proteomics, together with developments in biotechnology, make their impact.
- *Advances in science and delivery of medical care raising public expectations* of those who deliver healthcare with increased attention to evidence-based policy and practice in delivering objectives and targets of the NHS plan.<sup>1</sup>

- *Expansion in medical education.* In England alone, there will be a 60% increase in the annual intake of undergraduate medical students (2,100 to 5,750) between 1998 and 2006.<sup>2</sup> This, together with the establishment of four new medical schools will require an appreciable increase in the number of academic neurologists.
- *Increasing pressure on research resources.* This maintains the need for a cadre of well trained clinician scientists in neurology to compete effectively for research funds so as to ensure that the right proportion of scientific research remains dedicated to the problems of patients with neurological disease.

# 7

## Incentives and disincentives to a career in academic neurology

### Background

Increasing pressures on clinical academics in neurology and other specialties as a result of their wide range of responsibilities, together with diminishing levels of support, have eroded the satisfaction traditionally obtained from this career. The problems of clinical academics cannot be viewed in isolation, and clearly relate to chronic healthcare under-investment in the UK compared to most other developed countries.

There is concern from the Association of British Neurologists that recruitment of young, talented, research-minded clinicians into academic neurology will be insufficient to maintain the current impetus and standard of neurological research in the UK, and the translation of this activity into improved patient care.

The situation of academic neurology should be viewed in the context of concern for the survival and health of clinical academic medicine in general, expressed both in the UK and overseas.<sup>3-5</sup> Several senior bodies have expressed concerns for the future of academic medicine:

- The *House of Lords Select Committee on Science and Technology* issued a report in **1995** on Medical Research and the NHS reforms<sup>6</sup>, expressing concerns about disincentives to clinical academic careers, partly as a consequence of changes in specialist medical training, and indicating the need for an urgent enquiry.
- In **1996** the *Committee of Vice Chancellors and Principals* commissioned an independent task force, chaired by Sir Rex Richards, to investigate recruitment and retention of clinical academic staff in UK Universities. The Richards report (1997) triggered several initiatives to address the problems identified, but it was clear that further action would be required.<sup>7</sup>
- A symposium on careers in academic medicine was organised jointly between the *Joint Consultants Committee and the Department of Health* in **1999**. Key conclusions were the need for a clearer career track for clinician scientists and individuals entering academic medicine, and better data on the clinical academic workforce.
- In **1999**, the *Minister for Health met with the House of Lords Select Committee on Science and Technology* and, in view of the plans for expansion in medical education, requested comprehensive data from Universities on recruitment problems within academic medicine and the setting up of a permanent database of clinical academic staff.
- The following year, the *Council of Heads of Medical Schools (CHMS)*, in consultation with the *DOH Advisory Group on Medical Education, Training and Staffing (AGMETS)* agreed to undertake a comprehensive survey of clinical academic staff employed by Universities in medical and dental schools.<sup>2</sup> They concluded that:
  - i) At October 2000, there were 3,549 full-time clinical academic staff (professors, readers, senior lecturers and lecturers) employed in UK medical schools in the membership of the CHMS.

- ii) Senior lecturers with honorary NHS consultant contracts constituted about 10% of hospital medical consultant WTE's in England.
  - iii) The level of lecturer posts was low at 844 and there were approximately 2 senior lecturer FTEs for every lecturer; representing an insecure foundation from which to build a strong future cadre of clinical academics.
  - iv) There was a strong reliance of medical schools on NHS funding for academic posts (at least 38%) and conversely a dependence of the NHS on Universities for clinical services and clinical care provided by academics resulting in high expectation of clinical service from academic staff.
  - v) Approximately 10-15% of professorial and senior lecturer posts and 20% of clinical lecturer posts were vacant: the worst affected specialties were general medicine, surgery, anaesthetics, pathology and psychiatry. Independent advice indicated that a vacancy rate of 10% was indicative of a serious retention and recruitment problem.
  - vi) Medical schools confirmed that the field of applicants for clinical academic professorial posts was often worryingly small.
- In the same year (**2000**), the *Academy of Medical Sciences and the Royal College of Physicians* produced reports with recommendations attempting to improve the career pathway for potential clinical academics.<sup>8-10</sup> The major proposal emerging was the development of the National Clinician Scientist Scheme.

## Incentives

The many incentives for pursuing a career in academic neurology include:

- Advances in basic and clinical neuroscience, and the level of public interest and commitment of society make for an *unrivalled opportunity to solve problems important to patients with neurological disorders*. Considerable job satisfaction is to be found in making research discoveries and collaborating with other researchers, both clinical and scientific. A great sense of achievement comes from being involved in the translation of research findings into better clinical care of patients with neurological disorders.
- Now should therefore be an excellent time to embark on a career in academic neurology, given expansion of the clinical specialty and concern regarding the quality and number of academics leading to *new openings in research, training and teaching*. It has been estimated that approximately 1,000 clinical academic posts will be required to cope with teaching the expansion in medical student numbers between 1998-2006.<sup>11</sup>
- There is encouraging evidence that *junior doctors have not lost interest in research*. Every year there is robust competition for the approximately 150 nationally advertised research training fellowships. A report in 1999 examined the views of junior doctors about careers in academic medicine.<sup>12</sup> Major incentives to a clinical academic career included the challenge of research and the intellectual environment of research units; opportunities for a varied and interesting career; and making discoveries that might benefit patients. Peer

- recognition and the chance to travel did not rate as highly.
- The pursuit of research in a sub-specialty area undoubtedly *facilitates the provision of a first class clinical service and the implementation of new therapeutic approaches.*
  - There is evidence that *research training or experience as an undergraduate* (eg intercalated B Med Sci or BSc) have a substantial influence on career development and correlate positively with research performance years later.<sup>13</sup>
  - There is recognition amongst clinical academics, medical schools, postgraduate deans, Royal Colleges and specialist associations for the need to re-organise and re-deploy resources and structures so that *serious research training can be integrated with first class clinical training* to ensure the next generation of clinical academic doctors.

### **Disincentives**

But there are perceived disincentives, relating to increased pressures faced by clinical academics and highlighted in several recent reports from the Committee of Vice Chancellors and Principals<sup>7</sup> and by the Academy of Medical Sciences.<sup>3,14</sup> These disincentives apply both during training and in established practice and result in recruitment and retention problems. These are the most important threats to the viability of clinical academic medicine.

- *Serving two employers* – dividing time between research, scholarship and teaching and delivering patient care to which most academics attach great importance – presents difficulties of achieving the appropriate balance in a particularly acute form. There is an expectation from the University of high achievement in research, income generation and teaching, while the NHS expects a high clinical workload combined with clinical excellence. Young doctors may lack confidence in their ability to be productive researchers and effective clinicians. Keeping abreast of rapid advances both in clinical medicine and the basic sciences adds pressure on doctors trying to succeed as clinical scientists. A picture emerges of academic clinicians working very long hours, with designated research time often invaded by demands for additional service, as well as heavy administration. UK clinical academics have less time protected for research compared to clinical academics in many other countries and colleagues in non-clinical disciplines. The expectations of funding agencies to meet workload and conditional performance objectives have increased. New forms of accountability have arisen for meeting research and teaching quality standards in the Universities matched, in hospital practice, by clinical governance and growing professional self-regulation.
- *Ethical appraisal.* An additional pressure on the effectiveness, flexibility and timeliness of research activity is the increasing power and domination over clinical research of ethical appraisal and the impending requirements of European legislation. Ethical appraisal is clearly desirable and essential, but is delivered in a fragmented and piecemeal fashion nationally, without transparent systems for the regulation of standards and methodologies to command the confidence of the research community.
- *Lack of research infrastructure.* The recent JIF and SRIF initiatives have resulted in improvements in the physical infrastructure for research in many medical schools. However, the formula operated by funding councils based on RAE results has led to a weakening of

- other aspects of the infrastructure that supports clinical academic staff. This formula encourages Universities to employ academic staff rather than employ technicians, maintain laboratory facilities or purchase equipment
- *Financial disincentives.* In general, a clinical academic can expect a lower income than colleagues employed in the NHS both during training and later from lack of private practice income. A trainee who undertakes a significant period of research training slips approximately £25,000 [British Medical Association: C Smith personal communication] and often when he/she has a young family to support. There are disadvantages in the arrangements for reimbursement of expenses, particularly relocation costs and study leave, for individuals employed by Universities rather than the NHS. New arrangements for the award of discretionary points and merit awards, or their future replacement by Clinical Excellence Awards, may be relatively unfavourable for academics, since more emphasis will be given to reward individuals who are perceived to contribute most to the development and delivery of services, with less attention given to academic distinction.
  - *Gender issues.* Despite high numbers of female medical students and young doctors, women are scarce in senior academic posts in clinical medicine – due both to the constraints of traditional gender roles and lack of effective encouragement and mentoring.<sup>15</sup> This results in a lack of role models for young women trainees who might be contemplating a clinical academic career; and perpetuation of the imbalance.

### **Disincentives applicable to trainees**

The Goldacre study surveyed the views of trainees in academic medicine and identified several major perceived disincentives to the pursuit of a clinical academic career<sup>12</sup>; perceived difficulties in obtaining research grants; uncertainty regarding pay parity with NHS colleagues; competing pressures at work; an inadequate number of senior academic posts; and lack of structured training. Some of these concerns also apply to academic staff in established posts. Issues specific to trainees are:

- *Pressure to start research too early.* Aspiring trainees in neurology currently face intense competition to obtain a national training number (NTN). This imposes a pressure to undertake research at the end of general professional training in order to 'mark-time' and enhance competitiveness for the acquisition of an NTN. In general, it is likely to be better for trainees to choose their research project and supervisor when they have had some exposure to their specialty of interest at SpR level. The expediency of research at entry, rather than the more traditional vocational approach, is already narrowing the geographical and technical base of experimental neurology – with major implications for the next generation of academics.
- *Uncertain career structure for clinical academic trainees.* The current career structure of clinical academics in training compares poorly with the more straightforward path to a permanent post offered within the NHS. There has been widespread uncertainty amongst junior doctors and their clinical mentors as to how to construct a training programme in academic medicine. To date, many trainees have had to forge their own personal career path and getting started on a research training pathway may be especially difficult.

- *Length of training.* The aspiring clinical academic in neurology faces an extended period of training given the current requirements for clinical training and the real need for advanced scientific training in order to prove effective in research. This training compares unfavourably with the streamlined process for acquisition of a CCST and entry on the Specialist Register under the Calman system. Thus on average, a clinical academic will not acquire a permanent post until the age of 37-38 years, compared to 31-32 years for an NHS consultant and 27-28 years for a principal in general practice – and the mismatch would increase further with implementation of the Donaldson report on *Unfinished Business*.
- *Lack of flexibility in training.* Many trainees who have already completed a research fellowship, as a clinician or through MB PhD programmes, find it difficult to maintain significant research activity during specialist clinical training because they are governed by the rigid structures and rules of their SpR programme and may be required to rotate away from their research base in order to cover the requisite number of procedures and exposure to sub-specialties.

## 8

# Recent changes which have increased the pressure on academic medicine, including neurology

### **The Research Assessment Exercise (RAE)**

The RAE is undertaken by the UK Higher Education Funding Councils (HEFC) in order that public funds underpinning University research are preferentially directed towards those units of assessment within Universities judged to be undertaking research of international excellence. For a given grade awarded in the RAE, the subsequent grant also relates to the number of University staff returned within each unit of assessment. This exercise has undoubtedly produced some positive benefits, including the encouragement of Universities to adopt pro-active policies for streamlining research portfolios and concentrating resources on existing areas of strength. However, there have also been some detrimental effects which have placed academic medical specialties under increased pressure. These include:

- *Reduction in clinical lectureship posts.* One traditional stepping-stone in an academic career has been the post of clinical lecturer, combining opportunities for clinical training, research and teaching. The RAE does not distinguish between clinical lecturers (young doctors in training, who are not in a position to undertake full-time research, and who may not contribute substantially to the RAE return) from career lecturers in academic disciplines outside medicine. They are expected to provide the same indices of productivity as more established clinical academic colleagues. The resulting financial pressure on medical schools has contributed to the reduction in clinical lectureship posts, converting these to non-clinical lecturer or senior lecturer posts filled by individuals who will more reliably contribute to the RAE return. Enquiry by the Council of Heads of Medical Schools revealed that there was an approximately 8% fall in the number of clinical lectureship positions in a sample of UK medical schools from 1995/6 to 1997/8. This snapshot is likely to reflect an ongoing, year-on-year decline for which no national statistics are available.
- *Underestimation of the constraints imposed by patient care and undervaluation of clinical research and teaching.* The RAE makes no allowance for time clinical academics spend on clinical duties; it undervalues clinical and health services research compared to molecular and cellular science; and promotes loss of status for teaching excellence compared to research.

### **Changes in the National Health Service (NHS)**

Recent changes in the NHS have included rapid growth in technology, the healthcare needed by an ageing population, higher public and patient expectations, and increased pressure on clinicians in terms of performance targets and accountability for service quality at a time when the service provision by junior doctors is decreasing. Each reduces time available for research and teaching.

### **Changes in the training of junior doctors**

Implementation of the Calman system for training hospital-based specialists has yielded positive

benefits in terms of training NHS consultants, including a reduction in the time taken to achieve consultant status and replacement of the traditional apprenticeship system with a more structured approach to training. However, there are several problems inherent in this system, which actively threaten academic medicine, including neurology, as highlighted by the Academy of Medical Sciences.<sup>9</sup> Acceleration of clinical training has highlighted the prolonged period of training for clinical academics; the SpR grade is governed by NHS workforce needs, with strict control of NTN numbers according to consultant vacancies – the difficulty of making projections in a situation where promised consultant expansion has remained un-funded has log-jammed the appointment of new SpRs; the current SpR programmes may be overly proscriptive and inflexible for the needs of clinical academic trainees; and academic trainees may be required to undertake periods of clinical training away from their hospital research base which makes it extremely difficult to maintain research activity.

### **Increased demands for teaching time**

Recent changes have placed increased teaching demands on academics. The recent increase in medical student numbers will continue until at least 2006. The deeper knowledge base in medicine has increased the specialisation of clinicians who no longer feel competent to teach across a broad range of topics. Clinical teaching has moved away from reliance on lectures attended by many students to more labour intensive small group teaching. The more formal requirements for post-graduate training and research supervision require more investment of time from academics for teaching, supervision, assessments and appraisals. Traditionally, much undergraduate and postgraduate clinical teaching has been undertaken by NHS staff but they now have to spend more time on clinical work and related activities of clinical governance, management and administration.

# Recommendations to help preserve the future viability of academic neurology

The recommendations of this report are considered under the following headings: i) Support of existing generic political initiatives; ii) Other measures needed specifically to support established and clinical academic neurologists in training; iii) Measures which the ABN Council and Clinical Research and Academic Committee (CRAC) can undertake to help nurture academic neurology.

## Support of existing initiatives

The current crisis in academic medicine is being addressed by a variety of professional organisations. A real will is emerging amongst clinical academics, medical schools, postgraduate deans and the Royal Colleges to re-organise medical training so that research is integrated with high quality specialist clinical training and methods devised to make the career path in clinical academic medicine more attractive. The ABN should support and help implement proposals put forward by the Academy of Medical Sciences and the Royal College of Physicians<sup>8-10</sup> and:

- *Secure more time for teaching* through the creation of combined clinical and teaching NHS consultant posts, with 4 dedicated sessions for teaching and University contracts for the appointees.
- *Protect time for research* by the adoption of model job plans for clinical academics, to include no more than 3 fixed clinical sessions, at least 5 protected sessions for research activities, and on-call commitments reflecting clinical sessions on a pro-rata basis. These job plans should be kept under regular (at least annual) review to ensure that clinical service pressures do not inappropriately erode research time. Academic departmental agreements for clinical service and delivery would allow increased flexibility for individuals in the division of time between research and clinical activities.
- *Adopt measures to enhance recruitment and retention of clinical academic staff* by annual joint (NHS and University) appraisals taking account of the specific features of clinical academic posts, as recommended in the Follett report<sup>16</sup>; attention to the lack of research infrastructure; abolition of the 6 clinical session requirement for distinction awards; and extension of pay scales for academic trainees to minimise the financial disincentives inherent in the extended training time for clinical academics.
- *Improve career opportunities, progress and flexibility* through competence based (rather than time served) assessments for trainees and *implementation of a better career structure for clinical academics in training*. A two stage career structure following general professional training with phase 1 (doctoral phase) consisting of a 2-3 year full-time research training fellowship and phase 2 (post-doctoral phase) providing a flexible mix of clinical and further research exposure. The national clinician scientist scheme provides 50 posts/year in the first instance with national coordination of clinical and academic training, dedicated academic NTN, tenure track status for the post holder, and mentoring from an experienced academic outside the trainee's institution. Other funding agencies should adopt the MRC Career Establishment Award to get young academics started as independent principal investigators. The clinical lecturer grade should be bolstered as an option for phase 2 training of clinical academics, and this should be directly linked to tenure

track positions. Heads of departments should provide an environment which nurtures the research momentum of young clinical academics. An academic access scheme for promising SHO's should be introduced allowing 20% protected research time to facilitate the development of a research interest leading to application for a training fellowship in association with an academic sponsor:

### **Other measures needed to support clinical academic neurologists**

- *Guidelines for the structure of an academic neurology unit.* It appears relatively common for professors and senior lecturers in neurology to become discouraged in the early years after appointment – a predictable result of increased performance pressure, diminished levels of support and difficulties in securing funds. Careful attention should be given, prior to taking up an academic appointment, to the research and clinical environment of the host institution and whether this will allow the individual to deliver the University and NHS expectations. We would recommend the following departmental structure and resources for a successful career as a clinical academic neurologist:
  - *A critical mass of neurologists* holding University appointments to ensure the delivery of effective research, education and clinical service. This would require a minimum of 3 consultant level academic staff to provide mutual support, team working and protected academic time.
  - Consideration should also be given to the broader perspective of *critical mass in neurosciences across the whole Institution.* The balance and effectiveness of collaborative links between basic and clinical sciences groups are a crucial and generic issue in the long-term success of clinical academic medicine.
  - There should be an *adequate resource of associated support staff* including technical and secretarial support.
  - Academics should provide *no more than 3 fixed clinical sessions and should have at least 5 protected sessions for academic activities.*
  - Confidence that the host environment will foster continued research funding and links with basic neuroscience should be ensured.
  - Specific arrangements need to be in place to *nurture the development and support the training of academically orientated junior neurologists.* The attraction of high calibre research trainees and students is an important ingredient for a successful research unit.
  - The academic department should *encourage opportunities for NHS neurologists to pursue their research interests.* Academic neurologists should help NHS colleagues interested in pursuing research to incorporate an appropriate research component in their job plans and provide practical help and support for the development of NHS research programmes. Good relations between academic and clinical departments will also foster the most effective delivery of medical student teaching and cross referral of patient groups important for clinical research activities.
  - *Agreements on clinical service delivery* from academic staff should be made on a departmental, rather than individual, basis.

- *Financial disadvantages of a clinical academic career should be minimised by strongly resisting any failure to maintain pay parity for NHS and clinical academic staff; bringing pressure to bear on Universities and Hospital Trusts that remuneration for study leave, removal expenses etc should be equivalent for NHS and clinical academic staff; and formulating a separate category of 'Clinical Academic Excellence Award', with its own budget, to complement the new Clinical Excellence Award scheme.*
- *Modular training courses within the Royal Colleges should be developed to facilitate the acquisition of broad neuroscience knowledge generic to all branches of the clinical neurosciences.*

### **Proposed future activities of the ABN Council to support academic neurology**

- Council should continue to ensure appropriate representation of University appointees and research trainees on policy committees and on Council itself.
- The balance and status of original communications by trainees at the twice yearly meetings should be carefully considered so that the ABN remains a prestigious venue for young investigators to present and receive feedback on their best work in the clinical neurosciences from an informed and interested audience.

### **Proposed future activities of CRAC to support academic neurology**

- *Improve Academic Neurology information base accessible to trainees to include:*
  - The portfolio of research activities in UK academic neurology departments.
  - A database of clinical academic posts, new appointments and retirement projections.
- *Improve mentorship for academic neurologists.*  
Support aspiring academics in acquiring and maintaining appropriate job plans and departmental resources. Foster better mentorship schemes for research trainees, including the recommendation that an independent advisor, as well as the research supervisor be allocated to each trainee. The aim is to encourage a climate in which academics in training and in established posts can obtain appropriate and independent advice.
- *Organise and facilitate a series of 'how to do it' seminars and lectures for trainees.* Topics might include: why academic neurology is important; how to prepare a grant/research training fellowship application; how to choose a research project/supervisor; how to maintain research activity during completion of clinical training. Such lectures could be interdigitated with existing meetings, eg ABN, SpR away days; Edinburgh advanced neurology course, Cambridge Neuroscience for Clinicians course and other venues. Written material from these lectures could be prepared and made available via the ABN website.
- *Provide a section on the ABN web page listing research funding opportunities for academic neurologists, particularly aimed at those in training.*
- *Prepare advice for academic neurologists relating to preparation of Research Assessment Exercise submissions.* The next RAE is scheduled for 2007. Although the structure remains to be confirmed, the present proposal is for all individuals to be scored from 0-3 and the

aggregate scores for each department or higher academic institution used to calculate the volume measurement on which funding is based. Clearly this will further expose academics to individual scrutiny, creating even greater pressure to perform against a set of generic targets. It is not too early for those responsible for submitting and evaluating returns to plan for optimal performance of individuals and organisations based on an understanding of what does and does not constitute a research achievement.

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# Membership of the CRAC committee

This report was compiled on behalf of the Association of British Neurologists Council by the membership of the Clinical Research and Academic Committee including:

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