Training in infectious diseases and tropical medicine in Britain

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British higher medical training programs for Infectious Diseases and Tropical Medicine have been revised over the last 4 years, taking into account the changing nature of infection practice. They have remained as flexible as possible, to provide specialists equipped to practice in the wide variety of infectious disease (ID) units found in the UK. Pediatric infectious diseases is a separate specialty, allied with training in pediatric immunology and immunodeficiency, and will not be considered further in this article.

WHAT ARE WE TRAINING FOR?

Most consultants still have patients with suspected community-acquired infection, and/or with difficult infection-related and medical problems, admitted under their direct care. The majority of units are integrated within the wider hospital infection team, providing consulting expertise on the whole range of infection problems in the hospital and community. Most ID consultants are also involved in the direct care of patients with HIV infection, and many units have additional interests in special groups, such as patients with viral hepatitis, tuberculosis, intravenous drug misuse and chronic fatigue syndromes. This is described in more detail in the accompanying article by McKendrick [1] and in a recent article from Scotland [2].

ID units provide regional expertise in the management of imported infections, and most units run clinics to give advice to travelers about how to minimize health problems while overseas. A small number of units, such as those attached to the two Schools of Tropical Medicine, act as tertiary referral units for imported infection, with several consultants with specific expertise in tropical disease who are actively involved in clinical work and research overseas. The need for tropical physicians has been debated at length, but interest in the discipline continues to flourish, and both British Schools of Tropical Medicine have increasing enrollment for their DTM&H and other courses. A recent debate soundly endorsed the view that specialist ID practice related to the tropics is a viable discipline, despite the uncertain career path which its devotees follow [3,4]. This is largely driven by the academic centers, with generous support for training from the Wellcome Trust, the MRC and other agencies.

MONITORING OF TRAINING

Training programs in clinical infection are monitored by the Specialist Advisory Committee (SAC) in Infection and Tropical Medicine, which is responsible to the Joint Committee on Higher Medical Training (JCHMT). The JCHMT, which includes representatives of the Royal Colleges, the Conference of Postgraduate Deans and others, is responsible for standardization of training programs in all medical disciplines and makes recommendations on the contents of such programs to the Specialist Training Authority (STA), which carries the final legal responsibility for approving both the content of programs and their satisfactory completion by individual trainees, who may then be awarded a Certificate of Completed Specialist Training (CCST) in the appropriate discipline(s). Possession of a CCST is required in order to enter the specialist register. The SAC monitors both the performance of the centers approved to provide training and the content of the national training programs. Specialist societies have advisory input to the SAC but are not directly responsible for training. Before 1996, all ‘infectious disease’ trainees were certified as having had training in ‘Communicable Diseases and Tropical Medicine’, but in 1996, following the adoption of European Agency regulations, the SAC was informed that a separate training pathway in ‘Tropical Medicine’ should be specifically designated in addition to ‘Infectious Diseases’.

INFECTIOUS DISEASES

ID training is allied to internal medicine training pathways and is distinct from training in clinical microbiology and virology, which has a 5-year specialist registrar (SpR) training program monitored by the appropriate SAC associated with the Royal College of Pathologists [5]. All entrants to a 4-year ID SpR program will have finished their 1-year internship (‘house jobs’) and then fulfilled a minimum of 2 years of designated general professional training in internal medical specialties, together with successful acquisition of the MRCP (UK).
or its equivalent. There is then fierce competition at open interviews for SpR posts; once appointed, the trainee will be exposed to a wide spectrum of community- and hospital-acquired infection practice, with 6 months of mandatory microbiology laboratory experience. Apart from community-acquired infection, periods of training should provide adequate exposure to dealing with patients with immunodeficiency, including HIV, specific infections such as tuberculosis and viral hepatitis whose care may be shared with other specialties, and intensive care. Up to 3 months may be spent in specialties such as Genitourinary Medicine and Public Health, and up to a year’s training in an approved center overseas (e.g. Europe, North America or Australasia) may also be approved.

The UK-based experience is supposed to include ‘travel medicine’ and experience dealing with imported infections, the level of exposure varying in the different units around Britain. The majority of trainees take extra time (externally funded) to carry out research leading to a higher degree such as a PhD or MD. One year of this research may be counted towards the total 4 years of higher medical training.

All trainees are strongly encouraged to pursue joint accreditation with General Internal Medicine (GIM), which requires at least one extra year of GIM training early in the SpR program, as well as adequate concurrent GIM training for at least 2 years of the 4-year infectious disease pathway. This enables the trainee to acquire CCSTs in both ID and in GIM after a total SpR program of 5 years.

TROPICAL MEDICINE WITH INFECTIOUS DISEASE

The new 5-year Tropical Medicine pathway has been constructed around the 4-year ID program, as there are insufficient employment prospects for purely ‘tropical’ specialists at consultant level internationally. The main addition is an extra year of prospectively approved clinical training in a suitable center in the tropics (as distinct from a predominantly research post). At least 1 year of the UK-based 4 years of ID training must be spent in a center providing a balance of expertise and clinical workload in imported disease, allied with specific diagnostic parasitology expertise and ongoing interests and involvement with workers in the tropics. Finally, all trainees are expected to undertake an approved (3-month) full-time course leading to the DTM&H, such as those of one of the British Schools of Tropical Medicine. Other courses may also be recognized—the principle is that the trainee should be immersed in a full-time learning environment that exposes them to tropical experience and expertise and to other trainees from many parts of the world. This training pathway will equip the trainee for ID practice with special expertise in academic tropical medicine, usually reinforced by related research experience. This is but one facet of ‘tropical practice’, and training for a number of other possible types of tropical specialist might be catered for, but there is no provision for these (Figure 1). In particular, there is no specific training pathway in ‘Travel Medicine’.

The outline structures of the two main training pathways above are summarized in Figure 2. It would also be possible, but take longer, for trainees doing ID and Tropical Medicine to undertake training in GIM (at least 7 years total). Recently, a third option of joint training for 6 years in both ID and in Medical Microbiology and Virology has been developed and approved. The rationale and mechanisms for this exciting new scheme are described in detail by Cohen [6]. Discussions have also been held about joint training pathways for ID and Genitourinary Medicine and for ID and Public Health Medicine, each of which have their own SAC and specified programs. All

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**Tropical training tracks**

- Academic/infectious disease physician as described here
- Missionary/single handed (MRCGP & DTM&H)
- Refugee/disaster/NGO management training (MPH)
- Tropical epidemiology/public health public health & MSc epidemiology
- Travel medicine (no standards)
- With other specialties e.g. microbiology, pediatrics, obstetrics

**Figure 1** Possible specialist career pathways in tropical medicine.

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**ID plus other CCST**

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5 year total 5 year total

**Figure 2** Summary of components of the two main programs for training.
SACs have rejected the need for a specific training program in HIV medicine alone.

Discussion between all the disciplines involved in the above programs is facilitated by a Joint Specialist Committee on Infection and Tropical Medicine, which has wide representation from the Royal Colleges of Physicians, of Pathologists, and of General Practitioners, the relevant specialist societies and others. This Committee has no statutory authority but is a useful platform for exchange of views.

WORKFORCE PLANNING

There is a strict limitation on the number of SpR training posts available, imposed by the NHS executive, which uses a spreadsheet model to guide its attempts to predict the number of consultant positions that will become available in the future. Workforce projections are extremely difficult to gauge and are heavily influenced by the rates of future expansion of consultant positions, as well as more tangible considerations such as the length of SpR training. Unfortunately, the NHS executive may decide on the approved number of SpR training posts, but the final responsibility for creating new consultant positions or for maintaining these on retirement of a consultant rests with individual hospitals or trusts. Further, there is no universal agreement on the appropriate number of infection specialists that are needed. Ten years ago, the Joint College Committee on Infection recommended that each district general hospital should have at least one consultant in ID [7]. This has not happened.

There is approximately one ID consultant per 700 000 of the population of England and Wales (58 million), and about twice as many per capita in Scotland (5.1 million). At least one English medical school has no associated clinical ID specialists, and coverage of different health regions remains highly variable. International comparisons are difficult, but in Sweden (8.9 million) there are about 330 specialists in 30 units (1 per 27 000), and in Norway (4.3 million) there are 56 specialists (1 per 75 000) [8]. In Australia there is approximately one ID specialist per 200 000 adults [9]. At the other extreme, in the USA (population 250 million), 458 consultant-level positions were advertised in 1993 and 340 in 1995 [10], compared to approximately five per year in the UK. This illustrates the extreme ranges of demand and supply, complicated by the differing roles of ID and clinical microbiology specialists in different countries.

The specialist ID societies and the Royal College of Physicians have recently reiterated the advice from 10 years ago, that each district general hospital serving an average population of 250 000–350 000 people should have at least one clinical ID specialist. This would more than double the current number of ID consultants to about 200, including those in academic centers and in predominantly tropical medical practice. Whether this aim can be achieved remains to be seen, and it is vital for the speciality to continue to press for this to happen.

THE FUTURE

As this issue goes to press, all British higher medical training curricula are being revised to adopt a more uniform and structured approach. Most importantly, they are being rewritten using a more objective-oriented approach to both the content of training, its delivery and its assessment. This process will undoubtedly lead to further improvements in the quality of our training programs, but we have to guard against loss of the flexibility which has been a previous strength. Concern about the future of academic medicine has led to new proposals to encourage high-fliers, including those interested in infection, to develop academic careers [11]. Meanwhile, the continued uncertainty of future job prospects has done little to prevent exceedingly bright and able young doctors from their showing continued enthusiasm for ID practice. It is our duty to support them, both for sustained quality of patient care and for preservation of the discipline.

REFERENCES

11. Academy of Medical Sciences. The tenure-track clinician scientist: a new career pathway to promote recruitment into clinical academic medicine. http://www.acmedsci.ac.uk

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