

COMMENTARY – Professional Development

Combined infection training—a pioneering collaborative approach to educating infection specialists

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One sentence summary: The training of UK physicians in disparate infection specialties has recently been replaced with a combined infection training model and this commentary discusses the implications of this novel collaborative approach.

Editor: Beatrix Fahnert

ABSTRACT

This commentary discusses the recent pioneering overhaul of training for UK doctors wishing to pursue a career in the infection specialities. Changes include the introduction of new curricula that embrace increased collaboration between the laboratory-based and clinical specialties and a broad-based infection training period, named ‘Combined Infection Training’, which has never been seen before. Here, we discuss the benefits and challenges associated with the collaborative approach to training with particular reference to points that educators responsible for training programme design need to consider. We also describe our own local experiences in adopting a proactive, multidisciplinary approach to address potential obstacles prospectively.

Keywords: postgraduate; curriculum; infectious diseases; medical microbiology; shape of training; education

INTRODUCTION

The story of the study and treatment of infection is renowned for its ever-changing nature, influenced by new and unexpected pathogens, advances in diagnostic and treatment technologies and changing political climates (Isenberg 2003). The recent move to centralise laboratory services in the United Kingdom (UK) and the increasing reliance on automation reflect the most modern drivers for change, resulting in the removal of laboratories from some hospitals and in traditional laboratory-based infec-

tion doctors now providing a purely clinical infection consults service. The training of medical professionals in infection also undergoes substantial transformations in line with shifting external influences (Read, Cornaglia and Kahlmeter 2011). In the UK, a new Combined Infection Training (CIT) programme has recently been introduced as part of a major, pioneering reform in the training of medical doctors who wish to pursue higher specialist training (HST) in infection-related specialties. In this commentary, we will discuss the impact of CIT and cross-specialty

Received: 18 March 2016; Accepted: 3 June 2016

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collaboration on training programme design and the service provided by future infection specialists.

CIT AND THE NEW 2014 CURRICULA

In April 2014, the General Medical Council in the UK approved a significantly reformed postgraduate training pathway for infectious disease (ID), medical microbiology (MM), medical virology (MV) and tropical medicine (GMC 2016). Previously, training routes into these specialties were considered distinct in terms of structure, content and length. The new 2014 curricula require all trainees to undertake a 2-year general medical training period (previously not required for the laboratory-based specialties), followed by application and entry into CIT, a basic infection training period, incorporating experience in ID units (both in outpatient and inpatient settings) as well as in clinical microbiology and virology departments. A further 2 years of HST in the trainee's specialty of choice is then necessary to attain a Certificate of Completion of Training (CCT) in their chosen specialty and exit the training pathway. Trainees choosing dual specialism (e.g. ID/MM) require typically 3 years of HST.

PERCEIVED FUTURE BENEFITS OF A COLLABORATIVE APPROACH TO TRAINING

The new 2014 curricula for infection specialties were designed jointly by the Royal College of Pathologists and the Joint Royal College of Physicians Training Board (JRCPTB) following a prolonged consultation process, which commenced in 2007 (RCPATH 2014). The rationale was to 'reflect the modernisation of UK microbiology and virology laboratory services and the need to train infection specialists with a sound knowledge of both clinical and laboratory practice', such that the National Health Service (NHS) can expect to have specialists with a more generalist outlook in the near future. The creation of such specialists is consistent with the core principle underpinning the recent 'Shape of Training' review of UK medical education (Fuller 2014). This review recommended reform of both undergraduate and postgraduate education to deliver a more adaptive, generalist medical workforce.

CIT guarantees that infection specialties traditionally lacking in patient interaction, namely MM and MV, will be able to provide a clinical consulting service in addition to laboratory-centred duties. Ward-based reviews of patients with complex infections by infection specialists appear to result in positive healthcare outcomes and reduce unnecessary broad-spectrum antibiotic use through early antibiotic advice (Pulcini *et al.* 2014; Cai *et al.* 2016). With the increasing use of automated laboratory methodologies and introduction of clinical scientists who can have an increasing role in laboratory management, MM and MV doctors will have more time to spend on clinically orientated duties. Meanwhile, ID physicians, through greater understanding of the workings of NHS laboratories, will be able provide a more efficient bench-to-bedside service for patients. Thus, all infection specialists should be able to offer a broader service to the NHS, in line with changing trends in workforce planning.

EDUCATIONAL OPPORTUNITIES PRESENTED BY THE CIT PROGRAMME

The CIT programme, by its very nature, mandates cross-communication between the infection specialties. In the Mersey area, a working group composed of training programme

directors and trainees in ID and MM was formed to combine teaching schedules and map topics to the new 2014 curricula, to which trainees transitioned to in 2015. While trainees can be based across a number of training sites and not all sites have both specialties or laboratories, all trainees come together for the organised teaching. It was thought that amalgamation of the two monthly teaching programmes into a single fortnightly schedule would increase the efficiency of delivering teaching on topics relevant to CIT trainees as well as those in HST. The programme runs on a 2-year cycle such that all topics are covered once in CIT and again in HST. This occurs in parallel with laboratory, consults and clinical attachments of 6–12 months duration with individual learning objectives agreed with educational supervisors. Tutors are encouraged to adopt a 'facilitator' role, employing a more interactive, less didactic, style to their teaching, in order to enable greater sharing of expertise across specialties and seniority. Such 'collaborative learning' is thought to enhance learning of complex subjects which require critical thinking (Rutherford 2015).

CHALLENGES FACED WITH THE AMALGAMATION OF TRAINING

As MM trainees will have their time spent in a clinical laboratory reduced from 5 years to 2.5–3 years, concerns have been raised about the impact of reduced laboratory training and fewer opportunities for hands-on infection prevention and control experience on end-of-training competence in MM (Mahida 2015; Winzor and Patel 2015). Similarly, there will be less time for gaining confidence in laboratory management and infection epidemiological methodology, which are considered important aspects of an MM consultant's duties. Whilst clinical scientists could take over some of these duties, inadequate numbers in training mean that overall laboratory management will remain under the remit of infection doctors for many years.

At present, there is no national consensus with regards to how training in such specialist areas of infection can be accommodated. One approach may be to adopt a more prescriptive approach to CIT and HST, such that training is prospectively divided into short blocks to provide training time in all relevant areas of infection expertise as employed in Canada (RCPSC 2012). Locally, concerns about balancing fluctuating, small trainee numbers with the need to provide cohesive clinical services, including staffing of on-call rotas, have led to a greater reliance on the fortnightly teaching programme to address possible gaps in knowledge. Nationally, there may be issues with being able to accommodate the higher influx of trainees in the smaller specialties, such as ID and MV. An alternative approach is that the missed specialist experience could be attained post-qualification—the JRCPTB are piloting post-CCT fellowships and a similar scheme could address the potential shortfalls in experience facing MM and MV (JRCPTB 2016).

LOOKING TO THE FUTURE

At present, the UK is only one of two countries worldwide to adopt a combined training approach and is the only country which aims to produce an output of four different infection specialists from this approach; the similar approach in existence in Turkey produces only one category of doctor at the end of the training (Cooke, Choubina and Holmes 2005; Erdem *et al.* 2011). Although CIT could herald a re-organisation towards fewer CCT destinations, the authors envisage that distinctive infection

specialties may remain for many years as there is no infrastructure as yet to cope with the re-distribution of roles to allied professionals. However, CIT offers an exciting opportunity to evaluate the longer term impact of a collaborative approach to post-graduate training in infection specialties that has not been seen before. Its success will probably best be assessed by the ability of the NHS to provide a satisfactorily cohesive bench-to-bedside service to patients suffering from an infection.

Conflict of interest. None declared.

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