

Reforming postgraduate medical education: lessons from the United Kingdom

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Over the last three years, postgraduate medical education in the UK has undergone the greatest upheaval its history. There has been widespread change and reform, but at the cost of considerable professional and political turmoil. In its wake has been left a generation of disaffected junior doctors, a cynical and confused consultant body and a number of high level resignations. But out of this melting pot have arisen many positive developments and some important new training processes, structures, and relationships.

In this paper I will outline these recent UK reforms; highlight the drivers for change both within and outside postgraduate medical education; and describe how training is delivered. I will also point up the areas that have been recently identified by the UK government as key in the future development of ‘a high quality workforce’ in the National Health Service [1]. As education has been identified as a key driver for reform, I will go on to describe recent developments in both policy and practice concerning the educational development of the postgraduate medical ‘faculty’.

The UK National Health Service

The UK’s National Health Service was founded in 1948 and at the time of writing, has just celebrated its 60th birthday. The aspiration of the NHS, which it has largely achieved, was to provide a comprehensive healthcare service for all, funded through taxation but free at the point of delivery. The NHS covers everything from antenatal screening, routine management of viral illnesses to open heart surgery, accident and emergency treatment and palliative care. Nationwide, the NHS employs more than 1.5m people. Only the Chinese *People’s Liberation Army*, the Indian Railways and America’s Wal-Mart supermarket chain directly employ more staff. Of those NHS staff just short of half is clinically qualified, including some 90,000 hospital doctors, 35,000 general practitioners (GPs), 400,000 nurses and 16,000 ambulance staff. In parallel, there is also a burgeoning private sector for the affluent, anxious or those that work for companies that offer cover as part of an employment package. A proportion of the population therefore has access to two healthcare systems.

As with football, and rugby, the United Kingdom is far from ‘united’ when it comes to health. There are four Departments of Health; for England, Scotland, Wales and Northern Ireland, and each conducts its business in a slightly different way. NHS England is considerably larger and more complex than the Celtic countries catering to a population of 50m and employing more than 85% of NHS staff and will be the focus during this paper, although much of what I have written applies to the UK as a whole.

The NHS is run by the four Departments of Health which in England conduct their business through 10 Strategic Health Authorities. Strategic Health Authorities are a key link between government and the NHS locally. They are responsible for:

- spending taxpayers' money properly
- ensuring health services are financially secure
- ensuring local services are safe, high quality and performing well
- developing strategic plans for improving services in their local area
- integrating national priorities into local health service plans
- increasing the capacity and accessibility of local health services
- developing the skills of the NHS workforce through commissioning education and training

Local health services themselves are provided by Hospitals (known as Acute or Foundation trusts), Primary Care, Mental Health, Ambulance and Community Care Trusts. Primary Care Trusts also have a local commissioning role – they buy services for their local population from hospitals and other providers – and through this function control 80% of the NHS budget.

The organisation of postgraduate medical training

Each Strategic Health Authority links closely with a body responsible for postgraduate medical education and training. These organizations, for quaint and historical reasons are called Deaneries. The precise model varies across the UK. In some areas, the deanery is a department of the SHA, in others, a body maintained at arms length; in some areas Deaneries are responsible only for medical education, in others, they have a multiprofessional commissioning role. Scotland has created a unique and quite successful unitary special health authority, NHS Education for Scotland (NES) taking a holistic and multiprofessional overview of education for the service and that country as a whole [2]. Funding for postgraduate medical education and training is disseminated down through the Strategic Health Authorities or their equivalent and to a large extent has been ring-fenced, but not entirely, an issue that has caused one or two problems over the last few years as the NHS has struggled to maintain 'financial balance'.

The primary functions of deaneries are summarised in Box 1. There are, in effect, a virtual postgraduate medical school. The London Deanery for instance, oversees the training of more than 10 000 trainees in primary, secondary and dental care; as many trainees as there are undergraduates attending a large university. Periodic attempts have been over the last few years to deconstruct these organisations, and their role is under constant scrutiny and review. For the moment though it is recognised that deaneries have a number of important functions and they continue to ensure that the NHS is supplied with a supplied of well trained specialists, general practitioners and dentists.

Box 1

What do deaneries do?

Commission training placements

in primary care and acute (and Foundation) Trusts, training practices, (both general practice and dental) mental health and community trusts

Coordinate and run recruitment episodes

for all specialty training programmes

Construct and oversee training programmes

via specialty schools

Lead on the development of training

through curriculum enhancement and support

Quality manage

against national regulatory standards

Manage and support trainee progress

through annual review and supporting trainees in difficulty

Promote faculty development

of postgraduate trainers, supervisors and other faculty

Promote continuing professional development

in general practice and dentistry but increasingly in secondary care

Contribute to national and international policy

through national fora

The backdrop to recent reforms

Formal training structures in postgraduate medical education have evolved in the UK over the last 50 years. Due in part to the fact that medicine itself has evolved. As Cyril Chantler has put it [3];

*Medicine used to be simple ineffective and relatively safe.
Now it is complex, effective and potentially dangerous*

So, in the interests of the safety and care of patients, it has become increasingly important

that trainees are properly trained and supervised and that their professional development is not left to chance.

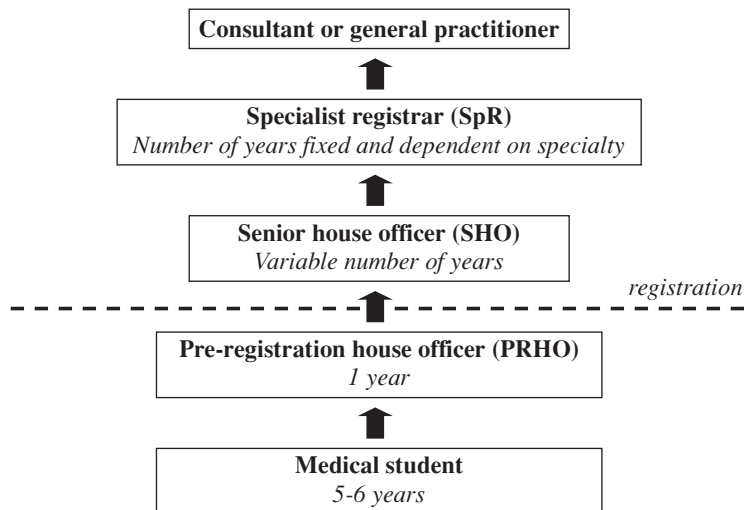
Up until the 1950s, a doctor qualifying from medical school in the UK could set themselves up in business without any subsequent training. This changed in 1953 when a pre-registration house officer year was introduced to address concerns that medical school graduates were ill-equipped to go straight into independent practice. Following the pre-registration year trainees spent variable lengths of time in junior positions; 'senior house officer' or 'registrar' before obtaining a highly sought after 'senior registrar' position – the ticket to a consultant career. At some point a recommendation would then be made by a supervising consultant that the doctor was ready to progress and become a consultant themselves.

This situation persisted for a number of years with embellishments along the way. One notable development was the passing of the Vocational Training Regulations in 1979 [4] that established a mandatory three years training for general practice (family medicine) including one year in a training practice attached to a designated trainer.

This system continued until in 1992 when Kenneth Calman, then Chief Medical Officer, set up a working group to bring the British system of specialist training into line with the requirements of various European directives. The resulting report recommended the amalgamation of the senior training grades into a unified specialist registrar grade, defining curricula and a minimum training period for each specialty, the successful completion of which would lead to admission onto the specialist register. See Box 2.

Box 2

Postgraduate medical training structures in UK 1996-2005



Features of the new system included educational objective setting, training agreements, and induction at the start of each placement; rotational placements designed to offer specified experience; and regular feedback on progress from the supervising consultant and more emphasis on structured teaching and supervised learning and less on experiential apprenticeship. Transition to the new system began in December 1995 and was completed in April 1997. The reforms were introduced slowly and carefully and were generally considered to have been successful. Subsequent research found that changes had been implemented as intended, and that trainees were generally satisfied that improvements to training had occurred as a result [5].

With both the registrar and pre-registration grade appearing to have been sorted out, attention shifted to the intervening junior training years - the senior house officer or SHO grade. The 1990s saw a dramatic growth in this junior grade largely driven by the need to staff hospitals in the face of the 'New Deal' a package of contractual measures brought in place to improve the working conditions of junior doctors. This was further compounded by the European Working Time Directive which in stages has continue to exert a downwards pressure on the working hours of doctors in training grades resulting in a final target of 48 hours/week to be achieved by 2009 [6].

What this created was a large group of junior doctors who remained outside formal training programmes, lacked career direction and would remain in this educational limbo for several years before obtaining a training number and programme. Selection procedures into SHO posts were local, variable and (probably) illegal, there was frequently a heavy workload with a poor balance between education and service and little entitlement to supervision or formal training opportunities. What's more, by 2000, this 'lost tribe' had grown to constitute around 50% of all doctors in training.

This unacceptable situation prompted another Chief Medical Officer, Sir Liam Donaldson to recommend further reforms to postgraduate training [7].

Structural reform: Modernising Medical Careers

The *Donaldson Report or Unfinished Business* [7] prompted a succession of policy documents and a wave of reform that has rocked postgraduate medical education and training in the UK over the last 3 years. The response to Sir Liam's proposals by the 4 health departments was entitled *Modernising Medical Careers* [8] and this eponym – MMC – has become synonymous with what subsequently occurred.

The principles proposed for reform were these. That training should be:

- Programme based
- Broad in scope – particularly in the early years
- Responsive to the needs of individuals
- Time-capped
- Flexible and allow movement between specialties

The aims of MMC were laudable. Namely to offer a broad-base of experience in the early years, house the ‘lost tribe’ of juniors within training programmes, reduce the waiting time for entry into specialist training and therefore shorten its duration. At the same time there was to be widespread introduction of competency-based curricula and a complete reform of all assessment programmes.

Things started reasonably well in 2005, and following a year of pilot schemes, the UK introduced a two year Foundation programme for all medical graduates with the aim of introducing programme-based training for all specialties from Aug 2007. The key features of the Foundation programme are summarised in Box 3. Despite some teething problems with selection, overall, the introduction of foundation training, though lacking formal evaluation, is generally considered to have been a success.

Box 3

Features of the Foundation Programme

- Two year programme offering a broad base of specialty attachments usually of 4 months duration.
- Programmes of around 30 trainees each run by programme director and administered with a Foundation School.
- New funding found to ensure that 55% of programmes include substantive attachment in general practice.
- A defined curriculum focussing on recognition and treatment of acutely ill patient and development of professionalism.
- Generic formal training programme for all trainees.
- National selection process.
- A programme of mandatory workplace-based assessment.
- Learning portfolio (now web-based).
- Careers guidance and advice including opportunity for tasters.

Problems came with the implementation of reforms in specialty training. What was being attempted was a simultaneous:

- Restructuring of every training programme in the UK in order to provide a seamless run-through grade for each specialty

- Introduction of new curricula for every specialty
- New assessment programmes including the wholesale adoption of workplace-based assessment in all specialties
- Application of new systems of quality assurance and management
- The re-recruitment of 50% of the existing junior doctor workforce
- An untried national recruitment process mediated through an untested web-based application

So, an ambitious big bang programme of educational reform to be implemented without pre-trialling and with almost no additional financial investment from government.

Some things went fairly well. General practice for instance, moved for the first time to 100% structured training and successfully introduced a national selection system based on a machine marked short-listing assessment and selection centre replacing the traditional interview. Most secondary care specialties were also able to build reasonably coherent run-through programmes of training. However, because of the closer matching of training input with output, the numbers of trainees needed at lower grades reduced. Unfortunately, this was not what was required to staff hospitals. Consequently large numbers of trainees ended up in free-standing posts outside training programmes, becoming in effect a new 'lost tribe'.

The real problems though came with selection.

Big bang reform meant big numbers. With applicants allowed a number of choices, vast numbers of applications were received and because of the system's design, post fill at first attempt was impossible and a hastily introduced 2nd and 3rd round became necessary. At the same time, due to a lack of decisive action from the Home Office there was pervasive confusion over the eligibility of overseas candidates. Eventually, overseas applicants were ruled 'in' leading to around 30000 applicants chasing 20000 jobs. This uncomfortable ratio produced howls of protest from UK trained graduates, their families, their consultants and the public. Almost overnight, previously cast-iron job security and local control over appointment had disappeared.

There were technical problems with selection too. The process relied heavily on the completion and marking of white-space boxes in response to prompt questions, with no recognition of past accomplishments. The (untested) on-line application system also failed, and there were embarrassing security breeches. Meanwhile, time was running out to staff hospitals across the UK.

The results were catastrophic and a concerted campaign of protest, including some well publicised marches through London by junior doctors, lead to a number of high profile resignations, including, eventually, the UK Health Secretary.

Regulatory reform: Postgraduate Medical Education and Training Board

2005 also saw the establishment of the Postgraduate Medical Education Board (PMETB) – a new regulatory authority. PMETB was set up under an Act of Parliament with the aim of developing a single, unifying framework for postgraduate medical education and training. It began its operation in Sept 2005 subsuming all previous regulatory structures.

PMETB is independent of government but accountable to parliament and funded through a government grant but aims to be financially independent by 2009. Its roles are summarised in Box 4.

Box4

Functions of the UK Postgraduate Medical Education and Training Board

Sets standards *for*

- curricula
- assessment programmes
- training
- trainers

Secures standards *by*

- approval of posts and programmes
- approves curricula and assessment programmes
- quality assurance of deaneries

Certifies doctors *by*

- issuing certificates of completion of training and statements of equivalence

Promotes development in postgraduate training

- through consultation and publication about policy

Surveys trainee and trainer satisfaction through national on-line surveys

The impact of PMETB has been considerable. Each specialty – of which there are 57 and 33 subspecialties – now has a curriculum that meets a national specification and is developing an assessment programme that meets carefully constructed criteria. Training posts and programmes have to meet certain minimum requirements to be approved and there is a clearly defined national system of quality assurance, management and control mediated through deaneries. Throughout all these processes run a set of training standards comprising nine quality domains including a set of standards for trainers.

The PMETB Generic Standards for Training [9] are summarised in Box 5.

Box 5

Quality Domains of the UK Postgraduate Medical Education and Training Board

1 Patient safety

The duties, working hours and supervision of trainees must be consistent with the delivery of high quality safe patient care.

2 Quality Management, review and evaluation

Postgraduate training must be quality managed locally by deaneries, working with others as appropriate e.g. medical Royal Colleges/Faculties, specialty associations, training providers.

3 Equality, diversity and opportunity

Postgraduate training must be fair and based on principles of equality.

4 Recruitment, selection and appointment

Processes for recruitment, selection and appointment must be open, fair, and effective and those appointed must be inducted appropriately into training.

5 Delivery of approved curriculum including assessment

The requirements set out in the approved curriculum, approved by PMETB, must be delivered.

6 Support and development of trainees, trainers and local faculty

Trainees must be supported to acquire the necessary skills and experience through induction, effective educational supervision, an appropriate workload and time to learn.

7 Management of education and training

Education and training must be planned and maintained through transparent processes which show who is responsible at each stage.

8 Educational resources and capacity

The educational facilities, infrastructure and leadership must be adequate to deliver the approved curriculum.

9 Outcomes

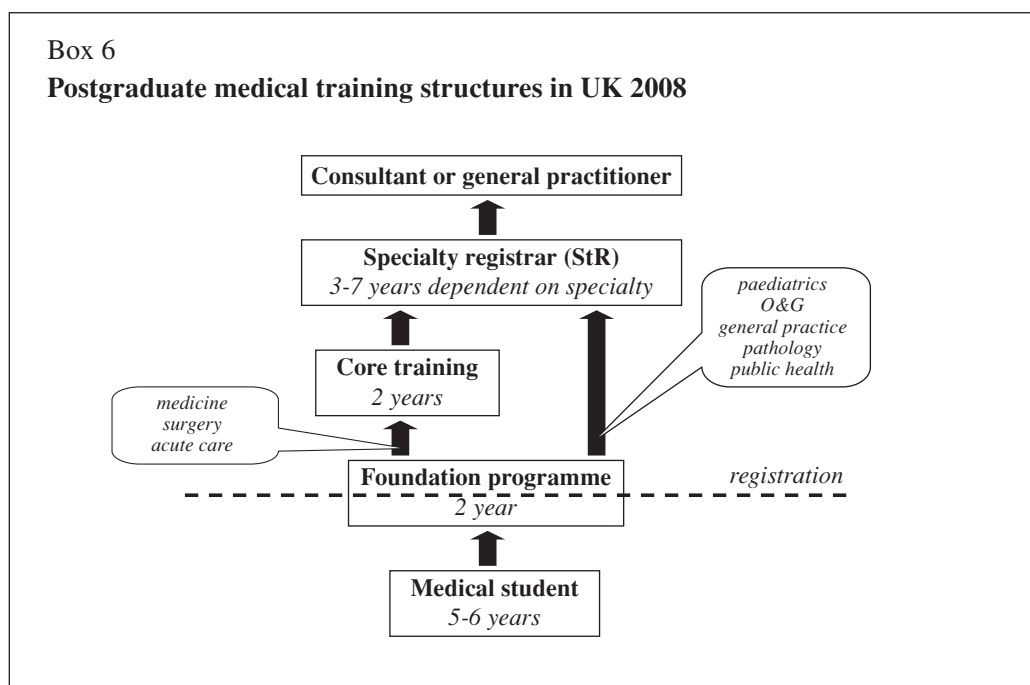
The impact of the standards must be tracked against trainee outcomes.

Surveying the aftermath

So where is UK postgraduate medical training in 2009?

In 2009, Foundation Programmes are well established. The national regulator, PMETB, is fully operational although shortly to be merged with the General Medical Council. National training standards are clear and explicit and competency-based curricula for all specialties have been established. New assessment programmes are either established or under construction and a system of workplace-based assessment, portfolios and annual review of progression is now running in all specialties.

There are also now well defined structures for training programmes in all specialties from entry to exit although the concept of run-through training has been jettisoned in some major specialties. Medicine, surgery and acute care have all settled into a pattern of core training with reapplication for higher training. Other specialties, where it has suited, have stuck with a run-through training notably general practice, obstetrics and gynaecology and paediatrics. See Box 6.



Recruitment has reverted to being locally-led in most specialties apart from a few which are proceeding with national where practical and successful. Training is orchestrated by deaneries through a system of specialty 'Schools' which bring together the deanery and the Royal Colleges and the quality machine is rolling informed by two informative iterations of the national on-line trainee survey [10].

Since the problems of 2007 there has been an independent enquiry into MMC [11], scrutiny from a parliamentary committee [12] and the creation of a new post of Director of

Medical Education for England. Yet further reform has been proposed and outlined in *A High Quality Workforce* NHS Next Stage Review [1].

Future challenges

But what are the challenges in postgraduate medical education that ‘further reform’ sets out to address?

A High Quality Workforce identifies a need to develop the role of the clinician; not only as a skilled practitioner, but also as a partner with patients and a leader of clinical services. Already, a new national medical leadership framework is being incorporated in all specialty curricula.

New roles and responsibilities are leading to a blurring of health professional boundaries and a need to more clearly define what is a doctor. There is a shift of care to community settings with reduced contact time with patients in acute sector. To this end, GP training is being extended and a large investment is going into creating more training posts. There is also to be an expansion of public health training.

A reduction in the working hours of clinicians has lead to the loss of team structure and the one-to-one apprenticeship relationship. In response to this we are already seeing an adoption of dedicated ‘hospital at night’ teams and an increased use of e-learning, technology and simulation.

There is also a need to match future training output with demography and disease profile, and the role and regulation of private sector must be strengthened,

Cutting across all these developments is a need to professionalise postgraduate medical education, to value the people and educational processes involved in developing the next generation; to develop communities of educational practice within provider organisations and to establish a focus on the quality of training away from the preoccupations of politics and structure.

In the final section of this paper I will briefly summarise what is being done to develop the faculty of postgraduate medical educators, the human capital on which the success or failure of postgraduate medical education stands or falls.

Educational reform: Putting learning back into training

The perceived importance of faculty development in postgraduate medical education is founded on the belief that better trained doctors deliver better patient care. This ‘self-evident’

truth in turn holds a number of assumptions for which there is a variable body of evidence, namely that: there are some good -and less good-ways to facilitate workplace learning; training the trainers results in better trainee outcomes; education positively influences organisational outputs.

Postgraduate medical education has some unique features. Namely an emphasis on: work-based learning rather than classroom-based; supervision rather than teaching; performance assessment rather than written assessment and the need to simultaneously deliver a safe and effective clinical service. So faculty development then is more that just about “teaching teachers to teach”. It is an institution-wide pursuit aimed at professionalising the educational activities of clinical teachers, enhancing educational infrastructure, and building capacity for the future. Not only should faculty development provide entry level training for novice clinical teachers, there must also be opportunities for ongoing professional development and support. Faculty development then is a journey, and not a destination.

The importance of ‘training the trainers’ has been recognised for some time. But investment in this highly important activity – both in terms of funding and human resources – has, in the UK, often been erratic and intermittent. In the US it appears to be a problem too. In a national study reported in the *Journal of General Internal Medicine* in 2004, only 39% of US teaching hospitals were found to have ongoing faculty development programmes (more likely if the hospital was attached to a University); with only 5% offering advanced programmes (i.e. beyond the short course) and 26% of teaching hospitals provided nothing at all.

But things are changing. Driven, as I have argued elsewhere [13] by three interlinked trends: the professionalisation of medical education; increasing accountability and the pursuit of excellence.

In the UK there is now a regulatory imperative to ensure that all postgraduate trainers are selected for the role and can demonstrate their ability. This has been taken up in ‘A High Quality Workforce’ which has declared a policy intention of ensuring that

...educational supervisors in secondary care undergo mandatory training and review of their performance for this role (as currently exists in primary care)...

National standards are being developed for all species of clinical educator and an industry is now developing around faculty development. Provision varies from site-to-site but typically encompasses e-learning provision, short courses, observational feedback on clinical teaching, Masters level courses and systems of educational appraisal (for examples of these see www.londondeanery.ac.uk/facultydevelopment). Importantly this development is also linked to a call for the appropriate recognition of time for teaching within consultant job plans and

a reworking of educational contracts with providers that offer more fine grained incentives and rewards.

At last it seems that there is a widespread realisation that the quality and safety of patient care is directly linked to the quality of postgraduate medical education. If postgraduate trainers can be afforded the recognition and support that they deserve, then we may yet be able to achieve the aim of establishing a community of educational practice within every provider institution, and grow a learner-centred ethos at the heart of medical training.

Final reflections

So what have we learned in the UK over the last few years and what lessons from *Modernising Medical Careers* might be usefully translated to other contexts where large scale change is being contemplated.

Firstly, reform in medical education should be, first and foremost in the interests of patient care both now, and in the future.

Whole system reform is best addressed organically. Slow implementation and piloting are less risky than a ‘big bang’ approach.

Reform is unlikely to be cost neutral. The eventual costs of MMC far outstripped what might have been a modest investment at the outset.

Address regulation at the same time as structure. Clear standards and expectations can then be set and time allowed for local evolution.

It takes time to get everyone on board and a lot of effort to keep them there. Communication and involvement at all stages are key.

Reforming structures and processes is relatively easy – changing educational culture is whole new ball game.

Finally; don’t expect to finish the job. As the Greek philosopher Heraclitus pointed out 2500 years ago:

The only constant is change

References

1. Darzi A (2008) *A High Quality Workforce: NHS Next Stage Review*. London: Department of Health
2. NHS Education for Scotland (2008) *NES The Basics*. 2008, Edinburgh: NHS Education for Scotland.
3. Chantler C (1999) *The role and education of doctors in the delivery of healthcare*. Lancet **353**:1178-81.
4. Editorial (1980) *NHS (Vocational Training) Regulations 1979*. BMJ **280**(6216): 810.
5. Paice E, et al. (2000) *Trainee satisfaction before and after the Calman reforms of specialist training: questionnaire survey* BMJ **320**(7238): 832-836.
6. Department of Health (2004) *European Working Time Directive*. www.dh.gov.uk/PolicyAndGuidance/HumanResourcesAndTraining/WorkingDifferently/EuropeanWorkingTimeDirective, 2004 (Accessed May 7th 2008).
7. Donaldson, L. (2002) *Unfinished Business: Proposals for the Reform of the SHO Grade*. London: Department of Health.
8. Department of Health, *Modernising Medical Careers*. 2003, London: Department of Health.
9. Postgraduate Medical Education and Training Board (2006) *Generic standards for training*. www.pmetb.org.uk/fileadmin/user/Policy/Policy_Statements/Generic_standards_for_training_April_06.pdf, 2006 (Accessed 4th February 2008)
10. Postgraduate Medical Education and Training Board (2008) *Trainee Survey*. 2008, London: PMETB.
11. Tooke J (2008) *Aspiring to Excellence: Final Report of the Independent Inquiry into Modernising Medical Careers*. London: Department of Health
12. Health Select Committee (2008) *House of Commons Health Committee -Third Report*. London: HMSO.
13. Swanwick T, *See one, do one, then what? Faculty development in postgraduate medical education* Postgraduate Medical Journal 2008. **84**(993): 339-343.