REPORT ON INTERNATIONAL COMPARISONS
U. K. ENVIRONMENT

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1. Introduction to the UK Comparison

1.1 Purpose

We were charged to undertake up to three consultations in the UK environment to generate:

- An overview of the current landscape in British medical education;
- Current issues / trends that impact upon or should impact upon medical education;
- How / if undergraduate medical school programs are engaging / responding to these societal shifts;
- Examples of innovation in British medical education.

1.2 Conduct of the study

Key stakeholder interviews were arranged with representatives of the General Medical Council (GMC), the Postgraduate Medical Education and Training Board (PMETB), and the National Health Service (NHS). We consulted with leaders in medical education in the UK and Canada to identify schools with innovative programs. Visits were arranged to three of these schools: Peninsula, Manchester and Hull-York. During these visits we met with a variety of educational leaders to get an overview of different aspects of the programs, and with students. In addition, a visit was made to Imperial College specific to innovation in simulation. See Appendix 1 for a list of the people we met.

We read a number of key reports in preparation for the visit and followed up on information provided during our meetings through accessing the relevant websites (see Appendix 2).

1.3 Outline of the report

The report is based on notes taken during our interviews and meetings, as well as our background reading. It is not intended to be a comprehensive review of British medical education but rather to highlight some high level themes that we found to be recurring and that seemed to be most relevant to the Future of Medical Education in Canada project. The report is divided into the following sections:

- A description of the organization of medical education in the UK;
- An overview of current and future issues in British medical education;
- A description of the important and unique features of the programs at three medical schools;
- A discussion of some key issues in British medical education organized into the same 5 cluster themes being used in the environmental scan;
- A summary of key points.

2. Organization of medical education in the UK

Medical education in the UK most typically consists of a 5-year program of basic medical education (4 years for a graduate entry program) in one of the 31 UK medical schools, followed by 2 years of generalist postgraduate training (Foundation Program) and 5 to 7 years of specialist training (3 years for General Practice) before award of a Certificate of Completion of Training (CCT).

The General Medical Council works with UK medical schools that issue UK primary medical degrees to set standards for the knowledge, skills attitudes and behaviours that medical students should acquire. These are laid out in a document called *Tomorrow's Doctors* (2003). The GMC runs a quality assurance program for UK medical schools, Quality Assurance of Basic Medical Education (QABME). Reports from the QABME process are made public and available on the GMC website. The GMC also produces joint guidance with the Medical Schools Council on professional behaviour and fitness to practice.

Funding for undergraduate medical education comes from the Department of Innovation, Universities and Skills (formerly the Department of Education) through the Higher Education Funding Council for England (HEFCE) and its equivalents in Scotland and Wales. The Council also plays a key role in ensuring accountability through the university quality assurance procedures. Funding also comes from the Department of Health in the form of the Service Increment For Teaching (SIFT) which is distributed through the Strategic Health Authorities (SHAs).

The GMC currently has very limited responsibility for establishing and maintenance of standards in postgraduate education. It approves curriculum for the Foundation Program jointly with the Postgraduate Medical Education and Training Board (PMETB). This body, created in 2003, regulates postgraduate training. Curriculum for specialist training is set by the respective Royal Colleges and approved by PMETB. The postgraduate deaneries are responsible for the management and delivery of postgraduate medical education and for the continuing professional development of all doctors, although in reality this function appears to be largely scheduling (Postgraduate Deans were described as "directors of postgraduate traffic"). Postgraduate Deans have few powers to control the way hospitals deliver training; they report to the Strategic Health Authorities. (See diagram)

There are large numbers of stakeholders responsible for different parts of the education system leading to fragmentation and an inability to respond nimbly to change. Vested interests make reaching consensus difficulty. It was notable that we kept hearing about new groups and organizations at almost every meeting. Some of the major ones are listed in Appendix 2.

3. Overview of current and future issues in British medical education

The GMC is producing a revised version of its recommendations on undergraduate medical education, *Tomorrow's Doctors*, following an extensive consultation process. The process has been delayed because of re-organization within the GMC. The final version will be published in 2009. It will be more outcomes-based to sit better with the curriculum of the Foundation Programs (i.e. more closely resemble *The Scottish Doctor* prepared by the Scottish Deans Medical Curriculum group in 2000).

The predominant current issue in British medical education is the re-organization of postgraduate medical education to respond to deficiencies in the NHS Modernizing Medical Careers (MMC) program. MMC arose from the Chief Medical Officer's 2002 report *Unfinished Business* that pointed out the excess of Senior House Officers in the system many of whom were not in structured training and were required repeatedly to apply for jobs. The MMC program began in 2005 with the conversion of the Pre-Registration House Office year into the first of two Foundation Training years, followed by entry into specialist training at the end of the second Foundation year. MMC reached crisis point in Spring 2007 with the failure and abandonment of the computerized centralized admission system (Medical Training Application) for entry into specialist training. An independent enquiry into the MMC was established by the Secretary of State for Health under the direction of Sir John Tooke. Its final report, published in January 2008, will set the agenda for future reform of postgraduate education. The Secretary of State responded to the recommendations in the Tooke report in February 2008.

The Foundation Program comprises a national curriculum and formal assessment of clinical competence. There is a single application from medical school. The program is still relatively new and will continue to evolve in response to identified concerns. Although the FY1 year is seen as a useful introduction to supervised clinical practice, trainees have identified problems with the selection process, the competency

assessments, and need for better linkage with undergraduate education. The majority of trainees feel that half way through FY2 is too early to be deciding on a specialty.

A key decision arising out of the Tooke report is to assimilate PMETB within the GMC (but not until 2010) which will give the GMC regulatory responsibility for both undergraduate and postgraduate education (as well as doctors in practice). The government agreed with 24 of the 47 recommendations in the Tooke report; those agreed in principle will be evaluated as part of the next stage review being carried out by Lord Darzi and due to be published in June 2008. A major recommendation which has been put on hold for further review is the creation of a new body NHS: Medical Education England (NHS:MEE) which will relate to the revised medical workforce advisory machinery and act as the professional interface between policy development and implementation on matters relating to postgraduate medication education and training. This body is seen as necessary to promote national cohesion in England as well as working with equivalent bodies in Wales and Scotland to facilitate UK wide collaboration.

The Health Minister, Lord Darzi, has been commissioned by the health secretary to produce a wide ranging review of the National Health Service, the NHS Next Step Review, to coincide with the 60th anniversary of NHS. The Darzi review is based on an extensive consultation with the public and professional groups, but is being done on a tight timeline, with the report due in June 2008. It is expected that report will address, among many other things, the role of "tomorrow's clinicians", including what differentiates a doctor and a doctor's education.

A number of EU directives have impacted the delivery of postgraduate education and training over the past few years. One of the most significant has been the impact of the European Working Time Directive which has restricted working hours and patterns in the NHS. At the undergraduate level there is much talk about the Bologna Process designed to create a European Higher Education Area (EHEA) based on international cooperation and academic exchange that is attractive to European students and staff as well as to students and staff from other parts of the world. The envisaged EHEA will facilitate mobility of students, graduates and higher education staff. There are differing views on whether medical education is included or exempted from the Bologna process and what the impact may be.

A new awards scheme worth up to £100 million has been created by the Higher Education Funding Council for England (HEFCE) and the Department of Health (DH) to increase the number of qualified clinical specialists going into medical research and education. The move follows growing concern over a drop of some 500 clinical academic staff - one in eight - between 2000 and 2004 in medical disciplines (including specialities in anaesthesia, surgery, pathology, and psychiatry) and in clinical dentistry, as reported by the Council for Heads of Medical Schools in June 2005. HEFCE and the Department of Health will fund up to 200 new senior lectureships jointly over the next ten years as part of a broad programme to improve career pathways for researchers in medicine and dentistry, set up in response to recommendations in the Walport Report, arising from a joint working party of the UK Clinical Research Collaboration (www.ukcrc.org) and the NHS Modernising Medical Careers initiative (www.mmc.nhs.uk/pages/academic).

A National Academy of Medical Educators has recently been established to offer opportunities for medical teachers to demonstrate their expertise and achievements in medical education through a formal accreditation and re-accreditation process. The aims are to develop and sustain medical education as an

academic discipline; to support academic and professional leadership in medical education; and to develop and support a transparent career structure for specialist teachers in medical education.

4. Examples of innovations at three medical schools

4.1 Peninsula Medical School (PMS)

Peninsular Medical School was established as a partnership between the Universities of Exeter and Plymouth and the NHS in Devon and Cornwall in 2000 following a successful bid to the government. It is one of five new medical schools set up by the government as part of a national expansion in student numbers. It graduated its first cohort of students in 2007. The school has increased its intake of students annually (to 200 in 2009) and has seen an increase in applications compared to the national average. The school's stated ambition is not only to provide an innovative undergraduate curriculum designed to enable graduates to respond to rapidly changing health needs but to establish the Medical School as a research-led institution (target is to be in the top 15 of all UK medical schools in research terms by 2015). The school has an interdisciplinary clinical education research program focusing on curriculum design and innovative methods of assessment, the construction of professional identity and the processes of learning.

The first two years of the program are delivered at the university campuses of Plymouth and Exeter; in years 3 & 4 students are based at the hospitals in Plymouth, Exeter and Truro and in Year 5 students are also placed at hospitals in two other towns. The spiral curriculum integrates the basic science and clinical learning over all 5 years of the program. The students thought the clinical skills thread was the best part of the program; they said the progress tests did not tell them what they knew (only what they did not), and they were anxious about the boundaries of what they were supposed to know.

Some unique features of the medical school:

- Strong partnership between the universities and the NHS, and the funding of teaching through Service Level Agreements with the hospitals.
- Teaching is perceived to be a benefit and the majority of clinical teaching in hospitals is done by consultants.
- The medical school is organized into three institutes; there are no departments.
- Research and evidence-based education underpinning to curriculum and innovation.
- Mixed assessment methods including progress tests.
- Authentic clinical skills lab, set up to mimic ward environment. Clinical skills taught by non-specialists and in some cases by nurse practitioners.
- Vertical integration of basic sciences.
- Aspirations to move from paper PBL cases to PBL based on clinical cases the students have seen.

4.2 Manchester Medical School

Established in 1874, Manchester is one of the largest medical schools in the country with an annual intake of about 380 students, joined in Year 3 by approximately 100 students from St Andrew's University who transfer following completion of a B.Med.Sci. course. These large cohorts of students are managed in the clinical years by assignment to one of 5 base units (teaching hospitals), each with its own SubDean. In 2007, to emphasize the primacy of the research endeavour, the School of Medicine was restructured to form 4 Research Schools and the undergraduate Manchester Medical School.

The aim of the medical program is to "produce doctors who are well-prepared to enter the profession and who can manage their own future education and career". The School aims to recruit broadly from the community and runs outreach programs designed to encourage applications from able students from all backgrounds.

The present integrated curriculum was introduced in 1994 and is organized around problem-based learning, which encourages self-directed study. Students receive a four-week induction in Essential Skills at the beginning of the program to assist them to make the transition to the PBL approach to learning from mainly didactic teaching in schools.

A range of Intercalated degrees are available within the 5-year program, enabling students to interrupt the MBChB for one year (after either Year 2, 3 or 4) to complete a BSc(Hons) or a Masters degree within a medically-related specialist area. From 2005, a Masters in Research was developed to focus on medical research, giving students the skills they need to pursue a career in academic medicine.

In addition to studying for the MBChB, students with some linguistic ability in French, German or Spanish can apply to the European Studies option during the first semester of Year 1. During Years 1 to 4, students maintain and enhance language skills by weekly tuition in a selected language. There is the option to study in a European country, which speaks the language being studied, during one of the Special Study Components in Years 3 or 4, and in Year 5 students undertake a 16-week placement at one of several partner universities in Europe.

Students commented that physicians in the community were not always sure what to expect of the students, that PBL was dependent on the quality of the tutor, they wanted more mentoring, were unsure about the value of portfolios and wanted more anatomy.

Some unique features of the medical school:

- Essential skills course to support students making transition from high school into medical school.
- Only a third of week (15 hours) scheduled curriculum time; remainder for private study.
- Expert patient sessions.
- European Option.
- Coordinating centre for Universities Medical Assessment Partnership (UMAP).
- Portfolio system for professional development throughout curriculum.
- Planned Masters in International Health.
- Medical education research program embedded in the curriculum.

4.3 Hull York Medical School (HYMS)

HYMS is one of the UK's newest medical schools created in answer to the national need for more doctors. Established by the Universities of Hull and York in partnership with the NHS, its first students were admitted in 2003 and will graduate in 2008. The medical school covers the largest geographic area in England with a diverse socioeconomic profile, including some severely deprived and medically underserved areas. The establishment of the program in Hull was favoured by the government as a means to improve the quality and availability of health care and to attract local students who might not otherwise consider a career in medicine. The 5-year curriculum features PBL in the first two years, early clinical placements linked to the theme of the week, a higher proportion (approximately 50%) of clinical

time spent in the community (general practice) than in any other medical school, and approximately 20% of the curriculum spent in Student Selected Components (SSCs) in a wide variety of topics from anatomy to philosophy. The students (130 per year) come from diverse backgrounds with a relatively high proportion of mature / graduate students. Initially at least some students were accepted into the program who would have found it difficult to get into established programs, but the school has no difficulty in filling its places. Students commented that they felt the school very welcoming and supportive, they were attracted because of the PBL program and early clinical contact. They felt there were not enough lectures and that they were missing some of the basic sciences (especially anatomy and pharmacology), and that GPs in the community were not sure of the curriculum. Some of the clinical sites in underserved areas were not popular with students (nothing to do for recreation).

Some unique features of the medical school

- No departments.
- 50% community based (local GPs).
- Spiral curriculum organized around 7 themes (of special note are themes on person-centred; evidence-based decision making; management for quality and efficiency).
- Early clinical exposure integrated into theme of week.
- Wide range of student selected components (including options outside medical school) that promote diversity and teamwork.
- Few full time staff (have multiple roles); 500 individual contracts for teaching.
- Good student support and personal attention; PBL tutors first port of call.
- Diverse student population including higher proportion of mature students.

5. Cluster themes

5.1 Curriculum content (new, difficult to teach or assess, undervalued and or otherwise challenging)

The basic medical school curriculum content as specified in *Tomorrow's Doctors* is similar to current curricula in Canadian medical schools.

There is no pressure for major change at the undergraduate level – the revision to *Tomorrow's Doctors* is likely to be tweaking and some change in emphasis (e.g. more basic sciences, reduction in time for Student Selected Components).

Drivers for change in curriculum content are in response to patient safety concerns (e.g. safe prescribing; increased basic science foundation knowledge, e.g. anatomy)

There appears to be concern that the teaching of basic sciences especially anatomy and pharmacology / therapeutics has decreased as the teaching of previously undervalued subjects such as communication and professionalism has increased.

There is interest in global health opportunities for students (social accountability at global level).

5.2 Pedagogical issues affecting the medical education system (e.g. curricular design, IPE, simulation, community-based learning, distributed models, physician wellness, faculty development, assessment)

The basic curriculum design as required by *Tomorrow's Doctors* is one of core plus options (up to 30% allocated to options, variously called Student Selected Components (SSCs), or Special Study Modules or Options).

Innovative schools have spiral curriculum design with basic sciences integrated through all four years. Learning in first two years is focused around PBL cases with integrated clinical experiences.

There was agreement that interprofessional health care is important, but some scepticism about the effectiveness of interprofessional education at undergraduate level. IPE initiatives were limited.

There are innovative developments in contextualized simulation (putting simulation in a patient context to mimic some of the complexities and realities of the clinical situation).

There are a variety of intercalated degree programs at Bachelors or Masters level; some address international health issues.

Some concerns were raised about lack of standard setting across the medical schools. A recent GMC consultation found variable support for the introduction of a national assessment and our informants were similarly divided. It seems likely that some form of MCQ examination will be introduced during the next 5 years and this may result in some changes to curricula (especially in schools that do not have high performing students). Both at admissions and entry into postgraduate, students are ranked based on percentiles across very diverse settings.

Schools have Fitness to Practice procedures designed to address problems of professional behaviour in students.

The proportion of community-based teaching is high (20% in Manchester up to almost 50% in HYMS). General practitioners also serve as clinical skills and PBL tutors.

5.3 The culture of medicine and medical education (governance, culture of medicine, hidden curriculum)

Newer schools had greater ability to control budget for education so money follows teaching.

Innovative schools had governance structures that separated education from research (e.g. no departments; creation of an education institution (medical school) separate from research institutes).

There were also mechanisms to protect education as an activity from pressures of service delivery (e.g. through service level agreements with hospitals and contracts with GPs).

Hidden curriculum issues were apparent: students had different perceptions to educators about what worked and what was important.

5.4 External issues affecting the medical education system (issues in society at large, e.g. human resources, social accountability, patient-centredness, increasing enrolment, student recruitment, influence of science / evidence on medical education)

Major ones include various European Union directives such as the European Work Time Directive, movement of doctors, Bologna project, number of hours of training, etc. driven by desire to standardize higher education across a huge diversity of educational systems across the EU countries.

Majority of funding for medical education from the Department of Health (SIFT) is not protected for educational use apart from in the new schools and may be supporting general hospital functions. Funding for medical education from the Dept Education (HEFCE) is used by universities to fund research and other activities peripheral to medical education. When money is clearly allocated for teaching (e.g. HYMS GPs and PMS NHS consultants) it leads to enthusiastic faculty (teaching seen as a plus) and accountability (quality assurance).

The lack of diversity in the student body was identified as an issue, especially under-representation in the student body of Afro-Caribbean and White males. There is a national widening access program and some schools have local outreach programs, including e-mentoring schemes (students as mentors) but few schools have effectively increased socio-economic diversity. There was discussion about should we be focused on the "brightest and best", especially if the need is to service deprived areas ("where are the doctors of Scunthorpe going to come from?").

At present there is little link between undergraduate and postgraduate education. Postgraduate education lacks any link to institutions for higher education and there appears to be little appetite to change that. Postgraduate training was said to lack educational sophistication with respect to curriculum, assessment, training of trainers, etc.
The social accountability driver for medical education appears to be patient safety and the NHS philosophy of patient partnerships and patient choice.

5.5 Higher order constructs (medical education research and theory; knowledge translation; change management and leadership in medical education; continuum of education, maintenance of competence, lifelong learning)

A hot topic of discussion was what makes a doctor different from other members of the health care team (forthcoming Darzi report) – and the implications for education. Some ideas we heard included: tolerance for ambiguity, management and leadership skills, team interactional skills, ability to manage complex multisystem disease and chronic conditions, ability to synthesize, ability to move from scientific foundations through the clinical spectrum, taking responsibility for actions, knowing when and when not to work off protocols, developing hypotheses, advance the science of medicine, challenge the system.

There is a widespread feeling that the pendulum has swung too far to doctors as purely service providers not academics, leading to the creation of new academic clinician posts (Walport positions).

Active medical education research programs to underpin educational programs especially in areas such as development of professional identity, clinical reasoning, workplace learning, contextualized simulation.

6. Key points
Education vs training: important to resist government pressure to conceptualize medical education as just a professional training program that prepares doctors for known roles in the health care system. To

prepare doctors for the future, and changing / unknown roles it will be important to provide a broadly based education.

Partnerships: important to create functional partnerships between stakeholders in medical education. Create win-win situations; ring-fence funding for education and ensure funding pays for teaching (e.g. through contracts).

Transitions: important to pay attention to transitions such as transition into medicine (additional help and support for students may be required) and the transition from undergraduate to postgraduate: the UK Foundation program could be a model of a program that provides a bridge between undergraduate and postgraduate.

Flexibility and choice: important to remove pressure for early and narrowly focuses career decision making and auditioning electives in medical school. Electives could be reframed as a special study module concept to promote ability of students to learn in depth within medicine or more broadly outside of medicine.

Changes in working hours: although in the UK driven by EU regulations, reflect societal trends and expectations of younger generation for work / life balance and shorter working hours. These trends will impact medical education and training as well as manpower planning.

Workforce mobility: in the UK these issues are again driven by EU directives, but will be a growing factor for manpower planning in all countries and will raise questions about curriculum, comparability of training, licensure, economics of education, etc.

Appendix 1: List of People Interviewed

Sir Graeme Catto: President, General Medical Council & Professor of Medicine University of Aberdeen.
Professor Peter Rubin: Chair GMC Education Committee, Chair PMETB, Member of Board Higher Education Funding Council & former Dean, Faculty of Medicine University of Nottingham.
Professor David Sowden: Senior Responsible Officer for MMC, Department of Health & former Postgraduate Dean.
Professor Michael Farthing: Vice Chancellor Sussex University, member of GMC Education Committee and responsible for leading revision of Tomorrow's Doctors.
Dr Roger Kneebone: Senior Lecturer in Surgical Education, Imperial College London)

Peninsula Medical School
Professor John Bligh: Vice Dean (Education)
Professor Paul Bradley: Director of Clinical Skills
Dr Tony Lewis: Small group program lead
Dr David Bristow: Director of Undergraduate Medical Studies
Dr Karen Mattick: Academic Lead for Research in Clinical Education
Dr Hisham Kahil: Clinical Subdean, Derriford Hospital, Plymouth
Three second year students (impromptu meeting in the skills lab)

Manchester Medical School
Professor Paul O'Neill: Deputy Dean (Education) and Head of Manchester Medical School
Professor Tim Dornan: Head Medical Education Research
Dr Ioan Davies: Director of Phase 1 Studies
Ms Siobhan Cartwright: Learning & Teaching Manager
Ms Andrea Owen: UMAP Manager
Dr Isobel Braidman: Portfolios
Dr John McLaughlin: Joint Degree Programmes
Dr Jon Shaffer: Student Support
Professor Tony Redmond: Sub Dean & International Health
Dr Alison Howorth: European Option
Students: Nicola Jepson and Lyndon Ridges-Jones (Med 1), Ruth Spedding & Hassan Awan (Med 2), Frances Elliott & Naomi Tan (Med 3), Katharine Warren (Med 4), Johannes Mcgavin (Med 5)

Hull York Medical School
Professor John Cookson: Dean of Undergraduate School
Dr Ian Watts: Chair of Primary Care & Chair of Phase 1 Curriculum Committee, Lead for Person-Centred Care theme.
Dr Anna Hammond: Clinical Skills lead & PBL tutor
Professor Paul O'Higgins: Chair of Anatomy, Coordinator for Phase 1 SSC and Head of intercalated degree program.
Ms Jane Pearce: Admissions Officer
Ms Sandra Robertson: Admission Office Assistant, especially International Students.
Dr Gay Fagan (Hull): Head of Assessment
Dr Hilary Hamer (Hull): Year 1&2 coordinator on both sites
Dr Steve Killick (Hull): Coordinator Phase 2 SSC
Dr Sarah Collins: Lecturer in Health Care Communication
Professor Ian Morris: Chair Pharmacology & Physiology
Dr John Lewis: Director of PBL (Hull)
Dr Janine Henderson: Director of PBL (York)
Students: James, Adam and Katherine (Med 3), Katie and Jamil (Med 4)

Appendix 2: Background information: key documents, organizations and websites

Reports

The Scottish Doctor. Scottish Deans' Medical Curriculum Group, 2000. www.scottishdoctor.org

Tomorrow's Doctors. General Medical Council, 2003.

Strategic Options for Undergraduate Medical Education. General Medical Council Education Committee. Consultation Final Report, June 2006.

Medically and dentally qualified academic staff: recommendations for training the researchers and educators of the future. Report of the Academic Careers Subcommittee of the Modernising Medical Careers and the UK Clinical Research Collaboration, March 2005.
http://www.ukcrc.org/PDF/Medically_and_Dentally-qualified_Academic_Staff_Report.pdf

Bligh J, Brice J. The Academy of Medical Educators: a professional home for medical educators in the UK. *Medical Education* 2007; 41: 625-627.

Aspiring to Excellence. Findings and Final Recommendations of the independent enquiry into Modernising Medical Careers led by Professor Sir John Tooke, January 2008.

The Secretary of State for Health's response to Aspiring to Excellence: final report of the Independent Enquiry into Modernising Medical Careers. Department of Health, February 2008.

Organizations

General Medical Council www.gmc-uk.org

Postgraduate Medical Education and Training Board www.pmetb.org.uk

Medical Schools Council (consists of the heads of each of the UK medical schools) www.chms.ac.uk

Higher Education Funding Council for England www.hefce.ac.uk

UK Clinical Research Collaboration www.ukcrc.org

National Health Service (including information on the Darzi review) www.ournhs.nhs.uk

Department of Health www.dh.gov.uk

Others

Modernising Medical Careers www.mmc.nhs.uk

Bologna Process http://www.ond.vlaanderen.be/hogeronderwijs/bologna/