The Future of Medical Education in Canada -
A Collective Vision for MD Education

Curriculum Renewal Faculty Retreat
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A Health Canada Funded Project
Learning Objectives

• Understand implications for medical education of changing physician roles and health-care delivery contexts

• Understand how one country (Canada) has tackled this through the *Future of Medical Education in Canada Project*—*A Collective Vision for MD Education*

• Understand implications of these changes for curriculum and assessment of learners
What goal are we training for?

OR

OR

Something new?
The Physician- 2025?

- Highly specialized technical skills
- Highly developed cognitive/problem solving skills related to specific disease issues (supersubspecialist)
- Leader/Member of highly developed/efficient collaborative health care team
- No solo practice
- High tolerance for ambiguity
The Physician- 2025?

- Very limited primary care role
- Manages complex, multi-system disease, and chronic conditions
- Personalized treatment based on genome
- Personalized treatment based on virtual simulation
- Continuum of life-long learning, revalidation and competency demonstration, and career flexibility
Physician 2025?

- Commitment to health of populations, as well as that of the individual patient
- Commitment to patient safety
- Commitment to innovation, that is evidence-informed
- Clinician Scientists
- Move seamlessly from scientific foundations to clinical care and back
- Knows when to work on and off-protocol
The Medical Education System of the Future

• ensures that key competencies are attained by every physician while simultaneously providing a variety of learning paths that prepare students for diverse roles in their future careers
• is sufficiently flexible and supportive to accommodate students who wish to concurrently pursue complementary degrees (e.g. MPH, MBA, PhD) or other advanced training or clinical experience
• keeps pace with developments in technology and their impact on how students learn and provides a learning environment that maximizes information technology as both a learning and a practice tool
Who are our learners?

What our Canadian youth (18-29 yrs) VALUE-millenials:

- Relationships
- Communication
- Information
- Diversity
- Empowerment
- Technology
- Balance between work life and family/personal life

(Youthography)
Faculties of Medicine
Northern ON School of Medicine
Regional Campus
Future Regional Campus

CANADA
Population Density, 2001 by Dissemination Area

Persons per Square Kilometer

- >50
- 10 to <50
- 1 to <10
- 0.4 to <1

Sparsely populated

“[Medical schools have] the obligation to direct their education, research and service activities towards addressing the priority health concerns of the community, regions, and/or nation they have a mandate to serve. The priority health concerns are to be identified jointly by governments, health care organizations, health professionals and the public.” (WHO, 1995)
“A well-rounded professional demonstrates: knowledge, clinical competence, lifelong learning, evidence-based practice, interdisciplinary teamwork, balance between disease management and disease prevention/health promotion, professional and ethical behaviour in practice, optimal use of resources and consciousness of well-being of self and colleagues.” (Social Accountability: A Vision for Canadian Medical Schools, 2001, AFMC)
Global environment for change

- Initiative to Transform Medical Education (ITME)
- Tuning Project-Europe - learning outcomes and competencies for a Primary Medical Degree
- Macy Foundation - Revisiting the Medical School Educational Mission at a Time of Expansion
- UK - Consensus statement on the role of the doctor
- Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the Institute of Medicine
Global environment for change

- Fundación Educación Médica - Spain - The Physician of the Future
- Howard Hughes - Scientific Foundations for Future Physicians
- Carnegie Foundation for the Advancement of Teaching - A Call for Reform of Medical School and Residency
- Education of Health Professionals for the 21st Century - A Global Independent Commission
Project Overview

• Thirty month project
• October 2007 – March 2010
• Four major phases
  1. Research and Analysis
  2. Consultations
  3. Development of FMEC Collective Vision
  4. Dissemination & Implementation Planning
1. Research and Analysis

- Extensive Literature Review
- Stakeholder Interviews
1. Research and Analysis

- International Comparisons
  - Site visits to United Kingdom (April 2008)
  - Site visits to United States - including UCSF (May 2008)
  - Meetings at AMEE with Australian educators (August 2008)
  - Teleconference with New Zealand educators (August 2008)
  - Site visit to Maastricht, the Netherlands (November 2008)
2. Consultations

• Several meetings
  • Young Leaders’ Forum (March 2008)
  • Data Needs and Access Group (March 2008)
  • Blue Ribbon Panel & Steering Committee (April 2008)
  • Environmental Scan Retreats (June & October 2008)
  • Deans, Blue Ribbon Panel & Steering Committee (September 2008)
2. Consultations

- Regional Consultations
  - Ontario - Toronto (October 2008)
  - Western – Moose Jaw (October 2008)
  - Eastern – Halifax (November 2008)
  - Quebec – Montréal (December 2008)

- National Consultations
  - National Forum – Ottawa (April 2009)
  - CCME Workshop – Edmonton (May 2009)
Ten priority areas have emerged from evidence gathered throughout the FMEC project, encapsulated in the recommendations that follow.

A series of five enabling recommendations identify overarching ideas that consistently emerged and are seen to be facilitators of the transformative change proposed in this collective vision.
Social responsibility and accountability are core values underpinning the roles of Canadian physicians and Faculties of Medicine. This commitment means that, both individually and collectively, physicians and faculties must respond to the diverse needs of individuals and communities throughout Canada, as well as meet international responsibilities to the global community.
The Way Forward: examples

- Consult with community stakeholders and other professions in curriculum design within each Faculty.
- Redesign the medical education curriculum to link more closely with local, regional, national and international needs.
- Provide greater support to medical students and faculty as they work in community advocacy and develop closer relationships with the communities they serve.
The Way Forward: assessment

• The Medical Council of Canada’s objectives identify cultural, communication, legal, ethical and organizational and professional competencies expected of every physician.

• These objectives include recognizing and responding to community needs as is expected of a socially accountable physician.

• Objectives are organized under the seven Can MEDS roles.
Recommendation II: Enhance Admissions Processes

Given the broad range of attitudes, values, and skills required of physicians, Faculties of Medicine must enhance admissions processes to include the assessment of key values and personal characteristics of future physicians—such as communication, interpersonal and collaborative skills, and a range of professional interests—as well as cognitive abilities. In addition, in order to achieve the desired diversity in our physician workforce, Faculties of Medicine must recruit, select, and support a representative mix of medical students.

Con’t…
The Way Forward: examples

- Value and profile diverse academic faculty members as leaders and mentors in order to attract a more diverse applicant base.
- Customize admissions criteria to align more closely with each Faculty’s social accountability mandate.
- Develop pipeline programs that connect students from underrepresented communities with the medical education system.
- Work with provincial/federal governments to monitor student debt management and create policies that encourage a broad range of applicants.
The Way Forward: assessment

- Assess not only the competencies associated with medical knowledge but also those that facilitate dealing with uncertainty, higher order thinking, integration of complex concepts.
- Physician roles such as communicator, collaborator, integrative ability and cross cultural understanding of diseases and their presentation require new assessment modalities.
Recommendation III: Build on the Scientific Basis of Medicine

Given that medicine is rooted in fundamental scientific principles, both human and biological sciences must be learned in relevant and immediate clinical contexts throughout the MD education experience. In addition, as scientific inquiry provides the basis for advancing health care, research interests and skills must be developed to foster a new generation of health researchers.
The Way Forward: examples

• Involve basic scientists, clinical faculty and medical educators in the collaborative design, development and implementation of the MD education curriculum.

• Reduce departmental barriers within Faculties to enable the optimum integration of basic and clinical sciences.

• Support existing and new programs that integrate research training with medical education.
The Way Forward: assessment

• Ensure that clinical questions also include the underlying and connected scientific knowledge necessary to resolve a clinical problem or to develop a diagnostic or therapeutic strategy

• Also include the behavioral and social sciences that impinge on the health of the populations and individuals
Promoting a healthy Canadian population requires a multifaceted approach that engages the full continuum of health and health care. Faculties of Medicine have a critical role to play in enabling this requirement and must therefore enhance the integration of prevention and public health competencies to a greater extent in the MD education curriculum.
The Way Forward: examples

- In partnership with a variety of communities, agencies and health disciplines, enhance MD education curricula to include competencies, skills and expected outcomes in relation to population health, prevention, promotion and the social determinants of health
- Utilize existing resources such as the AFMC ‘Best Practices in Public Health Undergraduate Medical Education’ report
The hidden curriculum is a “set of influences that function at the level of organizational structure and culture,” affecting the nature of learning, professional interactions, and clinical practice. Faculties of Medicine must therefore ensure that the hidden curriculum is regularly identified and addressed by students, educators, and faculty throughout all stages of learning.
The Way Forward: examples

• Create culturally safe ways for students and faculty to make the hidden curriculum explicit and relevant to the formal curriculum.

• Engage students and faculty from different schools to discuss the challenge of the hidden curriculum and share ways to address it constructively.

• Expose students and faculty to both the positive and negative effects of the hidden curriculum on learners, using data and research.
The Way Forward: assessment

• Assess professional behaviors towards patients, families, communities, peers and other health care professionals. The ability to work effectively in a system in a collegial and respectful manner is critically important.

• Link to patient safety and quality care
Canadian physicians practise in a wide range of institutional and community settings while providing the continuum of medical care. In order to prepare physicians for these realities, Faculties of Medicine must provide learning experiences throughout MD education for all students in a variety of settings, ranging from small rural communities to complex tertiary health care centres.
Where should our students learn?

Figure 1 – The Demography of Illness in the Community
(White & Greenberg, 1961)
The Way Forward: examples

• Create opportunities for early and extensive learning in a variety of community settings, including continuity clinics and integrated clerkships.

• Promote an organizational culture that positively reinforces the value of multiple learning sites in MD education.

• Promote research on learning in community contexts.
The Way Forward: assessment

• Utilize a broad range of settings of health care
• Emphasize the first presentation of illness
• Recognize the impact of culture, community, and geography
• The ability to make effective referrals,
• Effectively communicating with other members of the health-care professions (written and oral)….referral and consultation notes
Recommendation VII: Value Generalism

Recognizing that generalism is foundational for all physicians, MD education must focus on broadly based generalist content, including comprehensive family medicine. Moreover, family physicians and other generalists must be integral participants in all stages of MD education.
The Way Forward: examples

- Identify and address elements of the hidden curriculum that devalue generalism and family medicine.
- Ensure that the HHR planning process customizes the mix of generalists and specialists in the physician workforce with the needs of populations.
- Provide learning opportunities for students to experience undifferentiated patients and early presentation of illness in natural contexts.
- Increase representation of generalists within Faculties and among preceptors.
Recommendation VIII:
Advance Inter- and Intra-professional Practice

To improve collaborative, patient-centred care, MD education must reflect ongoing changes in scopes of practice and health care delivery. Faculties of Medicine must equip MD education learners with the competencies that will enable them to function effectively as part of inter and intra-professional teams.
New Roles and Responsibilities: Unlocking existing potential

- Physician Assistant
- Nurse Endoscopist
- Surgical First Assist
- Clinical Specialist Radiation Therapist
- Scaling and Planning for Dental Hygienists without an order
- Regulation of: TCM, Homeopathy, naturopathy, Kinesiology, Psychotherapy
- Anaesthesia Assistants
- Pharmacy Assistants
- Prescribing authority for Optometrists
- RN-EC: New classes (3), prescribing authority and roles/powers
- Enhanced roles for Physiotherapists
The Way Forward: examples

- Teach and assess team-based and collaborative competencies in all learning environments.
- Acknowledge and address the traditional power relationships and hierarchies that undermine the implementation of effective inter- and intra-professional education and practice.
- Focus on patient safety and quality care
Physicians must be able to put knowledge, skills, and professional values into practice. Therefore, in this first phase of the medical education continuum, MD education must be based primarily on the development of core foundational competencies and complementary broad experiential learning. In addition to pre-defined curriculum requirements, MD education must provide flexible opportunities for students to pursue individual scholarly interests in medicine.

Recommendation IX: Adopt a Competency-Based and Flexible Approach
An **observable ability** of a health professional, integrating multiple components such as knowledge, skills, values and attitudes. Since competencies are observable, they can be measured and assessed to ensure their acquisition.

*(Adapted from Frank, Snell, Ten Cate et al Medical Teacher 32: 638–645, 2010)*
The Way Forward: examples

- Create a national stakeholder task force to guide this movement toward a competency-based approach.
- Extend the CanMEDS competency framework to include admissions indicators and identify MD Education level competencies.
- Develop a competency-based assessment system (supported by appropriate faculty development) that includes continuous assessment.
- Consider tighter integration of accreditation standards between MD education and postgraduate medical education.
- Link more closely with postgraduate education
Medical leadership is essential to both patient care and the broader health system. Faculties of Medicine must foster medical leadership in faculty and students, including how to manage, navigate, and help transform medical practice and the health care system in collaboration with others.
The Way Forward: examples

- Develop and teach a set of core values and competencies relating to collaborative leadership skills that are relevant to learners and teachers alike.
- Enhance learners’ understanding of the healthcare system and their responsibility as physicians to participate in the process of transforming the healthcare system.
- Develop both core and advanced leadership opportunities for students in the curriculum.
Recognizing that accreditation is a powerful lever, Canadian medical leaders must review and realign existing standards of the Committee on Accreditation of Canadian Medical Schools and the Liaison Committee on Medical Education and develop new ones, as necessary, to respond to the recommendations in this report. This may involve the alignment of undergraduate and postgraduate accreditation standards.
Each Faculty of Medicine should carry out a review of its organizational systems, processes, and structures to determine and build capacity, where required, to support a constructive response to these recommendations.
Canadian Faculties of Medicine are continually innovating and have much to offer each other. Increased collaboration among schools is needed, including the sharing of teaching and learning resources, evaluation frameworks, tools for common curriculum development, innovations, and information technologies.
Based on rapid and evolving technological changes related to the way people communicate and learn, there must be increased understanding and use of technology on the part of both faculty and learners at all MD education sites.
Recognizing that teaching, research, and leadership are core roles for physicians, priority must be given to faculty development, support, and recognition in order to enable teachers and learners to respond effectively to the recommendations in this report.
Implementation

- AFMC Board of Directors (All Deans in Canada) unanimously approved the FMEC Collective Vision in November 2009
- National launch took place in January 2010 from Ottawa
- Knowledge transfer, dissemination and implementation planning activities underway (including on-line communities for each recommendation)
- FMEC – PG underway
Issues in Residency Training

• Early streaming into a specialty and lack of flexibility to change course
• Major disconnect between who we ‘admit’, what they choose to specialize in, the availability of jobs and societal needs
• Residents not prepared/ comfortable/ willing to leave training/ tertiary centre
• Reduced work week (e.g., from 80 to 40-50 hours) will require fundamental change in structure of residency
Opportunities in Residency Training

• Conduct HHR planning at national level across all healthcare professionals for the right balance of generalists, specialists, sub specialists, fellows and research scientists

• Make better use of potential resources (e.g., IMGs, DME sites, IPE opportunities, programs for underserviced areas)

• National sharing of training resources – reduce interprovincial barriers to practice and training.
Opportunities in Residency Training

• Introduce new models of training that address the hidden curriculum, IPE and simulation and reinforce generalism
• Have evaluation throughout residency count rather than one high-stakes exam
• Continuity of care--longitudinal
• Continuity of education- supervisors, mentors
• Protect education as an activity separated from pressures of service delivery
Other ideas on the table.....

- Have a small number of key paths that complete UG and PG directly into practice without the ‘match’
- Issue restricted licence after 2 years and make practice a requirement for subsequent PG training
- Redesign system to introduce flexibility in training path, reduce the number of PGY 1 entry programs and eliminate 4th year of UG
- Mandate community based practice and learning of social determinants of health in all residency programs
Health Professionals for the 21st Century-
Transforming education to strengthen health systems in an interdependent world     (Lancet)

**Instructional reforms:**
1. Adopt a competency based curriculum
2. Promote interprofessional and transprofessional education
3. Exploit the power of IT for learning
4. Harness global resources and adapt locally
5. Strengthen educational resources
6. Promote new professionalism
7. Establish joint planning mechanisms

**Institutional reforms:**
8. Expand from academic centers to academic systems
9. Link through networks, alliances, and consortia
10. Nurture a culture of critical inquiry
In Summary…

We have developed recommendations that:

1. Put Canadians at the centre of medical education;
2. Are patient-centred and foster collaborative care;
3. Recognize community needs and value community based care;
4. Emphasize generalism as a cornerstone for the undifferentiated medical education graduate;
In Summary…

5. Emphasize professionalism and address the learning context and culture;
6. Promote flexibility for the learner;
7. Value excellence;
8. Are academically rigorous.
Take home….

- Medical Education an increasingly complex field
- Medical Education no longer a silo - interdisciplinary education, a partnership
- Medical Education must be education, not just training
- Medical Education must be socially accountable
- The role of the future doctor is uncertain, evolving rapidly, and difficult to predict
- Need to select highly intelligent (both cognitively and emotionally) students, who are flexible, and who can adapt to society’s changing expectations of physicians
- University and clinical education environment must reflect these characteristics - nimble
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