2008 MEDICAL EDUCATION DATA NEEDS & ACCESS GROUP SYNTHESIS REPORT

MARCH 2008

AFMC
The Association of Faculties of Medicine of Canada
L'Association des facultés de médecine du Canada

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Acknowledgments:

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Introduction

In 1910, Abraham Flexner, through the funding of the Carnegie Foundation, created what continues to be held up as the framework for modern medical education in North America. During the past 100 years Canada has continued to promote advances in medical education through its significant and unique contributions such as Problem Based Learning curriculum, the Educating Future Physicians of Ontario (EFPO) Project in the 1980's, and the development and implementation of the CanMEDS Physician Competency Framework. Further advances in medical education, and also the ever-present challenges associated with ensuring high-quality health care delivery, have provided impetus to re-examining the Canadian medical education system and to consider moving beyond the possibilities that Flexner envisioned nearly a century ago.

The Association of Faculties of Medicine of Canada (AFMC), with its 65 year history of being the national voice of Canada's faculties of medicine and its mission to ensure the health of Canadians by promoting and supporting excellence in health education and research, has provided the leadership to ensure social accountability through a variety of activities. The Future of Medical Education in Canada (FMEC) Project was initiated by the AFMC to examine the challenges that the undergraduate medical education (UGME) system is currently facing and to identify challenges that will develop in the near future. Through this process the FMEC Project will provide valuable information in the decision-making process to guide UGME in Canada through the next 100 years. Please see Appendix 1 for more details pertaining to the FMEC Project.

Medical Education Data Needs & Access Workshop

The first Medical Education Data Needs and Access Workshop was held in Toronto at the Sheraton Gateway Hotel (Lester B. Pearson International Airport) on March 17-18, 2008. A wide range of perspectives were shared at the meeting, including those of faculty of medicine Deans, Undergraduate, Postgraduate and Research Deans, residents, medical students, administrative managers, AFMC resource groups, professional medical organizations and government (see Appendix 2 for participant list). Broad representation ensured that a voice is given to stakeholder groups within Canada's medical education system and that a foundation is in place to achieve consensus around priority information needs. In consultation with the AFMC, professional group facilitator Anthony Nash (Inter-Connex Consulting Inc.) was contracted to develop an agenda and provide structure to the event without constraining the breadth of discussion.

Following the initial meeting, a draft report was produced to describe and summarize the workshop proceedings. The draft report was then distributed to workshop participants for review and final comment prior to publication. When finalized, the summary report will serve as one outcome of the overall Future of Medical Education in Canada initiative but will also serve as a road map for the AFMC's future data collection work.

Workshop Purpose

- To surface, dialogue around, and put structure to all the issues, challenges and opportunities surrounding information and data needs for Canada's future medical education system.

Expected Outputs

The Medical Education Data Needs and Access Workshop will achieve the following outcomes:

- Review of Future of Medical Education in Canada project themes from an information needs perspective.
- Ensure that all medical education information needs have been brought forward for consideration.
- Build consensus around priority information and data needs for Canada's medical education system.
- Begin to develop strategies that will meet information and data needs.
- Provide AFMC with guidance for its future data collection work.

Session Activity

Setting the Context

The Data Needs & Access Group Workshop started with a time of group networking followed by welcoming and opening remarks provided by Dr. Nick Busing (President & CEO of the AFMC) and Mr. Steve Slade (VP Research and Analysis, CAPER/ORIS, AFMC) in order to set the context for the discussion. Included in this time was a placing of this workshop in the context of the larger AFMC Future of Medical Education in Canada (FMEC) Project, which is currently ongoing. Please see Appendix 1 for a more detailed description of the FMEC Project. With this valuable background, the workshop participants were then lead through a high level brainstorming session, in which they were asked to identify issues, challenges and opportunities which were then categorized into key themes. With this completed, the participants were then asked on the following day to begin to explore the issues, challenges or opportunities in order to identify success indicators, a summary vision and key recommendations for each key theme. Please see Appendix 3 for detailed workshop agenda. In addition, a glossary of acronyms or terms that may be unfamiliar is found at the end of the report.

Scoping the Challenge

After a time of group networking and introductory comments, the participants were given the opportunity to answer the following question in order to stimulate dialogue around the issues, challenges and opportunities surrounding medical information and data needs for Canada's future medical education system. "As we think about the medical information data needs for Canada's future medical education system, what are some of the issues, challenges, questions or opportunities that come to mind?" The participants were instructed to individually answer this question and then post their top two responses. After reviewing all the posts, the participants were once again asked to review their individual responses to ensure that all relevant issues were captured prior to sorting the posts according to the following key themes which were established through the environmental scan component of the FMEC project. A sixth key theme was identified by the participants during the course of the workshop.

> **Key Themes:**
>
> 1. Curriculum Content
>
> 2. Pedagogical Issues Affecting the Medical Education System
>
> 3. The Culture(s) of Medicine and Medical Education
>
> 4. External Issues Affecting the Medical Education System

5. Higher Order Constructs

6. Data Collection and Management (new theme)

Enviro-Scan

Interview Matrix

The workshop participants were divided into groups of 4 to pose each other four questions utilizing an interview matrix and then report back to the larger group.

Question #1 "As we contemplate the information and data needs for Canada's future medical education system what are some practical assumptions we can make about the professional / regulatory / economic environments in which we operate?" *We can safely assume that...*

- Medicine will be continue to be a self-regulatory profession.
- There will be a movement to a national recognition for physicians (which may possibly conflict with self-regulation).
- There will be a continuing challenge to meet health human resources (HHR) needs.
- We will continue to have multiple bodies to whom we have to report.
- There will be a ongoing debate on public and / or private health care with and increasing utilization of private health care. What will the impact on data collection be?
- Societal expectations will continue to rise (physician deployment, increased health needs, increased privacy concerns).
- There will be continued escalating cost of health care and medical education.
- There will be increased inter-professional care and potential credential "creep" (potential for inter-professional regulation).
- We will have mechanisms for data collection (the problem pertains to its linkage and use).
- Immigration will continue to be an economic base for Canada.

Question #2 "What are current and emerging trends that will stage the future of information and data needs for Canada's future medical education system?

- Confidentiality issues / privacy laws.
- Inter-professional education (IPE).
- There will be many paths for training. Must follow learners from start, through all delivery of training to practice type and location.
- Urban / rural displacement.
- What do physicians do? What scope and what will physicians do?
- Societal expectations of physician training.

- Teaching to collect data and need to integrate analysis.
- Coordination of overall data.
- Changing demographic trends.
- Reemergence of health promotion and prevention and outcomes.
- Population health will drive HHR needs.
- More efficient technologies.
- Changing work / life balance.
- E-teaching.

Question #3 **"What are the areas in which we must succeed if we are to meet the information and data needs for Canada's future medical education system?"** *We had better be <u>really great</u> at...*

- Preventing data duplication.
- Ensuring privacy.
- Understanding what data do we need and how to track data collection.
- Data sharing and collaboration (inter-professional, government, public).
- Linking data with policy development.
- Evidence based decisions making.
- Gather longitudinal data to measure change.
- Recognition of performance.
- Asking the right questions and collecting the right data.
- Identifying gaps. Quality indicators for lobbying..
- Data collection must be continuously and fully integrated into our standard operating procedures.
- Turning data into useful information.

Question #4 **"What has been done / is being done well, that needs to continue, to contribute to the information and data needs for Canada's future medical education system? What do we need to do more of? Less of?"**

- We need to mine and dig into the data and turn facts into knowledge.
- We need to link and integrate "competence" data across the continuum.
- We need data collection on "IMGs" and "CSAs".
- We need good collaboration across medical schools, but degree of "protectionism".
  - Role for AFMC as clearinghouse / repository of data.
- We need formal linkage of data sets RE: medical education to population health needs (ICES - but no connect to population health surveys).
- We need to clarify and prioritize questions that need to be answered.

Key Themes: Success Indicators / Summary Vision / Key Recommendations

The workshop participants were split into groups and were then instructed to examine the identified key themes and answer the following question to determine success indicators: "Success will have been achieved in this key theme area when / if...". A **success indicator** was defined as: *an achievement of some kin; a completed / successful outcome; a target we are shooting for / at; the "ends" not the "means".*

The groups were then asked to summarize their success indicators (see Appendix 3) into a summary vision statement for each key theme which are indicated below.

After determining a list of success indicators and defining vision statement for each of the key themes, the workshop participants were asked to spend time to identify a set of key recommendations for each key theme. The participants were provided with the following options to consider when drafting the key recommendations: 1) *START* (introduce / new); 2) *STOP* (discontinue / delete); 3) *CHANGE* (improve); and 4) *CONTINUE* (maintain). These options were understood to be relevant in an environment operating on the following three principles: 1) there are things over which we have absolute and complete control; 2) there are things we can only influence; and 3) there are things over which we have no control whatsoever. Participants were encouraged to use the "SMART" framework to identify key recommendations (i.e, activities or strategies that are Specific, Measurable, Attainable, Realistic / Relevant and Time-Driven).

Key Themes were then re-examined to answer the following questions: *"To achieve the success that we've described, what are some activities / initiatives / strategies that should now be contemplated?* and secondly: "*What are the key strategies critical to achieving the success we've described?*" The following is a summary of the summary vision and key recommendations for each of the identified key themes. Success indicators for each key theme are listed in Appendix 3.

Curriculum Content

Vision: A socially responsive curriculum accountable to the evolving needs of society, that measures its quality, adaptability and outputs that address sustainable HHR (clinicians, teachers and researchers).

- Measure integration of CanMEDS into current curriculum (gap analysis)

- Conduct an inventory of current databases

- Determine critical partners

- Design and implement the data integration concept (Research Institute) (see Appendix 4 - Data Stock Flow Usage Model).

Pedagogical Issues Affecting the Medical Education System

Vision: A forward thinking medical education system must take into account distributed medical education (DME), inter-professional education (IPE) and new approaches to the integration of clinical and basic sciences to assure the production of practitioners able to function in the future.

- Gather data on DME methods: classify where, what, how.

- Track eventual distribution of practitioners.

Culture(s) of Medical Education

Vision: Given the reciprocal and dynamic relationship between the culture of medical education and the health care system and society, we will achieve ongoing change in medical education that both adapts to, and drives, change in the delivery of health care.

- Measure why & how admissions filters (+/- pre-admission programs) impact outcomes with respect to: discipline choices; location; quality; retention; etc...

- Develop and implement tools to measure objective-driven standardized outcomes / competencies across a variety of learning settings / models

- Determine impact of financial accessibility issues on applicant pool and choices of matriculants.

- Each school: what mechanism for engaging all stakeholders in informing curricular decisions

- Determine how sites and teachers are currently selected prepared and evaluated.

- Assess characteristics of applicants and non-applicants that predict career choice.

External Issues Affecting the Medical Education System

Vision: Within the context of a changing health care system we will measure reciprocal (bidirectional) linkages between changes in medical education and changes in health care delivery.

Changes in medical education include, but are not limited to: admissions; inter-professional education (IPE); distributed medical education (DME); rural experiences; integrated clerkships; increased numbers in medical school.

Changes in health care delivery include, but are not limited to: the number, discipline, location, skills of physicians; engagement and retention of physicians; patient / population outcomes; collaborative practice.

- Define outcomes that relate medical education to health care.

- Design conceptual framework to map medical education components with health care system. (AFMC to take the lead)

- Develop common terminology within medical education and health care systems. (AFMC to take the lead)

- Create database linkages with common identifiers / definitions and established outcomes (measurable benchmarks, rewards, disincentives)

- Apply the conceptual framework to the development of data collection and research agenda.

- Commission literature review RE: new models of primary health care impact career choice

- Continue and expand mapping of learners and locations to outcomes (develop mapping tool)

- Define common definitions and language

Higher Order Constructs

Vision: A strategic alliance of all stakeholders (current partners) providing forward-thinking leadership, towards a sustainable, adaptable, high-quality health care system through medical education informed by research and knowledge translation.

- Establish the strategic alliance of stakeholders (i.e., CMF, government, ACHDHR?)

- Determine which health care indicators are relevant to input / output of medical education.

Data Collection & Management

Vision: To have in place high quality integrity data that will accessed and used for meaningful administrative / research / policy purposes. This will be a well-funded, sustainable endeavour.

- Map current privacy policy regulations & assess their impact on data collection policies & procedures.

- Practical model for collection, analysis & distillation of data, taking into account existing inputs & outputs (via a pilot project).

- Explore options and develop optimal mechanism for information interface among stakeholders.

Conclusion

Critical Recommendations

With the identification of a set of key recommendations for each key theme, the workshop participants were then asked to identify the critical set of recommendations that would be absolutely necessary to address or implement to achieve success.

- Conduct an inventory of current databases
- Design and implement the data integration concept (Research Institute) (see Appendix 5 - Data Stock Flow Usage Model)
- Gather data on DME methods: classify where, what, how.
- Track eventual distribution of practitioners.
- Develop and implement tools to measure objective-driven standardized outcomes / competencies across a variety of learning settings / models
- Design conceptual framework to map medical education components with health care system. (AFMC to take the lead)
- Develop common terminology within medical education and health care systems. (AFMC to take the lead)
- Assess characteristics of applicants and non-applicants that predict career choice.
- Establish the strategic alliance of stakeholders (i.e., CMF, government, ACHDHR?)
- Determine which health care indicators are relevant to input / output of medical education.
- Create and implement a practical model for collection, analysis & distillation of data, taking into account existing inputs & outputs (via a pilot project).

Key Messages

The Medical Education Data Needs and Access Group Workshop served as a valuable experience for participants to explore the many issues, challenges and opportunities surrounding information and data needs for Canada's future medical education system. During the discussion, the participants identified a number of key messages from the meeting that could be shared with a variety of audiences, which included:

- There is a lot of work to do.
- The need for:
  - Common terminology.
  - Data linkages.
  - Effective utilization of data.
  - Following learners through their experiences to determine their outcomes.

- Energy, dedication, and commitment to make this become a reality.
- Sense of optimism.
- Collegiality of stakeholders - we are all sharing the same problem.
- Broad interest and appetite for this kind of discussion on how to use and collect medical education data.
- In the present area of social accountability, this kind of work had to come; we have to look at our outcomes and be more rigorous in our evaluation and more disciplined, also, in its dissemination. There is a lot of information; but, we have to be rigorous in the dissemination.

Next Steps

To maintain momentum from this workshop:

- "As was said" report will reflect oral and written items from the day as a verbatim record.
- A synthesis summary report will be created. The synthesis summary report will be distributed to the workshop participants to assess whether it is reflective of the discussions.
- After completion of the review process for the synthesis summary report, this report will be posted on the AFMC website as a part of the FMEC Project and will serve as a project deliverable.
- Principles for Change for the Canadian Medical Schools.
- First of a series of meetings (2008 Young Leaders Forum, Blue Ribbon Panel, etc...)
- A second meeting with a focus on data needs and collection will be held through Health Canada funding.
- By March 2009, the FMEC Project will be concluded.

Appendix 1 - AFMC's Future of Medical Education in Canada (FMEC) Project

Background

In 1910, Abraham Flexner, through the funding of the Carnegie Foundation, created what continues to be held up as the framework for modern medical education in North America. During the past 100 years Canada has continued to promote advances in medical education through its significant and unique contributions such as Problem Based Learning curriculum, the Educating Future Physicians of Ontario (EFPO) Project in the 1980's, and the development and implementation of the CanMEDS Physician Competency Framework. Further advances in medical education, and also the ever-present challenges associated with ensuring high-quality health care delivery, have provided impetus to re-examining the Canadian medical education system and to consider moving beyond the possibilities that Flexner envisioned nearly a century ago. The FMEC project was initiated in response to the changing nature of medical education in Canada.

Goal of the Project

To conduct a thorough review of medical education in Canada in order to promote excellence in patient care by reforming the medical education system (across the continuum) where necessary and essential.

Timeline

This Health Canada funded project was initiated in October 1, 2007 and will be completed by March 31, 2009.

Objectives of the Project:

- To equip physicians with knowledge, skills, attitudes and values to provide high quality medical care and be responsive to changing societal needs.
- To address through medical education the production of physicians in Canada to ensure the appropriate balance between generalists and specialists.
- To ensure that areas such as bioethics, professionalism, communication skills and a population health approach are emphasized to the same degree as some other aspects of medical education.
- To identify the resources needed to support changes in medical education.

Environmental Scan

The FMEC project will take a comprehensive look at Canada's medical education system through a process of an **environmental scan**, which will be completed through the partnership of the *Wilson Centre* at the University of Toronto and the Université de Montréal's *Centre de pédagogie appliquée aux sciences de la santé (CPASS)*. The environmental scan includes a literature review, key stakeholder interviews and syntheses, with a, focus on the following key themes: 1) curriculum content; 2) pedagogical issues affecting the medical education system; 3) culture(s) of medicine & medical education; 4) external issues affecting the medical education system ; and 5) higher order constructs. These theme areas encompass many facets of undergraduate medical education (UGME) in Canada. For example, population health and intra-professionalism will be explored as part of the curricular review. Distributed learning and faculty development will be covered through the review of pedagogy. Medical student diversity and health human resource needs will be considered as part of the review of external issues. These are samples of the many areas to be explored by the FMEC project.

In addition to the environmental scan, the FMEC project will also include the following components as a means of gathering additional data and feedback from all stakeholders: 2008 AFMC Young Leaders Forum; Blue Ribbon Panel; International Consultations (United Kingdom, United States; Medical Education Data Needs & Access Workshop.

Medical Education Data Needs and Access Group

The Medical Education Data Needs and Access Workshop was held in March 2008 and brought stakeholders together to discuss information and data needs for Canada's future medical education system. To help frame the initial discussion, participants were asked to review of FMEC project themes from an information needs perspective. During the workshop, participants were asked to articulate specific information needs and measurable indicators within the theme areas and to build consensus around priority information and data needs for Canada's medical education system Participants were also asked to suggest strategies that would meet information and data needs and to provide the AFMC with guidance for its future data collection work.

Young Leaders Forum

The Young Leaders Forum brought participants together in March 2008 to discuss the future of Canada's medical education system from the perspective of the future leaders of the Canadian health care system. To help frame the initial discussion, participants received a summary of themes emerging from the FMEC project and then during the workshop, participants were asked to articulate specific measurable indicators within the theme areas. The participants were also asked to give input into future vision of the future health care system.

Blue Ribbon Panel

The participants of the Blue Ribbon Panel will represent the community at large and will be identified through a process of skills identification and stakeholder consultations. The panel members will meet in April 2008 to review and discuss findings of environmental scan and to provide an analysis of possible recommendations for change and will also participate in the National Forum, tentatively planned for late 2009.

Consultations with Canadian Faculties of Medicine

The AFMC will engage the Canadian Faculties of Medicine in a consultative process to discuss recommended principles for change and to begin to build support and develop consensus.

National Forum

The AFMC will convene a forum of medical educators and other key stakeholders in late 2009 to analyze the results of the FMEC project. The forum will provide participants with the opportunity to discuss the results of the FMEC project collectively and to reflect upon what impact they should have upon medical education in the future in Canada. The forum will also serve as an opportunity to develop consensus around current situation and moving forward.

Dissemination of the Project

The entire process of data collection and development of draft principles will be collated and provided through the AFMC website on an ongoing basis.

Project Evaluation

An independent evaluator will develop an evaluation plan early on in the FMEC project. There will be a midterm evaluation to allow for adjustment of activities as well as a final evaluation that will be shared with all participants.

Appendix 2: Participant List

INVITED GUESTS:

- **Ginette Arsenault**

  Administrative Manager
  Postgraduate Medical Education
  McGill University

- **Nahid Azad, MD**

  AFMC Equity, Diversity & Gender Special Resource
  Committee

- **Sandra Banner**

  Executive Director
  Canadian Resident Matching Service

- **Ian Bowmer, MD**

  CEO
  Medical Council of Canada

- **Lynda Buske**

  Director, Workforce and Human Resources
  Canadian Medical Association

- **Deborah Danoff, MD**

  Director of Education
  Royal College of Physicians and Surgeons of Canada

- **Patrice de Broucker**

  Centre for Education Statistics
  Statistics Canada

- **Silvana Di Lollo**

  Administrative Manager
  Undergraduate Medical Education
  McGill University

- **Paul Grand'Maison, MD**

  Associate Dean
  Undergraduate Medical Education
  Université de Sherbrooke

- **Robert Hache, MD**

  Vice Dean, Research
  Faculty of Medicine
  University of Ottawa

- **Sheila Harding, MD**

  Dean (Acting)
  College of Medicine
  University of Saskatchewan

- **Carol Herbert, MD**

  Dean
  Schulich School of Medicine and Dentistry
  University of Western Ontario

- **Helen McElroy**

  Health Human Resources Strategies Division
  Health Canada

- **Shaheed Merani**

  President
  Canadian Federation of Medical Students

- **Alan Neville, MD**

  Associate Dean
  Undergraduate Medical Education
  Michael G. DeGroote School of Medicine
  Faculty of Health Sciences
  McMaster University

- **Libby Posgate**

  Director, Physician & Human Resource Planning
  Ministry of Health
  Government of British Columbia

- **James Rourke, MD**

  Dean
  Faculty of Medicine
  Memorial University

- **Kristin Sivertz, MD**

  Associate Dean
  Postgraduate Medical Education
  Faculty of Medicine
  University of British Columbia

- **Leanne Tran, MD**

  Canadian Association of Internes and Residents

- **Sarita Verma, MD**

  Vice Dean, Postgraduate Medical Education
  Faculty of Medicine
  University of Toronto

- **Verna Yiu, MD**

  Assistant Dean
  Student Affairs, Undergraduate Medical Education
  Faculty of Medicine & Dentistry
  University of Alberta

STAFF

- **Nick Busing, MD**

  President & CEO,
  Association of Faculties of Medicine of Canada

- **Jerry M. Maniate, MD**

  Future of Medical Education in Canada (FMEC)
  Project Consultant
  Wilson Centre for Research in Education
  Faculty of Medicine
  University of Toronto

- **Catherine Moffatt**

  Project Manager
  Association of Faculties of Medicine of Canada

- **Anthony Nash**

  Facilitator
  Association of Faculties of Medicine of Canada

- **Steve Slade**

  VP Research and Analysis, CAPER/ORIS
  Association of Faculties of Medicine of Canada

- **Heather Sterling**

  Recorder
  Association of Faculties of Medicine of Canada

Appendix 3: Session Agenda

The Association of Faculties of Medicine/ L'Association des facultés de médicine du Canada (AFMC)

~ Medical Education Data Needs and Access Workshop ~

Monday & Tuesday, March 17-18, 2008
Sheraton Gateway Hotel, Lester B. Pearson International Airport, Toronto

Agenda

Workshop purpose:
- To surface, dialogue around, and put structure to all the issues, challenges and opportunities surrounding information and data needs for Canada's future medical education system.

Expected Outputs:
- Consensus around priority information and data needs;
- Recommended strategies to meet information and data needs, and
- Guidance to AFMC for its future data collection work.

Monday, March 17, 2008

Time	Topic	
1515 – 1600	**Registration and Networking**	
1600	**Opening** - Ice breaker exercise - Administrivia - Participant introductions - Session expectations	Facilitator
	Welcoming Remarks/ Setting the Context *- An historical update … what brought us to where we are today … "Future of Medical Education in Canada project" … session purpose* Scoping the Challenge - Dialogue around the issues, challenges and opportunities surrounding medical information and data needs for Canada's future medical education system	Nick Busing
1830	**Adjourn for the day**	
1830 - 1900	**Reception**	
1900	**Group dinner**	

Tuesday, March 18, 2008

Time	Topic
0715 – 0830	**Breakfast and Networking**
830	**Enviro-Scan** – Interview Matrix - Assumptions, Trends, Critical Success Factors etc.
1000 – 1015	**Health break**
1015	**Success Indicators/ Summary Vision** *"Success will have been achieved when/if…"*
1200 – 1300	**Lunch break**
1300	**Key Recommendations** *"What are the key strategies critical to achieving the success we've described?"* *"With whom do we need to connect?"* - Suggested lead/ support accountability
1500 – 1515	**Health break**
1515	**Next Steps** *To maintain momentum from this session what will happen over the next 15 – 45 days?* **Key Messages** *What are the Key Messages from this session we propose to share across our various audiences?* Evaluation/ Thanks/ Close
1600	**Session adjourned**

Appendix 4: Success Indicators

Key Theme Area #1: Curriculum Content

Success will have been achieved in this key theme area when we are able to measure…

- the quality of education on the 12 examples outlined in the FMEC project under "Curriculum Content": 1) Quality of care and patient safety; 2) Doctor-patient communication; 3) Negotiation and conflict resolution; 4) Intra-professional collaboration; 5) Humanities and social sciences in medical education; 6) Professionalism; 7) End-of-life care; 8) Population health; 9) Bioethics and decision making; 10) Ambulatory care; 11) Technical/diagnostic skills; 12) CanMEDS in undergraduate medical education.

- the adaptability of curriculum to the changing needs of society.

- the facility and expertise of content deliverers.

- the responsiveness to new pedagogical methods.

- the effectiveness of the MD program to deliver an undifferentiated, integrated and prepared graduate.

- generic embedded competencies across the board reflected in non-Medical Expert CanMEDS roles.

Key Theme Area #2: Pedagogical Issues Affecting the Medical Education System

Success will have been achieved in this key theme area when…

- we have implemented efficient inter-professional education that will positively impact inter-professional work, as reflected by standards of accreditation and highly rated professional practice.

- we can classify the types of distributed medical education (DME) and assess their impacts.

Success will have been achieved in this key theme area when we are able to measure …

- the capacity of the system to provide DME.

- the eventual distribution of practitioners.

Key Theme Area #3: Culture(s) of Medicine and Medical Education

Success will have been achieved in this key theme area when we are able to measure…

- the readiness, quality and success of community-based teachers and practices. All must be supportive of the teaching mission.

- the readiness, quality and success for learning locations (i.e.: simulation), and models must be using common language.

- the input of faculty, students, the public and government (all stakeholders) into curriculum content decisions to address the social accountability of medical schools.

- standardized (objective-driven) outcomes/competencies across a variety of learning settings (e.g. simulation, modular vs. longitudinal clerkships, and multiple clinical settings).

- the impact of informal (e.g. student organized clubs, study groups and other extra-curricular activities) and formal curriculum on student learning.

- the impact of hidden (both beneficial and detrimental) curriculum and result of interventions to ameliorate/alter hidden curriculum.

- if/how admissions' filters (and pre-admissions programs) impact outcomes, for example: discipline, location, quality, retention.

Key Theme Area #4: External Issues Affecting the Medical Education System

Success will have been achieved in this key theme area when we are able to measure…

- the impact of distributed medical education (DME) on MD career choice and location of practice.

- the diversity of medical students and practitioners compared with, makeup and needs of the population.

- the impact of inter-professional education (IPE) on delivery of healthcare with respect to: wait times, cost, safety/quality, patient outcomes, provider satisfaction/retention/recruitment.

- the numbers and types of MDs produced compared with societal needs: skills, numbers, location.

- societal needs including population health.

- longitudinal career paths – post CAPER.

- the impact of confounders on career paths (other than medical education): financial / debt, practice supports/ models, family issues, relative prestige.

- (re)patriation/(re)integration of: J-1 visa trainees, IMGs, CSAs.

- the true costs of UGME and PGME across country (presupposes common definitions) including cost of clinical education, especially with respect to DME.

- the impact of location/type of education on location/type of practice.

- in such a way as to generate rigourous data that remains relevant through political changes.

- the impact of health system frameworks and funding on career path and training

- the impact of increased class size on education and outcomes.

Key Theme Area #5: Higher Order Constructs

Success will have been achieved in this key theme area when we are able to measure…
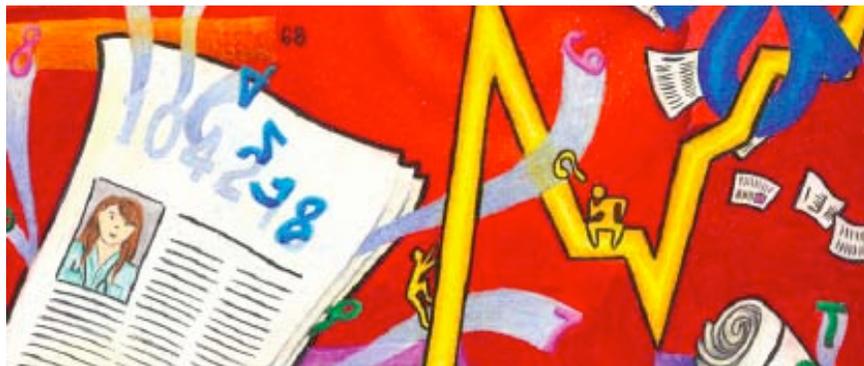
- when we need to change, that is, being able to measure aspects around when change should occur.

- define the priority issues – where do we want to go.

- in complexity and during change (measure ability to be nimble). Complex adaptive systems.

- functionality (report card).

- the "right people" doing the "right things" – appropriate skill set, choosing teachers/ students, etc.

- the link between education and high quality healthcare (education along the continuum). Indicators of quality include: effectiveness, efficiency, safeness, equitability, timeliness and sustainability.

- indicators utilizing Miller's Triangle (describes the progression of practice and knowledge transmission such that at the base of the triangle was "knows" which referred to an individual who possessed a very superficial understanding of a concept, the next level was "knows how" whereby there was a greater understanding of the topic, "shows how" whereby the individual was able to demonstrate to others and ultimately "does" where the individual practiced).

- effective leadership – a bidirectional relationship between the public and the medical profession.

- the funder's return on investment.

- the experience of: patient, learner, teacher.

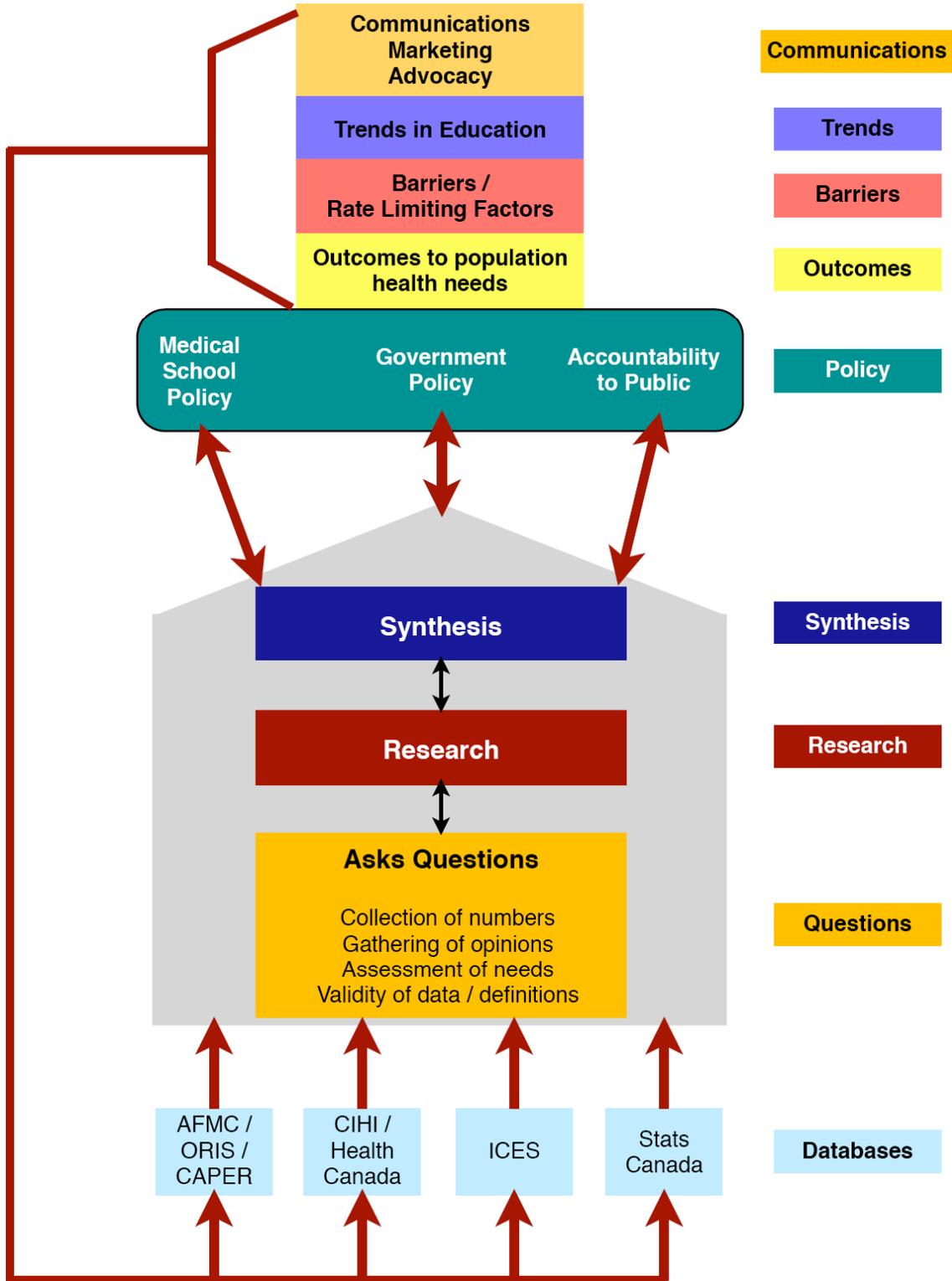- the balance between generalist / specialist

- unintended consequences.

Key Theme Area #6: Data Collection & Management

Success will have been achieved in this key theme area when…

- we have in place a standardized and universal process for getting informed consent to share data (from individuals).

- we have in place a process that allows data collectors to share data with data users/ researchers.

- we have opened a portal that allows researchers to communicate/develop more and better projects (alignment of existing and evolving research ideas with data being collected).

- we have excited and energized stakeholders about the data and how to access it.

- we have a coalition in place that engages stakeholders in the collection and possible use of data.

- we reach agreement on, and implement, common data standards/definitions.

Appendix 5: Data Stock Flow Usage Model

Communications Marketing Advocacy

Trends in Education

Barriers / Rate Limiting Factors

Outcomes to population health needs

Medical School Policy | **Government Policy** | **Accountability to Public**

Synthesis

Research

Asks Questions

Collection of numbers
Gathering of opinions
Assessment of needs
Validity of data / definitions

AFMC / ORIS / CAPER | CIHI / Health Canada | ICES | Stats Canada

Communications

Trends

Barriers

Outcomes

Policy

Synthesis

Research

Questions

Databases

Glossary

A) ACHDHR

Advisory Committee on Health Delivery and Human Resources

B) AFMC

Association of Faculties of Medicine of Canada

C) CAPER

Canadian Postgraduate Education Registry

D) CMF

Canadian Medical Forum

E) CSA

Canadian Studying Abroad

F) DME

Distributed Medical Education

G) FMEC

Future of Medical Education in Canada Project

H) HHR

Health Human Resources

I) IMG

International Medical Graduate

J) IPE

Inter-professional Education

K) PGME

Postgraduate Medical Education

L) UGME

Undergraduate Medical Education