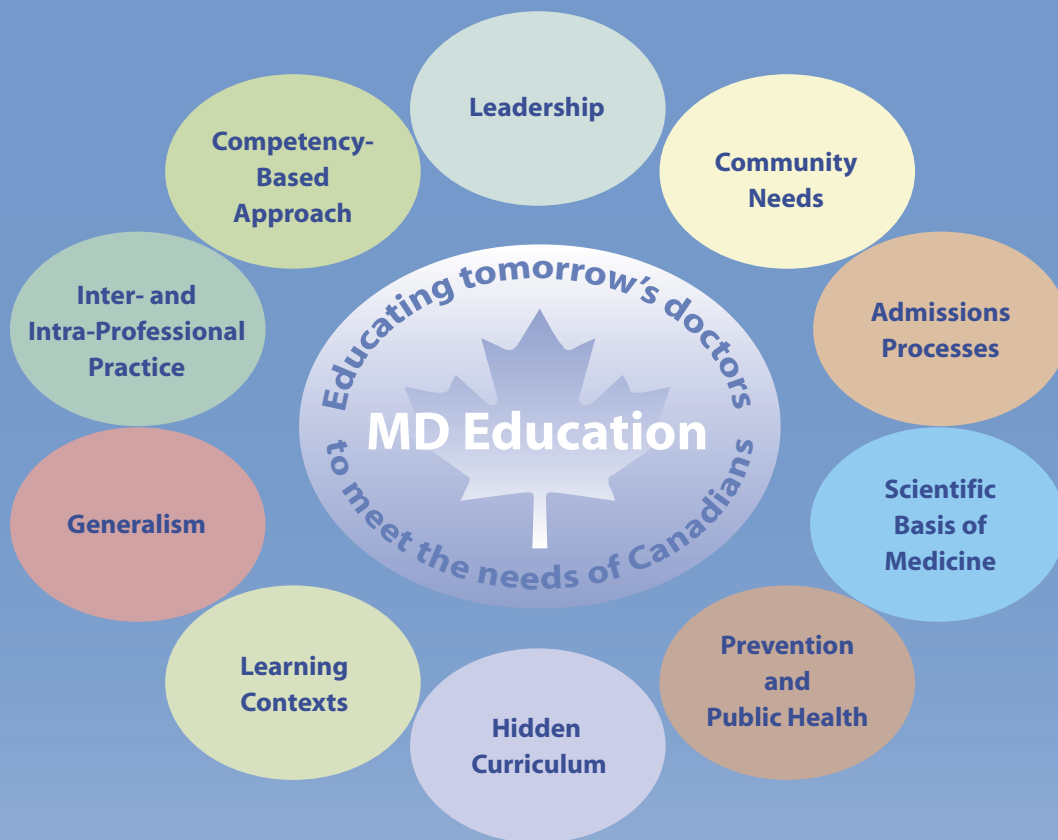


FMEC MD 2015

*Five Years of
Innovations at Canadian
Medical Schools*



The Future of Medical Education in Canada (FMEC): *A Collective Vision for MD Education 2010 – 2015*

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PREFACE

Just as Abraham Flexner's report did a century ago, *The Future of Medical Education in Canada (FMEC): A Collective Vision for MD Education* looks at how the education programs leading to the medical doctor (MD) degree in Canada can best respond to society's evolving needs. While Canada's Faculties of Medicine are leaders in medical education, continually adapting to changing expectations and requirements, educating the physician of the future that will require further adaptations and reforms to our medical education system. The ten FMEC recommendations for MD education that are encompassed in the *FMEC MD Collective Vision* are grounded in evidence and emerge from a broad and rigorous consultative process. These recommendations were endorsed by the Deans of Medicine, and presented publicly at the National Launch of the FMEC Collective Vision in January 2010.

Read the Future of Medical Education in Canada (FMEC) – A Collective Vision for MD Education, available online at www.fmec-aemc.ca.



EXECUTIVE SUMMARY

Five years of Innovations at Canadian Medical Schools

OVERVIEW

In 2010, the culmination of a comprehensive and systematic process involving research and analysis was released in response to our society's evolving healthcare needs. Coined the Future of Medical Education in Canada (FMEC), this initiative stemmed from extensive Canada-wide and international efforts aimed at re-evaluating and rigorously improving Canadian MD education programs in order to ensure that physicians are being trained appropriately and that Canadians are receiving the best care- an undertaking that resonates strongly with the Association of Faculties of Medicine of Canada's (AFMC's) social accountability mission statement. Ten priority FMEC recommendations were put forward to be implemented uniquely at all 17 medical schools in Canada. The original FMEC – A Collective Vision for MD Education report is available online at www.fmec-aemc.ca. Five years later, the AFMC has published the FMEC MD 2015 Innovations report, highlighting demonstrable accomplishments of each medical school pertaining to the 10 FMEC recommendations. The report showcases the successful implementation of the recommendations into curriculum by Canadian medical schools. A selection of these achievements is highlighted for each recommendation below.

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RECOMMENDATION 1

Address Individual and Community Needs

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.

Founded upon the WHO's statement from 1995 outlining the obligation that medical schools have towards the community that they are serving, Canadian institutions have taken great steps in order to become more prominent and engaging in the surrounding communities. For instance, the Universities of Manitoba and Saskatchewan have implemented mandatory rural elective training, exposing students early to Aboriginal culture, marginalized minorities and rural practice. Memorial University have engaged community representatives and members of the provinces' four regional integrated health boards in their curriculum redesign and established projects to build scholarship and research capacity in their rural physician teachers. The College of Medicine in Saskatchewan is also currently working to develop distributed learning sites in more rural locations around the province, where students will receive the bulk of their clinical training.

RECOMMENDATION 2

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.

Memorial University is an example of an institution actively recruiting diverse students from the following priority areas: Aboriginal Peoples of Newfoundland and Labrador, students from rural and remote areas, and economically disadvantaged students. The university customized the admissions criteria and included both Multiple-Mini Interviews as well as Traditional 30-minute interviews with Aboriginal and rural community representatives on the panel. It is also important to note that in the spring of 2015, the University of British Columbia celebrated the graduation of its fiftieth Aboriginal MD, five years ahead of schedule. This makes the University of British Columbia an inspiring model to Canadian faculties of medicine. The University of Calgary's Cumming School of Medicine has also implemented an admissions pipeline targeting potential students from rural areas, low socio-economic status and aboriginal descent, and has allocated funding to a "second look day," where interested aboriginal students are given the opportunity (travel funded) to return to the medical school to further explore their interest in the program.

RECOMMENDATION 3

Build on the Scientific Basis of Medicine

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 be 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.

A common theme that has risen across numerous universities is the growing number of opportunities for students to become acquainted with research, and enabling its integration into the fundamental curriculum. For instance, the Dalhousie University has launched a four-year mandatory program entitled Research in Medicine (RIM) as part of its multifaceted teaching approach. Furthermore, MD/PhD programs are also becoming increasingly popular in Canadian faculties of medicine. The University of Laval also offers a joint MD-MSc program in order to encourage integrative research-learning opportunities. Students at Laval are also benefiting from teaching strategies that involve concepts such as integration units, clinical epidemiology and problem-based learning opportunities. Students benefit from this teaching approach because it fosters critical thinking and enhances the human sciences curriculum.

RECOMMENDATION 4

Promote Prevention and Public Health

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 McGill University has extensively enriched its new MDCM by integrating epidemiology and evidence-based medicine with diverse population and global health, health care quality, clinical prevention, health policy and public health ethics. Through various teaching perspectives that analyze health from numerous medical and social perspectives, students can better understand the social determinants of health and the role that they will need to play as future physicians and health advocates in Canada. The University of Toronto is also actively working towards the establishment of a joint MD/MPH (Master of Public Health) program, which would give students the opportunity to become more diverse, well-rounded physicians, while enriching the students' knowledge and future practice within the community.

RECOMMENDATION 5

Address the Hidden Curriculum

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.

An overarching theme emerging from all medical schools in Canada is the essential importance of professional conduct amongst and with medical students. The University of Montreal has set very clear ethical and professional guidelines and expectations not only for students on the faculty’s premises and during internships, but also for the teaching professors. This helps them recognize and deal with unprofessionalism. The university has also set out to ensure a positive learning and teaching environment for all of its members by encouraging a nurturing and accepting environment. Separately, the University of Ottawa has adopted a White Coat Ceremony, which is a symbolic initiation into the medical profession. This ceremony provides the students with an opportunity to publically affirm their commitment to medicine and professionalism through the Declaration of Professionalism Oath.

RECOMMENDATION 6

Diversify learning Contexts

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.

Michael G. Degroote School of Medicine at McMaster University has one of the largest distributed Medical Education (DME) networks in Canada, allowing students to experience an array of clinical settings - large and small, inpatient and outpatient, urban and rural - beyond the academic centers. Furthermore, its Family Medicine North program, established in 1991 in Thunder Bay, has continued to grow, leading to the McMaster Community and Rural Education (Mac-CARE) program. Northern Ontario School of Medicine (NOSM) also offers a very diverse learning environment, offering students the possibility to experience medicine first hand in settings ranging from tertiary urban centers, to single family doctor offices and nurse practitioner clinics in rural and remote communities. University of Calgary’s Cumming School of Medicine also developed numerous initiatives in recent years, allowing students participate in the Global Health concentration stream and in research projects for underserved populations. All programs benefit from interdisciplinary teachings, a pivotal component of Canada’s health care system.

RECOMMENDATION 7

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 University of Alberta ensures generalism by including both family medicine and Royal College generalist representation on the curriculum committee and by integrating family medicine into curriculum. The university has successfully quantified this change by demonstrating that the number of Family Medicine teaching hours in the first two years of the program has increased from approximately 1200 hours in 2012-13 to more than 3200 hours in 2013-14. Queen's University has also included Family Medicine representation on the Curriculum Committee, and has successfully drawn 20 family physician preceptors from the community in order to facilitate the Problem Based Learning sessions in small groups. Such initiatives increase the crucial early exposure of students to Family Medicine and its learning opportunities.

RECOMMENDATION 8

Advance Inter- and Intra- Professional Practice

To improve collaborative, patient-centered 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.

Pluridisciplinary exposure through the medical education is central to successful physician training and future health care delivery. All medical schools across Canada have actively implemented this aspect into their curricula. For instance, l'Université de Sherbrooke hosts emergency situation simulation activities for its students, along with mandatory attendance and participation in clerkship multidisciplinary meetings. Queen's University also included interprofessional learning objectives into all of its clerkship rotations, and host a series of mandatory interprofessional learning events as part of their curriculum where medical students learn with nursing and occupation and physical therapy students.

RECOMMENDATION 9

Adopt a Competency-Based and Flexible Approach

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.

A deeper understanding of the CanMEDS roles and their importance in competency-based learning has been a prominent theme emerging from most medical school in Canada. Schools encourage this learning through the curriculum itself as well as through extracurricular activities. For instance, the University of Alberta has established a complete competency-based course termed the physicianship course in order to ensure that all students meet the expected competencies using assessment strategies. The University of British Columbia has renewed its own curriculum in order to increase flexibility and to provide a variety of learning opportunities and scholarly activities that foster innovation, creativity, critical thought, and life-long learning.

RECOMMENDATION 10

Foster Medical Leadership

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.

Schulich School of Medicine and Dentistry at Western University has implemented a first-year course on the foundational skills of leadership. The University of Ottawa has also successfully created a Longitudinal Leadership Curriculum that spans all four years of the program and touches upon topics involving Leadership Styles, Delivering Effective Feedback, Conflict Resolution, includes a multi-source feedback exercise in pre-clerkship and clerkship and Leadership Electives. British Columbia, Sherbrooke, Saskatchewan and Dalhousie universities have all facilitated the development of numerous student interest groups with the support of the Faculty. These interest groups span many topics, ranging from arts to social medicine interests, and are run by and for students. Interest groups offer executive team members the opportunity to learn and expand their leadership skills, while at the same time helping build a better-rounded medical student community.

FMEC MD 2015 Reflections

It is an immense pleasure to present the FMEC MD Collective Vision 2015 Innovations Report. How incredible that five years have passed since the launch of the Future of Medical Education in Canada (FMEC MD) Collective Vision report. The success of the project was based on the engagement of the entire medical education community and proponents of the Canadian public, the rigour of the consultative process and generous support from Health Canada.

In this five-year report you will find reflections from the initial leadership of the project: Dr James Rourke, Dean of Memorial University of Newfoundland, will speak to the genesis of the idea; Dr Jay Rosenfield, Vice-dean of undergraduate (UG) medical education, University of Toronto will give his perspective as a UG dean and Dr Nick Busing, past President and CEO of AFMC and the shepherd of the FMEC initiative will speak of the success in implementation and alignment with the postgraduate medical education collective vision, FMEC PG.

These reflections preface a compendium showcasing the extensive work accomplished by our 17 faculties of medicine, per FMEC MD recommendation, over the last five years. Each school's complete update is accessible at the end of this report. I would like to take this opportunity to thank our faculty members, leaders, and deans for their dedication to this work and their response to this call for updates. You will see that FMEC MD is alive and well and thriving in each of our schools.

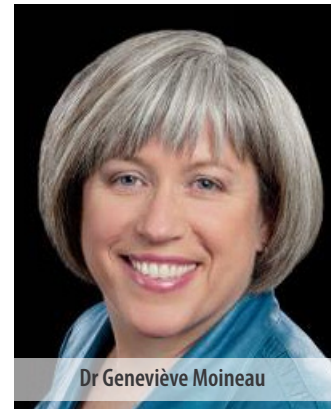
I personally am amazed at how far we have come in a relatively short time. We are well underway but our work is not done. The recommendations that require national collaboration between schools and with other stakeholders in particular require ongoing work. AFMC is committed to facilitate and support these activities. We will also promote, as per the original FMEC vision, alignment with postgraduate and continuing professional development recommendations, with the goal of developing a true continuum of medical education.

AFMC will continue to steward the FMEC initiative and we pledge to keep you informed on the progress of our schools. I hope you will be as impressed as I am with the significant advancement toward a better future medical education system for our learners and the potential impact on the quality of health and health care for Canadians.

The future looks bright!



Dr Geneviève Moineau



FMEC MD 2015 Reflections

FMEC MD origins, like most great discoveries, inventions, and advances, began as a result of a growing circle of conversations among leading thinkers. In this case, Canadian educational leaders concerned about the increasing complexity of what future physicians will need to know and do, and a sense that medical education was clinging to a glorious past. Medical student education in many ways seemed much like Abraham Flexner had recommended almost 100 years ago. The time was ripe, with the approaching centennial anniversary, for major review and a new direction.

We saw a uniquely wonderful opportunity in the way the Canadian medical education system was structured and functioned. There were only 17 medical schools and they worked well together through AFMC, their national partnership organization. They were all public university medical schools that derived the major portion of their medical education funding from their respective regional governments (Canadian provinces). They were primarily graduate entry medical schools with a fairly uniform system of pre-clerkship and clerkship four-year MD education programs (two having three-year programs with essentially the same number of educational weeks). Medical education was governed by a rigorous accreditation system in common with the United States medical schools (CACMS/LCME). Furthermore, almost unique in the world, all postgraduate vocational training in Canada was done through Canadian medical school residency training programs, accredited by the CFPC for family medicine and the RCPSC for all the other specialties. Medical schools also provided much of the faculty development and continuing medical education for practicing physicians throughout Canada. Finally, the Canadian healthcare context was an important consideration in setting the stage to reinvigorate medical education. The Canada Health Act, ensuring that necessary medical services are publicly provided, and the federal government providing tax transfer dollars to the provincial governments who have legislative responsibility for healthcare services, were key factors. Medical services, fairly similar from coast-to-coast in method of delivery, were facing increasing cost, complexity, population age, and difficult urban and rural determinants of health.

All these factors led an increasing number of us to the same conclusion: it was time to embark on an ambitious project, to develop a plan for the future of medical education in Canada. This gave rise to the name FMEC. Because medical education is primarily the responsibility of Canada's medical schools, and for real collaborative progress to be made, it was obvious that it would have to be a Collective Vision.

FMEC would have to be scientifically strong. This necessitated a thorough, evidence-based scientific literature review, which was commissioned and realized. The process began with a full year of data gathering and analysis, including a comprehensive literature review and was done at the time when there was an emerging discourse regarding the concepts of evidence-based versus evidence-informed decision making. We quickly realized that we had to go beyond the evidence base in a literature review, as such a review is necessarily based on what has happened and has been studied; often not contextually transferable and omitting evolving innovations which are increasingly important in a rapidly changing high-technology world. This shift in thinking led us to conduct regional, national, and international consultations with medical education innovation leaders from around the world to complement the literature review.

We also needed to understand what our key stakeholders thought about healthcare today and tomorrow, and their views on the roles of both current and future doctors and the medical education needed to train and support them. This need led to involving key stakeholders – a young leaders panel to ensure our future leaders could provide input; a “blue ribbon” expert panel that brought together hospital CEOs, parliamentarians, social commentators, economic and legal experts; and, a data needs and access group that identified and prioritized

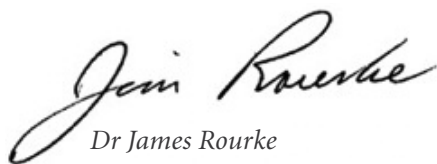


existing and emerging data and information needs pertaining to Canada's medical education system. The input from these groups was invaluable in prioritizing and shaping the project recommendations and their engagement and involvement contributed to widespread stakeholder support for the project recommendations.

The FMEC MD research teams collected, collated, parallel-processed and analyzed the substantial input we sought. It was amazing how clearly the dominant themes emerged from this multi-mode process. However, we found as Mark Twain alluded to when he said, "I am sorry for the long letter, I did not have time to write a short one," the work to refine this into a readable concise report required an enormous amount of thinking, discussion, revision followed by re-thinking, more discussion and editing around and around and around again. The steering committee and the FMEC MD leads made the recommendations as clear, concise, accurate and forward thinking as we could through this iterative process.

Having put all this work into the FMEC MD Collective Vision, none of us would be content with letting it sit on a shelf. So, the process continued with the most important tasks of engaging key members, partners and stakeholders in FMEC MD implementation. This required and received unanimous support of all Canadian medical school deans through AFMC. As I was told repeatedly when presenting the FMEC MD report at various meetings of medical deans around the world, the idea of a collective vision involving all of the medical schools in a country was seen as a seemingly impossible accomplishment in itself. But of course that was only the beginning; the dissemination and engagement process needed to make its way and be supported all the way through the medical schools, along with our partners, in order for the envisioned initiatives to be brought to action. Our community rose to the challenge – a flurry of activities, conferences, workshops, follow-ups, initiatives and projects were established across our schools and with our partners, exemplars of which are featured in this report.

Looking back at great projects, and I would feel this is truly one of them in Canadian medical history, it seems almost impossible that this actually happened and that it was so widely accepted as the collective vision for the future of medical education in Canada. It is a wonderful thing to work so closely with so many people committed to providing Canada with the very best possible physicians for today and tomorrow. It is my honor and privilege to be one of the FMEC MD project leads. Thank you, everyone, for your contributions and collaboration.



Dr James Rourke

Reflections – 5 Years of FMEC MD

In 2007, as we collectively approached the hundredth anniversary of Flexner's landmark report it was becoming apparent throughout the world of medical education that it was time for a review. There had been wonderful developments in medical education (PBL, the MMI system and CanMEDS are a few great examples, made in Canada), but there had not been an overview of the medical education experience relating to the many changes in the environment. These changes included the explosion of scientific knowledge, the increase in chronic diseases, the reality of a widening socioeconomic gap, the challenges in rural and remote care, and globalization, including increased mobility of physicians and people, to name but a few.

Canada's medical workforce and the health care system writ large had been studied thoroughly through initiatives like Task Force Two and the Royal Commission on the Future of Healthcare in Canada, but these efforts did not look closely at academic medicine- the incubator for tomorrow's physicians.

In order to launch a review, under the leadership of AFMC, initial discussions took place with Health Canada representatives, who were also recognizing the many changes that were occurring that would influence the education of our future physicians, and with the Deans of Medicine in Canada to confirm their interest and support. Recognizing that motivated leadership for the review would be critical, three co-chairs were identified – myself, at the time President and CEO of AFMC, Dr Jim Rourke Dean of the faculty of medicine at Memorial University and Dr Jay Rosenfield, Vice Dean Education at the Faculty of Medicine, University of Toronto. We saw at the outset that there would be tremendous value in engaging as many medical educators and other academics in the project as possible. This inclusive approach would promote a collective vision and buy in to recommendations and simultaneously facilitate effective communications.

Health Canada agreed to fund the project which was launched in 2007. I will not focus here on the details of how the project was conducted, or on implementation strategies, which are well documented and are articulated in the reflections of my colleague Dr Rourke. Suffice it to say that the FMEC MD project involved a huge number of participants from all our faculties of medicine. Additionally the project had wonderful contributions from many educators in other medical organizations in Canada, as well as from many learners.

Five years after the completion of the project and the launch of the resulting ten recommendations for change, many people ask me if the implementation of the FMEC MD recommendations has met my expectations. Overall, my response is yes...but there is still much more to do.

Several of the ten FMEC MD recommendations include challenges to the culture of medical education and to institutional cultures; it is not surprising that recommendations of this nature are harder to implement or have not been fully implemented. On the other hand there are some recommendations that are a bit more practical and therefore easier to implement. Let me explain with a few examples.

The commitment to social responsibility that is highlighted in the first FMEC MD recommendation is an ongoing challenge. Social accountability is influenced and defined by local circumstances, it is interpreted differently at each of the 17 campuses, and it is embedded in some programs more than others. With the release of the post-graduate collective vision, the FMEC PG recommendations, social accountability was again highlighted and there appears to be much work to be done to align not only our undergraduate curricula, but also all our residency programs to the core values of social responsibility and accountability. I – and I believe I am part of a great many – are hopeful that the federal-provincial-territorial funded multi stakeholder Physician Resource Planning Task Force will lead to meaningful change that is pan-Canadian in scope and genuinely rooted in social accountability.

The commitment to address the hidden curriculum, an explicit FMEC MD recommendation, is another example of a challenging recommendation that truly requires a change in culture – at our medical schools, in our facul-



ties, among our learners and in all our teaching venues. We continue to struggle to find effective ways to do this. The FMEC PG report also challenges us to address this culture and searches for ways to improve the learning environment. The importance of achieving success in dismantling the hidden curriculum really cannot be understated. It propagates a culture of differential regard for health care providers and props up many of the challenges we face in other FMEC areas, such as valuing generalism and harmonizing our approach to accreditation and governance. A third example that involves a change in culture related to the advancement of inter and intra professional practice. Individuals are doing a great deal to bring in inter professional education and practice. All our campuses are engaged in one way or another in moving towards more effective and meaningful inter professional education. However meaningful these efforts, change that will influence how we as physicians practice into the future is still in its formative stage.

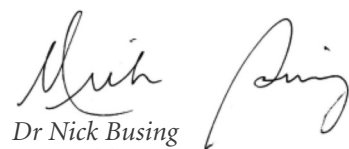
There are several recommendations that have triggered real and transparent change. The recommendation to promote prevention and public health has prompted the development of a strong network of educators in public health across Canada. An AFMC Primer on Population Health has been developed as a wonderful teaching tool for all faculties and learners. The recommendation to value generalism has resulted in curricula change that ensures earlier and ongoing exposure to family medicine (at all stages of undergraduate medical education). Many faculties have recruited more family doctors into medical education decision making roles.

When the FMEC MD project was launched, it was done so with the expectation that similar studies were needed for postgraduate medical education and continuing professional development. Looking at the FMEC MD and PG reports side by side, many themes reverberate across the two sectors of medical education, reinforcing the importance of seeing medical education as a continuum. For example there is a shared focus on the development of leadership skills for all learners, beginning with the medical student, enhancing the learning in residency and then working with the practising community. These are leadership skills to help our future physician workforce participate not only in team based clinical care but also to participate more effectively in supporting changes in medical practice and the health care system. Enhancing our admissions processes at both the UG and the PG levels is also highlighted by recommendations of both reports. These recommendations speak to the essence of shaping our profession, because the talents and perspectives of our medical students and residents will be a principal driver in helping define our profession and how the public views the individual physician and the profession as a whole. We have much work to do to ensure we admit students into medicine that have the cognitive skills combined with the values and personal characteristics that will truly reinforce the caring role of our profession.

Looking briefly at several of the five enabling recommendations in the FMEC MD report, there is evidence that we are using the accreditation environment as a key lever to promote change, for example by introducing new standards relating to leadership training, and by working towards an accreditation system that is aligned across the continuum.

There are some outstanding examples of collaboration that have resulted from the FMEC MD project. Perhaps the most impressive to date is the work done by our four Quebec faculties that have together addressed all the FMEC MD recommendations and developed some collective strategies such as a joint interview and admissions process.

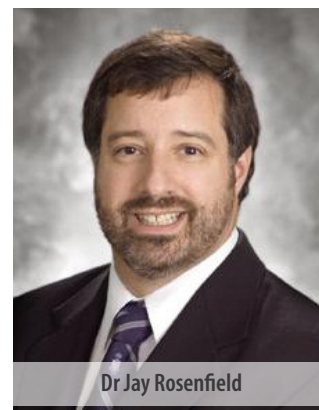
I am struck by the need to respect individual faculties' priorities and culture, while trying to bring about the Collective Vision of FMEC MD which may make demands to sacrifice some aspects of local traditions and perspectives for the betterment of the system. This is an ongoing challenge and one that I know we are capable of taking up. The FMEC MD and PG work is well in stride, with still much more to do to ensure we are making changes for the sake of all Canadians.



Dr Nick Busing

FMEC MD Reflections

I write these reflections from the perspective of a dean in undergraduate medical education, who has had the enormous and humbling privilege of working collaboratively with others on what turned out to be the most exciting project of my career, the Future of Medical Education in Canada, or as it came to be fondly known, “F-MEC.” When I was first asked to join the project leadership team, I was quite skeptical that it would be possible to get 17 medical schools across a country as large and diverse as Canada, to jointly agree on much, never mind a full scale reform of medical education and resetting of priorities. How fortunate I was that my personal apprehension did not preclude me from enthusiastically jumping in and testing the waters. The chance to work with such visionary leaders as Drs. Nick Busing and Jim Rourke, and my undergraduate dean colleagues, to make an impact on healthcare education in Canada was an incredible opportunity not to be missed.



Five years later I reflect back on what we have accomplished in Canada, as a true collective of all medical schools, who came together to embrace and fully engage with the FMEC MD project and its recommendations. FMEC was positioned temporally at a time when multiple efforts in medical education reform were being made around the world, and numerous influential reports were being published on the 100th anniversary of the Flexner report. I was fortunate as part of the FMEC MD project to visit, with some colleagues, innovative medical schools around the world and meet many amazing faculty and students. All were keenly interested in this project or “experiment” in Canada. Could we actually pull it off? Could we get all the Deans in the country into one room to talk about and agree on medical education needs? Well, yes we did! Utilizing the combined information gained from these international visits, thorough environmental scans and literature reviews, meetings of medical educators, academic administrators, medical students, young leaders, blue ribbon panels, the public, colleagues in undergraduate medical education, our collective teaching community—we were able to synthesize a set of recommendations, a road map providing direction to medical schools across the country for the past five years.

This report and compilation of activities herein provides impressive proof that a collective vision is possible. This volume demonstrates that meaningful, coordinated and transformative changes can occur with the right inclusive processes, that are based on recommendations that speak with both passion and logic to such fundamental concepts in health professional training as social accountability and interprofessional teamwork. I dare say that today in 2015, there is scarce an individual involved in medical education leadership at medical schools that does not know about FMEC. The collective vision has become a reality—FMEC is a regular discussion item at undergrad deans’ meetings, and joint projects across schools are in abundance such as development of public health curriculum and agreements between schools to ensure a diversity of learning contexts for our students. Implementation of recommendations is ongoing. This year at the Canadian Conference on Medical Education (CCME 2015), AFMC will be sponsoring the second joint meeting of admissions and undergrad deans across the country, working on operationalizing the underlying concepts in the “enhance admissions processes” recommendation.

As we developed the FMEC MD recommendations, I was struck by the necessity to link them clearly and consistently with recommendations that might emanate from FMEC projects further along the medical education continuum. It would hardly be possible to meaningfully talk about competency-based education in undergraduate education, without tying it in with directions that postgraduate training was taking, led by the College

of Family Physicians of Canada (CFPC) and the Royal College of Physicians and Surgeons of Canada (RCPSC). Similarly, addressing the learning environment and hidden curriculum for medical students could not be done in a vacuum, without tackling such issues for residents and other health professionals. Reform of clinician-scientist training at the MD level, with MD/PhD programs could not take place in the absence of serious discussion about the Clinician Investigator Program of the RCPSC, and the employment environment for practicing clinician-scientists. All of this to say, it was critical to link the FMEC MD recommendations, with the work of the FMEC PG project. As the implementation co-lead of the FMEC PG transitions recommendation (“Ensure Effective Integration and Transitions along the Educational Continuum”), my colleagues and I have worked to develop projects that link across the continuum. As an example, the undergraduate deans are working on a competency framework for MD education, including Entrustable Professional Activities (EPA’s) that will link to the foundational competencies for residency training articulated by the certifying colleges. FMEC MD has also supported changes in national assessment processes being led by the Medical Council of Canada, including their new examination blueprints. Development of a common learner portfolio that would stay with trainees throughout their education and career, commencing in medical school is in progress. FMEC MD, linked with FMEC PG is also catalyzing serious conversations about potential changes to the final year of medical school, the range of entry specialties and the match system.

So what do I see as the legacy of FMEC MD? I view it as having laid the foundation for change and transformation in the 21st century for the training of doctors in Canada. FMEC MD has set the stage for, and supported the development of curriculum reform, that is socially accountable – both locally and globally – and is truly patient, community and learner-centred. The FMEC initiative across the continuum is a model looked at with interest by other countries. FMEC has shown that autonomous universities that often operate in silos can co-operate for a greater common good and be responsive to the health needs of Canadians. Finally, it has provided academic administrators such as myself with an opportunity to develop innovative education programs in partnership with our tremendously talented and diverse students, who motivate us all to continuously do better!

A handwritten signature in black ink that reads "Jay Rosenfield". The signature is written in a cursive, flowing style.

Dr Jay Rosenfield

RECOMMENDATION 1

Address Individual and Community Needs

1

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

The Faculty of Medicine, Memorial University of Newfoundland launched a new spiral MD curriculum in September 2013, based on an increasingly patient-, family- and community-centred approach that embeds social accountability and community health with these relevant innovations: community profiles, case stories, longitudinal integrated clerkships, core curriculum and learner selected options/projects, longitudinal academic half days that link learning to Newfoundland and Labrador patients, families and community contexts and experiences. Community stakeholders and other professions engaged in the curriculum re-design included community representatives and members of the province's four regional integrated health boards (Eastern, Central, Western, Labrador-Grenfell).

Special programs (Ethics and Diversity, Refugee Health, Aboriginal Health, and the Global Health Initiative) have been developed that link social accountability objectives to measurable health care and health human resource outcomes, provide students with opportunities to learn in low-resource and marginalized communities and provide support to medical students and faculty as they work in community advocacy and develop closer relationships with the communities they serve. For example the Gateway program began in 2005 as a medical student-led community initiative to help newly arriving refugees in the St. John's area. Each year to date, 96% of the students have volunteered to participate.

The Rural Medical Education Network (RMEN) has been developing since 2010 to co-ordinate the distributed medical education activities in the regional and rural settings in collaboration with the four Health Boards and local communities. The RMEN has provided increased opportunities for physicians to become integrated into medical education for MD students and residents, and for promoting their own lifelong learning including teaching and role modelling for social accountability based on local health needs. This includes the Six for Six project to build scholarship and research capacity in our rural physician teachers.

DALHOUSIE UNIVERSITY

Base medical curricula on an increasingly patient-, family- and community-centered approach: During the 2010 curriculum renewal initiative, a wide variety of stakeholder groups were consulted. One of the tenets of the process was to ensure teaching and learning activities were founded in a patient-, family-, and community-centered approach, and aligned with the overarching program objectives.

Consult with community stakeholders and other professions in curriculum design within each faculty: As above.

Provide greater support to medical students and faculty as they work in community advocacy and develop closer relationships with the communities they serve: The Professional Competencies program provides students with the foundational underpinnings of community advocacy and opportunities to develop relationships with local community agencies. In addition, as part of the first year curriculum, students spend one week in a rural/remote community in an effort to learn about the community, how high quality medicine is practiced in the community, and the challenges faced by the community in the provision of health care. Students also take advantage of the electives program to develop community advocacy.

Provide students with opportunities to learn in low-resource and marginalized communities as well as international settings: Through the International Electives program, and various Service Learning Programs, students have numerous opportunities to learn in these types of settings.

Support faculty members in role-modeling social accountability by providing leadership in redesigning the medical education curriculum to link more closely with local, regional, national and international needs: Through initiatives such as the Longitudinal Integrated Clerkship (LIC), the Aboriginal Health Sciences Initiative (AHSI), the Social Accountability Committee, and the African Nova Scotian Advisory Committee, faculty members are supported in developing their leadership skills in relation to meeting the needs of the populations the school is mandated to serve.

UNIVERSITÉ DE SHERBROOKE

- Implementation of a *Committee for Learning through Community Service (ASC)* made up of program professors, professionals and students
- ASC activity included in the mandatory curriculum
 - in the prospective geriatrics file since January 2013
 - in the APP community internship during 2nd year (Moncton–Saguenay Pilot Project since 2012 and deployment at all three sites since April 2014)
- Introduction of meeting/testimony lunches for students, professors and other faculty community members to discuss their community involvement (local, national, international)
- Support for several student initiatives (e.g.: Bonbon, bon don [Candy, donation]; meals at the hospital’s family room)
- Implementation of a specific quota for admission of First Nation and Inuit candidates from Quebec with a specific support structure
 - Several ASC activities raising participants’ awareness to the realities of aboriginal communities (Shaputuan, health career camp, etc.)
- Development and consolidation of internships at preclinical and clerkship levels in various practice environments in Quebec and New Brunswick
- Recognition of optional credits for students doing internships in world health internationally, among First Nations and with vulnerable populations
- Optimisation of the pre-departure training and training after returning of students doing world or international health internships in cooperation with the Faculty’s International Relations Office (BRI). This training has become mandatory for recognized internships

UNIVERSITÉ LAVAL

Université Laval adapted a patient-centered approach. As a result of *the Clinical Approach* (I to V) and *Physician, Medicine and Society* (I to IV) courses, which cover intra- and inter-professional relations, the physician-patient relationship and the socio-anthropological approach in medicine, students may integrate these concepts in their daily lives to properly prepare for medical practice. A World Health component including an international mobility program (International and Intercultural Internship and International Profile), an intercultural internship with diversified clientele and an internship with First Nation and Inuit communities was implemented and is constantly evolving. Université Laval also participates in the Provincial First Nation and Inuit Physician Training Program (PFMPNIQ), which it manages. In 2012, the Faculty of Medicine created the Social Accountability and Professionalism Directorate (DISP) whose mandate is to support the Faculty to ensure that it carries out its obligations regarding social accountability and that it fosters professionalism in all its activities. The DISP produced a reference framework to situate social accountability and professionalism within the Faculty, as well as a reflective report regarding the concept of diversity and its definition within the Faculty.

UNIVERSITÉ DE MONTRÉAL

Address individual and community needs to better meet individual and community needs, our Faculty has taken another step with the implementation of a patient-partner approach. The patient becomes a partner with the physician and medical team in his care pathway. This is a new care and approach philosophy in the patient-illness reality. Our Faculty has given it such importance that it has implemented a Cooperation and Patient Partnership Directorate co-directed by a physician and a patient.

Our Faculty is involved in medical education in various regions in Quebec with the Mauricie Campus, among others, and this decentralization of teaching continues to be developed to better meet the needs of the population.

In addition, since 2012, our Faculty has participated in the work done by the International Group on Social Responsibility of French-Speaking Faculties of Medicine. Our dean has also set up international agreements with various countries (Brazil, Belgium, Switzerland, France, Germany, Haiti, Benin, etc.) for international internships, fostering a global approach to health by our students. Also, the Faculty gives financial support to IFMSA Québec, allowing numerous students in our program to become familiar with and get involved internationally, for both clinical internships as well as research.

In our educational program, we have added objectives regarding social responsibility as well as certain specific training sessions; the social involvement clerkship integrates a health determinant approach with what was already being done in the community health internship, in epidemiology and in the Social Aspects of Health course.

MCGILL UNIVERSITY

In year one of McGill's new MDCM curriculum, students are given the opportunity to work with a family doctor focusing on individual patients through the Longitudinal Family Medicine Experience (LFME). In year two, through the Community Health Alliance Project (CHAP) – Partnering for Healthier Communities, they are given the chance to work with local groups to help improve the health of communities and populations. Originally student-led, this new addition to the McGill curriculum exposes learners to the social, environmental, economic and historical determinants of health for different populations. This course allows students to spend time in the “not-for-profit sector” and reflect on the health needs of diverse and sometimes marginalized communities within the city of Montreal.

The community groups are diverse, giving students the possibility to work with the elderly, individuals with limited autonomy, people living with AIDS, women in high-risk pregnancies, the homeless, teens, cancer patients, native women and many others in Montreal. CHAP is founded upon values of cooperation and partnership between McGill's Faculty of Medicine and the community within which it resides. This community exposure is then taken as a basis for a critical reflection on the social determinants of health and how this affects patients and communities in order to propose interventions to improve population health. The LFME, CHAP and a Public Health Selective (during 4th year) are just three of several new courses being introduced progressively into the MDCM curriculum.

UNIVERSITY OF OTTAWA

There are a number of initiatives that the Faculty has put in place to address individual and community needs:

- Combined the subprograms of Society, Individual and Medicine (SIM); Community Service Learning (CSL); Leadership; Global Health, Humanities, and Interprofessionalism under a larger program of Social Accountability which included hiring a senior faculty member to direct the newly created program. In addition to a mandate to better serve the marginalized members of the community by ensuring the subprograms are aligned to do so, the program also supports faculty members in role modeling social accountability by providing leadership in redesigning the medical education curriculum to link more closely with local, regional, national and international needs
- Provide exposure to societal needs and demands to first year students through a mandatory elective week held in a community setting.
- Teach indigenous health, social issues and cultural safety through an introductory lecture in Aboriginal Health and Traditional Medicine in the first year of study.
- Liaise with resource people from the urban, rural and on reserve communities who provide content expertise in Aboriginal culture, ceremonial practices, protocol, and traditional knowledge.
- Engage with First Nations, Métis and Inuit health and social service organizations in urban and reserve settings to organize Community Service Learning Placements, observerships and clinical rotations.
- Introduced a mandatory community service experience in year one, wherein students provide over 5,000 hours of community service to the community's disadvantaged citizens each year

QUEEN'S UNIVERSITY

The MD program at Queen's has taken actions to address diversity and equity with particular attention to students concerning admissions, the curriculum, and cultural climate. As a basis for these measures an official Diversity and Equity Statement has been written. A Diversity Panel, comprising Students, Faculty, and Staff has been established with annual budget to fund initiatives improving any aspect of diversity and with a mission to develop and promote a strategic plan. Leading this vision, the Associate Dean has published three blogs highlighting the key issues and emphasizing the value of enhanced diversity to the school itself and the society it serves. Within the curriculum, the diversity and determinants of health streams provided new learning opportunities, including the Kingston Poverty Challenge, the Caring for LGBTQ Patients panel and cases, Aboriginal Health guest speakers and Community Based Projects.

UNIVERSITY OF TORONTO

- Our Office of Indigenous Medical Education, which officially opened on February 3, 2014, is home to four individuals appointed to three newly created positions: two Curricular Co-Leads in Indigenous Health Education, an Aboriginal Elder-in-residence, and an Indigenous Peoples' Undergraduate Medical Education Program Coordinator. The Office provides a culturally safe space for Indigenous medical students, supports development of curriculum initiatives to improve the discourse in Indigenous medical education, and advances engagement with Indigenous communities.
- To support the development and evaluation of curricular elements in areas that cut across the curriculum, particularly with respect to the diverse needs of particular communities that we serve, as well as our place within the global community, we created Faculty Lead positions in Geriatrics, Global Health, Health Advocate, Indigenous Health, and LGBTQ Health.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Social accountability is a core value in Schulich Medicine & Dentistry's vision. Located in a diverse region of Canada that is experiencing ongoing economic challenges post 2008, Schulich Medicine & Dentistry has a rich tradition of supporting student and resident learning in regional and global locales with basic scientists, physicians and other health care professionals as educators.

Our School is deeply committed to the community of Southwestern Ontario. With London as the regional tertiary referral centre for patient care and our long tradition of supporting education to advance care and knowledge, we support the regional economy, health knowledge creation and system transformation, as well as develop the future generations of community and tertiary health care providers.

In their first year, students explore patient care delivered in rural communities. In pre-clerkship courses, the role of acute and chronic patient care, delivered with other health professionals, is integrated in all settings. Summer clinical and research elective opportunities in our Distributed Education Network support UME students embracing care in rural and diverse areas.

Schulich Medicine & Dentistry proudly mentors and hosts our partners' global health electives for all years of learning. This role is in keeping with the School's values and strategic plan. The School also supports Western's strategic plan objectives of learning with safety through international partnerships.

Global health education is integrated throughout all courses of the curriculum. Clerkship offers rotations in rural and regional sites for core experiences in Family Medicine and other specialties. Our students are also strong advocates of delivering service and philanthropic initiatives aimed at improving the health of disadvantaged populations in our region and across the globe.

Our curriculum is rooted in the principles of patient- and family-centered care. Schulich Medicine & Dentistry is leading the implementation of a new strategic plan for its Distributed Education Network. This plan is being developed with input from regional health care and community partners, along with a Southwestern Ontario partnership of health care facilities, community networks, educational institutes – including three colleges and three universities in the South Western Academic Health Sciences Network (SWAHN) – to advance a regional education and patient care model of collaboration and quality.

NORTHERN ONTARIO SCHOOL OF MEDICINE

NOSM was founded with a social accountability mandate and commitment to community engagement. Our MD program engages with our communities in multiple ways and at many levels. For instance our learners undertake a wide range of community placements. They are exposed to substantial teaching on social determinants of health and community health issues and they spend significant time working with community clinical teachers learning patient-centred care. Although we are very focused on the health needs of Northern Ontarian communities, we are also active on a global level, advancing community- engaged medical education, socially accountable education, longitudinal learning and global health through a wide range of initiatives, many of which involve (and in some cases are led by) our medical students.

UNIVERSITY OF MANITOBA

1. We have a Rural Week where 110 students go to approximately 45 sites. The objective of this is to learn to understand the community and the role of the Family Physician within the community. Students come back to campus and present their findings on the final day of the exposure.
2. In the Transition to Clerkship we have added two community weeks in which the early Med III students go to 10 community agencies each to understand the role of the agency and the needs of the clients. There is a particular focus during these weeks on Aboriginal health, mental health and geriatrics.
3. In the new Pre-Clerkship Curriculum, which was launched in August of 2014 and the new Clerkship which was launched in August of 2013, there is a longitudinal course on Indigenous health led by Dr. Barry Lavallee that traverses all four years. I believe this is one of the most extensive Aboriginal health curricula available in North America. There are some very innovative sessions. For example there is a Human Book Session where the students talk to an Aboriginal Elder about their life experiences. There are also reflective sessions once they have started on the ward so that students can reflect with an Aboriginal Faculty member about the experiences of Aboriginal patients.
4. Jacob Penner Park: This is a park located directly across from the medical school where our students run an after-school program for the children in the area; one of the most socio-economically poor urban areas in Canada.
5. In the past two years the University of Manitoba has spearheaded a build for Habitat for Humanity. This is to illustrate the importance of housing as a determinant of health. Students volunteer as carpenters and helpers during this build each June.
6. Inner City Science Centre: The University is in partnership with the Winnipeg One School Division at the Ma Mawi Wi Chi Itata Centre allow inner city kids at an early age to engage in science. As well there is an inner city science camp run at our campus during the summer for children from the inner city to participate.
7. Rich Man Poor Man Dinner: Each year there is a Rich Man Poor Man Dinner in which students and faculty participate. One person at each table gets a meal full of proteins and vegetables and the other 7 at each table receive a starchy low budget meal. The proceeds from this dinner go to either Winnipeg Harvest or Shalom Mission, a homeless shelter in the city.

UNIVERSITY OF SASKATCHEWAN

Current Status

The College of Medicine is committed to incorporating social accountability into its education, research and service, and has recognized the role of service-learning for its faculty and students in fulfilling that commitment. The College supports a number of programs and initiatives that address community health needs, including Aboriginal health, primary health care, urban and rural underserved areas, gender and equity, eco-health, immigrant and refugee health and global health.

In 2011, the College of Medicine established the Division of Social Accountability to promote and support the College's obligation to direct its Clinical activity, Advocacy, Research and Education (CARE model) to activities toward the priority health concerns of local, regional, national and international communities. The division has also launched a social accountability e-zine, which updates College of Medicine stakeholders on what is happening in the area of social accountability.

Looking to the Future

- 1) **Further identify individual and community health needs:** The College of Medicine should actively seek relationships and liaise with regional health authorities, community health and epidemiology organizations and the Saskatchewan Physician Recruitment Agency to further identify the health needs of individuals and communities in the province. A paid project coordinator should be hired to assist in further strengthening these relationships. This individual could also assist in conducting needs assessments and in the development of research projects to address the identified health needs. Research groups should also be established in the College of Medicine's five enhanced learning centres to assist with the needs assessments and with research design.
- 2) **Foster stronger connections with Saskatchewan communities:** The College of Medicine is working to develop distributed learning sites in more rural locations around the province, where students will receive the bulk of their clinical training. This will forge stronger connections between communities and the learning institution. Students will be encouraged to work with community-based organizations to investigate local health issues. Faculty support must be provided to local preceptors to enable them to engage the community. Local preceptors should also be offered faculty development on conducting needs assessments. College of Medicine representatives should travel to communities throughout the province to learn more about the community residents' health needs and to develop and strengthen relationships. A liaison should be identified in each community where there are learners to welcome the learners and provide them with the support they need to be successful.
- 3) **Continue to support the Division of Social accountability:** Strong support must continue for the Division of Social Accountability and its programs and learning opportunities, such as Making the Links and SWITCH (Student Wellness Initiative Toward Community Health). Students' groups should be encouraged and supported. By implementing this recommendation and the two previous recommendations, new knowledge about individual, community and regional health needs will be generated. Practitioners and students will have a better understanding of the determinants of health in their communities. The ultimate goals of this working group are to see healthier individuals and communities and greater enthusiasm for the presence of learners in the communities.

UNIVERSITY OF ALBERTA

In addressing our social responsibility and accountability, the curriculum review groups have provided a list of suggestions to ensure our education program is aligned with the diverse needs of our population in providing high quality health care. To facilitate this recommendation at the content level, our program has reviewed objectives across 4 years of the program to enhance our education to be better aligned with needs of the community. Culturally-safe care was adopted as one of the core components of the physicianship course. We have a curriculum working group dedicated to inner-city health, and the objectives developed integrate with content regarding health promotion, social determinants of health and health equity. Content and curriculum dedicated to this content area has been successfully implemented into the physicianship course.

To address the needs of our aging population we have reviewed our curricular objectives in regard to care of the elderly, identified where the content is covered over the 4 year program and revised courses to more comprehensively address the objectives. We are shifting our focus in clerkship to provide more clinical experience in geriatric medicine.

Academic Service Learning is a critical component within the physicianship course which allows students to gain early context and experience in the needs of various populations within our community. Our program also provides enhanced experience for some students in a year-long integrated community clerkship program where students are embedded in a generalist practice with a community preceptor. A 6-week trial program is also currently in place to offer pre-clinical students a chance to learn in the rural community environment.

As our program continues to develop better capacity to accommodate curriculum change, more focus will be placed on civic professionalism and on student service learning within the community. We will also provide more faculty development on role-modeling social accountability and student learning in being mindful of various patient contexts to better served marginalized populations within the healthcare system.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- Implementation of the Brownell Family Medicine Task Force, which included creation of an early clinical experience in Family Medicine. Our first round match to Family Medicine, targeted at 40%, was 48% last year, and 38% this year
- The Cumming School of Medicine (CSM) has taken a number of steps, philosophically, to adhere to FMEC's vision:
 - The appointment of Dr. Jennifer Hatfield as Associate Dean (and Dr. Gwen Hollaar as Assistant Dean) International/Global Health. Dr. Hatfield, as of 2015, will be taking an expanded role as Associate Dean, Strategic Partnerships and Community Engagement
- This will likely result in an Assistant Dean position, aboriginal health (as was suggested by the working group)
 - In 2014, approval of an updated “goals, objectives and philosophy” document with the following revisions:
 - The addition of the following goal: “Provide an environment that fosters collegiality, ethical practice and professionalism among students, faculty and allied health professionals to produce future physicians capable of working cooperatively within a team of health care providers, able to provide comprehensive, socially competent health care to our socio-culturally diverse population with a goal of social accountability to all global citizens”

- The revision of the following outcome objective: “Apply a comprehensive patient-centered approach in the evaluation and care of patients including sensitivity to differing: sexual orientation and gender identity, cultural and spiritual beliefs, attitudes and behaviours, economic situations”
- In 2014, revisions to the CSM strategic plan, which includes a number of statements related to this area, such as: “The CSM has already committed to several of these themes, including social responsibility, educating in diverse settings and generalism. We will continue our commitment to FMEC priorities and will expand opportunities for our undergraduate medical students. We commit to enhancing our focus of graduating physicians with a social/global conscience.”

UNIVERSITY OF BRITISH COLUMBIA

At the core of the development of our expanded and distributed program is our belief in transformative learning — designing and delivering educational experiences that change the lives of our students, our educators, and the patients and communities we serve. Driven by innovation, scholarship, social accountability, equity, diversity and continuous quality improvement, our MD Undergraduate Program combines health education scholarship and community-based learning to ensure our graduates deliver excellent clinical care and are prepared for evidence-based practice, critical reflection, and lifelong learning.

Data collected by our Evaluation Studies Unit indicates the following early trends as a result of the expansion and distribution of our MD program:

- Increased healthcare service capacity in the province provided by increased clinical residents.
- Increased number of physicians entering independent practice each year.
- Increased retention of physicians supply in BC.
- Increased number of physicians practicing in rural areas and across health authorities.
- Training location may impact residency specialty training choice of MD graduates.

Key stakeholders (including faculty, students, government and health authorities) have been strongly involved in the development of our new curriculum, ensuring the education received by our students will ultimately prepare them to meet the needs of the communities they will eventually serve.

RECOMMENDATION 2

Enhance Admissions Processes

2

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

As an important part of our social accountability to the health care needs of our province in the recruitment, selection and support of a representative mix of medical students, the Faculty of Medicine at Memorial University has three student diversity priority areas: Aboriginal Peoples of Newfoundland and Labrador, Students from rural and remote areas, and Economically disadvantaged students.

We have customized our admissions criteria to align them with our social accountability mandate. The academic and personal components of each student's application are assessed on an individual basis, with each committee member taking into consideration applicants personal circumstances and potential disadvantaging factors.

We have developed pipeline programs that connect students from underrepresented communities, for example, the Aboriginal Health Initiative. There is broad community representation on the Admissions and Interview Committees including representatives from Aboriginal communities, rural communities, and the general public. Aboriginal communities are engaged in the development of special programs that link with our parallel aboriginal admissions pathway. Examples include: MedQuest, Aboriginal Health Initiative with Pre-Med Orientation, Pre-med Summer Institute pathways, Medical mentorship@MUN, and the Rural Medicine Interest Group that is led by current students. The aboriginal, and the rural and remote pipeline programs value and profile diverse academic faculty members as leaders and mentors in order to attract a more diverse applicant base.

MUN Med admission is very active in research and development that assesses the impact of modified admissions criteria and processes. In 2013 we introduced a hybrid of a Traditional and Multiple-Mini Interview (TaMMI) whereby each interviewed applicant participates in eight (ten minute) MMI stations with one assessor at each station, and a 30 minute two person panel traditional interview, to assess their suitability for acceptance into medical school. This will also assess performance of the traditional interview versus the MMI in our admissions process.

DALHOUSIE UNIVERSITY

Customize admissions criteria to align them more closely with each faculty's social accountability mandate:

Through affirmative action Dalhousie Medicine has admitted African Nova Scotians and aboriginal persons of the Maritime region with success. Currently there are 13 African Nova Scotians enrolled in the medical school—in the previous 140 years there was only one. Aboriginal students currently make up approximately 1 % of each class (range 0-2%).

Develop and research new admissions tool kits that have meaningful predictive value for desired future medical practice attributes: In the fall of 2014 the Admissions office, in collaboration with UGME, did a retrospective review of students who had been cited for professionalism or who had a pattern of difficulties adjusting to exams and/or clerkship. 60% of those identified had low MMI scores. As a result, the minimum MMI score for Admission has been raised (approved by Admissions committee November 2014). We are collecting data on the non-academic features (volunteerism, medically related experience, hobbies etc.) which are currently scored as part of the Admissions process. This data will be analyzable in 3 more years.

Develop pipeline programs that connect students from underrepresented communities with the medical education system: There are outreach sessions/programs delivered to the Aboriginal and African Nova Scotian populations done in conjunction with the Global Health Office. In Cape Breton, where most of the aboriginal population in Nova Scotia lives, there is a program for indigenous persons given through the University of Cape Breton. The Faculty of Medicine has a faculty member who works in this program who serves to facilitate our interaction.

Value and profile diverse academic faculty members as leaders and mentors in order to attract a more diverse applicant base: Dalhousie University is part of a federal contractor program relating to employment equity.

Work with the provincial/federal governments to monitor student debt-management and create policies that encourage a broad range of applicants: The Nova Scotia government recently instituted a program of paying for medical school costs (<http://novascotia.ca/news/release/?id=20150108003>) as part of a return for service agreement. Also, Dalhousie Medicine raised \$10 million as an endowment for support of disadvantaged students. The Faculty of Medicine now provides more than \$1 million in student aid per year.

UNIVERSITÉ DE SHERBROOKE

- Faculty policy for the promotion of diversity aimed at four minority groups, which are: candidates from French-speaking minorities in Canada, regions other than metropolitan and suburb areas, low socio-economic areas and aboriginal environments
- Modification of the selection of "training site choice" process to allow a more informed choice by the candidates regarding the delocalized program in Saguenay (decentralized training)
- Dropping of TAAMUS in favour of an increase in the % for MEMs (transversal competencies) that have a significant recognized prediction value
- Joint program among the four faculties in Quebec to foster access to medical training by the First Nations and Inuits in Quebec (PNIQ Program)
- Tour of the various regions in Quebec to meet potential candidates
- Establishment of a scholarship program financed by professors (\$170.00 per year) for students having the best admission files or experiencing financial difficulties
- Implementation, in the spring of 2015, of an "Intersite Student Mobility Guideline" for all students, covering the entire curricular path.
- Admission Committee reflection process underway by 3 sub-committees: candidate profile (diversity), specific categories (individualized path for learning), basic requirements and prerequisites

UNIVERSITÉ LAVAL

The three French-speaking universities in Quebec have developed a joint process for giving multiple integrated mini-interviews in French (MEMFI) to applicants, resulting in a better selection of candidates. This process looks for a set of individual characteristics that are deemed favourable to the development of the competencies, other than cognitive capabilities, that are desirable in a future physician. McGill University developed its own MEMs to fulfill the same objectives. Collaboration was developed among the four faculties for the pooling for analyses and results. Moreover, the four faculties developed longitudinal recruiting projects (pipelines) for targeted clienteles to foster greater diversity (socio-economic, rural region, etc.). In addition, a specific admission quota in Quebec for aboriginal applicants is in place for all four faculties. This program for First Nations and Inuits in Quebec (PNIQ) provides for supportive criteria and specific guidance for these students. There is also significant work carried out within the communities to foster young people's interest. Inspired by work carried out at McGill, the faculties in Quebec implemented a survey on student diversity that sheds light on the effectiveness of the admissions process.

UNIVERSITÉ DE MONTRÉAL

The three French-speaking universities in Quebec have developed a joint process for giving multiple integrated mini-interviews in French (MEMFI) resulting in a better selection of candidates. The purpose of this process is the evaluation of a set of individual characteristics that are deemed favourable to the development of the competencies, other than educational success, that are desirable in a future physician. In addition, places are now reserved for aboriginal candidates in all four faculties. This program for First Nations, Métis and Inuits provides for supportive criteria and specific guidance. Université de Montréal's Faculty of Medicine also carries out significant work within the communities to foster young people's interest for undergraduate studies in health by organizing, among other things, mini medical schools in these predominantly aboriginal regions.

In the last few years, the Faculty of Medicine at Université de Montréal has implemented its own Office of Diversity and a student diversity policy for the MD program. In conjunction with the three French-speaking faculties in Quebec, we developed a survey on student diversity that sheds light on the effectiveness of the admissions process. Moreover, our Faculty developed the SEUR (Awareness-raising about Studies, University and Research) project that is a longitudinal recruiting plan for targeting underprivileged clienteles in secondary schools to foster better diversity (socio-economic, rural regions, etc.).

MCGILL UNIVERSITY

The size of the Faculty of Medicine's applicant pool has more than doubled since 2007. In 2013, 2831 applications were received for 185 positions. Since 2011, the applicant pool has been at least 10 times the size of the admitted class size. In terms of qualifications, over the same period of time, we have observed that the mean GPA of the applicant pool has risen from 3.77 in 2007 to 3.84 in 2013.

McGill welcomes candidates from all backgrounds through an open, inclusive and bilingual system. All candidates are assessed based on a standardized, rigorous selection process. The Faculty monitors the diversity of medical students by way of a demographic survey. On the basis of these data, the Faculty's Widening Participation Committee determines which populations should be the focus of additional recruitment and outreach activities.

McGill participates – together with the Université de Montréal, the Université de Sherbrooke and Université Laval – in the provincial Quebec First Nations and Inuit Faculties of Medicine program, which sets aside four supernumerary places in medical programs for eligible First Nations or Inuit students who are residents of Quebec. The program has been in place since 2008 and has seen an increase in the size and the academic strength of the applicant pool each year. In fall 2014, the McGill registered three First Nations students in their first year of medical school and two additional students in preparatory or qualifying year programs.

Additionally, the Office of Admissions provides financial support to students who are invited to interviews, but for whom travel/attendance costs are a barrier. Students are advised of this service when they are invited to the interview.

UNIVERSITY OF OTTAWA

The mandate of our Admissions Committee is to select academically sound, accomplished students who represent Canada's three cultures Aboriginal, Francophone and Anglophone. Our application process thus has a stream for candidates with proven Aboriginal ancestry, French speaking candidates and Anglophones. Cognitive abilities are assessed with GPA ranking (uOttawa does not require the MCAT as it is an English only tool) and candidates must also have prerequisite science and humanities courses. The committee then ranks the Autobiographical sketch with categories of academics, volunteer work, extracurricular activities, research, employment, and awards using a predetermined grid. The highest ranked candidates are then invited to a 40 minute semistructured panel interview (1 faculty member, 1 community member and 1 fourth year medical student) wherein eight key values and personal characteristics are assessed in some depth.

We consider that our admission process is an excellent example of a mission based, socially accountable consideration of candidates and one which includes all stakeholders from faculty, to students to members of the community.

We have also: developed a pipeline program that features Mini Medical School sessions, called 'Come Walk in our Moccasins' which inspires First Nations, Inuit and Metis secondary, post secondary and mature students to connect with the medical education system. The Office of Francophone Affairs similarly has Mini Medical School sessions for the francophone Canadian population.

QUEEN'S UNIVERSITY

MMI

In 2011 the Admissions Committee implemented an MMI (Multi-Mini Interview) process. The MMI allows the committee to generate simulated life situations, in order to observe and evaluate candidate's non-cognitive qualities, such as; critical thinking, professional behaviour, ethical behaviour, advocacy and communications skills. The criteria allow the committee to admit candidates that are able to further their abilities in conjunction with the seven roles of the CanMEDS Physician Competency Framework.

Aboriginal Candidates

The Admissions Committee has been central in coordinating efforts to expand and diversify Queen's School of Medicine's applicant pool. For the past two years the Admissions Office has made a concerted effort to increase recruitment of Aboriginal students in conjunction with the recruitment staff of the Four Directions Aboriginal Centre of Queen's University.

The School of Medicine has contributed to the Four Directions Center event for “Indigenous Graduate and Professional Days”. This event is also scheduled in conjunction with the Aboriginal candidates interviews for the MD program to ensure candidates are informed of the resources available to them while students of the MD program. Through these efforts of collaboration there has been a significant increase in applications to the MD program and consequentially more offers of admission made to Aboriginal candidates.

MD/PhD

The Admissions committee has now admitted 3 cohorts of MD/PhD and MD/ Master’s students. Initiated in 2012, the program provides benefits to both scholarship and to the professional development of physician-scientists by allowing better integration of clinical and research training experiences, and also provides better opportunities for fostering translational research. Our programs are in keeping with the strategic directions of both the Canadian Institutes of Health Research Strategic Plan and Government of Canada’s Science and Technology Strategy, which emphasize the need for providing increased trans-sectorial and multidisciplinary training, building research excellence, translating knowledge into practical applications and deepening the pool of highly skilled individuals.

Queen’s University Accelerated Route to Medical School

Beginning in 2013, the QuARMS process admits 10 high school students each year, into a unique 2-year undergraduate educational opportunity that prepares them for direct entry into the MD program. In addition to their enrolment in first and second year courses at Queen’s, QuARMS students will be exposed to experiential learning strategies aimed at honing their skills in advocacy, communication, collaboration, and professionalism. This educational initiative will shorten the minimum length of undergraduate training for students before entering medical school, while enriching and focusing their curricular and extracurricular university experiences to prepare them for direct entry into medical training.

UNIVERSITY OF TORONTO

- Our Indigenous Student Application Program (ISAP) promotes and supports Indigenous student entry into the MD program. Through the ISAP, applicants who self-identify as Indigenous are invited to participate in a welcoming and culturally safe admissions process. From the 2010 to the 2014 admissions cycle, there has been more than a four-fold increase in the number of applications from individuals who self-identify as being of Aboriginal descent.
- Our three distinct high-needs bursary programs provide additional funding to students who may not otherwise apply for entry to the MD program due to particularly challenging financial situations. From 2010-11 to 2013-14, there has been an increase of \$1,158,300 in the total amount of high-needs bursary support provided to our MD students, from \$417,000 in 2010-11 to \$1,575,300 in 2013-14.
- In July 2014 we celebrated the 20th anniversary of our Summer Mentorship Program (SMP), which provides high school students of Indigenous and African ancestry with an opportunity to explore health sciences at the UofT over four weeks in July. 97% of our SMP alumni have completed or are currently pursuing post-secondary education. Of those students, 20% are in a health sciences field and 4% are in medicine. (Outcome data based on responses from 52% of SMP graduates from 1994–2011 (n=302))

MICHAEL G. DEGROOTE SCHOOL OF MEDICINE, MCMASTER UNIVERSITY

McMaster's MD Program was born out of a rebellious yearning to redesign everything about medical education. Even at the height of the 1960's counter-culture movement, it was a risky enterprise to adopt unfounded techniques of admitting and training medical students. Nonetheless, from the inception of the medical school at that time, the traditional processes of admission were placed under the proverbial microscope and quickly replaced.

Fundamentally, McMaster rejected the specification of pre-requisite courses and placed value on experiences outside of academia. This served to enhance the diversity of the medical school class and enabled the entry of the more mature students that were thought likely to thrive in the new problem-based learning environment. The MCAT, with its main focus on the scientific basis of medicine, was seen as antithetical to McMaster's recruitment goals.

In the pre-FMEC period, McMaster began blending the often paradoxical epistemologies of psychometrics and the non-cognitive attributes of applicants. While many of us acknowledge the theoretical and rhetorical awkwardness of the concept of "non-cognitive" attributes, the terminology endures, describing communication skills, ethical approaches to decision-making, critical thinking, ability to collaborate, etc. Blending in the psychometric principle of multiple samples to improve reliability led to the development of the multiple mini-interview (MMI).

Was there a way to bring the advantages (multiple sampling) and orientation (mostly assessing for non-cognitive attributes) of the MMI to the pre-interview, screening stage of the admissions process? The launch of an online, video-based, situational judgment test, CASPer (Computer-based Assessment for Sampling Personal Characteristics), was an affirmation of our belief that this is possible. Further, the use of videos to illustrate a practical conundrum for the applicant to address, enables the school to gradually tailor content towards areas on which we place importance. For example, all applicants are exposed to at least one video pertaining to issues regarding the health and healthcare of Indigenous Peoples.

McMaster's historical orientation towards admitting students from diverse educational backgrounds has continued to serve us well over the years, maintaining an emphasis on innovation in admissions. McMaster's enduring focus on utilizing the tools of the admissions process to achieve unique admissions goals continues to result in socially accountable, technology-enabled, admissions innovations.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Our School is proud of the diversity reflected through our UME classes, the Postgraduate Education (PGE) program and our faculty and staff. The School's Admissions Office works with our learner pipeline programs in rural regional communities and Indigenous nations to remove any obstacles impeding enrolment, and supports a UME class composition that reflects the social fabric of the region.

Specific admissions positions are allocated for students who have completed their secondary school education in Southwestern Ontario, or who are self-identified as indigenous persons.

Our School and University have extensive resources to support students enrolled with financial need for their medical education. More than 40 per cent of our students remain as residents in our system, and 20 per cent of our graduating students enter practice in Southwestern Ontario.

Our Admissions Office is also an active contributor to the growing literature of academic scholarship in admissions medical education.

NORTHERN ONTARIO SCHOOL OF MEDICINE

NOSM's recruitment and admissions process targets individuals who come from Northern Ontario or similar backgrounds and have a commitment to serving the North as physicians. The NOSM class profile is: 92% of students from Northern Ontario with the other 8% from remote rural parts of the rest of Canada. We are one of the few Canadian schools that does not have a basic science requirement and we actively encourage candidates from underrepresented populations. This is enhanced by having dedicated Aboriginal and Francophone support teams and a range of active community outreach activities. 40% of our students come from remote rural settings with 7% Aboriginal and 22% Francophone. We emphasize communication, interpersonal and collaborative skills and professional potential through our extended Multi Mini Interview (MMI) process where many of the interviewers are lay community members. Our ultimate goals of training, attracting and retaining high quality physicians for the North is proving successful (as demonstrated by our ministry-funded longitudinal tracking study) with a major proportion of our graduates setting up practice in Northern Ontario.

UNIVERSITY OF MANITOBA

1. Each year our students fill out a diversity survey so we can track the diversity of the student body.
2. In 2010, due to the under representation of rural students in medical school, we added a rurality index to the admissions score to better advantage rural students in entering medical school.
3. The Multi-Mini Interview process, which began in 2008, gives much more reproducible results than the previous panel interviews.
4. There is a Centre for Aboriginal Health Education which is designed to support Aboriginal applicants. As well there is an Aboriginal stream and a different process for Aboriginal students. We get on average of 8 Aboriginal students each year in our medical school through the Aboriginal stream.
5. With Manitoba being a bilingual province, we have also added a bilingual stream and a bilingual program for francophone students.

UNIVERSITY OF SASKATCHEWAN

Current Status

The University of Saskatchewan's College of Medicine recognizes the importance of considering both academic achievement and non-academic characteristics in selecting the students for its undergraduate program. As a result, in addition to examining the grade point average (GPA) of prospective students, the College replaced the traditional panel-style interview with the multiple mini interview (MMI) process in 2007.

The MMI is a series of short, structured interviews used to assess personal traits. The MMI was developed at McMaster University, where it was first assessed in parallel with the panel interview in 2003. There is a consensus

building across Canada that the MMI is the process of choice for assessing various non-cognitive abilities, such as communication skills, commitment to helping others, and ethical and critical decision-making. At the U of S College of Medicine, the MMI comprises 65% of the admission rank score with the grade point average of an applicant's best two full years of university comprising the remaining 35%.

In January and April 2011, the College of Medicine Faculty Council and the University Council, respectively, approved an enrolment increase at the College from 84 to 100 undergraduate medical students. Approval by the University Senate in October 2011 will lead to the first incoming class of 100 students in August 2012. As the province's only medical school, the University of Saskatchewan's College of Medicine strives to meet the needs of Saskatchewan citizens. It is anticipated that the enrolment increase will enhance physician retention in Saskatchewan communities.

The College aims to be representative of the population it serves, and is committed to increasing the number of Aboriginal physicians in Saskatchewan and in Canada as part of the Aboriginal Equity Program. The College has been using a target of 10% of its undergraduate students to be of Canadian Aboriginal descent, with a preference for applicants meeting the Saskatchewan residency requirement. This is a modest goal that will be revisited as the College achieves greater success, as 15% of Saskatchewan residents are of Aboriginal ancestry, and substantially more are represented in the youth cohort. In July 2010, the College hired an Aboriginal Coordinator to work closely with First Nations and Metis students, Elders and Aboriginal communities. The Aboriginal Coordinator connects Aboriginal students with the medical education system and offers support to the students during their studies.

Looking to the Future

- 1) **Continue to assess non-cognitive abilities:** As the AFMC's FMEC report notes, "selecting the most appropriate candidates is one of the greatest challenges in medical education." The report also acknowledges that due to the changing nature of medical practice and of Canadian society, the need to assess non-academic characteristics is even more critical. As such, the U of S College of Medicine will continue to utilize the MMI process, and will continue to give it significant weight in the rank admissions score. Literature reviews and environmental scans will be conducted periodically to determine whether 1) the MMI remains the best tool for assessing non-cognitive characteristics; 2) whether there is another non-cognitive assessment tool that could be employed; and 3) whether the MMI and another non-cognitive assessment tool could be used together in a complementary manner
- 2) **Collect data on students' backgrounds:** The AFMC's FMEC report notes that in Canada little progress has been made in attracting medical applicants from First Nations, Inuit, and Metis communities and from rural areas. The report states that other sociocultural and economic groups are also underrepresented. The U of S College of Medicine will continue its efforts to increase the number of Aboriginal students through the Aboriginal Equity Program and through the work of the Aboriginal Coordinator. In addition, beginning with the next admissions cycle, a questionnaire will be employed to collect data on the applicants' backgrounds, with a focus on identifying students from rural and remote areas of the province. The University of Manitoba's Faculty of Medicine's Supplementary Application 2011-2012, which identifies rural background, is an example of a tool used to gather such data. The data collected after three to four admissions cycles will be analyzed to determine whether an additional pipeline program is needed to increase the number of undergraduate medical students from rural and remote communities.
- 3) **Admit students with an interest in combining medical training and clinical research:** As the AFMC's FMEC report acknowledges, medical education must evolve as the role of the physician evolves. According to the report, "in a nimble and adaptable system, medical education can lay the foundation for physicians to be skilled clinicians, health scientists, researchers, and advocates for health system reform." In order to lay this foundation, the report states, "the medical education system must be sufficiently flexible and supportive to adapt to the individual academic, professional, and personal contexts of learners – including those wishing to pursue complementary graduate degrees (e.g., MPH, MBA, PhD) or other advanced training concurrently."

- 4) The U of S College of Medicine is committed to fostering excellence in clinical research. To bolster clinical research within the College, efforts are underway to initiate a robust process to admit students wishing to undertake combined MD/PhD training. Admitting students with completed MSc degrees or PhDs who also are interested in doing clinical research is concurrently being pursued.

UNIVERSITY OF ALBERTA

Changes have been made to enhance our admission process in order to attract candidates who can adapt to the needs of the community and of the profession. One major change implemented this year is the removal of mandatory prerequisite courses as part of the admission process. This change aims to encourage a more heterogeneous population of applicants to diversify the problem-solving skills within the class and profession. We are currently working on introducing a research agenda that investigates admission criteria to improve admission and program outcomes, through which new admission tools may be developed. Our alumni evaluation questionnaire also provides evidence to ensure alignment of our admission goals with the actual clinical practice settings of graduates.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- a. The highlight is the creation of an admissions pipeline that will target potential students from rural areas, low socio-economic status, and aboriginal descent
- b. As well, our admissions process has seen funding allocated to a “second look day”, where interested aboriginal students will be given the opportunity (travel funded) to return to our school to further explore their interest in our program

UNIVERSITY OF BRITISH COLUMBIA

We are continually finessing and enhancing our admissions processes. Our students enjoy a positive learning environment that fosters respect for all individuals regardless of age, gender, marital status, medical condition, national or ethnic origin, physical or mental disability, political affiliation, race religion, sexual orientation or socioeconomic status. We proudly publish this information on our Admissions website.

We continue to celebrate diversity in our student body. The 2012-13 admissions cycle saw more applicants than any previous year. We also witnessed an increase in our applicants’ desire to be part of the Northern Medical Program, with a significant number of admitted students listing the NMP as their first site preference. Our Aboriginal Admissions Program, which recently celebrated its 10th anniversary, continued its success with the admission of five Aboriginal applicants to the MED2017 class. In spring 2015 the Aboriginal MD Admissions Program will meet its original goal of graduating 50 Aboriginal MDs by 2020, or what is five years ahead of schedule. The program has also become a model for other Canadian faculties of medicine.

Finally, one of our goals for 2015 is to revamp our existing Admissions web pages with the aim to enhance and clarify the admissions process for applicants.

RECOMMENDATION 3

Build on the Scientific Basis of Medicine

3

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 be 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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

MUN Curriculum

The new curriculum implemented with the 2013 academic year, is horizontally and vertically integrated. Using two core families with their extended family members, students use their stories to apply concepts learned in the previous 4 weeks. In Phase I – the Health and Its Promotion, students learned the fundamentals of normal physiology, anatomy, and biochemistry etc. , within the context of these family stories. This is advanced as they move through the next three phases – Disease Prevention and Health Disruption, Diagnosis and Investigation of Illness and Disease and Integration Into Clinical Practice.

The special projects course pairs a student with a faculty member to embark on a research project in one of 4 pillars (CIHR) : biomedical, clinical, health systems and services, and population health. Students are prepared for these with sessions such as “introduction to evidence based medicine and critical appraisal, “research ethics” and “research question and proposals”.

Through Phases II and III advances these concepts in areas of “application of critical appraisal”, “setting a personal learning plan” and “knowledge translation”. Students are expected to continue their Phase I projects or embark on new ones.

DALHOUSIE UNIVERSITY

Involve basic scientists, clinical faculty and medical educators in the collaborative design, development, and implementation of the MD education curriculum: Basic science and clinical faculty continue to lead the design, development and implementation of the MD program through their work as leaders of the curricular components of the preclerkship programs, as Clerkship Directors for the clerkship components of the program, as members of the Undergraduate Medical Education Committee (UMECC) and its various curricular sub-committees, and as members of ad hoc (working groups) tasked on an ongoing basis with the review and revision of all curricular components.

Reduce departmental barriers within faculties to enable the optimum integration of basic and clinical sciences: The processes in place that guide curricular development and revision continue to require the involvement of both the basic and clinical scientists at every programmatic level (year). To facilitate this process, a Coordinated Recruitment Advisory Committee was struck in 2012 with a mandate to review upcoming vacancies and appropriate recruitment.

Support existing and new programs that integrate research training with medical education: In September 2013, the Faculty introduced a four-year mandatory program entitled Research in Medicine (RIM). The program, led by a variety of basic and clinical scientists, require all students to design, develop, and conduct a research project beginning in Year 1 of the program with a goal for completion by Year 4 of the program. One summer is devoted to research as part of the program.

To enable learning in context, create a national forum to discuss how and where the sciences foundational to the practice of medicine are best taught: We eagerly await leadership from AFMC on this recommendation.

UNIVERSITÉ DE SHERBROOKE

- Annual presentation of all teaching units is made to the Curriculum Committee to ensure adequate coverage of contents, limit redundancy, optimize integration possibilities among activities and ensure a common vision
- Promotion of summer research internships among preclinical students; internships now recognized by a university credit that appears on the report card and the student's training path
- Implantation of research interest groups modelled on the Family Medicine Interest Groups (Sherbrooke and Saguenay)
- Promotion of the M.D. / M.Sc. and M.D. / Ph.D. training paths.
- Pilot project at the Saguenay site on the use of informational competencies (factual medicine) in a learning context during phase III (impact study in view of implementation for the entire program)
- Establishment of training for professors on the use of informational competencies in medical pedagogy

UNIVERSITÉ LAVAL

At Université Laval the basic concepts covering the various fundamental science disciplines are taught during the first year in the *Fundamental Sciences courses* (I to III), allowing students to acquire the knowledge necessary for the understanding of clinical problems studied during the program. In the systems courses, the basic fundamental science concepts are reviewed in light of clinical cases for each organ or specific system. The longitudinal integration of these concepts is ensured in the program's integrative courses (*Clinical Approach* (I to V), *Integration* (I to III) and *Summary* (I and II) according to a problem-based learning approach fostering assimilation of the knowledge and skills already seen and integration of medical concepts from pathology to treatment. The *Clinical Epidemiology* and *Critical Reading of Medical Literature* courses stimulate the acquisition of basic clinical biostatistical and epidemiology concepts. These courses, offered during the second year, initiate students to critical thinking and learning from scientific reading. The *Physician, Medicine and Society* (I to IV) courses are an integrative learning opportunity for human sciences. Moreover, research training is encouraged among interested students through research internships offered during the summer, a Research Component recognized by the Université as well as a joint M.D.-M.Sc. program.

UNIVERSITÉ DE MONTRÉAL

With the preparatory year in medicine or by obtaining a related Bachelor's prior to admission, our students already have good knowledge of fundamental sciences and social sciences. Fundamental and social sciences have long been included in problem-based learning (PBL) through an approach by system in small groups.

The presence of teachers from fundamental sciences on the Program Committee is mandatory. In addition, courses covering fundamental sciences were added to campus weeks during clerkship to foster the maintenance of basic scientific learning in medicine. In 2013, a program sub-committee addressed the integration of fundamental sciences in training throughout the entire curriculum and gave its recommendations in 2014. Our students also have the opportunity to register for M.D.-M.Sc. or M.D.-Ph. D. programs as well as for summer research internships supported by scholarships (COPSE).

MCGILL UNIVERSITY

In McGill's new MDCM curriculum, the Fundamentals of Medicine and Dentistry (FMD Years 1 and 2) remain system-based, while normal and abnormal function has become more closely integrated within each system-based unit. This new organization has seen the introduction of several longitudinal themes that place emphasis on self-directed learning, evidence-based medicine, public health and a core of basic science knowledge.

With respect to the development of the basic science content, a core committee comprised of faculty members from all the basic biomedical sciences oversees and matches necessary basic science content from the development of pre-requisites for entry into the medical and dental school cohort through FMD, Transition to Clinical Practice (TCP) and the Clerkship programs. This matching is based on the Medical Council of Canada learning objectives and is done in collaboration with the coordinators of FMD, TCP and Clerkship programs under the auspices of the New Curriculum Implementation Executive Committee.

UNIVERSITY OF OTTAWA

Each Unit of the curriculum involves basic scientists, clinical faculty (both specialists and generalists), medical educators and students in the initial design and implementation of the curriculum as well as its regular review. Departmental barriers are minimized by mandating that the medical school curriculum committees (UCC and CCRC) take full ownership of the content and design of each Unit, and hence the entire curriculum. This allowed us to create positions for content experts within and across disciplines and allows for several different specialty areas to be involved in the creation of a Unit. Each week of preclerkship is based on a specific theme. The content of the theme is mainly addressed in case based learning (CBL) sessions wherein students work in small groups with a facilitator on all aspects of the problem (basic science, epidemiology, clinical issues, management, humanities, psychosocial determinants of health etc.). Students learn interviewing skills, history taking and physical examination skills during the physician skill development (PSD) sessions during that same week. In addition, the epidemiology, prevention and public health issues are addressed during society, the individual and medicine (SIM) sessions during that same week.

In addition we:

- Launched an MD-PhD Program in the summer of 2010. The program offers exceptional students the opportunity to pursue two degrees over the course of seven years.
- Created the Department of Innovation in Medical Education (DIME), which reduces departmental barriers within faculties to enable the optimum integration of basic and clinical sciences.
- Implemented an annual summer Studentship Program on Innovation in Undergraduate Medical Education that currently sponsors 30 research projects per year.
- Created additional annual summer Studentships in basic science and translational research

QUEEN'S UNIVERSITY

Curriculum Foundation: Focus on inclusion of basic science as the foundation for the curriculum includes newly revised science objectives (originally developed from Scientific Foundations for Future Physicians of American Medical Colleges). Revised by science faculty who teach in the program, these were added to the UGME Curricular Goals and Competency Based Objectives. Specific science courses are a part of terms 1 and 2, including Normal Human Structure, Normal Human Function, and Fundamentals of Therapeutics. Courses such as Blood and Coagulation, Mechanisms of Disease, and Pediatrics and Genetics include units on science integrated with clinical focus.

Curriculum Integration: Additionally, two specific science objectives are integrated into years 1 and 2 clinical foundations courses and into Clerkship rotations for inclusion on assessments: ME 2.1a: Identify and apply knowledge of normal human structure, development and physiology relevant to a clinical presentation and ME 2.1 b: Identify genetic, pathologic or maladaptive processes relevant to a clinical presentation. A Critical Enquiry Course has been developed in which year 2 students work with clinical and science faculty tutors in a 3:1 ratio to focus on health research training. The Critical Appraisal, Research and Learning course in Year 1 introduces students to diagnostic tests and their properties, research designs and methods, understanding the results of medical research, and critical appraisal of medical literature.

Curricular Leadership: Science faculty are a part of the curricular leadership: they are members of the UGME Curriculum Committee, the Student Assessment Committee, the Teaching, Learning and Innovations Committee and the Course and Faculty Review Committee. Basic scientists are Curriculum Course Directors of four courses in preclerkship.

UNIVERSITY OF TORONTO

- Starting in 2015-16, our MD students will be required to complete a new second year Health Science Research course. The two overarching goals of the course are: (i) to develop the competence of medical students in the interpretation of research findings to assist in patient care, and (ii) to develop medical students' skills in contributing to all aspects of health science research.
- Building upon the strengths of our MD/PhD program, we are developing an Integrated Physician Scientist Training Pathway along the continuum of undergraduate, graduate and postgraduate medical education. The principles of integration, customization, flexibility and innovation will guide development of a pathway model that will facilitate and support student aspiration, success and career sustainability.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Directed by Schulich Medicine & Dentistry's strategic plan, we offer the integration of basic and clinical scientists as educators and leaders across the curriculum. Content is integrated within and between modules or courses in all foundational and clinical sciences.

The School's strategic plan has cultivated leadership in developing and applying new knowledge in foundational and clinical sciences, as well as medical education during the past five years. Students have opportunities to work with faculty researchers in summer and longitudinally integrated projects in the main centres and the Distributed Education Network.

Our School, supported by a white paper on student research in UME, has moved to support and celebrate the growing number of student research and scholarship publications/presentations shared in peer-reviewed publications/meetings nationally and internationally.

Graduates acquire and refine research competence from courses throughout the curriculum to advance future models of patient-care across Canada.

NORTHERN ONTARIO SCHOOL OF MEDICINE

Our students learn the human, biological and medical sciences primarily through small group case-based learning (contextualized in Northern Ontario communities), experiential laboratory sessions, and community-based activities. Human sciences are primarily in Themes 1, 2, and 3, and biomedical sciences in Theme 4, all of which run from the start to the end of the 4-year undergraduate medical program. Students are exposed to research through elective summer research studentships and through community-based research projects in year 3.

UNIVERSITY OF MANITOBA

1. In the new curriculum we have created a Foundation of Medicine Course which is all taught by basic scientists.
2. We have a long standing Bachelor of Science in Medicine Degree which can be done over the two summers following Med I and Med II where students do scientific research which gives them an additional degree to their MD degree.
3. In 2011 we added a Med II summer research project to allow even more students to do research. Each year on average 45% of our students are engaged in a research project.

UNIVERSITY OF SASKATCHEWAN

Current Status

The basic sciences are the foundation of medical education, and the College of Medicine is engaged in a number of initiatives aimed at fostering knowledge of and interest in the scientific basis of medicine. Currently, 50 undergraduate students take part in the Dean's Summer Projects each year. For 12 weeks, undergraduate medical students participate in a research project under the supervision of a College of Medicine researcher. As a result, students gain firsthand experience in conducting research and presenting research findings. Another initiative, the student-driven Journal Club, encourages students to explore medical and scientific literature, to critically evaluate special topics and to more closely examine the topics that are of interest to them through self-directed learning. The basic sciences are particularly emphasized in Years 1 and 2 in several ways; examples include critical appraisal in Community Health and Epidemiology, the Form and Function Course, and integrative cases.

Looking to the Future

- 1) **Enhance basic science content in the undergraduate curricula:** Members of the FMEC Recommendation III working group should work in conjunction with the College of Medicine's curriculum committee to ensure the basic sciences are vertically integrated throughout all four years of medical school. Integrated cases should become a keystone of the renewed curriculum, and basic science content should be embedded within these cases. By teaching key physiological principles throughout the four years of medical school, and by building upon these concepts in clinical contexts, students will retain more information and graduate with a stronger scientific framework. For example, basic sciences "refresher" lectures in systems could be offered to students in Phases B and C, so that students are reminded of various scientific principles and how they can be used to solve clinical problems. The most relevant biomedical sciences content should be identified, and this should be taught to students within a contextual framework.
- 2) **More fully develop and promote the MD-PhD Program:** The current MD-PhD program should be more fully developed and promoted. Spots could be allocated within the newly expanded class size to those enrolling in the program. Additional funding could be provided to the MD-PhD students to cover the increased costs associated with studying in the combined program. Increasing the number of students enrolled in the program will ultimately lead to an increase in the amount of clinical and translational research occurring within the College of Medicine.
- 3) **Improve communication between basic science and clinical faculty:** Focus groups should be facilitated with basic science and clinical instructors in an effort to examine how various courses and their content can become more complementary in nature. Researchers and clinicians could present on the same topics during an ongoing seminar series in an effort to highlight the connections between scientific concepts and clinical practice. The principles of basic sciences should be incorporated into every clinical presentation, so that clinicians and researchers are not envisioned as working within separate silos.
- 4) **Enhance support of student activities:** Funding for the Dean's Summer Projects should be maintained and/or strengthened, and every student should be encouraged to participate. Faculty should support the student-driven Journal Club sessions, which are held monthly, by offering to participate in the sessions or by making presentations to the students and answering their questions. An annual research day could be developed that would involve every JURSI student working on a small research project throughout the academic year, and then presenting his or her research findings to all students and faculty in the College of Medicine at the end of the year.

UNIVERSITY OF ALBERTA

To ensure appropriate inclusion of basic scientific principles within the design of our curriculum we have included basic science representation on the curriculum committee. There is at least one basic science representative in each of our curriculum working groups. There is a working group dedicated to developing an evidence-informed practice of medicine. Our evidence-informed medicine curriculum is currently delivered within the physicianship course in all 4 years of the program. A large proportion of our students participate in our Special Training In Research (STIR) program; students participate in additional research training and conduct a research project prior to graduation. We also encourage participation in the MD PhD program.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- a. There has been increased attention paid (by way of meetings between Senior Associate Dean Education, Associate Dean UME, basic science department heads) to the integration of basic science teachers (alone or as team teachers) in our pre-clerkship
- b. Our school curriculum has introduced a “back to basic science” course in the clerkship, and will soon (2016) be introduction an “Introduction to Basic Science” course in the first month of our school program

UNIVERSITY OF BRITISH COLUMBIA

Our renewed curriculum is strongly focused on the integration of basic and clinical sciences more than ever before. This is achieved by ensuring both sets of competencies are represented in all four years of the program.

Within the renewed curriculum framework basic curricular components are described in terms of week topics and themes. For example, each course has an organized set of clinical week presentations/topics that are ordered developmentally to provide an integrated curriculum that builds from basic clinical presentations to complex ones. Later topics intentionally revisit, or spiral back to, earlier ones periodically to reinforce important topics, and to integrate material across years.

In addition to the clinical presentation/topics, foundational themes are integrated across all four years of the program through the course learning outcomes. These themes are organized under seven major categories: clinical medicine; medical sciences; diagnostic sciences; treatment; care of patients; populations, diversity, and equity; and scholarship.

RECOMMENDATION 4

Promote Prevention and Public Health

4

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

MUN Curriculum

Since its inception, the focus of Faculty of Medicine, Memorial University, has always been to train medical students to serve the population of Newfoundland and Labrador with an emphasis on rural practice. Population health and public health was well integrated in the curriculum. In the new spiral curriculum, these experiences are offered under Community Engagement and Special Projects. The rural placement consists of a two-week field experience in rural communities of Newfoundland and Labrador, New Brunswick, Prince Edward Island, and the Yukon. The course provides community-based education from an interdisciplinary perspective within four key components: community health, family medicine, ethics, and humanities. Activities to achieve these goals are organized into three main categories: local initiatives, community-based activities/programs, and institutional/health services. Our research shows that this is not typical of all curricula in medical schools

These rural placements represent successful integration of public health and medicine in meeting course objectives and are highly rated as a key learning experience by medical students. The rural placement successfully incorporates innovative and recommended methods in community-based experiential learning including: early clinical contact in community settings, rural-based education, field experiences in public health and inter-professional initiatives. Course evaluations highlight the importance of both organizations at the university level and community engagement (i.e. MOUs, affiliation agreements, ongoing communication with preceptors, community leaders, and community-based groups/initiatives).

Under Special Projects, engaging students in activities that serve the organization and address local needs while developing academic competence and a commitment to serve the community use a service learning approach to enhance this experience. The combination of classroom instruction and community service allows for critical reflection on personal and social responsibility. The exposure to service provision in a community setting allows students to see and experience the health disparities in our communities.

DALHOUSIE UNIVERSITY

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: Currently, the pre-clerkship curriculum includes teaching and learning activities addressing these competencies, skills and expected outcomes during the two-year longitudinal *Professional Competencies* program. At the present time, in collaboration with the basic, social, and clinical sciences faculty, the program is undergoing a redesign. In an effort to ensure teaching and learning of these principles in context, the program will expand to a four-year longitudinal initiative.

Promote a culture of innovation and scholarship in the teaching of population health (including prevention and public health): In September 2013, the program introduced a four-year mandatory program entitled *Research in Medicine* (RIM). The program, led by a variety of basic and clinical scientists, require all students to design, develop, and conduct a research project beginning in Year 1 of the program with a goal for completion by Year 4 of the program. During the first semester of the program, students are introduced to a variety of researchers and their work. Included is an introduction to research and scholarship in the areas of population health (including prevention and public health).

Provide encouragement and support to learners and faculty in advocating for population-level interventions: These topics are presented to the students during their Professional Competencies program, where students are provided with opportunities for guided facilitation of specific cases designed with these objectives in mind.

Teach learners how to look at individuals in the context of their environments, think about both patient-doctor and population-doctor relationship, and identify patients who are part of “at-risk” populations: These topics are presented to the students during their Professional Competencies program, where students are provided with opportunities for guided facilitation of specific cases designed with these objectives in mind. As mentioned above, as the Professional Competencies program undergoes revision, opportunities for students to address these issues in context will be provided.

Teach learners to apply epidemiological principles and critical appraisal of evidence to individual patient care. Encourage faculty to incorporate such principles into every part of the medical curriculum: In the pre-clerkship program, students are provided with these opportunities during the *Professional Competencies* program, the *Research in Medicine* program, and during the first curricular unit of the program – *Foundations of Medicine*. These programs help to establish the foundation for students to practice the application of epidemiological principles and critical appraisal of evidence to individual patient care.

Utilize existing resources, such as the AFMC Best Practices in Public Health Undergraduate Medical Education report and established national networks of public health educators: Our curriculum includes cases concerning public health related issues in the Professional Competencies program. The learning objectives for these cases coincide with the overarching theme of social determinants of health which runs through the entire two-year program. Many of the best practices discussed in the AFMC report are ones that are used. For example, we use case-based discussion related to topics such as physician responsibilities and roles during an infectious disease outbreak and draw upon literature from the Public Health Agency of Canada, the World Health Organization, Canadian Public Health Association, and the National Advisory Committee on Immunization. The students also have an opportunity to engage in a structured debate regarding the duty to care or treat in emergency and non-emergency medical situations. The lecture delivered in conjunction with the case on infectious outbreaks is always delivered by a Public Health Officer from either New Brunswick or Nova Scotia.

UNIVERSITÉ DE SHERBROOKE

- Consolidation of teaching regarding health determinants, populations at-risk and health lifestyle habits during specific activities (Preventive Medicine and Public Health unit and MD Profession – Lifestyle Habits)
- Consolidation of teaching regarding relationship aspects including an approach to specific clientele (e.g. immigrants)
- Integration of mandatory community service activities to raise students' awareness of the realities of various environments
- Raising of students' awareness to the specificities of First Nations through specific activities during the Preventive Medicine and Public Health unit
- Team work to develop a public health project with teachers in this field

UNIVERSITÉ LAVAL

At Université Laval, intervention concepts in public health, prevention and promotion of health are taught and put into practice in the systems and integrative courses. For example, themes such as health determinants, the health system in Quebec, promotion of health, prevention of disease and social inequalities are covered in the *Physician, Medicine and Society* III course while concepts such as risk factors, primary and secondary prevention in the prevention of cardiovascular disease are covered in the Cardiovascular System course. Students must do a mandatory internship in social and preventive medicine; its contents are currently undergoing revision. This purpose of this internship is to show future physicians the complementarity that exists between a clinic-based approach and a population-based approach so that they can consider health in its entirety in their future practice.

UNIVERSITÉ DE MONTRÉAL

With the preparatory year in medicine or by obtaining a related Bachelor's prior to admission, our students already have good knowledge of fundamental sciences and social sciences. Fundamental and social sciences have long been included in problem-based learning (PBL) through an approach by system in small groups.

The presence of teachers from fundamental sciences on the Program Committee is mandatory. In addition, courses covering fundamental sciences were added to campus weeks during clerkship to foster the maintenance of basic scientific learning in medicine. In 2013, a program sub-committee addressed the integration of fundamental sciences in training throughout the entire curriculum and gave its recommendations in 2014. Our students also have the opportunity to register for M.D.-M.Sc. or M.D.-Ph. D. programs as well as for summer research internships supported by scholarships (COPSE).

MCGILL UNIVERSITY

In McGill's new MDCM curriculum, there have been many innovations within the Public Health theme, which now integrates epidemiology and evidence-based medicine with population health, indigenous health, immigrant and refugee health, woman and child health, elder health, occupational health, global health, health care quality, clinical prevention, health policy and public health ethics. This enables the student to understand the social determinants of health, the role of the physician as health advocate and the position of medical practice in a larger social context.

One of the major innovations in the new curriculum is a new course in the very first month of medical school entitled, “Block A: Improving Health: From Molecules to Global Health.” Each week, this course looks at four patient case examples in which illness and context are explored in many different ways, including the basic science, clinical medicine and public health angles, to provide students with a big picture perspective prior to focusing in on the various physical systems of the human body in subsequent blocks. Nonetheless, following on from the large initial “bolus of population health and social determinants of health” in Block A, students go on to receive over 100 one-hour lectures and 18 small group seminars on many aspects of population health over the next 18 months. These are integrated into the systems-based teaching blocks (e.g., lectures on insalubrious housing and rates of childhood asthma in the respiratory block, lectures on obesity and cardiovascular disease in Aboriginal populations in the cardiology block, etc.). In pre-clerkship, the public health exposure continues through the CHAP – Partnering for Healthier Communities – course, involving service learning with vulnerable populations served by local community organizations.

Finally, in Clerkship, a public health selective provides hands-on clinical exposure in public health and community-oriented primary care to complete the theme.

UNIVERSITY OF OTTAWA

To promote prevention and public health, the SIM sessions are spearheaded by an expert epidemiologist. This faculty member has an integral role in curriculum review and is the Director of Integration in our curriculum. All the issues outlined in FMEC’s ‘the way forward’ are addressed in these sessions within the context of the theme of that week.

In addition, the Faculty has established a School of Epidemiology, Public health and Preventive Medicine that will enhance MD education curricula to include competencies, skills and expected outcomes in relation to population health, prevention, promotion, and the social determinants of health as well as teach learners to apply epidemiological principles and critical appraisal of evidence to individual patient care.

QUEEN’S UNIVERSITY

Curriculum Focus: A new Population and Global Health Course in year 1 has been developed to include topics such as: Underlying Philosophies and Concepts, National/International Health Care Systems and Policies, Global Health Concepts, Special Populations, Health Promotion, Prevention & Interventions.

Assessment is through a Preventions and Interventions Project, (independent study) and the primary text for the course is the AFMC Primer on Population Health.

Curriculum Integration: Prevention is a topic within the Family Medicine Course in year 1 and in subsequent clinical foundations courses in preclerkship. The Critical Appraisal, Research and Learning course in year 1 deals with the topic of diagnostic tests and properties, as well as screening. In clerkship, the consideration of social determinants of health is an objective for all clerkship rotations and included on all assessment forms. A new advocacy oral or written report is a part of all clerkship rotations and is included on final assessment forms.

UNIVERSITY OF TORONTO

- To better integrate prevention and public health competencies into our curriculum, we developed a new longitudinal Community, Population and Public Health course that takes place over the first two years of the program. Offered for the first time in 2014-15, the course introduces students to a population and community health perspective on medical practice, and fosters the development of future physicians' responses to changing community and societal needs and concerns.
- We are actively working toward the establishment of a MD/MPH combined program, which will provide interested UofT medical students with the opportunity to pursue a Master of Public Health concurrently with their MD.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Schulich Medicine & Dentistry has created a vibrant new learning model supporting leadership in public health in the region and across Canada with the launch of the Schulich Interfaculty Program in Public Health (MPH) in 2013.

The MPH curriculum directs student learning in modules that develop future care using the AFMC primer objectives of population health, while incorporating the determinants of health in care and research.

NORTHERN ONTARIO SCHOOL OF MEDICINE

Theme 3 (Social and Population Health) has a core focus on population and public health, ensuring that this is woven throughout the curriculum.

Moreover, our strong community focus ensures students are exposed to and work with the health of whole communities as well as the individual patients in these communities throughout the MD program so that they learn the social determinants of health at the local level.

UNIVERSITY OF MANITOBA

1. The Population Health Course now traverses all four years with a number of areas of focus; Health and Determinants, Assessing and Measuring, Interventions at the Population Level, Administration and Systems, Environmental and Occupational and Key Populations. There is also a Public Health rotation that is done simultaneously with the Family Medicine Clerkship.
2. When we mapped the old curriculum to the Health Advocacy Competency we discovered there were a number of areas where prevention had not been included. In the rubric required for courses in the new curriculum prevention is included with every system.

UNIVERSITY OF SASKATCHEWAN

Current Status

Currently, University of Saskatchewan medical students are introduced to the foundations of public health and prevention in the first year, or Phase A, covering the three separate areas of health determinants, basic epidemiology, and critical appraisal. The determinants are further examined in Phase B, focusing on the relation of health care to health inequity and the influence of specific determinants within subpopulations. Phase C provides instruction in occupational/environmental health, population health and Canada's health system, and clinical epidemiology/ preventive medicine; the principles of prevention and public health are also specifically taught in relation to infectious disease. Phase D's exposures to prevention and public health are most clearly outlined within the six-week family medicine rotation, although social and preventive aspects of clinical care are noted to varying degrees in other rotations and may be present in less-specified formats.

Several related community-based learning opportunities, both required and optional, are present for students. Compulsory experiences include sixty hours of community agency service (Community Service Learning Program) or a two-week community exposure while in Phase A, additional community service learning as part of the Community Health and Epidemiology courses in Phases B (16 hours) and C (6 hours), and a worksite visit, also occurring in Phase C. Community factors are considered in primary care settings during the mandatory well-child and family medicine pre-clerkship experiences of Phase B and again as part of community pediatrics (3-12 hours) and family medicine (two weeks urban, four weeks rural) during Phase D. Several optional community experiences are also available as part of Phase A (Family Care Experience, KinderKare inner-city school proposal, Longitudinal Elderly Person Shadowing, immigrant health shadowing, Making the Links/Global Health Certificate), but proportionately fewer exist for Phases B, C, and D (PREP externship, JURSI Zimbabwe elective, SWITCH). Several health science interest groups and a student-run journal club offer additional related learning opportunities.

Looking to the Future

- 1) **Ensure prevention and public health is integrated into the curriculum:** Recurrent in the AFMC's Best Practices in Public Health report series is the indication that medical students often find public health both uninteresting and removed from real medicine. Therefore, it is necessary to maximally integrate prevention and public health into the curriculum, specifically aiming for both multi-phase continuity and intersubject integration. According to the report series, overarching principles of this inclusion will include a commitment to quality teaching, the utilization of clinical-population teaching frameworks, an emphasis on real-world/clinical situations, and rigorous ongoing evaluation. Manifesting these ideals, public health instruction will be well-organized, enthusiastic, and knowledgeable, employing well-structured, well-delivered lectures, case-based learning, community visits, guest speakers, many clinical- community examples, guided reflection, and ongoing innovation.

In the specific context of clinical instruction, recognized tools and opportunities for population health teaching will be utilized. Clinical-population frameworks such as the University of Sydney's Eight Essential CDT Questions and Stone's integrated teaching matrix will ideally bring not only well-rounded community and preventive perspectives to the disease under study but will also provide students with an inclusive mental approach for future clinical situations. Public health objectives will be clearly delineated in both the clinical course syllabi and their individual lectures; reflecting this inclusion, public health content will be integrated into the evaluation of students' learning with substantial weight. Prevention will also be integrated into clinical skill development, emphasizing primary prevention/health determinants in history taking, secondary prevention during physical examination practice, and tertiary prevention in patient discharge planning/follow-up.

Generating continuity across Years One and Two of the new 2 by 2 curriculum, specific public health learning objectives will be presented in a continuous, parallel community health course.

Content will ideally be taught by community medicine specialists, again with excellence in teaching, connection to current clinical topics, and a strong emphasis of relevance to future clinical practice. The AFMC's newly developed public health primer will be used to guide content and presentation as this electronic resource has been developed to meet the Medical Council of Canada's public health learning objectives.

Additional important elements will include quality evaluation, a recognized key factor in public health teaching renewal, and overall coordination. Evaluation will include both short-term assessment based on student/instructor feedback and student performance, as well as long-term assessment of practicing physician attitudes and behaviors. As noted in the University of Sherbrooke's integration experience, integration is a significant undertaking and benefits from a designated coordinator throughout the process.

- 2) **Make experiential learning opportunities a priority:** Ongoing development, evaluation, and support of relevant, high quality, community-service learning opportunities should be a priority. These must be more evenly distributed throughout the curriculum, both as essential and optional experiences. Given the administrative demands around such opportunities, coupled with the community burden of similar requests from other colleges, the appointment of an inter-professional coordinator is necessary. As Phase D has no designated public health exposure, a mandatory, four-week, project-driven public health experience is proposed, similar to the University of Rochester. This rotation will focus on the development and hands-on implementation of a public health intervention to address a student-identified issue within a specific population.
- 3) **Appreciate and facilitate public health scholarship:** Increasing prevention and health promotion education in the clinical teaching context should be consistent with a larger climate of increased overall academic appreciation and facilitation of public health scholarship. Firstly, prevention research requires engagement with communities, often in non-traditional forms of academic activity; as such, all scholarly efforts, including those less typical, must be validated and rewarded in terms of tenure, promotion and other forms of recognition. Faculty development enhancing personal capability to undertake such engagement should also be increased. These suggestions are based on an unprecedented and new consortium of several Canadian universities (including the University of Saskatchewan) involved in a current initiative supporting the advancement and recognition of community engaged scholarship in the academy. Secondly, the College of Medicine must continue to make community engagement itself a priority in order to facilitate the research that underpins public health teaching. An upcoming opportunity, the launch of the university's Community-Engagement Hub, will present further potential partners from the community for engaged research in public health/prevention.
- 4) **Implement the following specific points of application:** In an effort to ensure the enhancement of prevention and public health integration into the MD curriculum, the working group examining FMEC Recommendation IV suggests considering the following specific points of application:
 - Different modalities of instruction in public health/prevention should be developed, progressing from didactic and Internet formats for basic concepts to problem-based cases within clinical courses and related experience-based learning.
 - A foundational content mix of lectures, small-group, and online instruction should be evaluated for effectiveness.
 - Public health/community medicine faculty should share in clinical teaching.

- Two clinical courses should be identified to pilot the introduction of problem-based scenarios and to evaluate the delivery of prevention content within these scenarios.
- A four-week Phase D mandatory public health experience should be developed.
- A systematic evaluation of factors related to below-average Licentiate of the Medical Council of Canada (LMCC) examination performance in population health during recent years should be undertaken and used to further inform the above recommendations.
- A public health integration/inter-professional community-service learning coordinator should be hired to facilitate these recommendations.

UNIVERSITY OF ALBERTA

The topics of health promotion and prevention are well aligned with the social accountability mandates as outlined in the program level objectives. There are dedicated working groups on designing the delivery of: social determinants of health, health policy and systems, equity and diversity and public health. These working groups, in a collaborative effort between faculty and students and based on a review of the literature, have developed revised curricula which have been implemented across all four years of the program. The aim of these educational experiences is to highlight the hidden elements and challenges that devalue prevention and population health. In addition, health promotion is well addressed across different block courses within the first two years of the curriculum.

We also have a curriculum working group that focuses on Patient Safety and Quality Assurance. Content in this area was developed in collaboration with Alberta Health Services, which aligns our educational outcomes with operational definitions of the provincial health service provider.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- The CSM strategic plan now includes the following statement: “We will develop scholarly tracks for medical students with an interest in business, policy and public health.” This will be accomplished by an enhanced “Leaders in Medicine” program, including current ongoing meetings with leaders in our Haskayne School of Business (combined MD-MBA)
- Several newer curricular initiatives have placed emphasis on Population health:
 - The Population Health Community Correlations project, interviewing members of the community (students in pairs visit members of community in one of six areas: disability, immigrant/refugee, aboriginal health, families of children with disabilities, homelessness and addiction, elderly)
 - As of 2016, a curricular plan is in place that will see a greater emphasis on Population health (reflecting a heightened attention to this area in our philosophy) in the first month on medical school

UNIVERSITY OF BRITISH COLUMBIA

From the earliest stages of their education, our MD students move between classroom and clinic, between campus and community, receiving world-class instruction from a constellation of province-wide educators. By integrating a scholarship-driven curriculum with multiple settings for learning, our students become active participants in their education.

The renewed curriculum is designed to highlight the importance of a health systems understanding and how medical training can be situated in the effective operationalization of the broader health system. The integration of four key areas into the renewed curriculum as foundational themes will support this recommendation. These include: inter-professional education (IPE), health systems, patient safety, and eHealth/Health informatics. These four themes are inter-related in that health systems understanding ensures quality care; inter-professional education leads to collaboration that encourages optimal human interactions; eHealth and health informatics provide the data and support the process of care, while at the same time introducing students to new and useful technologic advances; and patient safety is the vital output of the health system that we all want to achieve.

4

RECOMMENDATION 5

Address the Hidden Curriculum

5

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

MUN Curriculum

Students have specific sessions addressing “the Culture of Medicine and the Hidden Curriculum” and the “Respectful Medical Education and the Learning Environment”. They are introduced the Faculty of Medicine’s “Statement of Professional Attributes” and the CMA Code of Ethics. A respectful workplace policy and procedure is in place to provide students an opportunity to report negative behaviours. Evaluations of faculty by students are aggregated and sent to faculty yearly and to academic heads twice yearly. A “Red Flag” system, which is “major concerns”, notifies academic heads. Formal intervention is expected with three or more red flags.

After each Independent Learning Session (~q4 weeks), a Quality Improvement session is held with students, where they provide feedback on the curriculum and its operations to the Phase Management Teams. A summary of each session and actions taken is posted for students to read on D2L – the Faculty of Medicine’s Learning Platform.

DALHOUSIE UNIVERSITY

Create culturally safe ways for students and faculty to make the hidden curriculum explicit and relevant to the formal curriculum: The Faculty of Medicine involves students at all stages of curriculum design, development and implementation. Students are encouraged to explore aspects of the hidden curriculum and provide suggestions to the faculty for inclusion in the formal curriculum. In addition, faculty development offers sessions entitled the “Hidden Curriculum” and “Role Modeling” on an annual basis for faculty, staff, and residents. All clerks and their clinical faculty, at the beginning of clerkship, are required to sign a compact which outlines the roles and responsibilities each party has to each other on matters dealing with professional behaviour. The hidden curriculum is explicit in this document.

Encourage ongoing mentorship programs to provide guidance for learners in such activities as choosing electives, engaging in research, getting involved in the community and making career choices: The Dalhousie program includes a number of initiatives to address these activities such as the mandatory Research in Medicine (RIM) program, the Rural week program, and the 3-6 week “Transition” sessions presented during clerkship. Student Affairs has a program embedded in the curriculum which includes didactic interactive and on line learning opportunities for students to be mentored by faculty in career decision making.

Engage students and faculty from different schools in discussing the challenges of the hidden curriculum and in share in ways to address it constructively: Students from a variety of health professions backgrounds are invited each year to enrol the MEd program offered jointly by Dalhousie Faculty of Medicine and Acadia University. Topics dealing with the hidden curriculum are presented to learners.

Expose students and faculty to the effects of the hidden curriculum on learners by using data and research: All students are introduced to the concept of hidden curriculum through the Research in Medicine (RIM) curricular sessions. Here, the hidden curriculum is explored as a potential area of research. For example, one student is currently conducting a scoping literature review in the area of the hidden curriculum in the health professions.

UNIVERSITÉ DE SHERBROOKE

- Dissemination and promotion of the Faculty Intranet site among students and professors *Respect including the FMSS' Code of Conduct* and an *Interactive Guide aimed at helping anyone who feels he has suffered prejudice*
- Implantation of a procedure regarding professional wrongdoing reported by students
- Meeting of the program directors three times per year with student association representatives where these subjects can be addressed
- Specific initiatives depending on the training site (Professionalism Committee, subject during faculty development, meeting with students regarding professionalism)

UNIVERSITÉ LAVAL

At Université Laval, the negative aspects of the hidden curriculum are explored in a formal manner in the *Physician, Medicine and Society* (I to IV) course and informally in interest groups. The Faculty of Medicine has developed codes of conduct and policies that guide the medical students and faculty members: code of professionalism for medical students; code of professionalism for faculty members; code of conduct for teachers; policy against harassment, intimidation and violence; policies on relations with industry and private companies; policy on the management of funds for residency programs, etc. A reference framework on social accountability and professionalism was also adopted by the Faculty of Medicine Council in June 2013. A plan for the dissemination of these codes and policies to students and teachers was implemented in all areas. The Faculty ensured that clear remediation and intervention mechanisms dealing with potential undesirable events were implemented.

UNIVERSITÉ DE MONTRÉAL

This recommendation was the object of progress under two themes over the last two years: 1) Professionalism for various Faculty stakeholders and those from related environments, and 2) relationships among the specialists, specifically emphasis on family medicine.

Our MD program fostered the development of professionalism among medical students: specific training in ethics and guidelines pertaining to professional conduct expectations during PBL and during clinical internships were developed. More specifically, training was set up last year as a simulation with the purpose of recognition and adequate reactions dealing with incivility and intimidation when experienced in a learning

environment. The Faculty worked on the revision of the Code of Conduct and communication of a Code of Ethics covering conflicts of interest. Since 2013, a Faculty Office of Ethics allows the integration of ethics teaching and the dissemination of the Codes to all the Faculty's programs.

For professors, training aimed at recognizing unprofessional conduct and strategies for dealing with it are being deployed to improve the academic climate. Our goal is a stronger coherence between the teaching received in ethics and the conduct that can be observed in all environments.

As for family medicine, a Faculty committee is working on emphasizing it and increasing the number of family medicine professors during the preclinic years. The family medicine clerkship has also become one of the basic clerkships in the program.

MCGILL UNIVERSITY

The hidden curriculum is being addressed at several levels in our new MDCM curriculum. One of the Faculty's goals in recent years has been the promotion of Family Medicine, previously undervalued, often through influences of the hidden curriculum. Through a cohesive strategy and targeted actions, we have succeeded in transforming attitudes and doubling the number of students entering family medicine residencies in the last decade.

The hidden curriculum is also addressed through the Physicianship component of the MDCM program. This includes a four-year longitudinal mentorship where one of the primary goals is to provide a safe space for students to reflect upon and discuss the enculturation process they undergo in medical school. A critical aspect of this is guided reflections on the nature of the hidden and informal curricula. The teachers in this program, called Osler Fellows, receive targeted faculty development workshops on issues that will equip them to be supportive mentors; the content of these workshops include: the hidden curriculum, ethical erosion, narrative medicine (a tool to promote reflection), mindfulness, social justice, and cultural safety. We are currently in the process of developing a new workshop focused on professional identity formation, in which the impact of the hidden curriculum on identity formation will be explored explicitly.

Finally, and certainly not least, we have developed a code of conduct for both learners and faculty. It prescribes clear consequences for major lapses in behaviours as well as lapses that are not remediated.

UNIVERSITY OF OTTAWA

In an effort to deal with the hidden curriculum, we have put great emphasis on 'professionalism' in the curriculum, both for students and faculty members. All clinical rotations have the LEP tool (learning environment for professionalism) integrated into the end of rotation evaluations. Data collected by the tool are presented to leadership and department chairs at all affiliated AHSC.

In addition, we have created a system whereby students, and faculty, are encouraged to report unwanted behavior and can do so in a totally confidential and safe manner. All faculty, residents, and nurses are required to complete a learning module on student mistreatment.

The Faculty of Medicine has also created a program called 'Be In the Know'. This program is committed to providing a safe and positive learning environment for all learners, faculty and staff. This is well outlined on the Faculty Web site.

We also:

- Host a White Coat Ceremony at the beginning of the first year of studies to mark the students' official entry into the profession in front of family and friends. Students recite a Declaration of Professionalism as a symbol of their commitment to medicine and their own unique Professionalism Oath to distinguish their connection with their Class. They reaffirm the declaration when they begin clerkship.
- Provide both formal physician and peer mentoring programs that offer guidance for learners in such activities as choosing electives, engaging in research, getting involved in the community and making career choices.
- Involve students in Undergraduate Curriculum, Curricular Content Review, Clerkship, PreClerkship and Promotions Committees.

QUEEN'S UNIVERSITY

Extracurricular initiatives: Professionalism Narratives are invited from students to anonymously report on situations where they see the Professional role enacted, or where they see it could be improved. These are collected and “scrubbed” for learning events after the clerks have graduated.

The Learning Environment Panel was created in response to student concerns expressed in the Canadian Graduation Questionnaire. The panel has surveyed students about hidden curriculum, professional roles, and how supported they feel. Action plans have been developed. For example, Resilience Days have been implemented in clerkship.

Resilience Days: Students are given time away from the hospital and clinic rotations in clerkship to come together with faculty for a series of keynote speakers and active workshops on such topics as: addressing your personal wellness, the highway to success, first steps for CaRMS, pearls of wisdom for residency, the resilient physician: 5 tools to stay afloat, wellness tools, pearls of practice from faculty, panel discussion on challenging scenarios submitted by the class and maintaining your resilience core.

Curricular initiatives: Students meet with Portfolio advisors in years 1 and 2 to discuss challenges to the roles of a physician and to set practical goals. In clerkship the Competency Leads and others interview students in an interview about experiences in clerkship re. roles of a physician. The Professional role, competencies and objectives, are threaded throughout the curriculum, resulting in explicit teaching about the hidden curriculum.

UNIVERSITY OF TORONTO

- To better monitor the learning environment in our clerkship rotations, we added a standardized learning environment survey to our end-of-rotation course evaluations. Since data alone isn't enough to improve the learning environment, we also implemented a process to monitor and address learning environment issues identified in student responses to the learning environment survey.
- To support the development of strategies to address the adverse effects of the hidden curriculum in our clinical settings, we established a joint UME-Hospital Learning Environment Working Group, which includes senior-level representatives from the UofT MD program and our hospital partners.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Students are supported through social and curricular mentorship programs led by faculty in small groups that address the challenges of the hidden curriculum head on.

The UME Program has cultivated a culture where all disciplines of patient care are valued by embracing reflection as an educational strategy. Our student health and career support office – Learner Equity & Wellness – is cited as a strong pillar for all our UME learners regardless of their location. The growing numbers of Schulich Medicine graduates entering general disciplines speaks to our success in this goal.

NORTHERN ONTARIO SCHOOL OF MEDICINE

We teach the hidden curriculum explicitly in the first part of the program, exploring medicine’s ‘culture of no culture’ and the way in which it can be expressed in positive and negative ways. Students are also given structured opportunities to reflect on and explore their own hidden curriculum experiences through critical incident reflection sessions, and their community interprofessional learning portfolios. The hidden curriculum is also explored in clerkship experiences at various levels of formality. Finally the hidden curriculum is a key construct in much of our educational research projects and initiatives.

UNIVERSITY OF MANITOBA

1. As part of the Aboriginal health curriculum there is a cultural safety curriculum.
2. In the Academic Half Day in Clerkship, there is a unit in the Professionalism Course on the hidden curriculum and students have an opportunity to reflect on their experiences on the hidden curriculum and try to address it. As well, during every Clerkship, students are anonymously surveyed about mistreatment. Areas of concern are followed up by the Associate Dean of Professionalism.
3. There is a mentorship program where two students from each year in groups of eight have a mentor. That mentor follows them through all four years of the curriculum. It is not part of the curriculum; in the mentor they have someone with whom to discuss these issues and the experience of becoming and being a physician in a nonthreatening way.
4. Students in groups of ten have regularly scheduled meetings with both the Dean and Associate Dean so that the Dean’s office can accurately measure the pulse of the student experience.

UNIVERSITY OF SASKATCHEWAN

Current Status

Working group members reviewed the literature available on the hidden curriculum in medicine, and during a series of meetings based on this review discussed aspects of the hidden curriculum that affected their roles within the College of Medicine. The working group was comprised of students, residents, practising physicians, faculty and a representative from the College of Physicians and Surgeons of Saskatchewan.

In June 2011, based on the discussions of the working group, a College-wide survey focusing on the hidden curriculum was distributed to stakeholders, including undergraduate students, postgraduate medical residents,

graduate students, associate/assistant deans, full-time faculty members, community-based faculty members, staff members and program directors. A total of 116 people responded to the online survey (n=116). The majority (68.4 %) indicated that they have observed evidence of the hidden curriculum at the College of Medicine. The 80 respondents (n=80) that indicated they have observed evidence of the hidden curriculum at the College described how prevalent it is in the following ways: Extremely prevalent (10%); very prevalent (32.5%); prevalent (28.8%); somewhat prevalent (23.8%) and not very prevalent (5%).

Of the 116 survey respondents, the majority (69.9%) indicated the hidden curriculum is a high priority that must be addressed by Canada's Faculties of Medicine. The majority (66.4%) also indicated that the hidden curriculum has negative effects on undergraduate medical education and student learning.

The "hidden curriculum" can be difficult to define, and the definition may vary from person to person. A total of 87 survey respondents (n=87) provided their definitions of the hidden curriculum, including the following definitions:

- Attitudes and beliefs which are implicitly communicated among members of the College of Medicine via interactions and example-setting.
- A set of long-standing, unofficial rules or norms in the medical profession that are learned informally and are often in stark contrast to the actual goals of medical education and patient-centred care.
- Unofficial but prevalent attitudes about the culture of medicine, ethics, attitudes, and societal roles of being a physician.
- The hidden curriculum is the informal lessons students are learning from their preceptors and peers that the students may or may not be aware they're learning, and preceptors and peers may not be aware they are teaching.

Looking to the Future

- 1) **Provide clear and concise descriptions of the College's declared goals, mission and vision to all members of the College community:** A concern identified by the FMEC V working group is the entrenchment of negative attitudes among students, faculty and staff. There must be an explicit description of the negative and positive aspects of the hidden curriculum as experienced in the College, possibly following research conducted by a hidden curriculum task force. Clear and concise descriptions of the College's mission and vision should be circulated to the College community at large, and comparisons between the descriptions of the hidden curriculum and the College's declared goals must be made. Resources should be allocated to support the creation and the work of a hidden curriculum task force, and skilled staff should be asked to help identify issues and suggest ways to resolve them.
- 2) **Develop compulsory faculty education:** The FMEC V working group also identified as a concern the concentration of faculty education on teaching skills and imparting knowledge at the expense of mentoring skills. There must be development of compulsory faculty education to assist faculty in identifying knowledge and performance gaps in this area and to teach skills in changing behaviour and attitudes. Faculty must be held accountable for poor performance in this area as well as in the clinical sphere. Awards should be created to recognize those who exemplify the College's declared ideals and goals. Increased financial and promotional rewards for longitudinal behavioural and ethical teaching should be implemented.
- 3) **Develop a longitudinal plan to address the hidden curriculum:** The working group observed that "soft" skills education seems to be concentrated in the first year of medicine, as if to suggest these skills are something to be dealt with before the "real" teaching begins. There must be a longitudinal plan to address the positive and negative aspects of the hidden curriculum at all stages of student development. The role students can play in bringing forward examples of the hidden curriculum must be respected, encouraged and supported by the College of Medicine.

UNIVERSITY OF ALBERTA

The Physicianship Discussion Group component of the Physicianship course was designed to minimize and expose hidden curriculum within each course and clerkship by exploring context throughout their learning experiences. These longitudinal groups are facilitated by generalist physicians, continue over 4 years and have been demonstrated to represent a safe and supportive environment for students to discuss topics and experiences affecting their professional identity formation. We have also created intersession weeks in year 3 and 4 to provide context and content, in both large and small group settings, during their clerkship experience to specifically address the hidden curriculum.

A faculty development initiative to address the hidden curriculum included the creation of a “book club” where a group of faculty read and discussed literature on professional identity formation. As a culminating activity, we invited Dr. Alan Bleakley to visit and address our faculty through participation in education grand rounds and interaction with the book club group.

Our comprehensive data collection methods can provide a platform for investigating hidden curriculum.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- a. At our school, the hidden curriculum often lies in the student shadowing experience, which has been explored in detail recently by many discussions with our student body, creating a shadowing policy, polling our PGME program directors regarding their view on the importance of this activity (which is minimal) and creating a database of potential preceptors for shadowing experiences

UNIVERSITY OF BRITISH COLUMBIA

Outside the formal curriculum, we are aiming to enhance the learning environment for our students by addressing the hidden curriculum. We have recently established a Task Force on Student Abuse. We have a long-standing mentorship program, where students can engage with older students, residents and practicing doctors in an effort to navigate their way through the challenges of medical school.

RECOMMENDATION 6

Diversify Learning Contexts

6

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

MUN Curriculum

Phases I through III have two week community rotations in each, which send students into rural and regional centres to experience integrated primary care and its relationship with the communities they serve. Core rotations can be within a tertiary care environment or large regional centres within Newfoundland and Labrador or New Brunswick. The Family medicine core is provided in a rural or regional setting. Phase IV of the new curriculum, the Advanced Practice Integration Course enables students to be assigned to a physician, physician group or discipline for experiences that focus on following patients as they interact with the health care system for a period of twelve weeks.

The Global Health Office facilitates international electives by providing pre departure training. They launched a pilot program in 2013 taking eight (8) Phase I-III students to Nepal for 4 weeks – inSIGHT (International Summer Institute in Global Health Training). This successful program is in its third year.

DALHOUSIE UNIVERSITY

Create opportunities for early and extensive learning in a variety of community settings, including longitudinal and integrated clerkships: The program continues to develop opportunities for students to participate in a longitudinal integrated clerkship (LIC). To date, the communities of Miramichi and Upper River Valley in New Brunswick offer these experiences to a total of seven students. The community of Moncton, New Brunswick will offer the LIC experience beginning in September 2015 to a total of six students. Also, during the final week of the Med 1 program, students work with a physician in a rural Maritime community. The Nova Scotia Summer Preceptorship Program was created in 2009 to encourage students to consider a career in a rural practice or community-based clinic or hospital outside Capital Health District Authority in the Province of Nova Scotia. . . This program provides summer employment for medical students who are Nova Scotia residents.

Develop specific objectives for learning in community contexts throughout MD education: The Dalhousie program is founded on four overarching objectives; Life-long Learner, Professional, Skilled Clinician, and Community Contributor. As such, the program has specific objectives and opportunities relating to learning in community contexts throughout the four year program.

Promote an organizational culture that positively reinforces the value of multiple learning sites in MD education: Teaching and learning opportunities throughout the four year program at this point in time, extend across 100 learning sites. Dalhousie is considered the “Medical School of the Maritimes” spanning three provinces – unique to other Canadian medical schools.

UNIVERSITÉ DE SHERBROOKE

- Obligation for all externs to carry out at least one third (16 weeks / 48) of his clerkships in an environment other than his home site
- Continuation and development of diversified environments for clinical internships during the 1st year, 2nd year and clerkship
- Recognition in the form of academic credit since 2013 for internships done in research, world health (international, First Nations and community)

UNIVERSITÉ LAVAL

Université Laval is constantly improving its students’ exposure to various realities of medical practice through internships in urban, semi-urban, and rural environments within both intermediary and remote regions. The students are also exposed to community environments, current intra-hospital and outpatient care, as well as tertiary and quaternary care. Integrated longitudinal clerkships were implemented on sites in Joliette, Rimouski and Lévis, and other sites are under development. The mandatory family medicine internship is done in regional environments. In addition, Université Laval offers internships with vulnerable clientele, in aboriginal communities, emerging countries, etc. Since 2012, the Introduction to Clinic activity raises students’ awareness of patients’ life experience in various care contexts and to the work of health professionals, specifically that of physicians. Learning activities begin in the first semester in the program and are spread throughout the entire length of the pre-clerkship. They include observation internship-blocks of interventions by physicians and other professionals in various contexts: outpatient clinic, active, palliative, and rehabilitation care units, house calls, minor and major emergency, private clinic, GMF, UMF, etc. The students must also participate in community activities within community organizations.

UNIVERSITÉ DE MONTRÉAL

Our medicine program already offered, before the FMEC’s recommendations, diversity in its learning methods and contexts. At the preclinic level, the students are mainly exposed to learning in small groups using the problem-based learning (PBL) method. Team learning (TL) is introduced in a few courses and classroom courses consolidate the concepts to be mastered.

Our students are introduced early to a clinic context by longitudinal activities. They also have the opportunity to develop their competencies in simulated clinical situations included in the program in our simulation centres (CAAHC) on both campuses.

During the clinic years, our students benefit from a wide network of hospitals and community resources, in urban, semi-urban, and rural environments, both in intermediary as well as remote regions. Our vast Integrated Health University Network (RUIS) supports the organization required for this diversity in teaching.

It is also possible for our students to do their training entirely at Université de Montréal's Mauricie Campus, in a semi-urban environment, in an intermediary region. We offer, since 2012, for the students at this campus, the possibility of doing their clerkship in longitudinal experience in a primary care environment.

MCGILL UNIVERSITY

The Transition to Clinical Practice and the Core and Senior Clerkship components were centrally redesigned based on the goals of the AFMC's Future of Medical Education in Canada report and recommendations of the Education Design Group of the McGill Faculty of Medicine "Think Dangerously" strategic planning process. Course directors are building their revised curriculum to be aligned with the desired MDCM program outcome, namely a graduate possessing the core and fundamental clinical attributes and skills of a physician who has attained the requisite knowledge laid out by the Medical Council of Canada Clinical Presentations. The components curriculum promotes the learning and assessment of all MDCM program objectives, including the longitudinal curricular themes of Equity and Diversity, Inter-professionalism and Patient Safety.

Careful consideration was undertaken to ensure that students build on the knowledge, skills and attitudes learned during prior phases of the curriculum and to prepare them to be pluripotent physicians capable of pursuing further training in any clinical discipline.

The components renewal has also been driven by the need to better serve society. The current Clerkship is largely focused on tertiary care, is rotational in nature and largely inpatient-based. However, healthcare from the patient's perspective is largely primary and secondary care, longitudinal and outpatient-based. The new Core Clerkship has been redesigned into blocks of 16 weeks to promote more integration of content across several clinical disciplines. This gives students more opportunities for understanding illnesses and curricular themes across disciplines, while favouring more longitudinal outpatient exposures and better prepares students for the reality of assessing patients with undifferentiated illness.

Additionally, the primary care clinician is faced with a wide variety of clinical scenarios for which bedside ultrasound can assist in diagnoses, therapeutics, management, procedures and, ultimately, improved patient outcomes. At McGill, we are introducing students to bedside ultrasound as an adjunct to the clinical assessment of a patient. Our goal is to teach medical students the skills they need in order to use bedside ultrasound to solve discrete clinical problems. Acquisition of bedside ultrasound skills in first-year medical students was excellent throughout the year, suggesting that course objectives were set at an achievable level for the teaching time allotted. Students consistently reported an improved understanding of basic anatomy following completion of this new undergraduate course in bedside ultrasound.

UNIVERSITY OF OTTAWA

The Faculty has diversified learning contexts by:

- Creating opportunities for early and extensive learning in a variety of community settings through Distributed Medical Education (DME) and CSL.
- Offering electives in a variety of community settings that include longitudinal and integrated clerkships.
- Holding annual celebrations of 1) Aboriginal culture with lectures on Aboriginal cultures, health and traditional medicine; and 2) Francophone culture to coincide with the international francophonie day.

QUEEN'S UNIVERSITY

Pre-Clerkship Learning Contexts: The creation of our First Patient Program provides students in their first and second year with opportunities to learn from a real patient with a chronic condition. Students meet the patients at their home and in a variety of health care settings to learn from their patients. Nursing Observerships provide students with opportunities to observe the interaction among nurses and physicians and other health care professionals, but also gives insight into a small county hospital and manager skills. Additional observerships in a variety of disciplines and settings are required from students as well as part of an independent study.

Clerkship Learning Contexts: In clerkship, students have the opportunity to clerk in rural settings, including Moose Factory in Family Medicine, in larger settings for some clerkships in Oshawa and Toronto (Humber Rivers Hospital) and with a focus on inpatient and ambulatory settings in each rotation. Students also have the opportunity to participate in our new Integrated Clerkship rotation, where students spend 18 weeks in a smaller setting, combining their Family Medicine, Paediatric and Psychiatry rotations.

UNIVERSITY OF TORONTO

- Clinical teaching in the UofT MD program is provided in our **33 affiliated clinical teaching sites**, comprised of 24 hospitals, including nine full affiliates, four associated sites, and 11 community affiliates, as well as nine non-hospital clinical sites. Through this array of clinical teaching sites we are able provide students opportunities for learning experiences in a variety learning contexts. All our medical students must spend clerkship time in the community as well as in tertiary settings.
- Our four **Medical Academies** – FitzGerald, Mississauga, Peters-Boyd, and Wightman-Berris – are comprised of clusters of the University's full and community-affiliated hospitals and other healthcare sites. Our students are assigned to an Academy as part of the admissions process, with each Academy providing its students with a clinical home in an affiliated teaching hospital for the duration of the MD program, and a diverse set of clinical contexts for learning.

MICHAEL G. DEGROOTE SCHOOL OF MEDICINE, MCMASTER UNIVERSITY

As with most Canadian medical schools, McMaster has long recognized the need to train our students to be prepared to enter a broad range of post-graduate, specialty training programs. Our students have typically had a strong affinity to Family Medicine and several other generalist specialties.

McMaster's long-term and recent history has been steeped in both generalism and diversified learning contexts. Development of McMaster's Distributed Medical Education (DME) network started with the "Family Medicine North" program in Thunder Bay as early as 1991, but it began to take on its present form in 2004 with the establishment of the McMaster Community and Rural Education (Mac-CARE) program. With evidence mounting in support of the positive impact of DME and the continued need to train students to be able to practice in the widest array of clinical settings, McMaster opened Regional Campuses where students experienced nearly all of their MD Program training. The Regional Campuses were opened in Waterloo in 2007 and Niagara in 2008. These were followed by three Clinical Education Campuses in Grand Erie Six Nations (2008), Halton (2011) and Burlington (2012). As the name implies, Clinical Education Campuses supported clinical training in electives and Clerkship.

Today, McMaster has one of the largest DME networks in Canada, with over 600 enrolled undergraduate MD students (168 at the two Regional Campuses and 450 in Hamilton) and over 800 post-graduate medical trainees at sites across south-western Ontario. Most Hamilton-based students will do some training at clinical sites outside of the Academic Health Science Centre and most Regional Campus-based students will do some of their training in tertiary, academic centres. Throughout the program, students are exposed to a wide range of clinical settings – large and small, inpatient and outpatient, urban and rural.

Our partnerships with community hospitals and physicians have been key to the engagement of our teachers. The Regional Campuses and Mac-CARE Program support leaders and administrators directly within hospitals. With the support of the provincial Ministry of Health, we have been able to fund students to travel and live in community practice centres. Academic appointment, promotion, and recognition of community preceptors and the valuing of clinical teaching to the academic enterprise are all important in enabling community teachers to participate fully in McMaster's MD Program and Faculty of Health Sciences.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Our School has a national reputation in distributed learning throughout two decades. The core curriculum is delivered as a single class in a distributed fashion between two regional centres in pre-clerkship, and across our Distributed Education Network in all clinical learning in Years 3 and 4.

In clinical education, students are introduced to patient care in diverse regional centres from orientation week, through first year rural immersion week with physicians and health care professionals, into summer non-credit electives in rural, community, and global locations.

Clerkship is delivered in rural and regional sites for a minimum of one, and up to four core rotations. The School and University support students who identify global health as a career goal. Our graduates match as valued residents in regional programs leading to supporting underserved patients across Canada.

NORTHERN ONTARIO SCHOOL OF MEDICINE

NOSM's learning contexts could hardly be more diverse. Our students learn in large urban tertiary care centres, all sizes of community hospitals and clinics through to single family doctor offices and nurse practitioner clinics in rural and remote communities. There is much cultural variation including Aboriginal and Francophone communities, and immigrant populations in the large centres. In addition, learners are exposed to practice environments for a range of allied healthcare professions through a program of Community and Interprofessional Learning that runs through the first two years of the program.

UNIVERSITY OF MANITOBA

1. Rural week: All 110 students go to a rural site and learn outside of the Academy.
2. All students, unless there is a pressing reason otherwise, do their Family Medicine rotation rurally so that they can do full service Family Medicine and understand the context of the location.
3. We have moved core rotations including: Medicine, Internal Medicine, General Surgery, Emergency Medicine and Anesthesia into the community hospitals in Winnipeg.
4. We have, in the new curriculum, enhanced the number of outpatient clinics in which the students participate to get them off of the hospital wards.
5. There are two community weeks within the new Transition to Clerkship.

UNIVERSITY OF SASKATCHEWAN

Current Status

A variety of diverse learning experiences are currently available to undergraduate students at the University of Saskatchewan's College of Medicine. These learning opportunities focus on a number of different areas and themes, including inter-professionalism, urban underserved populations, rural and northern locations, global and immigrant health issues, community health, pediatrics, geriatrics and primary care. Some of the opportunities offer placements/ observerships to students, and some are longitudinal in nature. Various opportunities are available throughout all four years of medical school. While the majority of the learning experiences are mandatory, many are optional and can be selected based on student interests.

Looking to the Future

- 1) **Complete a review of available learning opportunities:** The FMEC VI working group, led by Dr. Albritton, identified more than 25 diverse learning opportunities currently available to MD learners at the College of Medicine. An administrative review of these opportunities should now occur, with the intention of answering the following questions: Do the present learning opportunities and resources meet the needs of students? Are there an adequate number of opportunities, both mandatory and optional, currently available to undergraduate students throughout all four years of their medical education? Are additional learning opportunities needed and, if so, in what areas? The administrative review should be conducted by a project coordinator, in conjunction with the FMEC VI working committee and with the assistance of the Undergraduate Medical Education (UGME) office and the UGME Curriculum Committee.

- 2) **Formalize a process for creating and implementing new learning opportunities:** If the administrative review identifies gaps in specific areas, a process will need to be formalized to create and implement new diverse learning opportunities at the College. The process should be multi-phased, beginning with needs identification and ending with program evaluation and a formal decision on whether to continue with the program. The Undergraduate Curriculum Committee, Educational Support and Development (ES&D), the Department of Community Health and Epidemiology (CH&E) and the College of Medicine Budget Planning and Priorities Committee (BPP) are entities that could be involved in this process. Inter-professional learning opportunities could be identified and developed through the Council of Health Science Deans, and through collaboration with the Division of Social Accountability, the FMEC VI working group, the FMEC VIII working group examining inter-professional practice and the UGME Curriculum Committee.
- 3) **Ensure College administrative structures can support a range of diverse learning opportunities:** While new and innovative ideas are always welcome at the College of Medicine, as the AFMC's FMEC report acknowledges, diverse learning contexts come with both benefits and "inherent challenges." The report cites distributed and community-based education models as examples, since they "must be accompanied by appropriate faculty development supports and the identification of willing preceptors." In addition, the report notes that when the number of diverse learning contexts is expanded, "the need to achieve learning objectives and assure quality of education must not be forgotten." The College must ensure it is offering high-quality learning opportunities to all undergraduate medical students that focus on a wide variety of areas of interest. The College must ensure adequate administrative resources are in place to support these programs, so students can participate in the best learning opportunities possible, and faculty and preceptors can have access to the resources they need to guide and enhance student learning.
- 4) **Explore interdisciplinary learning opportunities with other Colleges and Divisions:** While "learning contexts" often refers to geographical locations, the University of Saskatchewan's College of Medicine has taken a broader view of the term. Diversifying students' learning contexts can also mean offering innovative, unique educational content that diversifies teaching and learning styles. As a result, the College of Medicine should pursue mutually beneficial partnerships and learning opportunities with other Colleges and Divisions on the University of Saskatchewan campus. While the other health sciences disciplines, including Pharmacy, Nursing, Physical Therapy, Dentistry and Veterinary Medicine, have more obvious inter-professional linkages to and relationships with the College of Medicine, broader relationships should also be pursued on campus. For example, preliminary discussions have occurred regarding possible partnerships between the College of Medicine and the Division of Fine Arts and Humanities.

It has been observed that many undergraduate medical students have a keen interest in the fine arts, particularly music, and this interest should be nurtured throughout the course of their MD education. This interest in the arts can be seen in the success of the College of Medicine's first-year art show each year. As such, possible connections between the Division and the College should be explored. Examples of mutually beneficial projects may include, but should not be limited to, utilizing actors and their dramatic skills in the training of doctor-patient communication scenarios; encouraging painting with various brushes to enhance surgical skills; and further examining the innovative history of health care in Saskatchewan with the assistance of a medical historian.

UNIVERSITY OF ALBERTA

The focus of learning in a variety of community settings was well represented in our program level objectives. Since this report we have increased the number and type of students' experience across learning contexts. The Patient Immersion Experiences as part of the year 1 and 2 physicianship course seek to provide context from the patient perspective. Pairs of students learn from a designated patient mentor who is living with a chronic illness. Multiple mandatory meetings are scheduled in non-traditional clinical context and include one planned session where the students accompany the patient on a medical appointment to experience the health care system from their patient mentor's perspective.

All first and second year students participate in a Longitudinal Clinical Experience as part of the physicianship program where students are assigned to community-based family physicians. The experience has been designed to allow continuity of mentorship, patients and location. Our students also now participate in visits to community clinics, some have had an opportunity to attend health board meetings, and to share their learning experiences with through their longitudinal discussion groups in the physicianship course.

Students also participate in multiple settings in the pediatric, family medicine, surgery and internal medicine clerkships. We are also in the planning process of implementing home and rehabilitation center visits within the geriatric clerkship, and increased ambulatory care in all mandatory fourth year clerkship rotations.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

Our faculty has created and supported a number of recent initiatives in this area:

i. Faculty-led initiatives

1. Global Health concentration: (8 students)

The vision of the Global Health concentration is: "to increase student exposure to specific underserved populations locally, nationally, and internationally in hopes that students will (engage a broader context of health) return to these settings when they are finished their training"

2. Students who are not chosen for the Global health concentration stream but have a keen interest can also participate in the journal clubs (open to entire class). Many other students also take part in international electives or electives in more remote Canadian locations. In 2012-13, 26 students did electives in remote Canadian locations (e.g. Iqualuit, Repulse Bay, Yellowknife) and 48 students (54 electives) participated in international electives

3. Calgary inner city clinician coalition: 4 physicians in our city (including Dr. Janette Hurley, faculty-lead for student-run clinic), who are involved in direct clinical care, quality improvement (better linkages), and research projects plans for underserved patient populations. Students collaborate in research projects and patient care via this group

4. Calgary Healthcare Improvement Network, or CHIN: QI projects involving students, which include projects for underserved populations

5. The Global Health Project, completed as part of the Global Health course in first year (in groups of up to three, students complete a project in the area of global health. This project can relate to an elective, a research proposal, or other topic in global health)

ii. Student-led initiatives:

1. SHINE:

Students for Health Innovation and Education is a project started 2 years ago by a small group of students, which has now grown to 9 executive members. The SHINE initiative offers longitudinal, project-based experiences in the community: namely at the Calgary Remand center and the YMCA

2. Student-run clinic

This wonderful experience aims to provide accessible, quality healthcare for underserved Calgarians. The program takes approximately thirty students per year who participate in 3 clinics: Inn from the Cold, Refugee clinic, Alex Bus

UNIVERSITY OF BRITISH COLUMBIA

We have made great strides in diversifying learning contexts by expanding and distributing our program across British Columbia. Further, our Integrated Community Clerkships (ICCs) are based in six different B.C. communities and have been in existence since 2004. UBC was one of the first universities in North America to pilot an integrated clerkship, and the first in Canada. Longitudinal Integrated Clerkships, in all their permutations, have become a successful and innovative model of undergraduate clinical education, a model that is endorsed and implemented by medical schools all over the world. The success and strength of these clerkships is now informing curriculum reform in our own university and elsewhere. Finally, the FLEX courses, developed as part of our renewed curriculum, will further increase the diverse learning opportunities presented to our students.

RECOMMENDATION 7

Value Generalism

7

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

MUN Curriculum

Generalism has been a guiding principle of the new curriculum. Selection of objectives for the new curriculum came from a variety of databases – MUN, national specialty societies, national special interest groups – and was performed through the lens of family physicians and general community specialists. Subspecialty content experts were asked for gaps. A panel from the Medical Education Leadership Team and the Undergraduate Medical Studies Committee had the final say.

The major oversight committee for the MD program and the phase management teams recruit teams with specific skills that includes a community or generalist focus.

As in previous, family medicine physicians play a major role in clinical skills training. Family Physicians also play a lead role in the Independent Learning sessions (ILS) as described.

DALHOUSIE UNIVERSITY

Ensure that the health human resource planning process customized the mix of generalists and specialists in the physician workforce with the needs of populations: Currently, the human resource planning processes for Nova Scotia does take into account the need for the mix of generalists and specialists in the physician workforce with the needs of populations in a collaborative process involving both faculty of medicine and government Health HR planners.

Identify and address elements of the hidden curriculum that devalue generalism and family medicine: In 2014, the Undergraduate Medical Education Curriculum Committee (UMECC) approved a compact between faculty and students addressing expectations of both with regards to professional behaviour. Included in the compact is language dealing with this aspect of the hidden curriculum. In addition, case-based learning sessions are developed for the Professional Competencies program dealing with this issue.

Provide learning opportunities for students to experience undifferentiated patients and early presentation of illness in natural contexts: These learning opportunities have increased due to the introduction of the LIC opportunities for clinical clerks. In addition, all students have the opportunity beginning in the first year of the program to participate in a weekly elective experience with a family physician and/or generalist. Also, all students outside of the LIC experience do participate in a mandatory six-week clinical rotation at various family medicine practices located throughout the Maritimes.

UNIVERSITÉ DE SHERBROOKE

- Significant involvement by teachers from basic disciplines (family medicine, internist, pediatrician, etc.) in the program's teaching and organizational structures (directors and committees)
- Internship in family medicine mandatory (7 weeks), general internal medicine (4 weeks), general pediatrics (4 weeks) during clerkship
- Appointment of a family medicine MD studies director as a member of the Curriculum Committee
- Support of the Family Medicine Interest Group (GIMF)

UNIVERSITÉ LAVAL

Université Laval's training curriculum is closely associated with generalism pedagogical objectives and the field of study is circumscribed by a series of clinical situations directly related to the Medical Canada Council's objectives. The majority of courses have a course co-manager originating from family medicine. The generalist disciplines are very present in program management and within various committees. In addition, our mandatory clerkships are structured around basic specialties, called generalist: internal medicine, family medicine, pediatrics, general surgery, obstetrics, gynecology, geriatrics, emergency and psychiatry. The development of integrated longitudinal clerkships also foster an integrated and generalist vision of medical disciplines and practice. Finally, more than 80% of teachers involved belong to the family medicine and emergency medicine departments.

UNIVERSITÉ DE MONTRÉAL

Our Faculty continues to work on optimizing the presence of family physicians in medical training at all levels. They currently represent 30% of teachers in PBL, 50% in clinic and preclinic learning and 50 to 60% at the simulation centre.

In addition, our clinic years program is specifically built on generalist disciplines: internal medicine, family medicine, pediatrics, general surgery, obstetrics, gynecology, geriatrics, emergency and psychiatry.

Our Faculty, through the Family Medicine Department, supports the Family Medicine Interest Group implemented by the undergraduate students on both of our campuses and its activities. Our Faculty has even hosted the Family Medicine Forum (FMF) for medical students in Quebec in 2012.

Moreover, our students go into family medicine more than anywhere else: 66% of our Mauricie Campus students and 43% of those at the Montreal Campus. (These percentages of students are those with family medicine as their first choice). The patient-partner care approach as described in Recommendation 1 significantly contributes to the overall patient approach concept that is implied by generalism.

MCGILL UNIVERSITY

A new Longitudinal Family Medicine Experience (LFME) has received the thumbs-up from students and physicians, alike. The LFME places students in a family doctor's office at least once a month throughout their first year. Some 170 family physicians were recruited from McGill and the Quebec community in 2013-2014 to act as preceptors for this ambitious initiative. The students were exposed to close to 18,000 patient interactions as a result.

The following quote provides the perspective of one student having completed the first iteration of the LFME:

“My longitudinal family medicine experience allowed me to integrate book learning and the patient experience. For example, the day I learned about atrial fibrillation in a cardiology lecture, I saw a patient with a newly diagnosed atrial fibrillation with my preceptor. Not only did I get to feel their pulse and see the ECG, but I also got to understand how this diagnosis was affecting them.”

– Annick Gauthier, MDCM candidate, Class of 2017

UNIVERSITY OF OTTAWA

Generalists, including family physicians, are and have been involved in all aspects of development and teaching and leadership in the curriculum. Many of our CBL tutors are family physicians and the leaders of several of our 'Units' are family physicians (Unit II and Integration). Our Family Medicine clerkship rotation is guided by our Department of Family Medicine. Many of our students want to become generalists which is evidenced by the fact that in 2014 48% of our students matched to a family medicine residency program.

QUEEN'S UNIVERSITY

Curriculum: The new Curriculum in Family Medicine in pre-clerkship is taught by two family medicine faculty, and in clerkship includes rotations around Ontario, with reflections, logs, case reports and online modules. It also includes 2 practical clinical features: the Family Medicine After-Hours Clinic program is run by family physicians in first year, where students participate in at least one after hours clinic and submit reflections, and Community Week is a week at the end of first year, where students, travel to communities around Ontario and work with family physicians for a week, observing, and participating where possible. They create a blog article on their experience, as well as complete Advocacy and Manager checklists based on their observations. Family Medicine is a separate clerkship rotation in many settings and the pivotal component of the Integrated Clerkships.

Undifferentiated patient cases, and clinical reasoning skills are the focus of three new learning events. Additional undifferentiated cases are planned for the Professional Integrations course in year 2. Clinical presentations from the Medical Council of Canada form the “spine” of medical expert knowledge in our curriculum framework. A very popular learning series are the integrated sessions with family doctors and other specialists, such as the Back Pain learning event, with MSK surgeon and Family Medicine physician, or the Complex Medical Patient with Family Doctor, ED specialist, Respiriologist and Internist.

Curricular Leadership: Queen's PBL, Facilitated Small Group Learning draws over 20 tutors from the family medicine preceptors in the community. A Family Medicine physician is the Coordinator of 3rd term Clinical Skills, while two others are Course Coordinators. There is representation for Family Medicine on the Curriculum Committee.

UNIVERSITY OF TORONTO

- Through our second-year Family Medicine Longitudinal Experience, which was introduced into the MD program curriculum as mandatory requirement in 2010-11, students develop an appreciation of the role family physicians play within the health care system. As part of this experience, our students spend six half-days in clinic with a community-based family physician. In addition to providing students with an opportunity to observe a family doctor, the primary care setting provides an excellent opportunity for students to learn about the health care needs of diverse communities and the corresponding demands on the health care system.
- In the spring 2014 CaRMS match, 39% of UofT MD students matched to Family Medicine, our highest percentage in the last ten years and consistent with our commitment to valuing generalism.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Anchoring generalism in the UME vision statement and drawing from the strength of the Department of Family Medicine as a national founder in primary care, Schulich Medicine & Dentistry's commitment to the goal of generalism is evident in our many generalist educators, mentors and leaders. The curriculum has a deep commitment to nurturing all aspects of generalism in delivering patient-care and scholarship. There is no better demonstration of this than the consistent placement of more than 40 per cent of our graduating classes into Family Medicine. Additionally 70 per cent of our Class of 2014 matched into general entry residency programs across Canada.

NORTHERN ONTARIO SCHOOL OF MEDICINE

Generalism is one of NOSM's foundational academic principles, along with interprofessionalism, integration, community orientation, inclusivity, continuity, and dedication to inquiry. Generalism is therefore written into and celebrated in all aspects of the program.

Moreover, we have a strong family medicine focus throughout the undergraduate program. Family physicians and other generalist specialists are indeed integral participants in all stages of MD education.

UNIVERSITY OF MANITOBA

1. When designing the new curriculum, each course had a committee. There were 20 such committees and we ensured that there was a Generalist (Family Physician, Emergency Physician, General Internist or General Pediatrician) on each committee.
2. There is a very large Family Medicine Interest Group. In the neighborhood of 70% of our students attend in the first and second year.
3. In conjunction with the office of Northern and Rural Health we have started a Home for the Summer Program. Last summer 20 students went to rural areas (it may or not be their home) over the summer period. They also prepared reports on issues in the community to which they visited. Last summer there were 50 applicants to this program.

4. The Northern Medical Unit, which is affiliated with the University of Manitoba, takes both summer students and Med IV clerkship students. Students may also accompany faculty members on trips to remote northern communities.
5. We have made a concerted attempt to recruit more Generalist teachers particularly during their Pre-Clerkship to serve as role models for our students.

UNIVERSITY OF SASKATCHEWAN

Current Status

The College of Medicine recognizes the importance of generalism and is committed to enhancing the presence of generalists and generalist content in its undergraduate curricula. The generalism working group has discussed a number of approaches that could help achieve these goals. For the purposes of this working group, the generalist specialties include Family Medicine, General Pediatrics, General Internal Medicine and Emergency Medicine.

Looking to the Future

- 1) **Further involve generalists in undergraduate curriculum development:** Generalists should sit on the curriculum committee and on all subcommittees, as well as on the Course Development Teams. Curricular map reviews should take place to ensure the domains of the generalist areas are identified and generalists are sought out to teach undergraduate students.
- 2) **Further involve generalists in undergraduate teaching activities:** Case studies focusing on generalist content should be developed with the participation of generalists and should be taught by generalists. The number of integrated case studies developed by generalists should be expanded (for example, chronic diseases, chronic disease management and developmental system topics should be areas of focus). As well, generalists should coordinate and teach undergraduate communications skills in areas such as: Doctor-patient relationships, role of uncertainty and breaking bad news.
- 3) **Increase undergraduate student exposure to generalism:** Generalism guidelines should be developed in relation to admission policies at the College of Medicine. A mentorship program should be developed for first- and second-year undergraduate medical students so they have the opportunity to spend more time within generalist areas, including office situations, outpatient clinics and small group teaching activities. A two-week generalist clerkship rotation should be offered to all undergraduate medical students in areas such as palliative care, chronic disease clinics, chronic pain clinics, women's health clinics, inner-city clinics and addictions.
- 4) **Enhance faculty development in relation to generalism:** Enhanced faculty development opportunities should be offered to generalists, with teaching topic areas and mentoring high priorities. Standards for generalists to be recognized for teaching for further promotion and/or tenure should be developed.
- 5) **Implement a formal generalist structure in the College of Medicine:** An Assistant Dean Generalism position should be created to ensure the above goals are met. Administrative assistance would also need to be provided. Generalist champions should be identified within the College of Medicine, and an oversight generalism committee or subcommittee should work on an ongoing basis with the curriculum committee to ensure generalist content is included and enhanced.
- 6) **Develop a generalism communications strategy:** A communications strategy should be developed to inform students, faculty, departments and administrators about the increased focus on generalism. The strategy should include ideas for further engaging teachers and students and should assist in addressing the following questions: What needs to be taught? How should it be taught? When should it be taught? How can faculty become engaged and participate in the initiatives described in this report?

UNIVERSITY OF ALBERTA

Our program is actively adopting a generalist approach to the design of the MD program. In addition to the variety of learning contexts described above, we have both family medicine and Royal College generalist representation on our curriculum committee. For course and clerkship objectives, our priority is to ensure these are defined from a generalist perspective for the care of undifferentiated patients. The new Communication curriculum, which spans all years of the physicianship course starting in Sept of Year 1, involves new cases; these were created to simulate the generalist patient presentation of the clinical presentations related to each system-based block. There has also been an increasing participation from family medicine faculty across all 4 years of the program. Students will also gain experience with undifferentiated patients and early presentation of illness in authentic contexts through the family medicine, pediatrics and emergency medicine clerkships. Family medicine faculty also facilitate a majority of the discussion groups in physicianship to allow a generalist context in the discussion of student unique experiences. To quantify this change, the number of Family Medicine teaching hours in the first two years of the program has increased from approx 1200 hours in 2012-13 to more than 3200 hours in 2013-14.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- a. The strategic plan and the Brownell task force (mentioned under 1.) highlight the value placed on generalism
- b. In addition, a recent curricular task force, called “Less is More”, has taken a group of students, course leaders, and generalists and reviewed every single slide of every single pre-clerkship lecture to specifically address the question: “Is this material appropriate for the teaching of an undifferentiated medical student”. This process has been largely student-driven, very productive, and extremely informative
- c. A previous similar exercise had been undertaken for small group teaching by our group of “Master Teachers”, comprised of over 30 faculty members, of various backgrounds (largely generalists), who teach longitudinally in our pre-clerkship curriculum

UNIVERSITY OF BRITISH COLUMBIA

We have addressed historically negative concepts around family medicine or generalist specialties through the distribution of our MD program. Our diverse, province-wide campuses place value on generalism and family medicine. Many of the students who complete their training in these regional areas are enthusiastic about serving the needs of the communities by becoming family physicians or general specialists, and we have a growing number of students choosing careers in these areas each year. For example 43% of UBC students now enter family medicine residency programs.

RECOMMENDATION 8

Advance Inter- and Intra-Professional Practice

8

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

MUN Curriculum

For many years, the MD program has had a strong educational component in inter-professional practice through the Centre of Collaborative Health Profession Education (CCHPE). This centre brings together faculty and educational leaders from the Faculty of Medicine, Schools Nursing, Pharmacy, Human Kinetics and Recreation, Education and Social Work and the Counselling Centre. For the new curriculum, a shift in approach was made from disease-based modules to Collaboration/IPE where they learn in inter-professional groups team functioning, inter-professional skills in communication and collaboration and enhanced collaboration. In the development of phase IV attention is paid to using skills in intra-professional and inter-professional teams.

This is enhanced by the introduction of a series of eight modules over 4 years of the MD program in physician leadership and management. Topics include project management, organizational structures, and strategic planning. Many sessions reflect on the role of physicians “to self, patients and families, within society, to the medical profession, other professionals, and the health system”.

The new FoM simulation centre integrates simulation (high and low fidelity) and the standardized patient program. It will provide opportunities for team based care and intra- and inter-professional interactions.

DALHOUSIE UNIVERSITY

Acknowledge and address the traditional power relationships and hierarchies that undermine the implementation of effective inter- and intra-professional education and practice: Students are provided with opportunities to explore these concepts during case-based learning sessions throughout their longitudinal Professional Competences program. Currently this two-year program is being redesigned as a four-year program, spanning the entire four years of the MD program.

Collect and share exemplary practices in inter- and intra-professional education: The Faculties of Medicine and Health Professions have established a collaborative network with a goal to design, developing, and implementing high quality inter- and intra-professional education opportunities for all health professions students.

Foster further research and knowledge translation to help shape medical education policies that support inter- and intra-professional learning: The Faculty of Medicine has been involved in a small number of research initiatives that support inter- and intra-professional learning.

Review existing faculty and departmental structures with support for inter- and intra-professional learning in mind: A project to develop an undergraduate Inter professional Education Program in the Faculty of Medicine was created by the Faculty of Medicine Education Council in response to the program requirements outlined in the LCME/CACMS accreditation standard ED – 19A. A working group was formed with the purpose of developing an IPE program that is integrated across four years of Undergraduate Medical Education (UME) and reflects best practices in IPE and Inter professional Care (IPC). Work is ongoing, with an implementation date set for September 2015.

Teach and assess team-based and collaborative competencies in all learning environments: At the present time, students are taught and assessed on team-based collaboration during their Professional Competencies and Case-based Learning (CBL) small group learning sessions. Planning is underway to include these initiatives in the clinical settings throughout the four-year program.

UNIVERSITÉ DE SHERBROOKE

- Report from a Faculty committee on professional cooperation (CP) training with an inventory of current learning activities and identification of competency development stakes (2014)
- Health Cooperation Group at the University of Moncton: research and inclusion of the CP in the curriculum
- Restructuration of the inter-professional workshop offered to 3rd-year students
 - Involvement of other health professionals (psychologists, nurses, respiratory therapists, etc.) in certain activities (MD Profession specifically)
- Mandatory observation at the preclinical level and participation encouraged during clerkship in multidisciplinary meetings
- Specific involvement of the Moncton team regarding clinical simulation activities at the local and national level. Inter-professional clinical immersion workshops for externs at the Moncton site
- Emergency situation simulation activity with a cooperation component offered to externs at the Saguenay site

UNIVERSITÉ LAVAL

Mandatory *Inter-professional Collaboration* (I to III) courses are included in the training of medical students at Université Laval. These inter-faculty courses are under the joint responsibility of the Faculties of Medicine, Nursing Sciences and Social Sciences. Medical students are paired with colleagues from other health and social science disciplines. In addition, the students must complete an integration project for the *Physician, Medicine and Society IV* course, supervised by a long-term care nurse. Moreover, the program is given in an integrated complex housing three health science faculties (medicine, pharmacy and nursing sciences) and the Faculty of Medicine includes a Vice-Deanship dedicated to rehabilitation studies.

UNIVERSITÉ DE MONTRÉAL

The Faculty of Medicine at Université de Montréal has innovated with the creation of longitudinal inter-professional training of its students, in cooperation with three other health sciences or social sciences faculties. Certain activities in these so-called CSS courses mobilize up to 1200 students in various professions or include the presence of patient-partners.

These activities take place over a 3-year continuum and cover the roles of other professionals, as well as how a team operates and the implementation of intervention plans. An inter-faculty committee coordinates the program. In addition, during clinic years, several health establishments have implemented internships that integrate specific activities aimed at the development of interdisciplinary experience.

MCGILL UNIVERSITY

A core theme within the new MDCM curriculum, inter-professional education has become imperative in the last ten years, as it becomes increasingly obvious that good care can only be delivered through teamwork. To that end the Faculty of Medicine offers students an Interprofessional Educational Experience (IPE) that introduces students from across the Faculty's schools to workshops beginning their first year. The workshops follow national guidelines on the competencies professionals need to be part of a team and to meet accreditation requirements. In 2013-14, some 350 first-year students participated in the IPE workshops from across the Faculty's four schools.

UNIVERSITY OF OTTAWA

The curriculum includes a number of interprofessional objectives in units I, II, integration unit and clerkship to:

- Understand the roles of the various members of the multidisciplinary team
- Identify the disciplines that may be involved in the management of patients and recognize the importance of multidisciplinary and interprofessional care in this regard
- Describe the types of interprofessional supportive care that may be available to assist the patient and their family
- Discuss interprofessional collaboration in palliative and end of life care as a fundamental concept
- Demonstrate an interprofessional case approach with formal and informal teams

In addition, there is a leadership course, which includes the multisource feedback tool in healthcare. This is a 360 evaluation with feedback being elicited from multiple sources, including interprofessional colleagues. A new subprogram of interprofessional education has been created under the newly developed larger program of social accountability. The position for a Director of Interprofessional Education has been posted.

QUEEN'S UNIVERSITY

Curriculum: Program objectives include interprofessional and intraprofessional practice. The Nursing Observerships are a new learning experience where students go to the hospitals in Kingston and Napanee to observe nurses at work, and to complete field notes to debrief with their preceptor. There are a series of mandatory interprofessional learning events as part of the curriculum, where medical students learn with nursing and occupational and physical therapy students. These include Introduction to Interprofessional Roles, Cases with Interprofessional Roles, Infection Control, and Intellectual Disabilities Education Day. IP assessments are linked to each. There are plans for interprofessional learning in the next iteration of the Exercise Expo, with physiotherapy students. A new set of learning objectives regarding interprofessional collaboration has been added to all clerkship rotations. Rotations are requiring students to log specific examples as part of the mandatory logging process. Examples include “Surgical checklist”, handovers, etc.

Curricular Leadership: The Collaborator Competency Lead oversees the Collaborator role, competencies and Program/Curricular objectives, and the teaching and learning and assessment of these, from years 1-4. The Collaborator Lead and the Manager, Educational Development sit on the Office of Interprofessional Education Curriculum Advisory Group and meet regularly to plan and refine Interprofessional learning events.

Extracurricular: There are several optional learning events with students from other health care schools in which medical students consistently participate: Health Care Team Challenge, Compassionate Care Workshop, House of Horrors (Infection Control with Nursing on Hallowe'en), Sports and Athletes with Disabilities (new for meds) and Collaborator in Action Project .

UNIVERSITY OF TORONTO

- Our Interprofessional Education (IPE) curriculum has been developed for students from 11 U of T health professions Departments and Faculties and is delivered under the auspices of our Centre for IPE in collaboration with our IPE Faculty Lead. To complete the IPE curriculum, our students must complete four core learning activities as well as a minimum number of elective learning activities. From 2011 to 2012, the Centre for IPE tripled the number of available elective activities.
- As a complement to our IPE Curriculum, we introduced an IPE shadowing activity at the beginning of our third year Transition to Clerkship course. To complete this mandatory half-day experience, our students shadow a member of our IPE team in a hospital setting and reflect on their experience as collaborators during their Portfolio sessions in Clerkship. By seeing health care through the lenses of different health care professionals, our medical students gain a new perspective on patient care and a more accurate understanding of what ‘other players on the same team’ contribute.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Schulich Medicine & Dentistry values other health care professionals as educators in all areas of education. In first-year, students are involved in integrated learning with all health professionals. Clinical exposure in second-year, and all rotations in Clerkship, involve working alongside and learning with all members of the health care team. Our students are supported to achieve competency in communications within and between health care teams as an objective throughout the curriculum. Designating a faculty Interprofessional Education (IP) lead and working with Western medical faculty, and Windsor University health sciences faculty, allows the School to deliver graduates who understand improving quality and safety through team-based patient- and family-centred care.

NORTHERN ONTARIO SCHOOL OF MEDICINE

Northern healthcare is intrinsically interprofessional, which means that our students regularly learn in inter-professional settings. Moreover, IPE is explicitly taught and assessed in the curriculum through Themes 1 and 2, and there is an Interprofessional Education group in the Community Engagement portfolio which organize a wide range of IPE activities that include our medical students alongside students from other NOSM programs as well as with those from other health professional schools and programs.

UNIVERSITY OF MANITOBA

1. In 2014 the Faculty of Medicine became the College of Medicine with the creation of the new Faculty of Health Sciences which was designed to have Medicine, Nursing, Pharmacy, Dentistry and Medical Rehabilitation work together. In Med 1 and Med II there are specific inter-professional education events that occur with Nursing, Pharmacy and Rehabilitation.
2. We have an Intra-Professional Health Initiative Open School that is a student run event where students may participate with learners from different disciplines in areas that are generally cared for by a team.
3. Through the Clinical Learning and Simulation Facility (CLSF), Faculty has developed an innovative program called Nightmare-Night Care where student physicians, student nurses, student pharmacists, student occupational therapists, student physiotherapists and student social workers all work together on a simulated ward where they get calls, have problem patients, patients get sick, there are social issues to deal with. This has been a highly successful program.
4. We have ensured that the collaborator role is evaluated in every clerkship rotation.

UNIVERSITY OF SASKATCHEWAN

Current Status

Health-care providers who are good collaborative practitioners understand the importance of working together with colleagues and the patient/family to achieve the best health outcomes.

To examine the above national recommendation within the context of the University of Saskatchewan's College of Medicine, a working group led by Dr. Liz Harrison was created.

The FMEC VIII working group included College of Medicine students, faculty and senior administrators representing interests in education, research, clinical practice, administration, community engagement and professional development. The recommendations on the next page focus on medical education with the knowledge that we must work with others to make any meaningful progress in inter-professional education (IPE).

In the process of developing the recommendations below, national and local reports were reviewed. A survey focusing on inter- and intra-professional practice was developed and sent out to all members of the College of Medicine in April 2011. Interviews with key individuals were carried out in May 2011. Faculty, students and administrators participated in the survey (n=68) and follow-up interviews (n=13).

The majority of respondents were not aware of two recent national documents defining IP competencies and IP accreditation standards. Although there were some comments related to the culture of hierarchy as a barrier to IPE, this theme was not as prevalent in the findings as one might have expected based on the AFMC's FMEC report. There was also significant recognition of collaborative practice contributing to better patient care and health-provider satisfaction.

An inventory of IPE experiences was developed by the FMEC VIII working group based on survey information and other reports available to the committee, such as a Diverse Learning Opportunities Grid prepared by the working group examining FMEC Recommendation VI. A small number of mandatory IPE experiences currently exist in the program; however, there are also a range of elective or informal IPE activities. Student events were frequently mentioned as the primary consistent IP experiences in the College. The majority of individuals (faculty and students) commented on the very positive experiences to date with IPE. There was significant support for developing IP curriculum with patient-centred/case-based approaches frequently noted as appropriate. In building IP competencies, it was recognized that the competencies need to be formally evaluated to ensure appropriate attention and value within the curriculum.

There was overwhelming support for the need to significantly advance IPE in the College of Medicine. Many opportunities exist that can contribute to the development of IP competencies. Although there is a need to build IPE capacity through faculty development, it was also noted that a small number of faculty members with significant expertise in IPE (teaching, research, practice) should be consulted through the next stages of curricular development to implement best practices and evidence related to IPE.

Looking to the Future

- 1) **Focus on IP competencies:** All graduates of the University of Saskatchewan College of Medicine must be effective team members demonstrating IP competencies in six domains:
 - a. Inter-professional communication
 - b. Patient/client/family/community-centred care
 - c. Role clarification
 - d. Team functioning
 - e. Collaborative leadership
 - f. Inter-professional conflict resolution

These core competencies will be developed through an inter-professional curriculum with a patient-centred focus which should be integrated into the new 2+2 medical curriculum. An IPE medical lead should be appointed to work with the medical curriculum committee and other health professional programs to develop the IPE curriculum.

- 2) **Establish appropriate mechanisms and structures to support IPE:** The College of Medicine must establish appropriate mechanisms within the College governance structures to ensure faculty, staff and student representation and engagement in IPE work on campus and throughout the province and country. The College of Medicine must establish appropriate College administrative structures and resources to support IPE within the program considering the work of faculty, staff and students.

Although the FMEC VIII working group is committed to continuing on as an advisory group on the implementation of the FMEC recommendations, it is emphasized that there is the need for a new academic IPE position (lead) to be established in the College of Medicine. The individual in this position would be responsible for IPE facilitation, communication and teaching. The committee envisions the establishment of an IPE lead for the College of Medicine as an important first step in moving ahead.

- 3) **Ensure IP duties are assigned and expectations related to IPE are clearly outlined:** The Faculty Council of the College of Medicine must ensure that IPE assignment of duties, performance and scholarship by faculty and staff are clearly identified, rewarded and recognized within the various College/Department structures, including standards for promotion/tenure. The College should establish two new faculty positions to support research and scholarship related to IPE and/or collaborative practice
- 4) **Ensure IPE resources are easily accessible to the College faculty:** College of Medicine faculty must have easy access to current IPE resources (IP competencies, online resources for IPE) to support faculty development. The national documents will be used to direct and guide activities.

The FMEC VIII working group will assist with College-wide communication, evaluation and education around IPE and will monitor the progress on the recommendations contained in this report. The working group will also represent the College in activities related to IPE strategic planning with CHSD as required. As noted previously, it is important that the College of Medicine appoints an IP lead who can work with the various groups and individuals in moving ahead on the implementation of these recommendations.

UNIVERSITY OF ALBERTA

The University of Alberta has a longstanding program to promote inter- and intra-professional practice. The Health Sciences Council, an association of nine health related faculties, facilitates an inter-professional education program that our students participate in year 1. Our Associate Dean Curriculum is a lead on the revision of the inter-professional learning program. Our program level objectives mandate that collaborative learning environments occur in our program. A variety of team-based learning and problem-based learning opportunities reinforce the importance of intra-professional team practice. Also, there are peer and inter-professional assessments delivered in the physicianship course, two systems based block courses and in clerkships.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- a. We have recently (2014) appointed Dr. Ian Wishart, an Emergency physician by training, as Director of IPE at our school. This has led to a number of very productive meetings with the faculties of Nursing and Social Work at the University of Calgary. In addition to enhancing what we were previously doing for IPE, this group has organized two activities to begin in May 2015:
 - I. A pilot in our Endocrinology course where nursing students and social work students will accompany medical students on a home visit to an endocrine patient and discuss team management of the patient
 - II. A trauma simulation as part of Introduction to Clinical Practice where we will have medical students in second year, nursing students, respiratory students and social work students running a trauma with facilitation by staff from respective disciplines

UNIVERSITY OF BRITISH COLUMBIA

We have developed a faculty-wide strategy and framework for inter-professional health education and are currently developing an integrated implementation plan. The curriculum renewal process has presented the ideal opportunity to build IPE into our renewed framework going forward.

RECOMMENDATION 9

Adopt a Competency-Based and Flexible Approach

9

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

MUN Curriculum

Integrating the CanMEDS competencies and the four principles of family medicine, MD program competencies were created and adopted by the Undergraduate Medical Studies Committee for the then current curriculum and the new curriculum. From this are derived the course phase and course goals and session objectives. As a new course is developed, Advanced Procedural Skills, entrustable professional activities (EPAs) are developed with milestones to be achieved. All learning objectives and course goals must fit with the program competencies.

Core values that were embraced at the onset of curriculum development in 2008, were innovation, integration, accountability, flexibility and collaborative. These reflect the University core values in its Teaching and Learning Framework, adopted in 2011. The UGMS committee and its supportive committees endorsed measures that reflect these values. These include protective time for self-directed or independent learning, a new curriculum database to track and monitor competencies, learning objectives, linkages, associated resources and inventories of teaching and learning methods.

Integrated Learning Sessions (ILS) are an opportunity for undergraduate medical students to integrate their recent learning in the context of patients, their families and their communities. Students work in small student-led groups to discuss their recent course work as prompted by very short case descriptions (stems). Rather than “solve a case”, students focus on how different topics, including CanMEDS roles other than Medical Expert, come together in an approach to a realistic scenario. Each group then feeds back the results of their discussion to the entire class in a student-led large-group session, which is overseen by faculty physicians who provide guidance and insight into the topics at hand, often drawing on their own experiences to bring an added relevance to the discussion. Students round out the ILS experience by submitting moderate-length papers discussing more fully one of the stems, with an eye to issues that have not yet been covered in class and a plan for how this will be learned as they proceed in their medical careers.

DALHOUSIE UNIVERSITY

Develop a competency-based assessment system supported by appropriate faculty development that includes continuous assessment: The Faculty of Medicine is establishing an Assessment Unit in 2015 with a mandate to promote a programmatic assessment approach that will foster and support competency-based assessment, programmatic evaluation, feedback and pedagogy across the continuum.

Identify MD education level competencies: This work by the PGME and UME leadership nationally is ongoing.

Link more closely with postgraduate education to create a learning continuum: The Faculty of Medicine has established an Education Council which addresses education issues and trends across the continuum. The EC has studied competency-based education extensively at the PGME level and in 2015 will explore more fully its formal implementation into UGME.

Tighten the integration of accreditation standards for MD education into those for postgraduate medical education: The Education Council is responsible to review accreditation practices/processes along the continuum of medical education.

UNIVERSITÉ DE SHERBROOKE

- Development of a computer tool for cartography of the program making identification of objectives and competencies taught easier
- Validation with people responsible for activities and externships of the expected level of various competencies during their activities
- Possibility of interrupting studies for personal projects or for academic or personal difficulties
- Addition of specific mentorship for students with significant academic difficulties
- Emphasis on new technology including, among others, the limitation of paper records (documents on the Intranet site)
- Progressive implementation of the use of the iPad by transforming the material to iBook format for all pre-clinical activities (will be mandatory in 2015-2016)

UNIVERSITÉ LAVAL

Université Laval's medicine program is based on the development of 7 competencies resulting from the CanMEDS framework. Longitudinal and customized monitoring of the development of students' competencies throughout the program, from the beginning of the pre-clerkships to the end of the clerkships, was developed (series of *Competency Development Monitoring* (I to V) courses). This is a major pedagogical innovation by the Faculty and includes the pairing of each student with a physician-supervisor who guides him in the starting of reflective practice and establishment of specific development plans for his competencies; it includes the continuing evaluation of competencies carried out during integrative courses and internships; which follow exposure to clinical situations and the demonstration of clinical skills during internships; and

that are supported by specifically-developed computer platforms (SDC and Clinifolio platforms). Moreover, Université Laval stands out by offering great flexibility in academic paths in the pre-clerkship period (2 years, 2 and a half years, 3 years). This allows students to follow a joint program (M.D.-M.Sc., M.D.-M.B.A.), a profile (international, entrepreneurial, sustainable development, research, distinction), a certificate or other activities. There is also a flexibility in accommodation for leave for studies, elite sports and others, while complying with university rules.

UNIVERSITÉ DE MONTRÉAL

The Vice-Deanship for Undergraduate Medical Studies, as well as the Centre for Pedagogy Applied to Health Sciences, have multiplied their efforts to integrate a competency-based approach on the basis of the CanMEDS in our students' training. The implantation council for the competency-based approach for the Faculty submitted a document in 2013 listing the competency development paths during the entire training continuum. A group of pedagogical leaders was formed and given the mandate of developing and disseminating training to CBA teachers.

New internship evaluation forms and teamwork evaluation forms based on their competencies are now used in all training activities. ÉCOS take plus during the entire preclinic and clinic training providing a continuing overall evaluation of performance, so that the student may identify areas that need to be worked on and monitor his development. We continue to develop tools with, among others, the implementation of learning opportunities (LO) from paths, serving as guidelines in actual situations for the development of competencies.

We have, since 2012, implemented a progressive performance test during clerkship that allows us to document, over two clinic years, the progression in knowledge and reasoning. The program allows flexibility with various realities on an individual basis: an academic path adapted for elite sports, an interest in research, world health, or other. We have increased the number of internship weeks with an option during the clinic years.

MCGILL UNIVERSITY

Integrated assessments now occur throughout the four-year program through Reflection and Evaluation (R&E) weeks, progress tests and Objective Structured Clinical Examination (OSCE). The goal is to assess students on the MDCM Objectives, which are organized by competencies and principles deemed essential for Canadian physicians. These competencies and principles have been elucidated by the Royal College of Physicians and Surgeons of Canada (CanMEDS 2005), and by the College of Family Physicians of Canada (Four Principles of Family Medicine). During the FMD component, there are six R&E weeks interspersed between courses. During these weeks, regular learning activities are replaced by more loosely structured activities, many at McGill's Arnold and Blema Steinberg Medical Simulation Centre. R&E weeks also feature a mixture of written and practical evaluations aimed at encouraging ongoing integration of material to which students have been exposed to that point. During Transition to Clinical Practice and Core and Senior Clerkships components, there are progress tests that are representative of all the knowledge domain of a curriculum and are sat by classes at different stages of the clinical experience. Each test has the same blueprint, which represents a broad sample of the knowledge base of the curriculum as a whole. The tests aim to assess knowledge application rather than solely recall.

UNIVERSITY OF OTTAWA

One way the UGME program offers a competency based and flexible approach is to offer an enrichment year following the completion of their third year of study. This course allows students to take a year in between years 3 and 4 of Clerkship to supplement their medical training by pursuing unique opportunities that are not covered in the MD program. Students must complete 48 weeks of supervised and evaluated training at sites approved by the Faculty of Medicine. Students must submit a proposal and obtain permission from the Faculty at least six (6) months prior to the beginning of their fourth year of study. Generally students use this year to pursue global health training, public health training, policy training etc.

QUEEN'S UNIVERSITY

Curriculum: The new Foundations Curriculum for Queen's UGME is stable after a transition period. Queen's adopted and refined a competency-based curriculum, based on CanMEDS roles, and MCC clinical presentations. Creation of levels or standards for each intrinsic role is the focus of a February 2015 retreat with Competency Leads. Integration of intrinsic roles has been the focus of two "speed dating" workshops with competency leads and course directors. In assessment, competency-based assessment is a part of the e-Portfolio, with milestones over each year, and integral to clinical and communication skills. There is inclusion of intrinsic roles in OSCE stations.

Curricular Leadership: Competency Leads oversee the intrinsic (non-medical expert) competencies including objectives, learning events and assessments, over 4 years.

Student Developed Study Groups: Among the twenty-six interest groups at Queen's, the student Interest Group in Neurosciences, the Surgical Skills Training Program, Medicine and Literature program, the Wilderness Medicine Interest Group, and the Women's Health and Aboriginal Health interest groups are examples of specialized curricula that students have developed to complement the standard curriculum. Junior Medics and Queen's Community Health Talks are student-developed projects that enhance participants' educational and oral skills. Queen's Medical Review is a student-run journal that enhances educational and writing skills.

UNIVERSITY OF TORONTO

- We are currently engaged in a comprehensive review of our MD program goals and objectives with the mandate of developing user-friendly program competencies, enabling competencies and milestones, and a related program of assessment. The review principles include:
 - The seven CanMEDS roles will remain the overarching basis for our MD program competencies.
 - The review will be consistent with the CanMEDS 2015 revisions and informed by FMEC recommendations as well as developments at the MCC, RCPSC and CFPC.
 - The competencies will include milestones that clearly indicate the level of achievement as well as the possible ways that achievement can be demonstrated.
 - The review will take into account transitions involved in the continuum of medical education.

Consistent with these review principles and the development of program competencies and milestones, two major curriculum initiatives are underway, in the pre-clerkship and clerkship, both of which will support longitudinal training, more flexible and personalized curricular pathways, and an enhanced ability for students to pursue integrated joint degrees.

MICHAEL G. DEGROOTE SCHOOL OF MEDICINE, MCMASTER UNIVERSITY

McMaster’s signature pedagogies have long espoused flexibility of educational programming, grounded in the development of self-directed, lifelong learning skills. Problem-based learning has inherent flexibility in its coverage of core material. In the redesigned COMPASS curriculum, faculty are given greater guidance to support students in covering the necessary learning objectives; at the same time, students are given more latitude through less prescriptive objectives.

McMaster’s MD Program has always encouraged very early interaction with patients in the real clinical setting – learning medicine in the context in which it is practiced. Students continue to have both programmed and elective opportunities to participate in patient care learning activities from the first month of the program. Structured learning in the real clinical environment occurs in clinical skills and a mandatory, longitudinal Family Medicine experience for every student. Students may also participate in “horizontal electives”. Unlike shadowing or observerships, these are opportunities for students to practice applying skills in the real clinical setting. Students use these opportunities to fill in knowledge and skill gaps, to explore careers in medicine, and to develop a more robust understanding of the application of the things they are learning in the classroom.

All McMaster students participate in clinical electives in their first year of medical school and continue to have elective time throughout Clerkship – early, mid-point, and late. This gives students multiple opportunities to satisfy the goals of horizontal electives stated above, but in more concentrated blocks of time. While this may sound similar to many other MD Programs, it is the inclusion of clinical elective time throughout the entire program that sets us apart from most other programs; encouraging students to be active participants in the design of their educational journey from the moment they begin learning at McMaster. This orientation lends itself well to the many “transitions” discussions that are emerging from the FMEC PG project.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Our program’s curricular competencies are measured throughout all years of studies and derived from the CanMEDS framework. Schulich Medicine & Dentistry is moving with its partners nationally, in embracing a competency-based outcome process for UME and PGE. The School provides mentors and learner support to bolster our students achieving competency by graduation in all our curricular objectives.

NORTHERN ONTARIO SCHOOL OF MEDICINE

This is a work-in-progress for NOSM. We have moved from a primarily objectives based model in the last few years to embrace outcomes-based syllabi, and we are now exploring the use of competencies in a more explicit way in the latter half of the program. Although we have yet to fully embrace a competency-based model we have based much of our teaching on the MCC objectives, which are in turn based on the CanMEDS roles. CanMEDS is used to structure many other aspects of the curriculum. Our mandatory 8-month longitudinal integrated clerkship and our other continuity-based models of education allow for competencies to be built in profoundly experiential contexts.

UNIVERSITY OF MANITOBA

1. In every rotation students have a list of essential clinical presentations which they may log. These essential clinical presentations must be completed in order for the student to complete the rotation.
2. The Objective Structural Clinical Exams (OSCEs) begin in the fall of the first year and allow us to ensure that competencies in clinical skills are met.
3. There is a comprehensive clinical exam at the end of the clerkship which the students must pass to get their degree.
4. We have ensured that the entrustable professional activities recommended by the AAMC have all been met prior to student's graduation.

UNIVERSITY OF SASKATCHEWAN

Current Status

As the expectations of medical professionals evolve over time, so too must medical education. The CanMEDS initiative of The Royal College of Physicians and Surgeons of Canada can be viewed as a response to changing expectations of physicians around issues of accountability and societal responsiveness. Frank and Danoff (2007) describe CanMEDS as “a national, needs- based, outcome-oriented, competency framework” that centres around seven clearly-defined physician roles: Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional. As Frank and Danoff write, “The CanMEDS initiative defined a framework of competencies designed to address the roles physicians have in meeting societal needs.” They posit that such frameworks “are an effective method for achieving outcomes-based education.”

The University of Saskatchewan's College of Medicine has adopted the CanMEDS roles in its delivery of undergraduate medical education. This competency-based approach to assessing students can be seen in use in major courses such as Professional Skills I, II and III. To successfully pass Professional Skills I, for example, MD students must be proficient in the seven CanMEDS roles. Competency-based assessment tools with descriptive anchors and organized by CanMEDS roles have been developed for Pediatrics, Emergency Medicine and Family Medicine in Professional Skills II as well as Female Reproductive and Physical Medicine and Rehabilitation rotations in Professional Skills III. End-of-rotation assessments for mandatory clerkship rotations have been drafted and are in the approval process. The evaluation continuum for these roles includes ratings of Below Expectations, Meets Expectations, and Exceeds Expectations.

Looking to the Future

- 1) **Align course objectives with competencies:** In the case of undergraduate medical education courses that will focus on a competency-based approach, the course objectives should be re-examined and rewritten to reflect the required competencies. Students must have a clear understanding of the main principles and skills upon which they will be evaluated. As Leung (2002) writes, in competency-based medical training “assessments are based on a set of clearly defined outcomes so that all parties concerned, including assessors and trainees, can make reasonably objective judgments about whether or not each trainee has achieved them.” This means the course objectives should align with the core competencies.
- 2) **Continue to evaluate CanMeDS roles:** While the CanMEDS roles have been accepted across the country, some debate continues at the University of Saskatchewan about the use of the term “Medical Expert.” According to the CanMEDS 2005 Framework, this role is defined in the following way: “As Medical Experts, physicians integrate all of the CanMEDS roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centred care. Medical Expert is the central physician Role in the CanMEDS framework” (Frank and Danoff 2007).

In recognition of the importance of generalism in medical education and practice, and in recognition of the fact that physicians benefit from ongoing continuing professional learning opportunities throughout their careers and from the values and skills brought to health-care delivery by other health sciences professionals, the term “Medical Expert” should be re-examined. Consideration should be given to replacing the term “Medical Expert” with another term, such as “Clinical Learner.”

- 3) **Support independent learning:** Undergraduate medical students should be provided with ample time to explore topics and issues of particular interest to them. Information should be provided to students about a wide variety of self-directed learning opportunities, and this independent student learning time should be valued and protected.
- 4) **Develop a peer evaluation strategy:** Physicians must work effectively to deliver health-care services within inter- and intra-professional teams. Demonstrating a high level of professionalism at all times and learning to respect others’ opinions is of crucial importance. As a result, an initiative that would see peers evaluate their counterparts on all of the CanMEDS roles, with the exception of Medical Expert, would be beneficial.

UNIVERSITY OF ALBERTA

The shift towards a competency-based education design is at an early developmental stage in our program. We have focused efforts on a process that was inclusive of a broad base of stakeholders, to develop new outcomes-based program level objectives. We are developing a programmatic approach to assessment, which is built from these objectives. We believe these are critical steps in establishing a competency-based learning approach.

The physicianship course is our first completely competency-based course administered throughout the program. Students are expected to pass every aspect of the course; unsuccessful students are assigned personal learning plans to ensure all competencies are met. A complex assessment system tracks student progress and provides interim reports to the students. Further changes to the assessment processes may be needed as we shift from a time based to a competency-based approach to learning and assessment through the remainder of the program.

To providing flexibility to allow for competency learning, we have begun to institute changes in clerkships to allow for earlier identification of learning deficits and remediation. We have appointed an academic mentoring coordinator to establish personal learning plans for students requiring remediation and provide flexibility within the curriculum. There is also a transitions component within the physicianship course to facilitate the change to postgraduate training.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

- a. Our UME curriculum committee has worked diligently to revise our UME “goals, objectives and philosophy” document (approved by our Faculty Council March 2015). This document now provides objectives that are:
 - i. outcome-based
 - ii. linked to CANMEDS competencies
 - iii. linked to milestones for entering clerkship and entering residency

UNIVERSITY OF BRITISH COLUMBIA

The Faculty has adopted a competency-based and flexible approach to medical education. This is clearly demonstrated in the process of renewing the MDUP curriculum, which is based on competencies required to be a UBC MD graduate. The renewed curriculum is based on competencies required to be a UBC MD graduate. Programmatic exit competencies are organized according to the Royal College of Physicians and Surgeons of Canada’s CanMEDS Framework⁴, which describes seven physician roles: Medical Expert, Collaborator, Communicator, Health Advocate, Manager, Professional, and Scholar.

The principles that underpin the renewed curriculum also align with the UBC strategic vision to increase flexibility of learning, embed opportunities for inter-professional education with other health profession programs, and move towards a competency-based educational approach.

The renewed curriculum increases flexibility to provide a variety of learning opportunities and scholarly activities that foster innovation, creativity, critical thought, and life-long learning. The renewed curriculum also acknowledges students with diverse backgrounds, interests, and circumstances, and enables them to be successful in the program. Although they all take the same courses in the same sequence, each student’s path through the program is different and the knowledge, skills, and attitudes that must comprise our graduates’ exit competencies are taught, learned, acquired, reinforced, and assimilated in a unique way for each student according to their background and their learning style. Flexibility in the renewed curriculum recognizes that each student has a unique path. It will draw on and draw out their individual strengths.

RECOMMENDATION 10

Foster Medical Leadership

10

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.

Innovations at our Faculties of Medicine

MEMORIAL UNIVERSITY

Professional Development & Conferencing Services (PDCS), Faculty of Medicine has fostered the leadership knowledge and skills of faculty, students, community physicians, and other health care professionals via various initiatives over the last five years. These initiatives have provided core and advanced leadership opportunities which enhance learners' understanding of the health care system and provides them with the skills and resources they need to be effective leaders in the Newfoundland and Labrador (NL) health care environment. These initiatives include:

- **The Physician Management & Leadership Program (PMLP)** (<https://www.physicianleadership.ca/>)

This initiative, launched in 2012 with the support of the provincial government and regional health authorities, is led by PDCS and delivered in collaboration with the Gardiner Centre, Faculty of Business Administration, Memorial University. It is delivered to a defined cohort of physician and other health care leaders across the province on an annual basis. Program content was developed based on a province-wide needs assessment. The program is one year in duration and consists of 10 physician-accredited modules; 3 delivered online and 7 delivered utilizing an innovative flipped classroom approach (pre-module didactic content and assessment, live session, post-assessment and evaluation). Participants are also required to complete an applied learning report to receive their program certificate. There have been N=71 participants in the program across two cohorts (2012/13; 2013/14). There are currently 34 participants in the 2014/15 cohort.

In 2014, PMLP was the recipient of a Royal College of Physicians and Surgeons of Canada Accredited CPD Provider Innovation Award. An essential component of its innovative approach is that PMLP may be one of the only programs which focus specifically on the educational needs of physician leaders in one province – NL – and the local context in which they lead and practice. Program content is tailored to local needs, using localized cases and local faculty experienced in the NL healthcare system. Participants are local and regional colleagues; a cohort which can drive discussion and potentially collaborate across health care institutions and regions. A six-month' post-program evaluation study conducted annually has demonstrated improved performance and application of knowledge/skills in the workplace.

- **Physician Leadership Certificate**

PDCS is currently collaborating with Undergraduate Medical Education (UGME) to develop and deliver 8 modules as part of a Physician Leadership Certificate which medical students will receive in conjunction with the MD program. The modules will be delivered online and will provide students with some of the knowledge and skills they need to be effective leaders when they graduate from medical school.

- **Health Care Leadership Forum**

In November 2014, PDCS delivered the Health Care Leadership Forum over one-day to an audience of health care decision-makers including trustees, CEOs, directors, managers, department heads and health care leaders representing various sectors and professions in health regions, hospitals, public health, and academic centers. The goals of the conference were to provide participants with the knowledge and skills they need to:

- Provide effective management and leadership practices in health care settings in Newfoundland and Labrador and Atlantic Canada.
- Provide perspectives and be better equipped to deal with organizational and systematic challenges in health care.
- Provide an opportunity to network with other leaders and the health care system.

DALHOUSIE UNIVERSITY

Enhance learners’ understanding of the health care system and their responsibility as physicians to participate in the process of transforming the health care system: During the two-year longitudinal Professional Competencies program, students are introduced to the health care system(s) and through case-based learning sessions, are able to explore their responsibilities as physicians to participate in the process of the transformation of these systems.

Cultivate collaborative leadership skills in learners through mentors and role models from multiple disciplines: Dalhousie medical students across all four years of the program are provided with numerous opportunities to develop their leadership skills through the following:

- Students are voting members of all curriculum committees and sub-committees
- The Dalhousie Medical Student Society (DMSS) provides a wide variety of leadership positions for students enrolled in all four years of the program – e.g. Leadership for student wellness, medical education, student leadership, etc.
- Through the DMSS, each class has struck a Class Council – student leadership is essential
- Each class has an elected class president
- Each Unit in the pre-clerkship curriculum has an elected “Unit representative” who is responsible to liaise with faculty leadership in that Unit
- The DMSS has facilitated the development of numerous “student interest groups” – the focus of which depends entirely on the interests of each group of students

UNIVERSITÉ DE SHERBROOKE

- Faculty support through coaching and guidance for student initiatives that foster better understanding of the health system and social problems, as well as involvement in meeting communities’ needs
- Longitudinal integration of the concept of professionalism (MD Profession), which includes leadership
- Faculty financial support to foster significant participation by students at various important conferences dealing with medical research and education (CCME, etc.)

- Student participation, representation and involvement in all of the program's organizational and decisional structures
- Establishment of a process certifying remarkable involvement by students that is included in the dean's letter during the CARMS process
- Financial support for professors for training and development on leadership such as ICLEM
- Elaboration of a series of training workshops (3) on leadership as well as the change process for all pedagogical coordinators and program managers for optimal implementation of the new curriculum

UNIVERSITÉ LAVAL

Université Laval encourages and fosters students' involvement in numerous fields, from faculty management to community involvement, as well as the establishment of student pedagogical activities. Thus, students sit on various faculty and university academic committees, both to allow them to develop academic leadership as well as to give them a voice regarding transformations and operations. Numerous student projects and initiatives receive faculty support in order to recognize and encourage social commitment. Moreover, the students are exposed to leaders in the health system in the *Physician, Medicine and Society* (I to IV) course. Finally, the training program uses team projects where each student must play an active role and contribute to the success of the tasks to be carried out. They are also evaluated on this collaboration and their participation.

UNIVERSITÉ DE MONTRÉAL

The current program allows all of our students to develop their leadership skills, in their active learning roles in small groups, in the CSS courses on inter-professionalism or in new social commitment internships. We foster student participation in several university and non-university committees: Thus, these students rub shoulders with models of leadership, from teaching as well as management and research backgrounds, and exercise their own organizational and influencing skills on the accomplishments to be carried out.

The Faculty also supports student initiatives in social commitment that foster the development of their leadership, as well as the student association, and also certain groups, such as the aboriginal health interest group, family medicine interest group, the surgery interest group and IFMSA.

MCGILL UNIVERSITY

The concept of "physicianship" (i.e., the physician's binary roles of physician as healer and physician as professional) continues to be an important leitmotif and guiding principle for the new curriculum. Physicianship is both a curricular component (with designated courses) and a curricular theme.

As a theme, it encompasses the following domains: professionalism, healing in medicine, clinical method, palliative care and leadership. The physicianship component has adapted to the new educational blueprint, most notably in the teaching of clinical method. We have created two new courses, Clinical Method-I and Clinical Method-II. CM-I is focused on medical interviewing and communication skills. CM-II is focused on the physical examination.

UNIVERSITY OF OTTAWA

To foster medical leadership, we have created a mandatory leadership course in our curriculum consisting of lectures and small group work throughout the curriculum. We have also created a Longitudinal Expert position for the Leadership Curriculum. The curriculum consists of:

Year 1: Understanding Leadership Styles, Delivering Effective Feedback, Using Feedback Effectively, Introduction to Multisource Feedback

Year 2: Conflict Resolution

Year 3: The Multisource Feedback tool in Healthcare

Year 4: Leadership Elective

Students with a special interest in leadership may also complete a leadership certification.

QUEEN'S UNIVERSITY

Leadership in the Curriculum: Student representatives are involved in all committees demonstrating significant leadership abilities. There is active, consistent involvement of students in course review and evaluations as well as in curriculum development. Students are taught about conflict resolution, team building, roles of physicians and other health care professionals and giving and receiving feedback as part of physicianship and leadership skills. Near-peer instruction in learning events such as Patient Confidentiality and Being a Medical Student allow students to practice leadership skills.

Providing service in leadership, the Community Interventions Project asks students to review interventions that have promoted healthier communities and/or prevented ill health. They share findings with the class, and also submit a paper written as a proposal for funding to implement another Population Health Intervention targeting the same health problem or determinant of health. Students at Queen's are encouraged to provide service to the community through Service-Learning initiatives.

UNIVERSITY OF TORONTO

- Our Leadership Education and Development (LEAD) Program is an innovative, interdisciplinary partnership between Undergraduate Medical Education, the Rotman School of Management, the School of Public Policy and Governance, and the Institute of Health Policy Management and Evaluation, that has been implemented for the past several years. The goal of the LEAD Program is to foster a new generation of physician leaders committed to improving health care and the health of our communities. Available to nine students from each MD cohort, the program curriculum includes a longitudinal sequence of six graduate courses that provides LEAD students with the knowledge and skills required for leadership as well as two summer-long practicum experiences in which they have an opportunity to apply their knowledge and further develop their understanding of career opportunities in leadership.
- Over the next five years we are planning, in collaboration with the U of T Institute of Health Policy, Management and Evaluation, to build upon our existing Manager Role curriculum as well as the LEAD Program to further develop our teaching about the leadership and management competencies required of physicians. To facilitate development and implementation of these efforts, we have created a new Integrated Leadership Portfolio Director position. A search to fill this new position is currently underway.

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

Developing tomorrow's leaders is a key goal for Western University. Our UME program has implemented a first-year course on the foundational skills of leadership. Students are supported in personal leadership development through access to School programs, mentored roles in student government, participation in School committees, processes of curricular development and governance, to name a few. Our graduates embrace this goal in their careers and are visible nationally and internationally as the next generation of health care leaders.

NORTHERN ONTARIO SCHOOL OF MEDICINE

Medical leadership is developed in our students through the longitudinal integrated clerkship, through the focus on developing physicians as change agents (which is taught in per-clerkship and practiced in clerkship), and through their many multi- and interprofessional experiences. We are working at developing our faculty (many of whom have taken on academic roles mid- or late-career) as academic leaders and to share their experiences as community health leaders.

UNIVERSITY OF MANITOBA

1. We have started a leadership course for a group of interested students. We are currently working on trying to figure a way that it can be given to all students.
2. The students in the University of Manitoba get a high level of clerkship responsibility compared to other schools; something we think allows them to develop their leadership role.
3. Being a relatively small school, there are many leadership roles available to students throughout the four years such that any student who wishes to take on a leadership role would have no difficulty doing so.

UNIVERSITY OF SASKATCHEWAN

Current Status

Leadership literature often makes a distinction between “formal” and “informal” leaders. While the formal leaders at medical colleges are easily identifiable – for example, the Dean, Assistant/ Associate Deans, Department Heads and high-level administrators – informal leadership is also an important aspect of organizational behaviour. As in formal leadership, the informal leadership role must be identified and nurtured in all students, faculty and staff. C. Dean Pielstick (2000) indicates that both formal and informal leaders develop shared visions, and this is the “touchstone theme of authentic leadership.” Pielstick states that “an important role of the authentic leader is to articulate the shared vision, values, and beliefs of the organization repeatedly.” This can be done by those in formal roles at the College of Medicine as well as by those occupying informal roles.

The Leaders for Life website (www.leadersforlife.ca) acknowledges the Canadian medical system is facing a variety of challenges, and “these stresses are making it clear that we must introduce significant changes in how health services are organized and delivered.” Leaders for Life states there is a “significant” number of formal leaders in the Canadian health-care system, pegging “a conservative estimate” at more than 80,000 individuals occupying formal health management roles throughout the country. However, because the demographics of

these leaders are consistent with the demographics of the population at large, more potential leaders must be identified in the health professions; as Leaders for Life states in describing the health system's leadership challenges, "little has been done to develop succession plans to effectively fill the gap." The website also notes that "this only speaks to formal leaders," and "if you consider that employees of all kinds may wish to play a role in leading the change, then the need for effective leadership in healthcare is very great indeed."

Leadership will be required to transform undergraduate medical education. Leadership will be needed to ensure the FMEC recommendations are implemented. As the FMEC report notes, it is up to Faculties of Medicine to foster a variety of leadership skills in the physicians of tomorrow. This can mean preparing physicians for roles "beyond direct medical care," such as administrative and managerial positions and involvement in "system-level advocacy for social change."

Looking to the Future

- 1) **Create a leadership and management development program:** All undergraduate students and residents at the University of Saskatchewan's College of Medicine should have access to a leadership and management development program. A three-tiered approach to complement students' interests and passion is recommended. For instance, an introductory course on leadership should be offered to all students. This course would utilize the Leaders for Life LEADS Framework and would also be based on the five practices of leadership identified by Barry Z. Posner and James M. Kouzes (1988): Challenging the process, inspiring a shared vision, enabling others to act, modelling the way and encouraging the heart. As Leaders for Life posits, leadership is an activity, not a position: "Anyone can act as leader, regardless of the positional authority they hold. To do so they need to exercise the LEADS in a Caring Environment capabilities – that is, from a foundation of caring, lead themselves, engage others, achieve results, develop coalitions, and transform systems. Positive change will occur."

Following the introductory course, students would have the opportunity to learn through an intermediate-level course. This course would involve personal projects, reflective essays and leadership opportunities in formal and informal roles leading to a certificate or a diploma program in the College of Medicine. For those students who are passionate about this area of study, and envision it as a personal or professional pursuit, a formal degree program offered at the University of Saskatchewan or another post-secondary institution should be offered and/or encouraged.

- 2) **Integrate leadership into the undergraduate medical curriculum:** Leadership development should be formally and strategically integrated into the new 2+2 MD curriculum. Any new leadership courses that are developed should be based upon the two frameworks identified above: LEADS and Posner and Kouzes' five practices of leadership. All student leadership projects should be linked to the Medical Expert (ME) competency and other CanMEDS roles, such as Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional. Students' leadership competencies, including knowledge, attitudes, skills and behaviours, should be assessed by using appropriate tools. Inter-professional learning opportunities should be utilized so that leadership is developed in a team setting to reflect the changing paradigms of health-care delivery.

- 3) **Model leadership throughout the College:** Faculty should be actively engaged in modelling leadership to other faculty members, staff and students. To help develop leadership skills amongst faculty members, leadership workshops should be offered regularly throughout the academic year to all those who are interested in attending. Students should be provided with opportunities to shadow leaders and develop mentor-mentee relationships, and they should be encouraged to play formal and informal roles in health care, medical education and community-based leadership. To ensure that the learning around leadership in the early undergraduate years (years 1 and 2) is not lost in the later undergraduate years (years 3 and 4), opportunities for leadership work and learning should continue to be provided in the later undergraduate years as well as in the post-graduate years.

Student and resident leadership awards should be developed and distributed at high-profile College events, so that leadership is formally recognized and celebrated within the institution.

UNIVERSITY OF ALBERTA

Our MD program's approach towards fostering medical leadership is to include leadership as a component of the core curriculum. We also enable students to participate in leadership learning opportunities in para-curricular initiatives within the Faculty and with external stakeholders. The new combined MD/MBA program is an additional option for students interested in health systems and medical administration in their future careers.

The development of system-level leadership and advocacy for social change is included in our program level objectives. A health system and health policy working group has outlined leadership objectives to be covered in the core curriculum. A para-curricular Health Advocacy Leadership program was developed to allow a more in-depth learning experience for interested students.

Student leadership opportunities are offered on the curriculum committee as well as subcommittees and working groups. For the past two summers, we have offered summer studentships in medical education; these allow students to be involved with, and in several cases, to lead in the development of education objectives and content. Student leadership opportunities also exist within the medical student association and the student council across all health professions.

CUMMING SCHOOL OF MEDICINE, UNIVERSITY OF CALGARY

a. Last year Dr. Grondin (residency director for thoracic surgery) worked with our student leaders to provide medical students with a four-part leadership seminar series. This series covered critical topics such as: conflict resolution, self-assessment and reflection, and leadership style. This seminar series takes high level concepts from week-long programs and condenses it down into 4 seminars, each 1-1.5 hours long. Students who attended 3 or 4 of the sessions received a certificate of participation that could be included in a student CaRMS application

UNIVERSITY OF BRITISH COLUMBIA

We are continually aiming to foster leadership in both medical education and practice. We have aimed, throughout the years, to build capacity at the post-graduate level, increasing residency spaces throughout British Columbia. FLEX courses in our renewed curriculum will specifically provide leadership classes for students who are interested. Health systems transformation education is also built into the renewed curriculum, which will prepare students to adapt to changes within the current healthcare model.

APPENDIX

For further information, read the full responses provided by each Canadian Faculty of Medicine:

MEMORIAL UNIVERSITY

Reflecting on 5 years of FMEC MD Innovations

DALHOUSIE UNIVERSITY

A Brief Overview of Implementation Activities
Addressing the 10 Recommendations

UNIVERSITÉ DE SHERBROOKE

AFMC Bilan des réalisations

UNIVERSITÉ LAVAL

Un Idéal – Oeuvre au mieux-etre de la société

UNIVERSITÉ DE MONTRÉAL

Le projet sur l'Avenir de l'éducation médicale au Canada

MCGILL UNIVERSITY

5 Years of Reflection on Medical Education
Innovation

UNIVERSITY OF OTTAWA

The Impact of FMEC Recommendations at
uOttawa, Faculty of Medicine, MD Program

QUEEN'S UNIVERSITY

Report on the Future of Medical Education in
Canada

UNIVERSITY OF TORONTO

University of Toronto MD Program – FMEC-MD
Implementation Activities

MICHAEL G. DEGROOTE SCHOOL OF MEDICINE, MCMASTER UNIVERSITY

Five Years of FMEC MD at the Michael G.
DeGroot School of Medicine, McMaster University

SCHULICH SCHOOL OF MEDICINE AND DENTISTRY, WESTERN UNIVERSITY

FMEC MD Memo from Schulich Medicine at
Western University

NORTHERN ONTARIO SCHOOL OF MEDICINE

Northern Ontario School of Medicine and the
FMEC MD Collective Vision

UNIVERSITY OF MANITOBA

The Future of Medical Education in Canada
(FMEC)

UNIVERSITY OF SASKATCHEWAN

MD Education at the University of Saskatchewan's
College of Medicine – Looking to the Future

UNIVERSITY OF ALBERTA

AFMC FMEC Recommendation Implementation
Update – University of Alberta

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