



# **Registration Form for the “Innovative Practice” in Medical Education**

## Innovative practice in the medical education and the PHC

### 1-Data general

University	Université de Sherbrooke
Country	Canada
Province	Québec
School of Medicine	Faculty of Medicine and Health Sciences
Name of the Dean	Pr Pierre Cossette
Year when the program starts	The medical school received its first MD students in 1966 (see next section) In 1970, it introduced the first residency program in Family Medicine in Quebec. The 2-year residency program in Family Medicine became compulsory in 1988 for all those physicians who want to practice as a general practitioner/family physician in Quebec.
Year when the new curriculum was implemented	1966: Initial MD curriculum: organ-system integrated teaching and learning, orientation towards comprehensive consideration of health problems, orientation towards the need of communities.  1987: Completely revised curriculum : extensive use of small-group problem-based learning, integration of basic and clinical sciences with consideration of public health and humanistic issues throughout the problems, emphasis on community oriented education, introduction of a compulsory clerkship in Family medicine as well as one in Public health.  2006: Major revision of the clerkship. Competency-based, task-based learning with 98 clinical situations/presentations that orient the whole teaching and learning process during the clerkship and for the whole program, emphasis on more relevant and “generalist” clinical presentations. Implementation of a fully distributed medical education program in two outside campuses (see next section)

	2015: Planned implementation of a revised curriculum. Focus: on competence, interdisciplinarity, generalist vision of the content, flexibility, competency-based evaluation.
<b>2- Social Mission of the school</b>	
School social responsibility with the community	<p>The medical school was established in order to prioritize the training of family physicians and specialists in broad-based disciplines. The school has always been oriented towards the training of primary health care physicians with a significant development of Family Medicine and broad-based specialties. In the recent decade, the school has committed itself so that more than 50% of its graduates will practice in Family Medicine (results during the previous 5 years have been approximately 45%) and that more than another 25% (result attained in the last 5 years) will practice in a broad based medical discipline (internal medicine, general pediatrics, general obstetrics and gynecology, general psychiatry).</p> <p>The school has always committed to train physicians who will practice outside of large urban university cities. In fact, our school is recognized as one of the leader school in Canada and probably the leader school in the Province of Québec for the training of physicians who establish and maintain their practice in suburban, remote and rural areas. It has frequently been cited by the Canadian Society for rural medicine as being one of the best schools for the percentage of its graduates who maintain after five or 10 years of practice their practice in these areas. In link with that issue, the school has developed an extensive network of health care institution for the training of its students and more recently (in 2006), it has established two outside campuses who offer the whole medical program (see next section) Worth noting, the term social responsibility is specifically present since 2000 in all official documents of the medical school regarding its mission, mandate and engagement towards specific communities.</p> <p>In link with its social accountability, the school has developed programs in nursing sciences (1979), physiotherapy (2007), ergotherapy (2007), toxicomania (80's). It changed its name in 2006 from the Faculty of Medicine to the Faculty of Medicine and Health Sciences.</p> <p>The school is WHO/PAHO Collaborating Center since 2001 for the development of health human resources responsive to the needs of communities. The school has extensively collaborated with WHO in order to promote</p>

	<p>the concept of social accountability of medical schools around the world. It has exerted leadership in that regard in Canada being instrumental for the identification of social accountability as one of the main values of the Association of Faculties of Medicine of Canada. The school has been highly active in the development of the Global Consensus for Social Accountability of Medical Schools. Since fall 2011, the school is part of the leadership group for the implementation of a worldwide research action project on Social Accountability of Medical Schools (francophone medical schools, n=130)</p>
Profile of physician in training	<p>The MD program aims at producing physicians who will be able to pursue their education in any specialty but who would have a comprehensive overview of health and health care as well as of primary health care. Further to their clinical expertise, these physicians should demonstrate professionalism, humanistic values, significant ability in doctor-patient relationships, etc.</p> <p>In the last decade, the MD program has adopted canMeds roles as the basis for the development of curriculum and of the terminal competencies to be attained by graduates.</p>
Population target area with whom the school is working	<p>The school has always felt responsible for the populations where it is involved in education and research activities, first in the Sherbrooke large area and progressively other areas where it has implemented education and research activities, including non-smaller university communities since 90's.</p> <p>Since 2004, the school heads in partnership with Sherbrooke University Hospital an integrated university network for health which regroups collaborating health care institutions covering a specifically defined area in the province (pop: 850 000 people). The network is responsible for optimal health care services to the populations to be served. It coordinates health professional education, research, clinical care and evaluation of innovations.</p> <p>In order to extend its targeted population of influence as well as to extend its education and research activities, the school has distributed its activity in three major health care institutions and health area outside of Sherbrooke : one in the south shore of Montreal in a health care region which is adjacent to the one where Sherbrooke is located, one in the Saguenay-Lac-Saint-Jean area, a northern region in Québec which is 500 km away from Sherbrooke, the last one in Moncton, New-Brunswick, a</p>

	<p>neighboring province of Québec, more than 1000 km away from Sherbrooke. (See other sections with more detailed information on the implementation of fully distributed medical education in Saguenay and Moncton.)</p>
Selection of students (rural areas, urban peripheral, etc.)	<p>Even though by the Canadian Charter of rights and freedoms no discrimination regarding age, sex, religion, race, etc. is accepted, the school has been able to develop different strategies to ensure diversity in its students and foster admission of medical students with some specific characteristics. These strategies included the following :</p> <ul style="list-style-type: none"> <li>- The school has introduced at the end of the 90's a written test which measure the aptitude of future medical students to learn medicine at the University of Sherbrooke, considering the characteristics of its curriculum as well as types of students the school wants to train as well as type of its expected graduates. The test is a written questionnaire with 200 questions which measure some non-cognitive characteristics of incoming medical students include such as leadership, tolerance to uncertainty, openness to change, integrity, etc.</li> <li>- The school has introduced at the end of the years 2000 the utilization of the MMI (multiple mini interviews) in its selection process in order to assess and consider candidates' non-cognitive characteristics and values, some of them has been already measured by the previous test and other which are only measured by the MMI such as capacity of ethical decision, capacity to make decision, etc.</li> <li>- Students may enter the MD Program either after a college education or a university education (older students, higher proportion of men, more diverse backgrounds)</li> <li>- Students coming from peripheral areas in Quebec are proportionally advantaged in the selection process.</li> <li>- In collaboration with the three other Quebec medical schools, a pipeline to increase the number of candidates and medical students coming from first nations has been in place for the last 5 years.</li> <li>- The school has a significant engagement for the out of Quebec province francophone minority communities for more than 30 years. A number of positions are specifically allocated to these candidates. Candidates from francophone minorities from all provinces of Canada can apply to these positions.</li> </ul>

	<ul style="list-style-type: none"> <li>- From year to year, the medical school admits 2 to 3 international (non-Canadian) medical students usually coming from low and middle income countries around the world.</li> <li>- It also yearly admits from 2 to 3 international medical graduates who have previously completed their MD program in other countries</li> </ul>
<b>3- Curriculum orientation</b>	
Educational proposal Orientation	<p>The curriculum is oriented towards the needs of the population. The objective is to train an “undifferentiated” physician who could pursue its training in clinical education (Family Medicine and other specialties) research and education.</p> <p>Terminal competencies of the MD program are derived from the canMeds roles: medical expert, communicator, collaborator, manager, health advocate, scholar, professional.</p> <p>It fosters active self-directed learning, critical thinking, inter-professional collaboration, professionalism, etc.</p>
Type of curriculum	<ul style="list-style-type: none"> <li>• A 4-year long curriculum</li> <li>• 2.5 years of preclinical training <ul style="list-style-type: none"> <li>- Discipline and system based integrated</li> <li>- Extensive use of problem based learning focused on clinical situations and symptoms most frequently met in medicine and more specifically in primary health care</li> <li>- More than 80% of the educational activities during preclinical training occur in small groups of students (6-10) supported by a teacher facilitator</li> <li>- Integrated learning of basic sciences and clinical sciences and of theory and practice</li> <li>- Integration of public health considerations in all PBL units during the preclerkship training</li> <li>- Early in the curriculum and ongoing throughout the 2.5 years, an extensive and comprehensive program regarding the development of clinical skills including doctor-patient relationship and clinical problem solving.</li> <li>- As early as in the first semester of the program, a clinical immersion rotation of two weeks to help incoming students have a better grasp of what is the practice of medicine in the community. A similar activity is also in place in 2<sup>nd</sup> year</li> <li>- A transversal program on professionalism, humanism, ethics, doctor-patient relationships, etc. throughout the 2.5 years of preclinical training with an extension during the clerkship.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• 18 months of clerkship <ul style="list-style-type: none"> <li>- 64 weeks of clinical rotation including 16 weeks of electives</li> <li>- Rotation throughout the extensive network of health care institutions contributing to clinical education in medicine with the obligation for each student to spend at least 16 weeks out of university hospital and in smaller health care institution frequently located in suburban, remote or rural area. It uses the 98 clinical situations/presentations which form the basis of the curriculum as also the basis of teaching and learning during the clerkship. For each of these situations, competencies related to the canMeds roles are identified and form the target of the educational process.</li> <li>- During compulsory rotations, students participate once or twice a week to a 60 minutes long clinical reasoning session based on the clinical situations/presentations which are at the basis of the task based learning.</li> </ul> </li> </ul>
Incorporation of PHC content and social determinants	<ul style="list-style-type: none"> <li>• For the whole curriculum <ul style="list-style-type: none"> <li>- Curriculum is based on 98 clinical situations/presentations frequently met in clinical practice and oriented towards primary health care. The whole curriculum content is derived from what should and need to be learned in order for future graduates to take charge of these situations while knowledge, skills, attitudes related to them are specifically defined and related to the canMeds role.</li> <li>- More than 30% of teachers involved in the curriculum (preclerkship and clerkship) are coming from the Family Medicine Department and another 30% to 40% are coming from the broad based specialties, including public health.</li> </ul> </li> <li>• For preclerkship training <ul style="list-style-type: none"> <li>○ Integration of public health issues in all organ/system based educational units</li> <li>○ A 4-week unit on Public Health during first year of the program (established since 1988)</li> </ul> </li> <li>• For the clerkship training <ul style="list-style-type: none"> <li>- A 4-week clerkship in Public Health (since 1989)</li> <li>- A 8-week clerkship in Family Medicine/PHC (since 1989)</li> <li>- A 4-week clerkship for each of the following five broad-based specialties: general internal medicine, general surgery, general pediatrics, general obstetrics and gynecology, general psychiatry.</li> </ul> </li> </ul>

Discipline based integration	Since its beginning in 1966, the MD program is a system-based integrated curriculum so that for any system (ex: cardiovascular system) learning of basic sciences, clinical sciences and clinical skills is integrated.
Community clinical experience	<ul style="list-style-type: none"> <li>- A 2-week community clinical immersion at the end of the 1<sup>st</sup> semester of 1<sup>st</sup> year.</li> <li>- A 2-week community clinical experience during the 2nd semester of the 2nd year</li> <li>- During 1<sup>st</sup> and 2<sup>nd</sup> year, all students must regularly follow child as well as an aged person with regular visits and evaluation</li> <li>- Numerous service learning activities have been initiated by students in previous years. Service learning will become a compulsory part of the renewed curriculum by 2014.</li> </ul>
<b>4-Learning opportunities and education-services relationship</b>	
Learning in services in the Health Services Network and the communities. Program and special features.	<p>Throughout the years, the school has developed a comprehensive and extensive network of health care institutions (n=20) that are complementary in their characteristics: urban or non-urban areas, large or small cities, with a greater emphasis on first level or higher levels of care, in central or rural/remote areas. All medical students must complete rotations in different sections of this network including compulsory rotation in smaller cities.</p> <p>The program has implemented in 2006 two outside campuses that now offer the whole MD curriculum: one in Saguenay, a northern regional area of Quebec Province (500km from Sherbrooke); one in Moncton, a mid-size city of the neighbor province of New-Brunswick (1000 km from Sherbrooke). This distributed medical education (DME) approach aims to better respond to the needs of these communities.</p>
Length of study for first level care students	<p>In the 4-year MD program :</p> <ul style="list-style-type: none"> <li>- A 2-week clinical immersion experience during first year mainly focused on PHC</li> <li>- A 4-week unit on Public Health during first year of the program.</li> <li>- A 4-week clerkship in Public Health.</li> <li>- A 8-week clerkship in Family Medicine/Emergency Medicine</li> <li>- A 20-week of clerkship in general broad based specialty (4 weeks in each of them)</li> </ul>

	<p>Residency programs :</p> <ul style="list-style-type: none"> <li>- A compulsory 2-year program in Family Medicine for all future family physicians that can be extended for a year to develop specific competencies (emergency, palliative care, obstetrical care, etc.)</li> <li>- 4 to 5-year residency programs in broad based specialties.</li> </ul>
Agreements and commitments with health service institutions. Teaching-services relationship	The Faculty has official agreements with all its partner health care institutions (see other section). Agreements confirm the roles and responsibilities of the medical school and of the institutions in relation to education, research and clinical services.
Rotary internship	There is no more rotating internship in Quebec since 1988. All those students who want to practice Family Medicine must complete the compulsory 2-year program if they want to become family physicians and the compulsory 4 to 5-year program for specialties.
Mandatory final practice	There is no mandatory final practice in Quebec.
<b>5- Teaching-learning process</b>	
Research Action as learning strategy	All students have some basic training on research methodology and on evidence-based medicine. Approximately 15 to 20% of them will complete a research summer rotation. Yearly, approximately 2% of medical students will complete a master degree program in conjunction with their MD program.
New knowledge generation	See previous section
New modalities approaches and educational strategies	<p>2.5-year of preclinical training</p> <ul style="list-style-type: none"> <li>- Small group problem-based learning (with tutorials and large amount of time for self-directed learning for students)</li> <li>- Comprehensive program with innovative teaching and learning approaches (lecture, discussion, role plays, use of standardized patients, teamwork, etc.) for ongoing progressive and iterative learning of clinical skills including medical interviews, physical examination, clinical reasoning and doctor-patient relationship.</li> <li>- A transversal program on professionalism, humanism, ethics, doctor-patient relationships, etc. throughout the 2.5 years of preclinical training with an extension during the clerkship.</li> </ul>

	<p>During the clerkship</p> <ul style="list-style-type: none"> <li>- Clerkship is specifically task based with the use of 98 clinical situations/presentations as the basis for the teaching and learning activity.</li> <li>- Participation during compulsory clerkship to 1 or 2 session of clinical reasoning skills per week.</li> <li>- Evaluation of clerk's performance highly linked to the competencies to be developed, using ongoing approaches</li> <li>- Clerks are extensively involved in health care of the patients DC, always under the supervision of either a resident or the attending physician/teacher</li> </ul> <p>Whole program</p> <ul style="list-style-type: none"> <li>- Extensive use of standardized patients and OSCE for training as well as for evaluation, including formative and summative evaluations.</li> </ul>
Educator and students' role	The educator acts as a facilitator in the majority of the process (based on self-learning and practice). The students are actively involved and encouraged to adopt a reflexive approach during and following their learning activities. These strategies encourage practitioners to pursue such learning throughout their professional lives.
Teamwork	Extensive learning in small group which supports students' development of teamwork skills. Some interdisciplinary experiences.
Types of training activity	Please refer to the previous section on « new modalities approaches and educational strategy »
Use of Internet and new information technology in the educational processes	<p>Extensive use of new information technology for the program administration, and communications among all those involved :</p> <ul style="list-style-type: none"> <li>- All documents and references for the teaching and learning activities are accessible from the web.</li> <li>- The curriculum is more and more paperless and emphasis extensive of information technologies</li> <li>- Lectures are all registered and are available for all those students who are not able to attain in person.</li> </ul>
Educator's program and training processes	<p>The MD program has in collaboration with the Office of Medical Education an extensive program of compulsory initial and ongoing faculty development. Further to the acquisition of general concepts in medical education, faculty members must develop specific skills related to the teaching/learning activities in which they are involved such as :</p> <ul style="list-style-type: none"> <li>- Tutor in problem based learning</li> <li>- Monitor in clinical skills session</li> </ul>

	<ul style="list-style-type: none"> <li>- Facilitator/Animator in clinical reasoning sessions</li> <li>- Monitor in the “profession MD” unit which covers ethical issues, prevention, humanities, etc.</li> <li>- Role of the teacher as a supervisor in clinical rotation</li> <li>- Utilization of direct supervision and feedback during clinical rotations</li> <li>- The use of evaluation methods in the various teaching and learning activities, these methods include written exams, written reports, evaluation by tutors/monitors/small-group leaders/evaluation by standardized patients, OSCE examination, clinical supervision and evaluation, etc.</li> </ul> <p>The Office of Medical Education also offers master and PhD programs in medical education.</p>
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#### **6- Learning and educational process evaluation**

Knowledge, skills, and attitudes in PHC	<p>The terminal competencies and objectives of the program are linked to PHC globally and more specifically in the teaching units and clinical clerkships related to PHC as listed previously.</p> <p>Methods of evaluation include :</p> <ul style="list-style-type: none"> <li>- Written exams (multiple choice question and opened questions)</li> <li>- Direct observation with feedback</li> <li>- Written reports by students</li> <li>- Evaluation of students performance during small-group learning activities such as problem-based learning sessions, clinical skills sessions and others</li> <li>- Extensive use of standardized patients and OSCE evaluation</li> <li>- Training evaluation report during the clerkship</li> </ul>
Impact assessment on the approach towards PHC	<p>The program is actually implementing an extensive program evaluation process regarding students' vision of health, medicine, health care services throughout the program. Comparisons among groups of students as well as comparison of evolution of students' vision throughout de program are actually completed.</p> <p>The program is implementing a comprehensive evaluation process on its impact on the workforce development looking at the links and relations between students 'characteristics, teaching and learning processes and activities and the evolution of the graduates regarding a choice of residency program, their location of practice during their 1<sup>st</sup> year of practice as well as further down during their professional career and the type of practice they are involved in.</p>

Institutional effectiveness evaluation	<p>The MD program assesses itself with numerous internal measures including a large array of results of its students. The MD program assess itself with external measures that are the following :</p> <ul style="list-style-type: none"> <li>- Sherbrooke MD program and Sherbrooke Medical School is accredited by Society of Faculties of Medicine in Canada as well as the Liaison Comité on Medical Education (LCME) from the Association of American Colleges. The process is well recognized for its quality and its level of stringency in order to ensure quality in medical education.</li> <li>- The medical council of Canada examination, a nationally distributed examination which includes a first part at the end of the MD program and a second part (OSCE) in the second year of all residency programs. Comparison of Sherbrooke students 'results with the results of students coming from other Canadian medical schools is done annually. More specifically for the Sherbrooke program, comparison of students 'results among the group of students who have completed their program at the Sherbrooke site or at the two fully distributed medical education sites, Saguenay and Moncton.</li> <li>- The Canadian Resident matching system (CaRMS), a nationally organized system for the selection of residents in various residency programs throughout Canada. Comparison of Sherbrooke students 'results with the results of students coming from other Canadian medical schools is done annually. More specifically for the Sherbrooke program, comparison of students 'results among the group of students who have completed their program at the Sherbrooke site or at the two fully distributed medical education sites, Saguenay and Moncton.</li> <li>- The evaluation of the work-force development alluded in the previous section.</li> </ul> <p>Sherbrooke Faculty of Medicine and Health Sciences is significantly involved in different projects related to the social accountability of medical schools. In these projects, the level of social accountability for the school as a whole and more specifically for the MD program is observed and assessed.</p>
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## **7-Observations and comments**

All residency program in Quebec and in Canada are university-based and under the responsibility of the medical schools. They are not under the responsibility of hospitals or health care institutions even though a close collaboration between the medical schools and the institutions is established.

The Sherbrooke Faculty of Medicine and Health Sciences has been initially designated as a WHO/PAHO Collaborating Center in 2001. It has been redesignated for the 2005-2009 and 2009-2013 periods. It has recently reconfirmed and redesignated as a Collaborating Center for the 2013-2017 period. The theme of the Collaborating Center is the development of health human resources responsive to the needs of communities to be served. The collaborating center has been a partner for the last 12 years with WHO and PAHO regarding education of future health professionals around the world.

Internationally, the school is involved in numerous educational projects and collaboration. Worth noting are the following ones :

- A more than 15 years long collaboration in Mali, regarding the development of Primary Health Care practice and education with a more recently (since 2010) extensively founded project to develop the residency program in Family Medicine at University of Bamako.
- An extensive collaboration since 2007 with Uruguay and more specifically the Faculty of Medicine of the Universidad de la Republica (UdelaR), Montevideo. This collaboration focusses on the improvement of education at the level of the MD curriculum as well as the development and consolidation of the practice, education and research in Family and Community Medicine.
- More recent (since 2010), collaboration with the four medical schools in Haiti in order to improve Medical Education at the undergraduate and postgraduate level with a focus on the development of basic clinical competencies and the offering of clinical services in primary health care and in communities out of large cities.
- The school acts as a leader in an international project of francophone worldwide medical schools on the issue of social accountability.