

Undergraduate Medical Education Queen's University Curricular Goals and Competency Based Objectives

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Defining the Curriculum

Our curriculum is the result of a branching design that expresses with increasing detail, the educational goals at various levels. The curricular tree begins with values and extends through an analysis of roles and competencies to the objectives of the program, curriculum, courses, and finally individual learning opportunities.

Our program reflects the mission and values of Queen's and its faculty, as well as the needs of our society. Therefore, we start by defining a set of **Values** which describe the expected professional and personal qualities of our students and the educational and clinical environment our School aims to create to foster these qualities. We have identified 5 core values: life-long learning; service through patient care, citizenship; scholarship; and respect. These are described in greater detail on page 7.

Our values direct the **Goals** of our program. These express the successful outcomes of our program: *“Our graduates will have exemplary foundations in medical competencies that will prepare them for success in qualifying examinations and in post-graduate training programs and for fulfilling careers serving their patients and their communities. Our innovative approaches to adult education will provide relevant, integrated and interactive learning experiences that foster life-long learning.”* Our goals are summarized on page 8.

We have based our curriculum on the **7 Roles of a Physician** described by the CanMEDS framework. *The competent physician is an **Expert** in the medical arts and sciences who also understands and demonstrates the characteristics of an effective **Communicator, Collaborator, Manager, health Advocate and Scholar**, while consistently embodying the attitudes and behaviours associated with **Professionalism**.* The Royal College of Physicians and Surgeons and the College of Family Physicians have both adopted this framework to guide post-graduate education. The use of this framework in the medical school promotes educational alignment and across the continuum of training for our students and their instructors.

Our analysis indicated that each role requires a physician to be particularly competent in 1-4 essential areas which we have referred to as **Core Competencies**. From the 7 roles we have therefore identified 15 such competencies. These describe the knowledge, skills, and attributes required of a competent graduate. The core competencies are the primary organizing principle of the curriculum. They are summarized on page 9.

Each of the 15 core competencies is further subdivided into its major conceptual elements. These are called **Program Objectives**. There are 35 such program objectives.

Each the 35 program objectives is, in turn, described in greater detail by several **Curricular Objectives**. There are 131 curricular objectives.

The relationship between the roles, competencies, program and curricular objectives is reflected in the alpha-numeric identification code for the curricular objectives. For example:

Within the **role** of Medical Expert (ME)

The first **competency** (ME.1) is “application of basic sciences”

Within which ME.1.7 is the 7th **program objective** for pharmacology

And for which one **curricular objective** is:

ME 1.7 (d) *The competent medical graduate is able to apply knowledge of pathological processes, pharmacokinetics and pharmacodynamics to guide safe and effective treatments.*”

The roles, competencies and their program and curricular objectives are summarized in table from on page 10, and described in detail on pages 11-35.

This process continues with the development of course objectives and ultimately objectives for each instructional experience. This guides the selection of appropriate course content, instructional design and student assessment. This process is the responsibility of the individual course chairs with oversight by the Curriculum Committee.

The explicit branching design of our curriculum enables the Curriculum Committee, students and teachers to appreciate how individual curricular elements fit into a coherent whole. It encourages a shared vision and purpose for the undergraduate curriculum that is visibly congruent with students’ continuing education. It provides a clear framework for regular assessment of curriculum content, ensuring appropriate inclusion, minimizing redundancy, and enabling the curriculum to be responsive to changes in professional practice and expectations.

By basing the curriculum on the roles and competencies of a competent physician, we emphasize the importance of students learning not only knowledge, but skills and attitudes that will support life-long careers. To achieve that goal, we aim to create learning opportunities that promote and emulate the processes students will use in practice. In this sense the “form” of the curriculum reflects its function. This intent is evident in two features of our curricular design throughout all four years of the program: there is a balance of content and process, and clinical material is organized to address clinical presentations.

Through the selection of objectives, instructional and assessment methods, all courses are expected to intentionally promote professional skills such as critical appraisal, team-work and independent learning strategies. Skills and principles introduced in the pre-clinical setting are applied with increasing independence in the clinical settings.

The Medical Council of Canada (MCC) has identified 135 core Clinical Presentations that are the basis for the Canadian licencing examinations. We are using these MCC presentations as the reference the essential clinical presentations to which our students

will be exposed over the course of their undergraduate training. Each of the presentations is linked to one or more relevant courses from first to fourth year. A clinical presentation may be addressed in a variety of educational formats and with increasing depth as students progress. The MCC presentations provide clinically relevant guidance for and encourage linkages between pre-clinical and clinical courses. The process of analyzing undifferentiated presentations helps students integrate core content between systems, enables them to practice self-directed learning and critical appraisal skills, and illustrates the clinical relevance of the values, roles and competencies upon which the curriculum is founded.

Acknowledgements

We acknowledge the following sources which were instrumental in the development of this framework:

The Royal College of Physicians and Surgeons CanMEDS Physician Competency Framework

The Four Principles of Family Medicine: The College of Family Physicians of Canada

The Medical Council of Canada Clinical Presentations

Scientific Foundations for Future Physicians – Association of American Medical Colleges

Queen's Curricular Framework

MD Program Values (5)

⇒ **MD Program Goals (4)**

⇒ **Roles (7)**

⇒ **Competencies (15)**

⇒ **Program Objectives (35)**

⇒ **Curricular Objectives (131)**

⇒ **Course Objectives**

MD Program Values

Learning

We believe that learning is a lifelong process, and that the skills and motivation for learning must begin at the undergraduate level. To serve this purpose:

- We promote students' development of independent and collaborative learning strategies that will be effective throughout their careers
- We foster an environment that optimizes learning in pre-clinical and clinical settings
- We support and encourage innovation in learning and teaching, including new instructional processes and technology.
- We value teaching. We support our educators and facilitate their growth and development.

Patient Care

As a medical school, our students' learning is directed to the ultimate goal of serving the needs of patients. Therefore:

- We ensure that our students understand normal and abnormal human functioning
- We ensure that our students are able to recognize and manage clinical presentations of disease
- We ensure our students understand the impact of disease on patients, their families and society
- We ensure our students are able to direct appropriate preventive strategies

Citizenship

We believe our students should be active contributors and participants in the leadership of their communities, society, and professional organizations.

Scholarship

We believe that exemplary providers of patient care continually inquire, are skilled problem solvers, are motivated by the highest standards of practice and research, and contribute to the acquisition of new knowledge through active research and publication.

Respect

We believe that physicians must hold a deep appreciation of humanity. As such:

- We foster an ongoing sense of compassion for patients and their families
- We encourage understanding of the roles of other health care providers
- We foster tolerance and understanding of differences between people

MD Program Goals

Our graduates will have

exemplary foundations in medical competencies

that will prepare them for success

**in qualifying examinations and
post-graduate training programs,**

and

fulfilling careers serving their patients and their communities.

Our innovative approaches to adult education will provide

**relevant, integrated and interactive learning experiences
that foster life-long learning.**

Core Competencies.

The competent medical graduate:

1. Articulates and utilizes the basic sciences to inform disease prevention, health promotion and the assessment and management of patients presenting with clinical illness (ME1)
2. Is able to perform a complete and appropriate clinical assessment of patients presenting with clinical illness (ME2)
3. Is able to appropriately assess and provide initial management for patients presenting with clinical illness, as defined by the Medical Council of Canada Clinical Presentations (ME3)
4. Applies knowledge of disease prevention and health promotion to the care of patients (ME4)
5. Demonstrates appropriate professional behaviours to serve patients, the profession and society (P1)
6. Applies knowledge of legal and ethical principles to serve patients, the profession, and society (P2)
7. Critically evaluates medical information and its sources (S1)
8. Contributes to the process of knowledge creation (research) (S2)
9. Engages in life long learning (S3)
10. Effectively communicates with colleagues, other health professionals, patients and other caregivers (CM1)
11. Effectively collaborates with colleagues and other health professionals (CL1)
12. Articulates and applies the determinants of health and disease, principles of health promotion and disease prevention (A1)
13. Effectively advocates for their patients, the profession and community (A2)
14. Describes a variety of practice options and settings within the practice of Medicine (M1)
15. Balances personal health and professional responsibilities (M2)

Key Phrase Table of Roles, Competencies and Program Objectives

<i>Role</i>	<i>Competency</i>	<i>Program Objectives</i>	<i>Curricular Objectives (n)</i>
<i>Medical Expert</i>			
ME1	Application of Basic Sciences	ME1.1 Homeostasis & Dysregulation ME1.2 Physics and Chemistry ME1.3 Genetics ME1.4 Defense Mechanisms ME1.5 Pathological Processes ME1.6 Microorganisms ME1.7 Pharmacology ME1.8 Quantitative Reasoning	9 2 5 4 4 3 3 5
ME2	Clinical Assessment	ME2.1 History & Physical ME2.2 Procedural Skills	5 2
ME3	Clinical Presentations	ME3.x Clinical Presentations	6
ME4	Health Promotion	ME4.1 Health Promotion & Maintenance	5
<i>Professionalism</i>			
P1	Professional Behaviour	P1.1 Professional Behaviours P1.2 Patient-centred Care P1.3 Self-awareness	2 2 3
P2	Principles of Professionalism	P2.1 Ethics P2.2 Law & Regulation	4 2
<i>Scholar</i>			
S1	Critical Appraisal	S1.1 Information Retrieval S1.2 Critical Evaluation	2 3
S2	Research	S2.1 Research Methodology S2.2 Sharing innovation	5 1
S3	Life long learning	S3.1 Learning Strategies	6
<i>Communicator</i>			
CM1	Effective Communication	CM1.1 Therapeutic Relationships CM1.2 Eliciting Perspectives CM1.3 Conveying Information CM1.4 Sharing Decision-making	5 2 3 5
<i>Collaborator</i>			
CL1	Effective Collaboration	CL1.1 Working in teams CL1.2 Overcoming Conflict CL1.3 Including Patients & Families CL1.4 Teaching and Learning	5 4 2 3
<i>Advocate</i>			
A1	Determinants of health	A1.1 Synthesizing Determinants of Health A1.2 Applying determinants of health	3 4
A2	Patients, Profession & Community	A2.1 Community Resources A2.2 Responsibility & Service	3 3
<i>Manager</i>			
M1	Practice Options	M1.1 Career Settings	4
M2	Balancing Health & Profession	M2.1 Work / Life Balance	4

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Roles, Competencies, Program Objectives and Curricular Objectives

The following section expands the curricular organizational “tree” from each of the 7 roles into its principle competencies (a total of 15), and from those to the program and curricular objectives. For organizational purposes, competencies and objectives have been identified with one principal role, recognizing that in both learning and practice there is overlap. Individual courses have responsibility to provide instruction to a greater degree for some objectives than others, but all courses are expected to address relevant aspects of several roles and competencies.

Medical Expert

The undergraduate curriculum has the primary goal of providing students with foundational knowledge, skills and attitudes to enable them to be successful in postgraduate training and to become competent practitioners.

Foundational knowledge and skills are those required to establish sound diagnostic and initial management approaches to the presentation-based objectives set forth by the Medical Council of Canada.

Foundational knowledge and skills include:

- Basic scientific knowledge fundamental to understanding the scientific basis of disease.
- Clinical knowledge, skills and therapeutic approaches considered essential for all graduating physicians
- Clinical judgment, decision making, problem solving and critical appraisal

The curricular and course objectives described for the medical expert role represent a comprehensive itemization to guide curricular design. The course chairs, with the guidance of the curriculum committee, are responsible for determining the depth to which each objective is achieved. These decisions are guided by the information required to address the core MCC presentations, and the expectation to promote life-long learning skills. Students will practice the application of foundational skills and principles to clinically relevant examples. In choosing content and instructional methods course chairs are guided by considering:

- What knowledge/skills/attitudes are required to enable a student to initially manage patients presenting with a representative clinical presentation?

- What knowledge/skills/attitudes regarding this presentation would be reasonably expected of any practicing physician?
- What knowledge/skills/attitudes regarding this presentation would be considered pre-requisite to entry into any post-graduate training?

Medical Expert Competency 1 *Application of Basic Sciences*

The competent medical graduate articulates and utilizes the basic sciences to inform disease prevention, health promotion and the assessment and management of patients presenting with clinical illness.

ME1.1 *Homeostasis & Dysregulation*

The competent medical graduate:

Applies knowledge of molecular, biochemical, cellular, and systems-level mechanisms that maintain homeostasis, and of the dysregulation of these mechanisms, to the prevention, diagnosis, and management of disease.

The graduate is able to:

- Apply knowledge of biological systems and their interactions to explain how the human body functions in health and disease.
- Use the principles of feedback control to explain how specific homeostatic and reproductive systems maintain the internal environment and identify (1) how perturbations in these systems may result in disease and (2) how homeostasis may be changed by disease.
- Apply knowledge of the atomic and molecular characteristics of biological constituents to predict normal and pathological molecular function.
- Explain how the regulation of major biochemical energy production pathways and the synthesis/degradation of macromolecules function to maintain health and identify major forms of dysregulation in disease.
- Explain the major mechanisms of intra- and intercellular communication and their role in health and disease states.
- Apply an understanding of the morphological and biochemical events that occur when somatic or germ cells divide, and the mechanisms that regulate cell division and cell death, to explain normal and abnormal growth and development.
- Identify and describe the common and unique microscopic and three-dimensional macroscopic structures of macromolecules, cells, tissues, organs, systems, and compartments that lead to their unique and integrated function from fertilization through senescence to explain how

perturbations contribute to disease.

- h. Predict the consequences of structural variability and damage or loss of tissues and organs due to maldevelopment, trauma, disease, and aging.
- i. Apply principles of information processing at the molecular, cellular, and integrated nervous system level and understanding of sensation, perception, decision making, action, and cognition to explain behavior in health and disease.

ME1.2 *Physics and Chemistry*

The competent medical graduate:

Apply major principles of physics and chemistry to explain normal biology, the pathobiology of significant diseases, and the mechanism of action of major technologies used in the prevention, diagnosis, and treatment of disease.

The graduate is able to:

- a. Apply the principles of physics and chemistry, such as mass flow, transport, electricity, biomechanics, and signal detection and processing, to the specialized functions of membranes, cells, tissues, organs, and the human organism, and recognize how perturbations contribute to disease.
- b. Apply the principles of physics and chemistry to explain the risks, limitations, and appropriate use of diagnostic and therapeutic technologies

ME1.3 *Genetics*

The competent medical graduate:

Use the principles of genetic transmission, molecular biology of the human genome, and population genetics to guide assessments and clinical decision making.

The graduate is able to:

- a. Describe the functional elements in the human genome, their evolutionary origins, their interactions, and the consequences of genetic and epigenetic changes on adaptation and health.
- b. Explain how variation at the gene level alters the chemical and physical properties of biological systems, and how this, in turn, influences health.
- c. Describe the major forms and frequencies of genetic variation and their consequences on health in different human populations.
- d. Apply knowledge of the genetics and the various patterns of genetic transmission within families in order to obtain and interpret family history and ancestry data, calculate risk of disease, and order genetic tests to guide therapeutic decision-making.
- e. Uses these principles to guide clinical action plans, the interaction of genetic and environmental factors to produce phenotypes and provide the basis for individual variation in response to toxic, pharmacological, or other exposures.

ME1.4 *Defense Mechanisms*

The competent medical graduate:

Applies the principles of the cellular and molecular basis of immune and nonimmune host defense mechanisms in health and disease to determine the etiology of disease, identify preventive measures, and predict response to therapies.

The graduate is able to:

- a. Apply knowledge of the generation of immunological diversity and specificity to the diagnosis and treatment of disease.
- b. Apply knowledge of the mechanisms for distinction between self and nonself (tolerance and immune surveillance) to the maintenance of health, autoimmunity, and transplant rejection.
- c. Apply knowledge of the molecular basis for immune cell development to diagnose and treat immune deficiencies.
- d. Apply knowledge of the mechanisms utilized to defend against intracellular or extracellular microbes to the development of immunological prevention or treatment.

ME1.5 *Pathological Processes*

The competent medical graduate:

Apply the mechanisms of general and disease-specific pathological processes in health and disease to the prevention, diagnosis, management, and prognosis of critical human disorders.

The graduate is able to:

- a. Apply knowledge of cellular responses to injury and the underlying etiology, biochemical and molecular alterations, to assess therapeutic interventions.
- b. Apply knowledge of the vascular and leukocyte responses of inflammation and their cellular and soluble mediators to the causation, resolution, prevention, and targeted therapy of tissue injury.
- c. Apply knowledge of the interplay of platelets, vascular endothelium, leukocytes, and coagulation factors in maintaining fluidity of blood, formation of thrombi, and causation of atherosclerosis to the prevention and diagnosis of thrombosis and atherosclerosis in various vascular beds, and the selection of therapeutic responses.
- d. Apply knowledge of the molecular basis of neoplasia to an understanding of the biological behavior, morphologic appearance, classification, diagnosis, prognosis, and targeted therapy of specific neoplasms.

ME1.6 *Microorganisms*

The competent medical graduate:

Apply principles of the biology of microorganisms in normal physiology and disease to explain the etiology of disease, identify preventive measures, and predict response to therapies.

The graduate is able to:

- a. Apply the principles of host–pathogen and pathogen–population interactions and knowledge of pathogen structure, genomics, lifecycle, transmission, natural history, and pathogenesis to the prevention, diagnosis, and treatment of infectious disease.
- b. Apply the principles of symbiosis (commensalisms, mutualism, and parasitism) to the maintenance of health and disease.
- c. Apply the principles of epidemiology to maintaining and restoring the health of communities and individuals.

ME1.7 *Pharmacology*

The competent medical graduate:

Apply the principles of pharmacology to evaluate options for safe, rational, and optimally beneficial drug therapy.

The graduate is able to:

- a. Apply knowledge of pathologic processes, pharmacokinetics, and pharmacodynamics to guide safe and effective treatments.
- b. Select optimal drug therapy based on an understanding of pertinent research, relevant medical literature, regulatory processes, and pharmaco-economics.
- c. Apply knowledge of individual variability in the use and responsiveness to pharmacological agents to selecting and monitoring therapeutic regimens and identifying adverse responses.

ME1.8 *Quantitative Reasoning*

The competent medical graduate:

Apply quantitative knowledge and reasoning—including integration of data, modeling, computation, and analysis—and informatics tools to diagnostic and therapeutic clinical decision making.

The graduate is able to:

- a. Apply basic mathematical tools and concepts, including functions, graphs and modeling, measurement and scale, and quantitative reasoning, to an understanding of the specialized functions of membranes, cells, tissues, organs, and the human organism, in both health and disease.
- b. Apply the principles and approaches of statistics, biostatistics, and epidemiology to the evaluation and interpretation of disease risk, etiology, and prognosis, and to the prevention, diagnosis, and management of disease.
- c. Apply the basic principles of information systems, their design and architecture, implementation, use, and limitations, to information retrieval, clinical problem solving, and public health and policy.
- d. Explain the importance, use, and limitations of biomedical and health informatics, including data quality, analysis, and visualization, and its application to diagnosis, therapeutics, and characterization of populations and subpopulations.
- e. Apply elements of the scientific process, such as inference, critical analysis of research design, and appreciation of the difference between association and causation, to interpret the findings, applications, and limitations of observational and experimental research in clinical decision making.

Medical Expert Competency 2 *Clinical Assessment*

Is able to perform a complete and appropriate clinical assessment of patients presenting with clinical illness

ME2.1 *History and Physical*

The competent medical graduate:

Conducts a comprehensive and appropriate history and physical examination

The graduate is able to:

- a. Effectively identify and explore issues to be addressed in a patient encounter, including the patient's context and preferences
- b. For purposes of prevention and health promotion, diagnosis and/or management, elicit a history that is relevant, concise and accurate to context and preferences
- c. For the purposes of prevention and health promotion, diagnosis and/or management, perform a focused physical examination that is relevant and accurate
- d. After a clinical encounter, select initial basic, medically appropriate investigative methods in an ethical manner
- e. Demonstrate effective clinical problem solving and judgment to address selected common patient presentations, including interpreting available data and integrating information to generate differential diagnoses and management plans

ME2.2 *Procedural Skills*

The competent medical graduate:

Demonstrate proficient and appropriate use of selected procedural skills, diagnostic and therapeutic

The graduate is able to:

- a. Demonstrate effective, appropriate and timely performance of selected diagnostic procedures including infection control processes and documentation.
- b. Demonstrate effective, appropriate and timely performance of selected therapeutic procedures.
- c. Describe the potential risks of a procedure in which the student is engaged, and be aware of the principles of informed consent and disclosure of medical error and complications.

Medical Expert Competency 3 *Clinical Presentations*

Is able to appropriately assess and provide initial management for patients presenting with clinical illness, as defined by the Medical Council of Canada Clinical Presentations

ME3.1 *Clinical Presentations*

The competent medical graduate:

For selected Clinical Presentations, the competent graduate is able to assess and provide initial management:

The graduate is able to:

- a. Identify and apply aspects of normal human structure and physiology relevant to the clinical presentation
- b. Identify pathologic or maladaptive processes that are active
- c. Develop differential diagnosis of clinical conditions that underlie this presentation
- d. Utilize history taking and physical examination relevant to the clinical presentation
- e. Utilize diagnostic tests or procedures appropriately to establish working diagnoses
- f. Identify appropriate treatment modalities, and can provide evidence of their effectiveness

Medical Expert Competency 4 *Health Promotion*

Apply knowledge of disease prevention and health promotion to the care of patients

ME4.1 *Health Promotion & Maintenance*

For the both ill and well patients, the competent graduate is able to:

- a. Demonstrate awareness and respect for the Determinants of Health in identifying the needs of a patient.
- b. Discover opportunities for health promotion and disease prevention as well as resources for patient care.
- c. Formulate preventive measures into their management strategies.
- d. Communicate with the patient, the patient's family and concerned others with regard to risk factors and their modification where appropriate.
- e. Describe programs for the promotion of health including screening for, and the prevention of, illness.

Professionalism

Medical professionalism is defined as a set of values, behaviours and relationships that underpin the trust the public has in doctors. Professionalism in medicine is based on ethical principles and bound by codes, both explicit and implicit, regarding the relationships between physicians and their patients, their profession, and society at large. As medical professionals, physicians demonstrate maintenance of competence, ethical behaviour, adherence to professional codes, adherence to legal principles and responsibilities, as well as the qualities of integrity, honesty, altruism, service to others, justice, respect for others, confidentiality and self-regulation. The central importance of the patient-physician relationship is a crucial part of professionalism.

At the undergraduate level, professionalism begins with the study of foundational principles of professionalism. Students will be expected to demonstrate their understanding of these principles and integrate them into their behaviour in all their clinical and educational interactions throughout their four years of medical education. It is our hope that these will become integral to their life-long behaviour as physicians.

Professionalism Competency 1: Professional Behaviour

Demonstrates appropriate professional behaviours to serve patients, the profession and society

P1.1 Professional Behaviour

The competent medical graduate:

Practice appropriate professional behaviours, including honesty, integrity, commitment, dependability, compassion, respect, an understanding of the human condition, and altruism in the educational and clinical settings

The graduate is able to:

- a. defines the concepts of honesty, integrity, commitment, dependability, compassion, respect, confidentiality and altruism as applied to medical practice and correctly identifies examples of appropriate and inappropriate application
- b. applies these concepts in medical and professional encounters

P1.2 Patient-Centered Care

The competent medical graduate:

Delivers highest quality patient-centered care, with commitment to patients' well being.

The graduate is able to:

- a. Defines the concept of "standard of care"
- b. Applies diagnostic and therapeutic modalities in evidence based and patient centred contexts

P1.3 Self-Awareness

The competent medical graduate:

Is self-aware, engages consultancy appropriately and maintains competence

The graduate is able to:

- a. Recognizes and acknowledges limits of personal competence
- b. Is able to acquire specific knowledge appropriately to assist clinical management
- c. Engages colleagues and other health professionals appropriately

Professionalism Competency 2: Principles of Professionalism

Apply knowledge of legal and ethical principles to serve patients, the profession and society

P2.1 *Ethics*

The competent medical graduate:

Analyze and appropriately respond to ethical issues encountered in practice (such as informed consent, confidentiality, truth telling, vulnerable populations, etc.)

The graduate is able to:

- a. Analyze ethical issues encountered in practice (such as informed consent, confidentiality, truth telling, , vulnerable populations etc)
- b. Analyze legal issues encountered in practice (such as conflict of interest, patient rights and privacy, disclosure of medical error etc.)
- c. Analyze the psycho-social, cultural and religious issues that could affect patient management
- d. Define and implement principles of appropriate relationships with patients

P2.2 *Law and Regulation*

The competent medical graduate:

Apply profession-led regulation to serve patients, the profession and society.

The graduate is able to:

- a. Recognize the professional, legal and ethical codes and obligations required of current practice in a variety of settings, including hospitals, private practice and health care institutions, etc.
- b. Recognize and respond appropriately to unprofessional behaviour in colleagues

Scholar

As scholars, physicians demonstrate a lifelong commitment to reflective learning as well as the creation, dissemination, application and translation of medical knowledge.

The graduating medical student will have developed effective learning strategies that include the capacity to engage in reflection and self-assessment, the ability to critically evaluate information and its sources (the literature), and the ability to contribute to the process of knowledge creation (research).

Scholar Competency 1 *Critical Appraisal*

Critically evaluate medical information and its sources (the literature)

S1.1 *Information Retrieval*

The competent medical graduate:

Are able to retrieve medical information efficiently and effectively

The graduate is able to:

- a. Use objective parameters to assess reliability of various sources of medical information
- b. Are able to efficiently search sources of medical information in order to address specific clinical questions

S1.2 *Critical Evaluation*

The competent medical graduate:

Critically evaluate the validity and applicability of medical procedures and therapeutic modalities to patient care

The graduate is able to:

- a. Apply knowledge of research and statistical methodology to the review of medical information and make decisions for health care of patients and society through scientifically rigorous analysis of evidence
- b. Apply to the review of medical literature the principles of research ethics, including disclosure, conflicts of interest, research on human subjects and industry relations
- c. Balance scientific evidence with consideration of patient preferences and overall quality of life in therapeutic decision making

Scholar Competency 2 *Research*

Contribute to the process of knowledge creation (research)

S2.1 *Research Methodology*

The competent medical graduate:

Adopt rigorous research methodology and scientific inquiry procedures

The graduate is able to:

- a. Formulates relevant research hypotheses
- b. Develops rigorous research methodologies
- c. Develops appropriate collaborations in order to participate in research projects
- d. Practice research ethics, including disclosure, conflicts of interest, research on human subjects and industry relations
- e. Evaluates the outcomes of research by application of rigorous statistical analysis

S2.2 *Sharing Innovation*

The competent medical graduate:

Prepares and disseminates new medical information

The graduate is able to:

- a. Report to students and faculty upon new knowledge gained from research and enquiry, using a variety of methods.

Scholar Competency 3 *Life Long Learning*

Engages in life long learning

S3.1 *Learning Strategies*

The competent medical graduate:

Implements effective personal learning experiences including the capacity to engage in reflective learning

The graduate is able to:

- a. Develop lifelong learning strategies through integration of the principles of learning
- b. Assess one's own learning needs and strategies, seek feedback from colleagues and prioritize learning issues.
- c. Ask effective learning questions and solve problems appropriately
- d. Consult multiple sources of information
- e. Employ a variety of learning methodologies

- f. Learn with and enhance the learning of others through communities of practice
- g. Employ information technology (informatics) in learning, including, in clerkship, access to patient records and other technologies

Communicator

Physicians are involved in dynamic exchanges with patients, families, colleagues, and members of the community. Effective communication skills are therefore essential to successful medical practice and contribute to the successful fulfillment of all the physician roles.

Medical students will learn the principles of effective communication and will demonstrate these in a variety of educational and clinical settings. They will recognize that being a good communicator is a core clinical skill for physicians, and that effective patient-centered communication can foster patient satisfaction, physician satisfaction, adherence and improved clinical outcomes. In the clinical years, students will incorporate these principles in their management of patients.

Communicator Competency 1 *Effective Communication*

Effectively communicates with colleagues, other health professionals, patients, families and other caregivers

CM1.1 *Therapeutic Relationships*

The competent medical graduate:

Demonstrate skills and attitudes to foster rapport, trust and ethical therapeutic relationships with patients and families

The graduate is able to:

- a. Apply the skills that develop positive therapeutic relationships with patients and their families, characterized by understanding, trust, respect, honesty and empathy
- b. Respect patient confidentiality, privacy and autonomy
- c. Listen effectively and be aware of and responsive to nonverbal cues
- d. Communicate effectively with individuals regardless of their social, cultural or ethnic backgrounds, or disabilities
- e. Effectively facilitate a structured clinical encounter

CM1.2 *Eliciting Perspectives*

The competent medical graduate:

Elicit and synthesize relevant information and perspectives of patients and families, colleagues and other professionals

The graduate is able to:

- a. Gather information about a disease, and also about a patient's beliefs, concerns, expectations and illness experience

- b. Respecting patient confidentiality, appropriately seek out and synthesize relevant information from other sources, such as a patient's family, caregivers and other professionals

CM1.3 *Conveying Information*

The competent medical graduate:

Convey relevant information and explanations appropriately to patients and families, colleagues and other professionals, orally and in writing

The graduate is able to:

- a. Provide accurate information to a patient and family, colleagues and other professionals in a clear, non-judgmental, and understandable manner;
- b. Maintain clear, accurate and appropriate records of clinical encounters and plans in line with current standards for written and electronic medical records.
- c. Effectively present verbal reports of clinical encounters and plans

CM1.4 *Finding Common Ground*

The competent medical graduate:

Develop a common understanding on issues, problems, and plans with patients and families, colleagues and other professionals to develop a shared plan of care

The graduate is able to:

- a. Effectively identify and explore problems to be addressed from a patient encounter, including the patient's context, responses, concerns and preferences
- b. Respect diversity and difference, including but not limited to the impact of gender, religion and cultural beliefs on decision making
- c. Encourage discussion, questions and interaction in the encounter
- d. Engage patients, families and relevant health professionals in shared decision making to develop a plan of care
- e. Effectively address challenging communication issues such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding

Collaborator

Physicians must collaborate effectively with others in a variety of settings to ensure the delivery of optimal patient care. Respectful “two-way” interaction allows physicians to receive and give information and advice, and provide leadership when appropriate. Physicians must be able to work cooperatively with patients, families and relevant care-givers, and members of patient care teams.

In the pre-clinical setting, medical students will learn principles of effective teamwork and collaboration, and about the roles and responsibilities of members of patient care teams and community health care agencies. They will demonstrate application of these principles and effective collaboration in their educational and clinical settings.

Collaborator Competency 1 *Effective Collaboration*

Effectively collaborate with colleagues and other health professionals

CL 1.1 *Working In Teams*

The competent medical graduate:

Participate effectively and appropriately as part of a multiprofessional healthcare team.

The graduate is able to:

- a. Clearly describe and demonstrate their roles and responsibilities under law and other provisions, to other professionals within a variety of health care settings,
- b. Recognize and respect the diversity of roles and responsibilities of other health care professionals in a variety of settings, noting how these roles interact with their own
- c. Work with others to assess, plan, provide and integrate care for individual patients
- d. Respect team ethics, including confidentiality, resource allocation and professionalism
- e. Where appropriate, demonstrate leadership in a healthcare team.

CL 1.2 *Overcoming conflict*

The competent medical graduate:

Work with others effectively in order to prevent, negotiate and resolve conflict.

The graduate is able to:

- a. Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team members in a variety of settings
- b. Respect differences, and work to overcome misunderstandings and limitations in others, that may contribute to conflict
- c. Recognize ones own differences, and work to overcome ones own misunderstandings and limitations that may contribute to interprofessional conflict
- d. Reflect on successful interprofessional team function.

CL 1.3 *Including Patients and Families*

The competent medical graduate:

Includes patients and families in prevention and management of illness

The graduate is able to:

- a. Identify the roles of patients and their family in prevention and management of illness
- b. Informs and involves the patient and family in decision-making and management plans

CL 1.4 *Teaching and Learning*

The competent medical graduate:

Teaches and learns from others consistently

The graduate is able to:

- a. Seeks and accepts advice, guidance and instruction from others
- b. Appropriately seeks and accepts supervision
- c. Provides appropriate advice, guidance and instruction to peers, learners, patients and families
- d. Seeks and provides helpful feedback
- e. Improves teaching skills through advice from experts in medical education

Advocate

As health advocates, physicians responsibly use their expertise and influence to advance the health and well being of individual patients, communities and populations. In addition, health advocacy integrates the attitudes of compassion, understanding, respect for, and belief in the role of physician to act on behalf of patient, community and population health.

At the undergraduate level, Health Advocacy begins with the acquisition of specific knowledge about the diverse factors that influence the health of individuals, communities and populations. This progresses to an investigation into principles of health promotion, prevention of disease, access to community resources, health advocacy programs and population wide health programs.

In the clinical years, students will begin to incorporate these principles in their management of patients.

Advocacy Competency 1 *Determinants of Health*

Articulate and apply the determinants of health and disease, principles of health promotion and disease prevention

A1.1 *Synthesizing Determinants of Health*

The competent medical graduate:

Synthesize the diverse factors that influence health, disease, disability and access to care of patients into management plans

The graduate is able to:

- a. Explain factors that influence health, disease, disability and access to care including non-biologic factors (cultural, psychological, sociologic, familial, economic, environmental, legal, political, spiritual needs and beliefs)
- b. Demonstrate awareness and respect for these factors in identifying the health needs of a patient.
- c. Discover opportunities for health promotion and disease prevention as well as resources for patient care.

A1.2 Applying Determinants of Health

The competent medical graduate:

Apply knowledge of the determinants of health for populations to medical encounters and problems.

The graduate is able to:

- a. Describe barriers to access to care and resources
- b. Discuss health issues for special populations, including vulnerable or marginalized populations
- c. Identify principles of health policy and implications
- d. Describe the issues determining success of health programs and interventions at the population level.

Advocacy Competency 2 *Patients, Profession, and Community*

Effectively advocate for their patients, the profession and community

A2.1 Community Resources

The competent medical graduate:

Identify and communicate about community resources to promote health, prevent disease and manage illness in their patients and the communities they will serve.

The graduate is able to:

- a. Identify the role of and method of access to services of community resources
- b. Describe appropriate methods of communication about community resources to and on behalf of patients
- c. Locate and analyze a variety of community resources and health networks in the local Kingston area and beyond.

A2.2 Responsibility and Service

The competent medical graduate:

Integrate the principles of advocacy into their understanding of their professional responsibility to patients and the communities they will serve.

The graduate is able to:

- a. Describe the role and examples of physicians and medical associations in advocating collectively for health and patient safety.
- b. Analyze the ethical and professional issues inherent in health advocacy, including possible conflict between roles of gatekeeper and manager.
- c. Discuss opportunities for engagement in global health issues and care of marginalized communities, including the potential ethical and professional dilemmas present in those situations

Manager

Physicians are required to effectively manage the care of their patients, their practice, and themselves in the context of the health care system, community, and society in which they practice. The skills of an effective manager of others include the competencies described for an effective communicator and collaborator. As the goal of the medical school is to prepare students for rewarding careers, it is important that they learn about the challenges and responsibilities of physicians, and develop personal insight and behaviours that will promote healthy life-long careers.

In the pre-clinical setting, medical students will learn the principles and obligations of effective and responsible health care delivery in Canada. During their clinical experiences, they will demonstrate these principles in their patient care.

In the pre-clinical settings, students will learn the principles of self-management and resources to support physician well-being. They will demonstrate their ability to maintain a healthy work-life balance in their educational and clinical settings. Students' clinical opportunities will ensure the experience a variety of practice settings in order to inform their career choice and prepare them for entry into postgraduate training.

Manager Competency 1 *Practice Options*

Describes a variety of practice options and settings within the practice of Medicine

M1.1 *Career Settings*

The competent medical graduate:

Is aware of the variety of practice options and settings within the practice of Medicine, and makes informed personal choices regarding career direction

The graduate is able to:

- a. Outline strategies for effective practice in a variety of health care settings, including their structure, finance and operation
- b. Outline the common law and statutory provisions which govern practice and collaboration within hospital and other settings
- c. Recognizes ones own personal preferences and strengths and utilizes this knowledge in career decisions
- d. Identifies a variety of career paths within health care settings.

Manager Competency 2 *Balancing Personal Health and Profession*

Balances personal health and professional responsibilities

M2.1 *Work / Life Balance*

The competent medical graduate:

Identifies and implement strategies that promote care of one's self and one's colleagues to maintain balance between personal and educational/ professional commitments

The graduate is able to:

- a. Identify and balance personal, educational and clinical priorities to foster ~~future~~ a healthy-balance between personal well-being and-a sustainable, responsible practice
- b. Practice personal and professional awareness, insight and acceptance of feedback and peer review; participate in peer
- c. Implement plans to overcome barriers to healthy personal and professional behavior
- d. Recognize and respond to other educational/professional colleagues in need of support

Approved by MD Program Curriculum Committee
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