# Curriculum Map
# Undergraduate Medical Education Program
# Dalhousie University, Faculty of Medicine

## Program and Course Descriptions

The four-year undergraduate medical education program at Dalhousie University is divided into two phases, preclerkship (Med 1 and Med 2) and Clerkship (Med 3 and Med 4). The Med 1 and Med 2 programming provides students with the foundational academic knowledge and clinical skills and attitudes required for entry to the first year of the clerkship program. The Med 3 and Med 4 programming provides students with the opportunity to apply the foundational academic knowledge, clinical skills and attitudes in a variety of clinical settings and across a variety of medical specialties.

## Med 1 (Year 1)

**Foundations:** The principal goal of the Foundations unit is to prepare students for successful completion of the systems based units of the curriculum, including foundations in biomedical, epidemiological, social and human sciences. The two major components consist of a review of cell and molecular biology (weeks 1-3) and an introduction to evidence based practice (weeks 4-6). The unit also includes an introduction to the basic biomedical science disciplines (e.g. anatomy, histology, pathology and pharmacology), a full day experience of shadowing a physician in his/her practice, and presentations by clinical and biomedical researchers.

**Host Defense:** The Host Defense Unit includes Hematology, Immunology, Infection and an Inflammation component. During the Hematology component concepts such as the development and function of blood cells, normal hemostasis, diseases of the blood systems including anemias and haemoglobinopathies, bleeding and clotting disorders and hematological neoplasms are presented.

**Metabolism and Homeostasis I:** Upon completion of this Unit, students will be able to describe the mechanisms underlying biochemical and physiologic processes related to oral medicine, gastrointestinal issues, nutrition and endocrinology. They will learn to recognize normal and abnormal anatomic and histological structures of the gastrointestinal and endocrine systems and establish how societal factors influence health and disease relevant to oral medicine, gastrointestinal issues, nutrition and endocrinology.

**Human Development:** The Human Development Unit is an integrated review of all aspects of human reproduction, encompassing sexuality, the genitourinary system, embryology, genetics, labor and birth. Clinical cases are used to illuminate and reinforce the acquisition of basic

concepts of anatomy, physiology and pathology and demonstrate their linkage to high level themes of professionalism, patient centredness and community responsibility.

**Professional Competencies I:** This program is the first year of a two-year longitudinal Unit that provides students with the opportunity to integrate their biomedical and clinical learning within the context of patient care from professional, community, and life-long learner perspectives. Content includes public health and infectious disease management in the community, end of life decision-making and other ethical challenges, patient safety and other system and quality improvement approaches, social accountability and global health, physician wellness and career paths, and the Health Mentors program.

**Skilled Clinician I:** This four-year program is designed to provide students with a variety of formative and summative experiential and explanatory (knowledge) learning assessments across the four year continuum of undergraduate medical education. Through the use of a variety of assessment methodologies, students will begin to develop insights into the connections and interactions between their learning experiences and more importantly, through the practice of self-reflection, begin to understand how these experiences contribute to their development as physicians.

**Research in Medicine (RIM):** The four year RIM program begins in year 1 and is expected to be completed by mid-point of year 4. A series of didactic and observational learning experiences will comprise the first 15 weeks of the program. Following this introduction, students will be expected to work with their faculty mentor to design, develop, and carry out their individual projects.

**Electives:** The Med 1 elective experiences provides early clinical exposure opportunities for students in order to pursue topics related to medicine which are of specific interest to them. The student is required to plan, develop, and execute a personal project. This involves the cultivation of a socratic type of relationship between the student and the faculty preceptor over an extended period of time. These experiences begin in semester 1 of year 1 of the program.

**Rural Week:** During the last week of Med 1 students are required to spend one week observing a rural physician in practice. Students will identify characteristics of clinical practice in a rural setting, including health care delivery and resource access/utilization. Students will also focus on physician wellness and lifestyle in a rural setting, as well as the physician's role and leadership responsibilities in a rural setting.

**Health Mentors:** Health Mentors are adult volunteers with a chronic condition and/or disability who are willing to share their experience of living with their condition and navigating the healthcare system with a small interprofessional team of 4 – 5 students. Student teams do not provide care, treatment or medical advice; rather, they listen to and learn from the Health Mentors, developing a picture of the whole person.

## Med 2 (Year 2)

**Neurosciences:** The Neurosciences Unit introduces basic anatomical and physiological content, including the anatomy of the head and neck, special senses of vision and cochlear/vestibular dysfunction as they relate to clinical neurosciences, pathophysiology of atherosclerosis, the clinical manifestations of atherosclerosis throughout the body, and the burden, manifestations, physical effects, detection methods and ways to address emotional dysregulations. In addition, this unit focuses on the nervous system as it relates to neurological disorders and psychiatric conditions.

**Metabolism II:** This unit presents the major diseases of the cardiovascular, renal and respiratory systems. All three components of the unit include pediatric and adult conditions. Case-based learning sessions focus on the pathophysiology and clinical presentation of the major types of cardiovascular, renal and respiratory disease with appropriate coverage of physiology. Lectures and laboratory sessions present content on normal human physiology, anatomy and histology as well as the pathophysiology and principles of management of diseases affecting these three systems.

**Musculoskeletal & Dermatology:** This Unit addresses patient mobility and function in the performance of work, recreation and activities of daily living. Academic sessions focus on the unique elements of the clinical assessment required by the skilled-clinician for effective diagnosis and management of musculoskeletal and dermatologic conditions. Students learn the collaborative competencies of an effective team based professional while working with, from and about other health care providers in assessing the patient's environment for most effective management.

**Integration:** By the end of the Integration Unit, the students are able to use a patient-centered approach to take into account the whole person (culture and context, illness experience, feelings and expectations) with respect to diagnosis and management while synthesizing relevant information from history, physical examination and investigations to develop an appropriate care plan. This includes incorporating evidence-based practice and clinical practice guidelines into the assessment, education and care of patients using a patient centered approach, and recognizing the limitations of clinical evidence.

**Professional Competencies II:** This program is the second year of a two-year longitudinal Unit that includes a weekly two-hour tutorial followed by a one-hour large group session. This unit provides students with the opportunity to integrate their biomedical and clinical learning within the context of patient care from a professional, community, and life-long learner perspectives. Content includes public health and infectious disease management in the community, end of life decision-making and other ethical challenges, patient safety and other system and quality improvement approaches, social accountability and global health, physician wellness and career paths, and the Health Mentors program.

**Skilled Clinician II:** This four-year program is designed to provide students with a variety of formative and summative experiential and explanatory (knowledge) learning assessments

across the four year continuum of undergraduate medical education. Through the use of a variety of assessment methodologies, students will begin to develop insights into the connections and interactions between their learning experiences and more importantly, through the practice of self-reflection, begin to understand how these experiences contribute to their development as physicians.

**Research in Medicine (RIM):** Students will be expected to complete the bulk of their research in Year 2. Students will continue to work with their faculty mentor to design, develop, and carry out their individual projects.

**Electives:** The Med 2 elective experiences provides early clinical exposure opportunities for students in order to pursue topics related to medicine which are of specific interest to them. The student is required to plan, develop, and execute a personal project. This involves the cultivation of a socratic type of relationship between the student and the faculty preceptor over an extended period of time. These experiences begin in semester 1 of year 2 of the program.

## Med 3 (Year 3)

Med 3 (Year 3) of the undergraduate medical education program is the first year of a two year clerkship. There are two "tracks" that students may follow in order to meet the learning objectives identified for this year of the clerkship – Tradition Block Clerkship (TBC) and the Longitudinal Integrated Clerkship (LIC). For both tracks, students are introduced to specific clinical disciplines over a 55 week period (TBC) and a 48 week period (LIC).

**PIER I - IV:** A series of four transition sessions have been designed to assist all students as they transition from preclerkship to clerkship, and move within clerkship. These sessions are collectively known as PIER sessions: P (Positioning), I (Integration), E (Evaluation), and R (Research/Review). The content for each PIER (PIER I – IV) is based on feedback from students, faculty, and best practices in medical education.

**Emergency Medicine:** This is a three-week emergency medicine clerkship rotation, during which students will be involved in history taking, completing physical exams, coming up with care plans and delivering discharge instructions to patients. Clerks whose rotations are scheduled in the Halifax Regional Municipality are also required to attend weekly mandatory teaching seminars and departmental grand rounds at the QEII HSC. For those clerks scheduled outside the HRM, they are required to attend academics rounds as scheduled by the individual Emergency Departments.

**Family Medicine:** During this unit clerks complete six weeks in Family Medicine. Clerks have the choice to complete either two, three-week rotations or one, six-week rotation. Family Medicine rotations are completed throughout the Maritimes, with a limited number of rotations within the Halifax Metro area. Students can select to work with physicians with particular interests such as Emergency Medicine, Obstetrics or Geriatric Medicine.

**Internal Medicine:** The Internal Medicine Unit incorporates the objectives of general internal medicine as well as the sub-specialties of internal medicine. Clerks will complete four weeks in General Medicine (A1), four weeks in a ward-based medicine sub-specialty (A2); and four weeks which must be at least 50% ambulatory care on a medicine sub-specialty (A3). As part of the learning experience clerks will take in-house call for Internal Medicine.

**Obstetrics and Gynecology:** The Obstetrics and Gynecology rotation is six weeks and will be completed at the IWK Health Centre and distributed sites such as Kentville, Saint John and Charlottetown. The clerkship will provide a broad view of reproductive health as it pertains to women, covering the full spectrum from birth to climacteric. The rotation provides opportunities for a variety of clinical exposures.

**Pediatrics:** Pediatrics is a six-week core clerkship rotation and is divided into three weeks on the Pediatric Medical Unit and three weeks mixed ambulatory/emergency. Clerks rotating at the distributed sites typically have an integrated six weeks working with consultant pediatricians. During the pediatric core rotation, clerks at all sites attend a series of seminars via technology.

**Psychiatry:** During the Psychiatry Clerkship, clerks complete a six week rotation which includes a variety of inpatient and outpatient clinical experiences that expose the clerk to a range of psychiatric disorders. Rotations are offered in the Halifax Regional Municipality, as well as at other affiliated sites including Saint John, Fredericton, Moncton, Miramichi, Windsor, Charlottetown and Sydney. Teaching sessions on a range of topics occur weekly in the form of didactic lecturers, clinical vignettes and interactive discussion.

**Surgery:** The nine-week surgery unit provides clerks with the broad principles of surgery and the basics in surgical specialties as a foundation for postgraduate training. All clerks will complete a mandatory three-week General Surgery rotation and two three-week selective rotations that can be chosen from the following nine specialties: Cardiac, Neurosurgery, Otolaryngology, Pediatric General Surgery, Plastic Surgery, Orthopedics, Thoracic Surgery, Vascular Surgery, and Urology. All rotations are in Halifax, primarily at the QEII, but with some experiences at the IWK Health Centre. Clerks are scheduled for call duty.

**Electives:** Electives allow students to: gain experience in disciplines not offered in the regular curriculum; study particular areas of the curriculum in greater depth; and explore career opportunities. The elective period consists of two weeks Med 3 and 18 weeks in Med 4.

## Med 4 (Year 4)

Med 4 (Year 4) of the undergraduate medical education program is the second year of a two year clerkship. Med 4 runs for 32 weeks of which 18 weeks are electives: 12 weeks of general electives; 3 consecutive weeks of non-tertiary/community-based electives; and 3 consecutive weeks of interdisciplinary electives. At the end of Med 4 students will complete the Critical Review and Mastery unit to prepare for the Medical Council of Canada exam and first year of

residency.

## I: ENSTRUSTABLE PROFESSIONAL ACTIVITIES

**Entrustable Professional Activities** ←

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Educational Outcomes

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Unit/Clerkship Objectives

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Unit Component/Specific Clerkship Objectives

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Learning Session Objectives (For Year 1 and Year 2)

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Outcome Measure(s)

**Area 1: Professional**

Goal Statement: As professionals, our graduates are able to join and enhance the medical profession, through their commitment to excellence in patient care, high ethical standards, and accountability to society for the responsibilities entrusted to them.

| **Area 1: Professional** | |
|---|---|
| **Our graduates can successfully be entrusted to perform the following professional activities:** | |
| 1A | Demonstrate appropriate professional attitudes and ethical commitments |
| 1B | Demonstrate commitment to the well-being of the patient |
| 1C | Promote health and provide healthcare equitably |

**Area 2: Community Contributor**

Goal Statement: As community contributors, our graduates understand a community's health needs and respond to promote health. They contribute constructively to communities of practice and the institutions and healthcare systems to which they belong.

| **Area 2: Community Contributors** | |
|---|---|
| **Our graduates can successfully be entrusted to perform the following professional activities:** | |
| 2A | Contribute to the improvement of healthcare institutions and systems |
| 2B | Use their professional role to promote the public good |
| 2C | Pay particular attention to identifying inequities and the needs of the most vulnerable |

**Area 3: Lifelong Learner**

Goal Statement: As lifelong learners, our graduates engage in self-assessment and reflective practices to integrate clinical experience, and scientific evidence for the improvement of patient care, safety, and outcomes.

| **Area 3: Lifelong Learners** |
|---|

| Our graduates can successfully be entrusted to perform the following professional activities: | |
|---|---|
| 3A | Be effective lifelong learners |
| 3B | Participate in the creation, dissemination, application, and translation of new knowledge |
| 3C | Participate in the systematic improvement of clinical practice |
| 3D | Raise questions and bring fresh perspectives to existing practice |

**Area 4: Skilled Clinician**

Goal Statement: As skilled clinicians, our graduates are able to apply scientific understanding, clinical skills, professional attitudes, and reflective practice in their provision of safe, patient-centered care, in collaboration with patients, families, colleagues, and communities.

| Area 4: Skilled Clinicians | |
|---|---|
| **Our graduates can successfully be entrusted to perform the following professional activities:** | |
| 4A | Perform an accurate history and physical examination in diverse populations of patients |
| 4B | Develop and propose a differential diagnosis and appropriate plans for investigation and management |
| 4C | Provide safe, supportive and evidence-based care for patients, within their scope of training |
| 4D | Communicate and collaborate effectively and respectfully with patients, families, and colleagues in the team environment and across the continuum of care |
| 4E | Help patients navigate the illness and healing experience |

## II: EDUCATIONAL OUTCOMES

Entrustable Professional Activities
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**Educational Outcomes** ←
↓
Unit/Clerkship Objectives
↓
Unit Component/Specific Clerkship Objectives
↓
Learning Session Objectives (For Year 1 and Year 2)
↓
Outcome Measure(s)

| # | Area 1: Professional Educational Outcomes | Mapped to Entrustable Professional Activity |
|---|---|---|
| **Upon completion of the MD program our graduates will be able to:** | | |
| P1 | Demonstrate personal integrity, honesty, reliability, respect, compassion and commitment towards others | 1A, 1b, 1C |
| P2 | Practice medicine in a manner consistent with the fundamental rights of patients to self-determination, and responsibilities of physicians and healthcare institutions in Canada | 1A |
| P3 | Recognize ethical dilemmas and dimensions of professional practice, and critically analyze situations in order to propose well-reasoned courses of action | 1A, 1C |
| P4 | Take into account the uniqueness of each person and the diversity in populations in communicating respectfully and in providing supportive, and culturally appropriate care | 1C |
| P5 | Take responsibility for situations that place patients at risk | 1B |
| P6 | Offer and accept constructive feedback | 1A, 1B |
| P7 | Manage personal well-being in order to meet professional responsibilities, appropriately recognizing limitations and seeking help or consultation | 1A, 1B |

| # | Area 2: Community Contributors Educational Outcomes | Mapped to Entrustable Professional Activity |
|---|---|---|
| **Upon completion of the MD program our graduates will be able to:** | | |
| CC1 | Identify the determinants of health and community needs, including barriers to access to care and the situation of marginalized and vulnerable populations | 2B, 2C |

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|---|---|---|
| CC2 | Participate in public health initiatives, such as screening, vaccination, and surveillance, fulfilling professional and legal reporting responsibilities | 2B |
| CC3 | Identify, consider, and contribute to opportunities for improved health in the communities to which they belong – both locally and globally | 2B |
| CC4 | Work effectively and collaboratively in a range of practice contexts to provide patient care and improve health care systems | 2A |
| CC5 | Responsibly steward healthcare resources | 2A, 2B |

| # | **Area 3: Lifelong Learners<br>Educational Outcomes** | **Mapped to Entrustable Professional Activity** |
|---|---|---|
| **Upon completion of the MD program our graduates will be able to:** | | |
| LLL1 | Formulate clinical questions, search the evidence, and evaluate the results to inform diagnosis, prevention, treatment, and supportive care for patients | 3A, 3D |
| LLL2 | Know the appropriate use and limitations of scientific and statistical methods to address questions in basic, clinical, population, health services, and translations research | 3B |
| LLL3 | Reflect critically upon and monitor one's own performance using appropriate sources of data and practice standards | 3A, 3B, 3C |
| LLL4 | Assess learning needs and develop and implement personal learning plans | 3A, 3C |
| LLL5 | Identify and weigh opportunities for practice improvement in one's own clinical practice and in health care systems and institutions | 3C |
| LLL6 | Teach and learn from others | 3A, 3D |

| # | **Area 4: Skilled Clinicians<br>Educational Outcomes** | **Mapped to Entrustable Professional Activity** |
|---|---|---|
| **Upon completion of the MD program our graduates will be able to:** | | |
| 1. Under supervision, manage and provide care across the lifespan of patients with acute, chronic or undifferentiated illness: | | |
| SC1a | Establish therapeutic relationships in which patients are active partners | 4D, 4E |
| SC1b | Assist patients in evaluating and interpreting sources of knowledge | 4D, 4E |
| SC1c | Demonstrate skilled listening and responding in communicating with diverse patients, their families, or other caregivers, and colleagues | 4D |
| SC1d | Understand and respect the roles, expertise, and perspectives of health care professionals when learning, consulting, and collaborating | 4C, 4D |
| SC1e | Understand the psychosocial implications of health and illness across the life cycle for patients and families | 4E |
| SC1f | Take account of patient context in their clinical approach | 4D, 4E |
| 2. Diagnosis | | |

| | | |
|---|---|---|
| SC2a | Perform a comprehensive or focused patient-centered history and physical examination for diverse patient populations across the lifespan, as determined by patient presentation | 4A |
| SC2b | Select and interpret appropriate laboratory and diagnostic studies | 4B |
| SC2c | Perform selected therapeutic and diagnostic procedures | 4B |
| SC2d | Develop well-reasoned diagnostic hypotheses and differential diagnoses | 4B |
| 3. Treatment and Management | | |
| SC3a | Under supervision, formulate and propose treatment plans, weighting pharmaceutical, surgical, behavioural, and supportive options as appropriate, for therapy and for symptom management | 4B, 4C |
| SC3b | Identify and use opportunities for prevention and health promotion in the clinical encounter | 4B, 4C |
| SC3c | Know the risks and benefits of common therapeutic interventions and know when these are indicated | 4C |
| SC3d | Support patients and families in the appropriate use of self-care strategies | 4B, 4C, 4E |
| SC3e | Counsel and support patients as appropriate in the presence or absence of established diagnosis or treatment | 4D, 4E |
| SC3f | Demonstrate knowledge, skills and attitudes that support end of life care | 4E |
| SC3g | Connect patients and families to appropriate community resources for support and care | 4E |
| 4. Information Management | | |
| SC4a | Communicate effectively by spoken, written and electronic methods, respecting patient confidentiality | 4D |
| SC4b | Maintain accurate, effective, and comprehensive records of patient care | 4D |
| SC4c | Make judicious use of informatics tools and information sources to provide evidence-informed patient care, monitor patient outcomes, and maintain medical records | 4C |

## III. UNIT/CLERKSHIP OBJECTIVES

Entrustable Professional Activities
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Educational Outcomes
↓
**Unit/Clerkship Objectives** ←

**MED 1/Year 1**

| Foundations | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| U-F-1 | Describe basic scientific principles at the molecular and cellular levels as a framework for understanding biomedical concepts. | LLL2; SC2b – d, SC3a, SC3c |
| U-F-2 | Integrate concepts and language of anatomy, histology, pathology and pharmacology as a basis for helping to understand human health and disease. | LLL1, LLL2; SC1b, SC2b, SC2d, SC3c, SC4c |
| U-F-3 | Demonstrate the retrieval, appraisal and application of the best available evidence to address a clinical problem, e.g. interpretation of a diagnostic test. | LLL1 – 4; SC4d |

| Host Defense | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| U-H-1 | Describe how the physical and cellular elements of the immune system are integrated and how the immune system operates to protect the body from infections. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-2 | Describe the nature and impact of immune deficiency and autoimmunity on the health of the population. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-3 | Explain the cellular basis of the most common immunological deviations and immunopathologies and the impact these have on the community. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-4 | Construct an integrated model that reflects the process of normal haematopoiesis, the structure and function of bone marrow, the development of the cells which make up the blood and the immune systems, and how these change with age and normal development. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-5 | Describe the normal function of blood cells and blood coagulation as well as deviations in blood development and function such as anaemia, congenital and acquired bleeding and clotting disorders, leukaemia's, lymphomas and monoclonal gammopathy, together with a recognition of the global impact and importance of haematological diseases. | LLL1, LLL2; SC2b-d, SC3a, SC3b |

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|---|---|---|
| U-H-6 | Describe the basic structure and growth characteristics of bacteria, parasites, viruses and fungi. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-7 | Explain how infections are acquired and how they spread within populations. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-8 | Explain the strategies to prevent the spread of infections between individuals and within larger populations. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-9 | Describe how specific aspects of individual pathogens determine the site of infection as well as influence disease expression, pathology, treatment and outcomes of common infections. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-10 | Recognize the need for interprofessional and multidisciplinary teamwork in the diagnosis and management of haematological, immunological and infectious disease. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-11 | Describe how the basis of laboratory medicine supports all other disciplines in medicine. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-12 | Recognize the various therapeutic tools for the management of haematological, immunological and infectious disease. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-13 | Describe the etiology of acute and chronic inflammation. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-14 | Describe and interpret results of laboratory tests used to aid in the diagnosis of hematological, immunological and infectious diseases. | LLL1, LLL2; SC2b-d, SC3a, SC3b |
| U-H-15 | Discuss immunosurveillance and its role in limiting cancer growth. | LLL1, LLL2; SC2b-d, SC3a, SC3b |

| **Metabolism & Homeostasis** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-M-1 | Describe the mechanisms underlying biochemical and physiologic processes related to oral medicine, gastrointestinal issues, nutrition and endocrinology. | SC2d |
| U-M-2 | Recognize normal and abnormal anatomic and histological structures of the gastrointestinal and endocrine systems. | SC2d |
| U-M-3 | Apply the clinical and basic science knowledge acquired to the understanding of pathophysiologic mechanisms relevant to oral medicine, gastrointestinal issues, nutrition and endocrinology. | SC2d |
| U-M-4 | Recognize the pathophysiological signs that underlie the diagnosis and management of common clinical problems | SC2d |

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|---|---|---|
| | representative of oral medicine, gastrointestinal issues, nutrition and endocrinology. | |
| U-M-5 | Relate how societal factors influence health and disease relevant to oral medicine, gastrointestinal issues, nutrition and endocrinology. | CC1 |
| U-M-6 | Consider how physicians can influence community determinants of health. | CC1 – 5 |
| U-M-7 | Describe the diagnostic tests and procedures to aid in the diagnosis of GI and endocrine disorders. | SC2b |

| **Human Development** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-HD-1 | Relate the anatomy and histology of the pelvis, including the male and female genital systems, bladder and urethra sufficiently:<br>• to competently make common differential diagnoses<br>• to provide a foundation for further learning. | SC2a – d |
| U-HD-2 | Use the principles of genetic transmission, molecular biology of the human genome, and population genetics<br>• to infer and calculate risk of disease,<br>• to institute an action plan to mitigate this risk,<br>• to obtain and interpret family history and ancestry data<br>• to order genetic tests,<br>• to guide therapeutic decision making, and<br>• to assess patient risk. | SC1a, SC1b, SC2a – d, SC3a, SC3c, SC3e |
| U-HD-3 | Use a understanding of embryology and cell differentiation<br>• to explain the spatial relationship and shared developmental lineages of structures in the mature human body,<br>• to illustrate the normal process of human development, including the development of form and function, and<br>• to apply this knowledge to construct rationales to explain clinically significant perturbations in morphogenesis. | SC2a – d, SC3a |
| U-HD-4 | Describe reproductive endocrinology, male & female gametogenesis, ovulation and menstrual physiology, pregnancy, and labour and delivery. | SC2a – d |
| U-HD-5 | Understand the relevant anatomy, physiology, histology, clinical presentation, and pathology of common female urologic and male genitourinary disease processes. | SC2d |
| U-HD-6 | Describe and interpret the broad range of human sexual behaviour, its change through life stages and its cultural contexts, in sufficient depth to appreciate common problems affecting patients. | P2, P4; CC2, CC3; SC1a, SC1c, SC1e |

| Professional Competencies 1 | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| U-PC-1 | Identify opportunities in the practice environment to improve patient safety, practice organization, and quality of care, and describe effective and evidence-informed approaches to change. | P5; CC5; LLL5 |
| U-PC-2 | Identify the health needs of communities, and select appropriate approaches to prevention, management, and advocacy to meet those needs. | CC1 – 3; SC3b |
| U-PC-3 | Analyze ethical implications of situations encountered in medicine and reason through common scenarios in systematic yet flexible ways that focus on the good of the patient and of communities. | P1 – 5; CC1; SC1a– f, SC4a |
| U-PC-4 | Describe ways that law shapes medical practice, and specific obligations of physicians to work within legal standards in clinical care, practice management, and research. | P2, P3, P5; CC2, CC4; SC1a, SC1d, SC4a |
| U-PC-5 | Develop and maintain empathy and respect towards diverse patient populations, including practical communication, collaboration, and reflection skills to be effective in challenging relationships and practice environments. | P1, P4, P7; SC1c, SC1e, SC1f, SC3b, SC3d – g |
| U-PC-6 | Identify your collaborators in patient care (professional and non-professional), and work productively with them for the good of patients and communities, appreciating diverse perspectives and applying approaches to conflict management. | CC4; SC1d, SC3g |
| U-PC-7 | Contribute productively to strong learning communities through self<br>-assessment, supporting others in their learning, and contributing to the knowledge base. | P6; LLL3, LLL4, LLL6; SC4c |
| U-PC-8 | Routinely engage in critical thinking, seeking out the best and most appropriate evidence for different kinds of decision-making, critically assessing the research base, identifying biases, and reflecting on strengths and weaknesses in your own reasoning processes. | LLL1 – 3; SC2b, SC2d, SC3a, SC3c, SC4c |
| U-PC-9 | Maintain good stewardship of patient data, from gathering to securing to employing for improvement of practice and care, and for the empowerment of patients. | SC4a – C |

| Skilled Clinician 1 | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| U-SkC-1 | Demonstrate the communication process of the medical interview (Calgary Cambridge Guide) with diverse patient populations as it specifically relates to initiating the interview, gathering patient information, building the relationship, structuring the interview and closing the interview. | SC1c |

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|---|---|---|
| U-SkC-2 | Integrate the communication process skills of the medical interview (Calgary Cambridge Guide) with basic content of the medical history. | SC1c |
| U-SkC-3 | Describe the components of a complete medical history. | SC2a |
| U-SkC-4 | Demonstrate a patient-centered approach and documentation of the medical history that elicits the unique illness narrative and psychosocial and cultural context of each patient. | SC2a |
| U-SkC-5 | Communicate empathetically with patients who experience emotions such as sadness, fear, frustration and anger. | SC1a |
| U-SkC-6 | Reflect on their own and their peers' communication skills and skill development needs and give and receive constructive feedback based on reflection and self-assessment. | LLL3 |
| U-SkC-7 | Perform and document the finding of a physical examination in a manner that is informative and respectful of patient dignity and culture. | P1 – 7; SC2a |
| U-SkC-8 | Correctly drape and position patients during physical examination. | SC2a |
| U-SkC-9 | Demonstrate correct physical examination techniques for each system as outlined in the reference material. | SC2a |
| U-SkC-10 | Verbally present a history and physical examination in an organized and concise fashion. | SC2a |
| U-SkC-11 | Record a history and physical examination in an organized, concise and legible format. | SC2a |
| U-SkC-12 | Describe the infection control principles for safe patient care and the prevention of healthcare associated infection (HAI). | SC2a |
| U-SkC-13 | Describe the techniques used to avoid cross-contamination in the clinical setting. | SC2a |
| U-SkC-14 | Define the concepts of sterilizing and decontamination. | SC2a |
| U-SkC-15 | Perform a proper surgical scrub. | SC2a |

| **Research in Medicine** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-RIM-1 | Recognize and describe the value and roles of health research in:<br>– Informing clinical judgment, skills and knowledge<br>– Contributing to innovations in clinical care, health policy and healthcare systems<br>– Supporting lifelong learning and professional development | P1; CC1, CC3, CC4; LLL2, LLL5; SC1b, SC4c |
| U-RIM-2 | Demonstrate appropriate professional attitudes and behaviours in the performance of research activities. | P1, P2, P3; LLL6 |
| U-RIM-3 | Reflect upon and critically appraise published research | LLL1 |

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| U-RIM-4 | Establish effective communications and productive relationships with collaborators in the development and conduction of research projects. | P1, P6; SC1c, SC1d |
| U-RIM-5 | Apply fundamental research ethics concepts and principles in adherence to the second edition of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2). | P3, P4, P5; CC1 |
| U-RIM-6 | Describe the full spectrum of health research methodologies. | LLL1, LLL2 |
| U-RIM-7 | Formulate a relevant, operational health research question(s). | LLL1 |
| U-RIM-8 | Select an appropriate research methodology to address and answer a research question(s). | LLL1, LLL2 |
| U-RIM-9 | Develop and implement a research plan in collaboration with a mentor/supervisor. | LLL1, LLL2, LLL3, LLL6 |
| U-RIM-10 | Describe, evaluate/analyze and report research findings in a publication-quality research paper and academic | LLL1, LLL2; SC4a |
| U-RIM-11 | Describe how to effectively translate research-generated health knowledge into clinical care, health policy and healthcare systems. | LLL2; SC1b |

| **Electives** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-EL-1 | Describe and relate the varieties of contributions to the provision of health care, the practice of medicine and the associated lifestyle/career culture by participating in mentored and/or collaborative relationships with Elective preceptors.<br>– The pursuit of areas of personal interest, including the opportunity to work in a clinical or laboratory setting.<br>– The evaluation of possible career choices.<br>– The benefit derived from an established working relationship with a medical/ health professional, educator, and/or researcher (faculty, staff or community). | LLL4 |
| U-EL-2 | Define and apply specific outcomes-oriented learning objectives based on appropriate educational theory as they relate to the discipline in which the Elective is being done.<br>– The development of their own objectives specific to the discipline of their Elective. | LLL4 |
| U-EL-3 | Appraise individual areas of academic and or clinical interest which supplement their Med 1&2 curriculum and contribute to self-directed development of medical knowledge, skills and attitudes.<br>– The acquisition of skills of information retrieval as the basic prerequisite for independent study. | LLL4, LLL6 |

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| | – The acquisition of habits of independent /self-directed<br>– study.<br>– The acquisition of extra skills and experience in basic or clinical science fields. | |
| U-EL-4 | Apply the lifelong learning skills of self-reflection and self-assessment to determine learning needs, define educational goals, and implement appropriate learning strategies to guide their experiences.<br>– The opportunity to develop a unique approach to the solution of unfamiliar problems. | LLL4, LLL6 |
| U-EL-5 | Demonstrate the skills of scholarly research, analysis, professional behaviour, collaboration and effective communication (interpersonal, oral and written) as they apply to the Elective.<br>– The ability to describe new information, concepts, and conclusions in an effective written form or oral presentation.<br>– The opportunity to participate in collaborative health care teams. | LLL1 |

| Rural Week | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| U-RW-1 | Describe clinical practice in a rural setting, including the unique characteristics of health care delivery and the issues related to resources. | CC1 – 5 |
| U-RW-2 | Apply a determinant of health lens both in relation to rural practice decisions and in considering the needs and context of the community. | CC1 |
| U-RW-3 | Relate rural lifestyle issues to personal interests and future career goals. | CC3 |
| U-RW-4 | Compare and contrast the physicians' role in rural and urban settings, including leadership responsibilities. | CC3, CC4 |
| U-RW-5 | Demonstrate and apply the basic clinical skills (communication, history-taking and physical exam skills) | SC1a – f |
| U-RW-6 | Demonstrate personal integrity, honesty, reliability, respect, compassion and commitment towards others. | P1 – 7 |

| Health Mentors | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| **Chronic Conditions/Disabilities** | | |
| U-HM-1 | Demonstrate insight into the impact of the condition/disability on the Health Mentor's life and the lives of family members, and the experiences of Health Mentors in | LLL3, LLL4, LLL6 |

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| | navigating the health care system. | |
| U-HM-2 | Describe how the Health Mentor's experiences in the health care system affected her/his health status and contributed to the mentor's ability to play an active role in managing her/his condition and/or disability. | LLL3, LLL4, LLL6 |
| **Interprofessional Communication** | | |
| U-HM-3 | Establish team work communication principles. | SC1c |
| U-HM-4 | Actively listen to other team members including patients/clients/families. | SC1c |
| U-HM-5 | Develop trusting relationships with patients/clients/families and other team members. | SC1a, SC1c |
| **Patient/Client-Centredness** | | |
| U-HM-6 | Listen respectfully to the mentor's story. | SC1c |
| U-HM-7 | Share information with mentors in a respectful manner and in such a way that is understandable and encourages discussion. | SC1a |
| **Team Functioning** | | |
| U-HM-8 | Describe the process of your team's development. | SC1c |
| U-HM-9 | Develop a set of principles for working together. | SC1c |
| U-HM-10 | Participate and be respectful of all members' participation in collaborative decision-making. | SC1c |

## MED 2/Year 2

| **Neuroscience** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-NSc-1 | Describe the anatomy of the head and neck as a bridge to Neuroanatomy. | SC2a – d |
| U-NSc-2 | Describe the mechanisms underlying the normal and abnormal function of neurons, axons and synapses in the central and peripheral nervous system. | SC1a, SC1b, SC2a – d, SC3a, SC3c, SC3e |
| U-NSc-3 | Identify normal and abnormal anatomic structures of the nervous system. | SC2a – d, SC3a |
| U-NSc-4 | Apply the clinical and basic science knowledge acquired to the understanding of pathophysiologic mechanisms and localization. | SC2a – d |
| U-NSc-5 | Apply the clinical and basic science knowledge acquired to describe the clinical manifestation and management of common neurologic and psychiatric problems. | SC2a – d |
| U-NSc-6 | Relate the influence of societal factors to mental and neurological health and disease. | P2, P4; CC2, CC3; SC1a, SC1c, SC1e |
| U-NSc-7 | Discuss how physicians can influence community determinants of health. | CC1 |
| U-NSc-8 | Explain how the biopsychosocial model of illness contributes to an understanding of common psychiatric conditions. | SC1e |
| U-NSc-9 | Discuss the common occurrence of co-morbid psychiatric | SC1e, SC1f |

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| | diagnoses and the impact this has on diagnosis and management | |
| U-NSc-10 | Discuss health law as it relates to involuntary patient treatment. | P2 |

| **Metabolism II** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-M2-1 | Describe the mechanisms underlying biochemical and physiological processes of oxygen exchange, acid-base balance, blood pressure and renal function. | SC2d |
| U-M2-2 | Recognize normal and abnormal anatomic and histological structures of the cardiovascular, renal and respiratory systems. | SC2d |
| U-M2-3 | Apply the clinical, pharmacological and basic science knowledge acquired to the understanding of pathophysiological mechanisms that underlie diseases of the cardiovascular, renal and respiratory systems. | SC2d |
| U-M2-4 | Diagnose and manage common clinical problems of the cardiovascular, renal and respiratory systems across the life span. | SC2d |
| U-M2-5 | Relate the influence of societal factors to cardiovascular, renal and respiratory system health and disease. | CC1 |
| U-M2-6 | Consider the role of physicians in influencing community determinants of health, in particular related to smoking, exercise and nutrition. | CC1 – 5 |

| **Musculoskeletal /Dermatology** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-MSK-1 | Describe the pathogenesis and clinical expression of common dermatological and musculoskeletal diseases and injuries. | LLL2; SC2b, SC2c, SC2d SC3a, SC3c |
| U-MSK-2 | Describe characteristic dermatological and musculoskeletal injuries and conditions related to participation in work and athletic activity. | SC2a – d |
| U-MSK-3 | Formulate an approach to investigate, diagnose and manage common dermatological and musculoskeletal diseases and injuries. | SC2b, SC2c |
| U-MSK-4 | Describe the principles involved in determining fitness for return to activities of daily living, occupation and recreation. | LLL1, LLL2; SC1b, SC2b, SC2d, SC3c, SC4c |
| U-MSK-5 | Recognize the roles of allied Health care professionals in optimizing the return to activities of daily living, occupation and recreation following musculoskeletal disease or injury. | P7; LLL6; SC1d |

| Integration | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| U-I-1 | Use a patient-centered approach to take into account the whole person (culture and context, illness experience, feelings and expectations) with respect to diagnosis and management while synthesizing relevant information from history, physical examination and investigations to develop an appropriate care plan. | P4; CC1, CC5; SC1a, SC1b, SC1e, SC2, SC3a, SC3f |
| U-I-2 | Describe the causes of and diagnostic approach to common clinical problems in frail older patients, patients with cancer, and patients approaching end of life. | SC2a, SC2b, SC2d, SC3a, SC3b, SC3c, SC3f |
| U-I-3 | Identify ways in which the diagnosis and management (to include pharmacological and nonpharmacological) of medical problems differs for frail older patients. | SC2a – d |
| U-I-4 | Identify the entire spectrum of oncology care including epidemiology, prevention, screening, staging, diagnosis, management, and end of life care. | SC2a – d |
| U-I-5 | Discuss the management for common problems in the geriatric, oncology, and palliative care settings. | SC3a – g |
| U-I-6 | Apply and integrate this medical knowledge to individual patients with multi-system medical problems. | SC3a – g |
| U-I-7 | Discuss the interdisciplinary collaborative care model and identify the benefits and challenges of providing patient care in an interdisciplinary collaborative care model. | CC4, SC1d, SC3g |
| U-I-8 | Describe the unique role and perspective of the family physician in providing comprehensive, continuing care across the lifespan of patients and their families. | SC1d |
| U-I-9 | Recognize the importance of patient and family input to arrive at a course of action that is congruent with the beliefs, values and rights of the patient and their families. | P2, P3, P5, CC5 |
| U-I-10 | Describe the diagnostic and management approach to patients with delirium. | SC2a – d; SC3a – g |

| Professional Competencies 2 | Unit Level Objectives | Mapped to Ed Outcomes |
|---|---|---|
| U-PC-1 | Identify opportunities in the practice environment to improve patient safety, practice organization, and quality of care, and describe effective and evidence-informed approaches to change. | P5; CC5; LLL5 |
| U-PC-2 | Identify the health needs of communities, and select appropriate approaches to prevention, management, and advocacy to meet those needs. | CC1 – 3; SC3b |
| U-PC-3 | Analyze ethical implications of situations encountered in medicine and reason through common scenarios in systematic | P1 – 5; CC1; SC1a– f, SC4a |

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| | yet flexible ways that focus on the good of the patient and of communities. | |
| U-PC-4 | Describe ways that law shapes medical practice, and specific obligations of physicians to work within legal standards in clinical care, practice management, and research. | P2, P3, P5; CC2, CC4; SC1a, SC1d, SC4a |
| U-PC-5 | Develop and maintain empathy and respect towards diverse patient populations, including practical communication, collaboration, and reflection skills to be effective in challenging relationships and practice environments. | P1, P4, P7; SC1c, SC1e, SC1f, SC3b, SC3d – g |
| U-PC-6 | Identify your collaborators in patient care (professional and non-professional), and work productively with them for the good of patients and communities, appreciating diverse perspectives and applying approaches to conflict management. | CC4; SC1d, SC3g |
| U-PC-7 | Contribute productively to strong learning communities through self<br>-assessment, supporting others in their learning, and contributing to the knowledge base. | P6; LLL3, LLL4, LLL6; SC4c |
| U-PC-8 | Routinely engage in critical thinking, seeking out the best and most appropriate evidence for different kinds of decision-making, critically assessing the research base, identifying biases, and reflecting on strengths and weaknesses in your own reasoning processes. | LLL1 – 3; SC2b, SC2d, SC3a, SC3c, SC4c |
| U-PC-9 | Maintain good stewardship of patient data, from gathering to securing to employing for improvement of practice and care, and for the empowerment of patients. | SC4a – C |

| **Skilled Clinician 2** | **Unit Level Objectives** | **Mapped to Ed Outcomes** |
|---|---|---|
| U-SkC2-1 | Present verbally and in writing a case summary of a patient (of any age) presenting with a complaint relevant to the content areas (human development, neurology, psychiatry, respirology, cardiology, pediatrics, musculoskeletal, integration, dermatology). | SC4a |
| U-SkC2-2 | Demonstrate appropriate communication skills and professional attributes when interacting with patients, families, other health professionals and student colleagues. | SC4a |
| U-SkC2-3 | Perform the above while maintaining respect, courtesy and compassion for the patient. | P1—7 |
| U-SkC2-4 | Present a history and physical examination in an organized, concise fashion. | SC4a |
| U-SkC2-5 | Document a history and physical examination in an organized, legible fashion. | SC4a |
| U-SkC2-6 | Describe the anatomy and physiology of the visual system. | SC2d |

**MED 3 & Med 4/Year 3 & Year 4**

| **Med 3 and Med 4 Clerkship Objectives** | | **Mapped to Ed Outcomes** |
|---|---|---|
| CL-1 | Conduct a clinical interview that includes effective verbal and nonverbal communication and results in the obtaining of complete, accurate data appropriate to any clinical situation | SC1a – f, SC2a – d |
| CL-2 | Conduct a clinical examination of patients of all ages and interpret the findings | SC2a |
| CL-3 | Demonstrate clinical problem solving skills, including the ability to diagnose and initially manage with supervision, common acute and chronic illness | SC2a – d |
| CL-4 | Communicate effectively, orally and in writing, including recording in the patient chart, writing orders, presenting cases, prescribing, sending referrals, and summarizing patient care and recommendations | SC4a |
| CL-5 | Describe the indications for, and the methods used in common diagnostic investigations and interventional procedures and interpret the results | SC2b |
| CL-6 | Demonstrate competence in patient education regarding strategies for health promotion and disease and injury prevention | SC3b |
| CL-7 | Demonstrate the attitudes and professional behaviours appropriate for clinical practice | P1 – 7 |
| CL-8 | Identify and use appropriate sources of information to support the delivery of patient care | SC4c |
| CL-9 | Communicate and collaborate effectively as a member of an interprofessional team | SC4a |
| CL-10 | Describe the requirements and process for obtaining informed consent for any clinical diagnostic procedure. | SC1b |
| CL-11 | Conduct an appropriate medication reconciliation, utilizing available resources to ensure existing medications and prior medication history are taken into account | SC3a |