McGill

Internal Medicine Residency Program

GOALS & OBJECTIVES

2018

Table of Contents

Overall Goals & Objectives

Medical Expert

The curriculum is **structured** to occur though regular teaching sessions, academic half-days, simulated activities, journal clubs, and in the patient-care context. The resident will be provided with adequate resources in this context, including electronic references, such as the JAMA Rational Clinical Exam series. Simulation-based teaching on various procedures relevant to internal medicine as well as CanMEDS competencies is offered throughout the curriculum. The academic half-day sessions are based on a 2-year curriculum overseen by the Academic Curriculum Committee and guided by resident feedback regarding the topics and speakers. The AHD schedule is available for review in one45 under "My Calendar."

Regular **evaluation** of a resident's knowledge, skill, and attitudes are part of the monthly evaluation scheme for each clinical rotation. An annual oral exam in OSCE format is also a means to evaluate these domains. Completion of the American College of Physicians In-Training Examination (or equivalent) during the second and third years of residency is another means to provide formative feedback on these domains.

As a result, the resident will be able to perform a complete and reliable **history and physical examination**, recognizing the normal from the abnormal.

The resident will select appropriate **investigations** in a logical sequence, distinguish normal from abnormal results, and recognize their significance.

The resident will formulate a comprehensive **problem list**, synthesize an effective diagnostic and therapeutic plan, and establish appropriate follow-up.

The resident will demonstrate effective **consultation skills,** presenting well-documented assessments and recommendations both verbally and in writing.

The resident will be knowledgeable in both **common and uncommon** diseases, *as further outlined in each rotation's specific objectives and the Royal College Objectives of Training for Internal Medicine (version 1.0, 2011).*

The resident will demonstrate **technical expertise** in performing the following procedures while knowing their indications and complications:

i. central venous catheter insertion
ii. lumbar puncture
iii. peripheral arterial catheter insertion
iv. abdominal paracentesis
v. endotracheal intubation
vi. thoracentesis
vii. knee joint aspiration
viii. electrocardiographic interpretation

The resident will be familiar with the use of **procedural ultrasound** to aid in safely performing central venous catheter insertion, thoracentesis, and paracentesis.

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced concepts and skills in this field as the resident's clinical training progresses.

Communicator

The curriculum is **structured** to occur through regular teaching sessions and academic half-days (ethics/communication for R1-R3s), in the patient-care context through the recognition and application of the principles of verbal and written communication with patients, families, colleagues, and other health-care professionals, and in discussions and presentations with health-care professionals.

Regular **evaluation** of a resident's knowledge, skill, and attitudes in this domain are part of the monthly evaluation scheme for each clinical rotation. Direct observation of difficult communication scenarios also occurs in the context of regular academic half-days devoted to improving communication skills.

As a result, the resident will be able to **establish a therapeutic relationship** with patients and families based on trust and respect, recognizing the fundamental importance and benefits of this relationship.

The resident will be able to **obtain and synthesize a relevant history** from patients and families, given specific **challenges** (for example, language or other communication barriers). The relevant history will include not only information about the disease, but also patient beliefs, concerns, and expectations about the illness.

The resident will be able to **listen** effectively.

The resident will be able to **discuss appropriate information** with patients, families, and the health-care team. Specifically, the resident will be able to communicate in a humane and understandable manner that fosters discussion and promotes patient understanding**.**

The resident will recognize the importance of cooperation and **communication among health-care providers**, and recognize the importance of delivering consistent messages to patients.

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced concepts in communication as the resident's clinical training progresses.

Collaborator

The curriculum is **structured** to occur primarily through the patient-care context. It is in this context that the resident participates in the day-to-day care of in-and out-patients, as a collaborative member of the health-care team whose goal is the provision of optimal patient care, education, and research. There is an academic half-day for third-year residents on leadership and management skills, in which concepts of conflict-resolution and the assumption of the leadership role are further discussed. Finally, there is an annual Crisis Resource Management (CRM) session which is designed to teach team-work skills in the context of critical situations.

Regular **evaluation** of a resident's knowledge, skill, and attitudes in this domain are part of the monthly evaluation scheme for each clinical rotation. The CRM session will also be a formative evaluation experience.

As a result, the resident will be able **to identify and describe** the expertise and role of all of the members of an interdisciplinary team.

The resident will **develop a care plan** for patients, based upon the collaboration among the different members of the health-care team.

The resident will **participate as a collaborative member** of the health-care team, demonstrating the ability to accept, consider and respect the opinions of other team members, while contributing appropriate expertise to the team.

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced attitudes and skills involved in being a collaborator as the resident's clinical training progresses.

Leader

The curriculum is **structured** to occur primarily through the patient-care context. It is in this context that residents participate in the day-to-day care of in-and out-patients, as they make everyday practice decisions involving resources, co-workers, tasks, policies, and their personal lives. The ability to prioritize and effectively execute tasks is taught via the management of the resident's multiple roles and responsibilities, including in-patient care, out-patient clinics, teaching, administrative, and personal responsibilities. There is an academic half-day on leadership and management skills, in which these and other themes will be discussed.

Regular **evaluation** of a resident's knowledge, skill, and attitudes in this domain are part of the monthly evaluation scheme for each clinical rotation.

As a result, the resident will be able to utilize resources effectively to **balance** patient care, learning needs, and outside activities.

The resident will be aware of how to **allocate health-care resources** wisely.

The resident will be aware of how to work **efficiently** in a health-care organization.

The resident will **utilize information technology** to optimize patient care, life-long learning, and other activities.

The resident will recognize the **business and financial skills** necessary for a successful medical practice.

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced attitudes and skills involved in being a manager as the resident's clinical training progresses.

Health Advocate

The curriculum is **structured** to occur primarily through the patient-care context and in an academic half-day on advocacy/ethics/communication (R2s/R3s). It is in these contexts that the resident participates in the day-to-day care of in- and out-patients, as an advocate for the individual patient and society as a whole.

Regular **evaluation** of a resident's knowledge, skill, and attitudes in this domain are part of the monthly evaluation scheme for each clinical rotation. Formative feedback from the ethics/communication/advocacy sessions (R2s/R3s) will be provided based on directly observed interactions with standardized patients.

As a result, the resident will be able to **identify the important determinants of health** affecting patients. More specifically, the resident will be able to educate patients about long-term healthy behaviour and preventive health-care.

The resident will contribute effectively **to improved health of patients and communities.**

The resident will recognize and respond to those issues where **advocacy** is appropriate. More specifically, the resident will appreciate the existence of global health advocacy initiatives for elimination of poverty and disease.

The resident will apply the principles of **quality assurance/improvement** (see Quality Assurance/ Improvement).

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced attitudes and skills involved in being a health advocate as the resident's clinical training progresses.

Scholar

The curriculum is **structured** to occur through regular journal clubs, academic half-days offered to second-year residents on teaching skills, structured epidemiology teaching, and through the completion of a scholarly activity project. Participation in a minimum of a three-credit course taken as part of the McGill Summer Epidemiology Program is encouraged for all residents. Residents are required to participate in a scholarly activity project (see below) and will meet with their local Scholarly Activity Research Directors to assist them in identifying any research interests. Academic half-days on how to teach allow for elaboration of a resident's knowledge and skills in this area. The resident will have regular opportunities to present clinical cases and topic reviews at various clinical conferences.

A **mandatory scholarly activity** is effective for all residents. This activity may consist of (i) a case report or case series, (ii) a quality improvement (QI) or patient safety project, (iii) a medical education project, or (iv) a clinical research project. Evidence of a scholarly activity is required and will be placed in each resident's file. In order to meet this goal, each resident will be assigned 4 weeks of time towards a scholarly project (scholarly activity rotation) between PGY1-3. Up to 8 weeks may be taken as rotations or separately in 1 or 2 week blocks of time.

Regular **evaluation** of a resident's knowledge, skills, and attitudes in this domain are part of the monthly evaluation scheme for each clinical rotation. The resident will receive regular feedback following presentations at clinical case conferences.

Residents have the opportunity to present their work to their colleagues and to the hospital community at the annual "Resident Research Evening" and "Clinical Vignettes Evening." Presentation of appropriate work at provincial, national, and international conferences is strongly encouraged and supported.

As a result, the resident will be able to **apply the principles of critical appraisal** to sources of medical information, in the clinical, research, and educational contexts.

The resident will be able to **facilitate the learning** of patients, students, residents, and other health-care professionals.

The resident will **contribute to the development of new knowledge**.

The resident will be able to develop and implement a **personal continuing education strategy**.

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced concepts in clinical epidemiology, teaching, and research as the resident's clinical training progresses.

Professional

The curriculum is **structured** to occur through teaching sessions, academic half-days offered to second-year residents on professionalism, through simulation-based teaching on advocacy, ethics and communication skills for R2s and R3s, and through the patient-care context. Further training in ethics sessions is provided as part of the academic curriculum, and a session on medico-legal issues is offered to residents in the context of an academic half-day devoted to this topic annually.

Regular **evaluation** of a resident's knowledge, skill, and attitudes in this domain are part of the monthly evaluation scheme for each clinical rotation, while formative feedback is provided as part of the simulation-centre sessions on this topic.

As a result, the resident will be able to deliver quality care with **integrity, honesty, and compassion.**

The resident will exhibit appropriate **personal and interpersonal behaviours**.

The resident will practice medicine **ethically**, consistent with the obligations of a physician (see Ethics).

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced attitudes and skills involved in being a professional as the resident's clinical training progresses.

Special Teaching Topics

Ethics

The curriculum is **structured** to occur through regular teaching sessions with clinical ethicists, in the patient-care context through the recognition and application of basic ethical principles throughout a resident's clinical experience, and in the context of academic half-days.

Regular **evaluation** of a resident's knowledge, skills, and attitudes in this domain are part of the monthly evaluation scheme for each clinical rotation.

As a result, the resident will have a **knowledge** of the common ethical issues that are commonly encountered in clinical practice, including:

i. Consent
ii. Capacity
iii. Substitute Decision-Making
iv. Confidentiality
v. Truth-Telling (esp. medical errors)
vi. Conflicts of Interest (esp. physicians and pharmaceutical industry)
vii. Boundary Issues (esp. gifts from patients, sexual relations with patients)
viii. End-of-Life Decisions and Futility (esp. patient demands for treatment)
ix. Resource Allocation
x. Research Ethics
xi. Professionalism
xii. Medico-Legal Issues

The resident will be able to **appreciate** the ethical dimensions in medical decision-making.

The resident will appreciate the **professional, legal, and ethical codes** to which physicians are bound. More specifically, the resident will recognize and know how to address unprofessional behaviours in clinical practice.

The resident will be able to **analyze** the ethical and legal dimensions in a given clinical situation, to **communicate** with colleagues, families, and patients regarding these issues, and to recognize and **deal with conflicts.**

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced concepts in clinical ethics as the resident's clinical training progresses.

Quality Assurance/Improvement

The curriculum is **structured** to occur through regular teaching sessions with quality assurance experts, through regular morbidity and mortality rounds, through regular Residency Program Committee meetings, and quarterly meetings with the Curriculum Committee to review the program. A resident may also undertake a QA/QI project under the supervision of a local QA/QI leader, which is considered a scholarly activity project (see Scholar).

As a result, the resident will have a **knowledge** of the basic concepts of quality assurance/improvement, and their application in clinical medicine.

The resident will be able to **identify** a problem in need of improvement, and to **design** a proposal for improvement.

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced concepts in quality assurance/improvement as the resident's clinical training progresses.

Ambulatory Care

The ambulatory care experience is **structured** to occur through general internal medicine clinics and other subspecialty clinics of the residents' choosing. during PGY2-3. Time for self-learning is available with a dedicated half-day per week block. Teaching sessions devoted to outpatient medicine are also part of the resident's ambulatory care experience, and are integrated into MyCourses as online lectures.

As a result, the resident will have a **knowledge** and skill in the management of outpatients with complex multi-system disease on both a short- and long-term basis (medical expert).

The resident will be able to function in the role of **consultant** to family physicians and other subspecialists, when necessary (communicator, collaborator).

The resident will learn the principles and practice of **disease prevention** and **health promotion** (advocate).

The resident will learn to utilize **cost-effective** and **evidence-based** investigations and therapies in the outpatient setting (leader, scholar).

The resident will develop an awareness of available **community resources**, and learn how to appropriately access these and utilize them (collaborator, leader).

The resident will foster **research** appropriate to the optimal delivery of health-care in an ambulatory setting and become familiar with available methodology (scholar).

The resident's knowledge, attitudes, and skills in this context will show appropriate **evolution** over the three years of training, with appropriate mastery of more advanced concepts in ambulatory care as the resident's clinical training progresses.

Community Hospital Internal Medicine Experience (CHIME)

The curriculum is **structured** to occur primarily through the patient-care context in both rural rotations and other community rotations. The content of the rotation will vary by site, but will include a mix of in- and out- patient care, treadmill testing, peri-operative care, medical complications of pregnancy, and other procedures commonly performed by general internists in the community (ie. endoscopy, bronchoscopy, echocardiography, etc.). A list of Community Hospitals at which these rotations can be undertaken is available to all residents for their review on our website.

The required rotations for each resident will vary according to the following guidelines:

(i) a CaRMS-stream resident who can safely function in a francophone health-care environment:
2 blocks of CHIME in rural locations as listed in the program website (1 month each in PGY2 and PGY3)

(ii) a CaRMS-stream resident who cannot function safely in a francophone environment:
2 blocks at St. Mary's Hospital (1 month each in PGY2 and PGY3)

(iii) an out-sponsored resident:
2 blocks at St. Mary's Hospital (1 month each in PGY2 and PGY3)

Regular **evaluation** of a resident's knowledge, skill, and attitudes during these rotations will follow the usual McGill Evaluation Scheme.

As a result, the resident will gain a **deeper understanding** of the practice of medicine in a community setting. More specifically:

i. the resident will gain a deeper understanding of clinical decision-making when faced with **limitations of technological resources**,
ii. the resident will practice **autonomy with independent decision-making** in the context of limited access to sub-specialists,
iii. the resident will gain experience in the practice of internal medicine as a **consultant**, rather than in the primary care context.

The resident will be exposed to the practice of internal medicine in community contexts in order to **consider a career** as a specialist in a rural region.

A selection of approved Community Hospitals are available through the resident's local Teaching Office. Consideration will be given for sites that are not included in this document on a discretionary basis. Financial and other support is available for residents.

It is recommended that this rotation be limited to residents in their second and third years.

Overview of Rotations

CLINICAL ROTATIONS

Period Dates	Period 1 Starting July 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12	Period 13 Ending June 30
PGY1 (Junior)	CTU	CTU*	CTU*	ER CONSULTS	NIGHT FLOAT	CCU	ICU	SELECTIVE NEUROLOGY	SELECTIVE GERIATRICS	SELECTIVE	SELECTIVE	SELECTIVE	VACATION
PGY2 (Senior)	CTU	CTU*	CTU*	*ER CONSULTS	NIGHT FLOAT	CCU*	ICU*	CHIME	AMBULATORY CLINIC	SELECTIVE	SELECTIVE	EPIDEMIOLOGY/ SELECTIVE SAR	VACATION
PGY3 (Senior)	CTU	CTU*	CTU*	*ER CONSULTS	NIGHT FLOAT	CCU*	ICU*	CHIME	AMBULATORY CLINIC	SELECTIVE	SELECTIVE	ELECTIVE	VACATION

* These rotations will be scheduled outside of your base hospital.

CTU The number of months on CTU and their location in the 3-year curriculum may vary slightly from what is shown above, depending on the base hospital and other factors. Hematology and Oncology Wards (MUHC) are equivalent CTU rotations

CHIME Two months of Community Hospital Internal Medicine Experience (CHIME) are mandatory and will be scheduled during PGY2 or PGY3 year.

SAR Completion of a scholarly activity is required for all residents. 4-8 weeks of scholarly activity rotation (SAR) will be available to each resident between PGY1-3, either as a single 4-week block or in 1 or 2-week blocks of time. More details can be found under “Scholarly Activity Rotation”.

SELECTIVE Cardiology, Clinical Immunology and Allergy, Critical Care Medicine, Dermatology, Endocrinology and Metabolism, Gastroenterology, General Internal Medicine, Geriatric Medicine, Hematology, Infectious Diseases, Medical Biochemistry, Medical Oncology, Nephrology, Neurology, Occupational Medicine, Palliative Medicine, Respirology, Rheumatology. A maximum of 2 blocks of any 1 SELECTIVE may be done over the course of core training. (As per the 2015 RCPSC Specialty Training Requirements in Internal Medicine, version 2.0)

ELECTIVE A maximum of 3 blocks of non-SELECTIVE clinical rotations may be approved. EPIDEMIOLGY is an optional ELECTIVE McGill course and can be taken during PGY1-3 when it is offered during Period 12 or 13.

Selectives at McGill

Clinical selectives available to residents are listed in more detail in this manual. These are all approved rotations with pre-defined goals and objectives, also outlined in more detail here. Residents are required to choose their selectives from this list and inform their local Medical Teaching Office of their requested rotations. *Please note that the Program encourages residents to take selectives across McGill's teaching network to ensure a broad exposure to different patients and hospital systems.* A resident is permitted to take a **maximum of 2 selectives in the same field** during their 3 years of training (R1-R3). This is to ensure that residents get a variety of exposure to a wide variety of domains, without focusing too much on one area.

Electives at McGill

During the course of their three years of training, a resident is permitted to take **ONE** rotation (called an elective) not included in this list (ie. sky service, radiation oncology, toxicology, aerospace medicine, etc.). Residents are required to contact their local Medical Teaching Office ahead of time to inform them of this elective choice and to obtain approval from their site director to ensure that it meets the requirements for pedagogy and appropriate supervision.

Please contact your local Medical Teaching Office to organize and schedule your rotations.

Rotations outside of McGill's teaching network

Residents are permitted to schedule a rotation outside of McGill only once they have completed 18 months of training in Internal Medicine (exception: if a candidate is applying to another school for their PGY4 subspecialty, then special permission may be obtained by asking for an exemption with their Site Director. In this manner, an out of province rotation may be booked in the first 6 months of your PGY2 year for career planning purposes).

McGill requires that the total number of rotations taken in non-accredited sites not exceed 3 months in a 5-year training program (this may be important for some residents in the future).

When applying for a rotation outside of McGill's teaching hospital network, residents are required to comply with the following procedures (forms available on our website or at your local Medical Teaching Office):

1. **CREPUQ Procedure for Quebec Inter-University Rotations**
2. **McGill - Additional information form**

Once you have done this, your Site Director will review the "McGill - Additional information form" and decide if the rotation meets appropriate pedagogical requirements. If the rotation's pedagogical components are successfully approved, the administrative request for the rotation can then proceed under the CREPUQ system according to McGill's regulations and procedures.

For rotations requested outside of Quebec, further approval is required by the Collège des médecins after completion of their form, available on our website. As per the most recent FMRQ contract, rotations may be approved with pay even if they are available in Quebec. For more details, please refer to article 13.08 of the collective agreement.

Rotations in the USA are generally covered for medico-legal purposes. Any resident who wishes to do an rotation in the USA is also responsible for obtaining a J1 VISA. Please contact your local Medical Teaching Office and the Faculty of Postgraduate Medical Education well in advance for more information.

More information can be found on McGill's PGME website about this.

Rotation-Specific Objectives for Core Rotations, Selectives, and Electives

Allergy and Immunology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in allergy and immunology.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the immune system.

Be able to perform an accurate physical examination of the immune system, with emphasis on:

Lymph Nodes
Skin
Mucous membranes

Be able to provide a reasonable approach to the differential diagnosis, work-up and management of the following scenarios:

Angioedema
Urticaria

Be able to provide the indications for and complications of immunomodulating therapy (including DMARDS, cyclophosphamide and corticosteroids), desensitization therapy, and use of the "EpiPen."

Be able to provide a rational approach to the prevention of opportunistic infections in patients with primary or acquired defects of the immune system.

Be able to demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up and management of the following conditions:

Hypersensitivity reactions (including anaphylaxis)
Vasomotor rhinitis
Asthma
Auto-immune vasculitides

Be able to interpret pulmonary function tests.

Understand the indications for allergy testing.

Communicator

Be able to communicate effectively with patients and families with respect to their medical conditions.

Be able to interact effectively with other healthcare professionals.

Be able to accurately document the patient's condition and progress with emphasis on the relevant issues.

Collaborator

Be able to identify and recognize the need to and benefit of consulting other physicians and healthcare professionals, specifically a general surgeon or a dermatologist when biopsy of lymph nodes or skin is

being considered.

Be able to contribute effectively to a multidisciplinary team and its activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use healthcare resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and family regarding avoidance of allergen exposure and smoking cessation.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents and other healthcare professionals.

Be able to contribute to the development of new knowledge, through the participation in completion of a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues that arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice**.**

Ambulatory Clinics Rotation

The objectives of this rotation emphasize the resident's exposure to a broad variety of medical problems in the outpatient context. The Internal Medicine resident is expected to participate in a series of internal medicine clinics which includes a number of different sub-specialties during a four-week block. The content areas of this rotation depend on the choice of clinics, which will vary with each resident. The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in ambulatory clinics.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to a broad variety of outpatient problems.

Be able to perform an accurate physical examination that is relevant to the presenting problem.

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of a broad variety of complaints and problems commonly encountered in the outpatient context.

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of a broad variety of conditions that are commonly encountered in the outpatient context.

Recognize the indications for hospital admission for work-up or therapy.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions, given the time limitations of an outpatient experience.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition accurately with emphasis on the relevant issues.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding factors that impact on their health.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Anesthesia

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in anaesthesia. The objectives for Internal Medicine residents during this rotation center around gaining further experience with procedures, with an emphasis on airway management, central intravenous catheter insertion, and arterial catheter insertion.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the anaesthetist.

Be able to perform an accurate physical examination with emphasis on airway assessment.

Gain experience with and an understanding of the different types of anaesthesia, including regional and general anaesthesia.

Gain experience with and an understanding of the medications commonly used by anaesthetists, including paralytic and anesthetic agents, pressors, barbituates, and opioids.

Gain experience with and an understanding of appropriate pain control in the peri-operative setting.

Be able to perform central and peripheral venous catheter insertion (including a Swan-Gantz catheter), peripheral and central arterial catheter insertion, and airway management including endotracheal intubation.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of the above procedures.

Demonstrate an understanding of the issues surrounding the transport of critically ill patients within the hospital.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions. Specifically, be able to communicate with patients in the pre- and post-operative setting regarding the intra-operative events.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress intra-operatively.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding factors that affect their peri-operative risk, including smoking cessation.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition. Be able to teach medical students, residents, and other health-care professionals. Professional
Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Cardiology and Coronary Care Unit (CCU)

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in cardiology/CCU. It is expected that a resident's knowledge, skills, and attitudes will evolve as they progress from a first-year resident to a third-year resident.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the cardiovascular system.

Be able to perform an accurate physical examination of the cardiovascular system, with emphasis on:

JVP determination
Heart sounds and murmurs: distinguishing normal from abnormal
Pulmonary hypertension
Peripheral vascular disease

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

Chest pain (atypical and anginal)
Dyspnea
Syncope
Palpitations, arrhythmias, and syncope, including heart block
Systolic and diastolic murmurs
Coronary artery disease (medical management, indications for stress testing and angiography)
Role of thrombolysis – indications and contraindications
Pericarditis/Tamponade
Adult congenital heart disease (ASD, VSD, PDA, bicuspid aortic valve, coartation of the aorta)

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

Acute coronary syndromes and myocardial infarction (inferior, anterior, rhythm disturbances, post-infarct angina)
Congestive heart failure
Abnormal cardiac enzymes
Valvular diseases (how diseases affect heart sounds and how these change with the natural history of disease; management: medical and surgical)
Pulmonary hypertension
Cardiomyopathies
Aortic aneurysm and dissection

Demonstrate an understanding of the principles and practice of peri-operative cardiac risk assessment, including hypertension, coronary artery disease, arrhythmias, congestive heart failure, structural heart disease, and infective endocarditis prophylaxis.

Demonstrate an understanding of the indications for referral for cardiac transplantation.

Be able to perform and interpret ECGs.

Be able to perform central venous catheter insertion, peripheral arterial catheter insertion, and endotracheal intubation.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of the above procedures.

Understand the indications for and complications of EST, 24 hr. ECG monitoring, echocardiography (trans-thoracic and -esophageal), DIP-MIBI, dobutamine echocardiography, cardiac catheterization with or without angioplasty, and transcutaneous or transvenous pacing.

Demonstrate an understanding of and be able to perform advanced cardiopulmonary resuscitation.

Demonstrate an understanding of the indications for admission to and discharge from a monitored unit.

Demonstrate an understanding of the issues surrounding the transport of critically ill patients within the hospital and to other centers.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions. Specifically, be able to communicate with critically-ill patients, recognizing that these patients pose unique challenges that require unique solutions. Furthermore, be able to communicate with families of critically-ill patients in order to address their concerns while being realistic in terms of prognosis.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on the relevant issues.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals, specifically cardiovascular surgeons when coronary artery bypass or other surgery is being contemplated.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding smoking cessation, exercise, nutrition, and other risk factors to optimize a patient's cardiac risk.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition, specifically vardiovascular risk reduction.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice. Specifically, be able to understand and deal with the ethical issues that arise in the critically-ill patient including consent and capacity, level of intervention discussions and end-of-life decisions, substitute decision-makers, and advance directives.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Community Hospital Internal Medicine Experience (CHIME)

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotations in Community Hospital Internal Medicine. It is expected that a resident's knowledge, skills, and attitudes will evolve as they progress from a first-year resident to a third-year resident in this context. Ultimately, the resident is expected to function as an internal medicine consultant to family physicians.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is appropriate to a general internist functioning as a consultant. In particular, the resident will gain experience with independent decision-making in the context of limited access to sub-specialists.

Be able to perform an accurate physical examination with emphasis on multi-system involvement.

Be able to provide a reasonable approach to the pathophysiology, differential diagnosis, work-up, and management of the following scenarios and groups of conditions:

Peri-operative medical consultations (see General Internal Medicine Consultations) Pregnancy-related medical problems (see Obstetrical Medicine) Undifferentiated complaints Multi-system conditions

Be able to understand the indications for and complications of procedures commonly performed by internists in the community, including treadmill testing, endoscopy, and bronchoscopy.

Be able to understand the indications for transfer to a tertiary-care center for further patient care or work-up.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals, especially family physicians who will be managing the patients on a long-term basis.

Be able to document the patient's condition and progress accurately with emphasis on the relevant issues.

Be able to understand the need for, benefits and limitations of telephone consultations for physicians in remote communities.

Collaborator

Be able to identify the need to and benefit of working with other physicians and health-care professionals, specifically with other family physicians who are providing primary care for patients.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively in the context of limited access to technological resources. In particular, the resident should gain experience and understanding with the transfer of patients

to other centers for diagnostic tests and consultations with other subspecialists.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding the factors that impact on their health.

Be able to contribute to and improve the health of the local community. Specifically, the resident is encouraged to consider a career in general internal medicine in the community setting.

Scholar

Be able to critically appraise sources of medical information in the context of limited access to sub-specialists.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals, especially family physicians who will be managing the patients as primary-care givers.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Dermatology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in dermatology.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the dermatologic system.

Be able to perform an accurate physical examination of the dermatologic system, with emphasis on:

- Nail findings as manifestations of systemic disease (including clubbing)
- Skin findings as manifestations of systemic disease
  - Nutritional deficiencies
  - Inflammatory bowel disease
  - Coeliac disease
  - Malignancy
  - Connective tissue disease
  - Endocrine and metabolic disease
  - Systemic immunosuppression
- Features of senile keratosis (differentiate from melanoma)
- Differentiate venous from arterial insufficiency
- Recognize cellulites and differentiate it from common mimickers

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

- Hyperpigmented lesions (differentiate from melanoma)
- Petechia, purpura (palpable and non-palpable), and echymoses
- Bullous skin disease
- Urticaria
- Maculopapular eruptions including drug reactions
- Pruritus

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of common dermatologic conditions, including:

- Eczema
- Stasis dermatitis
- Psoriasis
- Erythema nodosum
- Herpes zoster

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of dermatologic emergencies, including:

- Stevens-Johnson syndrome
- Toxic Epidermal Necrolysis
- DRESS
- Anaphylaxis
- Disseminated herpes simplex

Understand the indications for and complications of skin biopsy.

Gain experience in performing skin biopsies.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition accurately with emphasis on the relevant issues, using drawings or sketches as necessary and appropriate for further clarification.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding reducing sun exposure and the use of sunscreens.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

ER Consults / General Internal Medicine Consults

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotations in Internal Medicine Consults in the emergency room (dealing with acutely ill patients and relatively undifferentiated problems). It is expected that a resident's knowledge, skills, and attitudes will evolve as they progress from a first-year resident to a third-year resident in the emergency room. Ultimately, the resident is expected to function as an internal medicine consultant to the emergency room and the goals and objectives of this rotation reflect this.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is focused and relevant to the clinical presentation of patients in the emergency room.

Be able to perform an accurate physical examination that is focused and relevant to the clinical presentation.

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of a broad range of clinical presentations in acute and undifferentiated form. Specifically, be able to focus on the common or dangerous problems first, with reference to rare but interesting diagnoses only as appropriate.

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of a broad range of clinical conditions in acute and undifferentiated form.

Understand the indications for and complications of and be able to perform central venous catheter insertion, lumbar puncture, arterial puncture and blood gas analysis, abdominal paracentesis, endotracheal intubation, thoracentesis, joint aspiration, electrocardiographic interpretation, and inspection and interpretation of urinary sediment.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of the above procedures.

Demonstrate an understanding of the indications for admission to an internal medicine ward in a tertiary-care hospital.

Demonstrate an understanding of the issues surrounding the transport of critically ill patients within the hospital and to other centers.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions. Specifically, be able to communicate with acutely-ill patients. Furthermore, be able to communicate with families of acutely-ill patients in order to address their concerns.

Be able to interact effectively with other health-care professionals. Specifically, be able to communicate the reasons for consultation with sub-specialists and the need for prompt responses to such requests in the emergency room context.

Be able to document the patient's condition and progress concisely and accurately while in the emergency room with emphasis on synthesizing the relevant issues and the plan of work-up and management in a concise fashion.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively in the emergency room context.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding factors that impact on their health status.

Be able to advocate on behalf of acutely ill patients in the ER to facilitate access to tests and other therapies.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice. Specifically, be able to understand and deal with the ethical issues that arise in the acutely-ill patient including:

Consent and capacity
Substitute decision-makers
Advance directives

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Endocrinology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in endocrinology.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the clinical presentation.

Be able to perform an accurate physical examination, with emphasis on:

- Thyroid gland
- Extrathyroidal signs of thyroid disease
- Diabetic feet
- Gynaecomastia
- Signs of dyslipidaemia

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

- Dyslipidaemias
- Thyroid nodule and goitre
- Pituitary nodule (including incidentaloma)
- Chronic corticosteroid therapy
- Incidental adrenal mass
- Hypercalcaemia and hypocalcemia
- Hypogonadism, male and female (including amenorrhoea and loss of libido)
- Hirsutism
- Galactorrhea and gynaecomastia
- Weight gain and loss
- Fatigue and malaise
- Obesity
- Amenorrhea and loss of libido

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

- Diabetes mellitus 1 and 2: first visit, treatment, follow-up, complications, peri-operative and in-hospital management, management of diabetes in pregnancy
- Diabetic ketoacidosis and hyperosmolar non-ketotic states Hypoglycaemia
- Hyperthyroidism (including Graves' disease and thyroid storm) Hypothyroidism (including myxoedema coma)
- Acromegaly
- Adrenal insufficiency (including Addisonian crisis and peri-operative management) Cushing's syndrome (including Cushing's disease)
- Pheochromocytoma Conn's disease Osteoporosis
- Hyperparathyroidism and hypoparathyroidism Paget's disease
- Panhypopituitarism Prolactinoma Porphyrias Diabetes insipidus
- Hyper- and hypo-gonadism Pancreatic endocrine tumors

Be able to interpret common endocrine laboratory results, including dynamic testing.

Understand the indications for and complications of thyroid biopsy, static and dynamic testing of pituitary, thyroid, and adrenal function.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's clinical condition and plan accurately with emphasis on the relevant issues.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding the role of lifestyle modification in the control of diabetes mellitus and osteoporosis.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Gastroenterology and Hepatology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in gastroenterology and/or hepatology.

The resident is expected

to: Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the clinical presentation in gastroenterology.

Be able to perform an accurate physical examination of the gastroenterological system, with emphasis on:

Peripheral signs of cirrhosis
Differentiate kidney from spleen
Ascites
Extra-intestinal manifestations of IBD, including eye, skin, and articular findings
Venous drainage of abdomen in normal and disease states
Signs of malnutrition
Full abdominal examination, including liver and spleen examination

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

General Gastroenterology	Hepatology
Upper GI Bleed Lower GI Bleed Recurrent gastric and/or duodenal ulcer Oesophagitis Dyspepsia Nausea & vomiting Dysphagia Diarrhoea, acute and chronic Constipation, acute and chronic Abdominal pain, acute and chronic Malabsorption Weight loss Melena, haematochezia Pancreatitis Abnormal transaminases Abnormal cholestatic liver enzymes	Abnormal liver enzymes Spontaneous bacterial peritonitis Hepatic encephalopathy Jaundice Ascites Hepatitis Cirrhosis and its complications Esophageal varices Indications for referral for liver transplantation

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

Peptic ulcer disease, including helicobacter pylori
Esophageal dysmotility, in particular achalasia
Gastroparesis
Crohn’s disease
Ulcerative colitis
PBC/Sclerosis cholangitis
Viral hepatitis
Non-alcoholic steatohepatitis
Hemochromatosis
Alcoholic liver disease
Cirrhosis

Ischaemic bowel
Celiac disease/Whipple's disease
Neoplasia (oesophageal, gastric, intestinal, colonic, pancreatic, hepatoma)

Understand the indications for and complications of gastroscopy, colonoscopy, ERCP, liver biopsy, and paracentesis.

Be able to perform a paracentesis and insertion of a nasogastric tube.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's clinical condition and plan accurately with emphasis on the relevant issues.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals. Specifically, be able to initiate a referral for a pre-transplant assessment in cases of cirrhosis.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding the role of lifestyle modification in the control of peptic ulcer disease, gastoesophageal reflux disease, inflammatory bowel disease, cirrhosis, and coeliac disease.

Be able to counsel and educate patients and families regarding the moderation of alcohol consumption.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of

physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Medical Clinical Teaching Units (CTUs)

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotations in the Medical Clinical Teaching Units. It is expected that a resident's knowledge, skills, and attitudes will evolve as they progress from a first-year resident to a third-year resident. Specifically, **a first-year resident** will function as the primary physician of his/her patients under the supervision of the senior residents and attending physicians, and the primary goals reflect the acquisition of basic clinical skills. **A second-year resident** will function in a supervisory capacity over the medical students and first-year residents. An important goal is the acquisition of teaching and supervisory skills. **A third-year resident** will function as the team leader under the supervision of the attending physicians. An important goal is the further refinement of teaching skills and adopting more of a manager role in terms of the functioning of the team.

With the above in mind, the resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the presenting complaints across the various domains in internal medicine.

Be able to perform an accurate general physical examination and focused examination of the involved systems, with particular emphasis on:

Evidence-based physical examination skills (JAMA Rational Clinical Exam series)
Multi-system conditions

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of a broad variety of clinical scenarios.

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of a broad variety of clinical conditions.

Understand the indications for and complications of central venous catheter insertion, arterial blood gas, lumbar puncture, paracentesis, thoracentesis, and knee joint aspiration.

Be able to perform central venous catheter insertion, arterial blood gas, lumbar puncture, paracentesis, thoracentesis, knee joint aspiration, EKG interpretation, and inspection and interpretation of urinary sediment.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of the above procedures.

Be able to interpret EKG's and arterial blood gas results.

Demonstrate an understanding of the issues surrounding the transfer of unstable patients to a monitored unit.

Demonstrate an understanding of the issues surrounding the appropriate and timely discharge of patients from the hospital.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions. In particular, be able to communicate with patients from different ethnic backgrounds and language groups.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's admission and progress accurately while in hospital with emphasis on the relevant issues.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals. In particular, be able to recognize one's limits of knowledge and expertise.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to participate in quality improvement initiatives on the CTUs (eg. M&M rounds).

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding the factors that impact on their health.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

General Internal Medicine Consults

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in General Internal Medicine Consultations, with an emphasis on providing consultative services to inpatients in the hospital admitted to non-medical units. This rotation is offered as a stand-alone service at the MUHC-MGH and JGH sites, and as a combined rotation with acute GIM consults / ER consults at the MUHC-RVH site.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to a broad variety of patients, including surgical, obstetrical, gynecological, and psychiatric patients.

Be able to perform an accurate physical examination with emphasis on the appropriate systems.

Be able to provide a reasonable approach to the differential diagnosis, work-up and management of the following scenarios and conditions in both the inpatient and outpatient settings (as appropriate):

- Peri-operative management of the following conditions:
  - Hypertension
  - Coronary artery disease (Goldman and Detsky criteria)
  - Arrhythmias
  - Congestive heart failure
  - Structural heart disease (valvular, cardiomyopathic)
  - IE prophylaxis
  - COPD/asthma
  - Diabetes mellitus (oral hypoglaemics, insulin therapy)
  - DVT prophylaxis and treatment
  - Antiplatelet/anticoagulant management
  - Adrenal insufficiency
  - Renal insufficiency/planning for dialysis
  - Minimizing peri-operative renal insults
- Post-operative complaints of:
  - Fever
  - Confusion
  - Dyspnea
  - Cough
  - Chest pain
- Patients with multi-system conditions
- Patients with undifferentiated complaints and problems
- Obstetrical Medicine (see Obstetrical Medicine)

Understand the indications for and complications of central venous catheter insertion, arterial blood gas, lumbar puncture, paracentesis, thoracentesis, and knee joint aspiration.

Be able to perform central venous catheter insertion, arterial blood gas, lumbar puncture, paracentesis, thoracentesis, knee joint aspiration, EKG interpretation, and inspection and interpretation of urinary sediment.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of the above procedures.

Be able to interpret pulmonary function testing, EKG's, and arterial blood gas results.

Demonstrate an understanding of the issues surrounding the transfer of unstable patients to a monitored

unit.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively and respectfully with other healthcare professionals.

Be able to document the patient's progress either while in hospital or in the community accurately with emphasis on the relevant issues.

Collaborator

Be able to identify and recognize the need to and benefit of working closely with the consulting physician and health-care team in providing optimal health-care.

Be able to function and contribute effectively in a multi-disciplinary team.

Leader

Be able to use information technology to optimize patient care.

Be able to use both inpatient and outpatient health-care resources in a cost-effective manner.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding factors that might impact on their health, including cigarette smoking, alcohol consumption, and obesity.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents and other healthcare professionals.

Be able to contribute to the development of new knowledge, through the participation in and completion of a research project (optional).

Professional

Be able to apply a knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues that arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Geriatrics

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotations in geriatrics.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the elderly (including collateral information).

Be able to perform an accurate physical examination, with emphasis on:

- Postural vital signs
- Mental Status Exam (Cognition – Folstein MMSE)
- Gait and balance
- Functional assessment (basic and instrumental activities of daily living)

Be able to accurately screen non-medical evaluations such as social, environmental and home assessments, and quality of life, including assessments of pain.

Be able to assess competency especially the ability to live alone and when to consider appropriate placement options.

Be able to provide a reasonable approach to the differential diagnosis, work-up and management of the following scenarios:

- Delirium
- Dementia
- Psychiatric Illness – specifically depression
- Urinary and Fecal Incontinence
- Constipation
- Osteoporosis
- Gait Instability
- Falls
- Alcoholism and other substance abuse
- Appropriate prescribing for the elderly (polypharmacy, iatrogenesis)
- Gradual change in functional status (failure to thrive)
- Impairment of vision and hearing
- Nutritional assessment (including indications for supplementation)
- Neglect/Abuse

Be able to demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up and management of the following conditions:

- Anemia – specifically Vitamin B12 deficiency
- Stroke
- Parkinson’s Disease
- Dementia/Delirium
- Cancer in the Elderly
- Falls
- Awareness of atypical presentations of common diseases

Understand the indications for urodynamics.

Be able to provide information on the demographics of the ageing population and at least one theory of

ageing.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical, psychiatric, and social conditions.

Be able to effectively support patients and families receiving end of life care.

Be able to interact effectively and respectfully with other healthcare professionals.

Be able to document the patient's progress either while in hospital or in the community accurately with emphasis on the relevant issues.

Collaborator

Be able to identify and recognize the need to and benefit of consulting other physicians and healthcare professionals, specifically social workers, liaison nurses, geriatric nurse specialists, pharmacists, dieticians, physical therapists, occupational therapists, recreation therapists, and pastoral services.

Be able to function and contribute effectively in a multi-disciplinary team.

Leader

Be able to use information technology to optimize patient care.

Be able to access and use both inpatient and outpatient health-care resources in a cost-effective manner for the elderly.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding posture, exercise, nutrition, smoking, alcohol and other drugs to optimize cognitive and functional status.

Be an advocate (at the societal as well as individual levels) of appropriate, evidence-based care that is neither "ageist" nor inappropriately "aggressive."

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents and other healthcare professionals.

Be able to contribute to the development of new knowledge, through the participation in and completion of a research project.

Professional

Be able to apply a knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues that arise in clinical practice. Specifically, be able to provide an ethical framework for the care of cognitively impaired elderly and to identify and work with surrogate decision-makers.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Hematology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotations in hematology consults or hematology CTUs. The learning objectives encompass areas critical to the practice of internal medicine best taught in the setting of a specialized unit (CTU). Examples include transfusion medicine, holistic care of the patient with cancer, and common complications of chemotherapy. The resident will have an exposure to laboratory services and learn to integrate appropriate testing in the work-up of a variety of common problems including coagulopathies, anemias, and malignancy.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the hematopoeitic system.

Be able to perform an accurate physical examination of the hematopoeitic system, with emphasis on:

- Splenomegaly
- Lymphadenopathy

Be able to provide a reasonable approach to the differential diagnosis, work-up and management of the following scenarios:

- Anemia
- Thrombocytopenia
- Bicytopenia/pancytopenia
- Polycythaemia
- Eosinophilia
- Lymphadenopathy, localized and diffuse
- Splenomegaly
- Warfarin and other anticoagulant use in patient care: management and counseling
- Patients with bleeding diatheses and abnormal coagulation testing

Demonstrate the ability to recognize and manage common symptoms and complications of patients with cancer:

- Emergency care:
  - Tumor lysis syndrome
  - Spinal cord compression
  - Hypercalcemia
  - Febrile neutropenia
- Pain & symptom control (in conjunction with palliative care medicine)
- Secondary effects of commonly used chemotherapeutic agents
  - Nausea/vomiting
  - Febrile neutropenia
  - Cardiomyopathy
  - Hemorrhagic cystitis

Demonstrate knowledge of the appropriate use of allogeneic blood products in patient care:

- Indications for transfusion of allogeneic blood products
  - pRBC’s
  - Platelets
  - Plasma
  - Cryoprecipitate
  - Coagulation concentrates

Albumin
Immunoglobulins
Risks of transfusion of allogeneic blood products Transfusion reactions
Current risk of infectious complications
Alternatives to transfusion of allogeneic blood products
Erythropoeitin/darbepoeitin
Vitamin K
Iron/vitamin replacement
The importance of informed consent in transfusion care

Demonstrate an understanding of the pathophysiology, manifestations, investigation and management of a number of clinical conditions.

Benign Disease	Anemia	Iron deficiency Vit B12/folate deficiency Hemoglobinopathies Hemolytic anemia Aplastic anemia Hypoproliferative anemia
	Thrombosis	Venous Arterial Thrombophilia
	Bleeding disorders Congenital	Hemophilia von Willebrand Factor deficiencies Platelet disorders
	Acquired	Coagulation factors (eg. DIC, liver disease) Platelet disorders (eg. Sepsis, ITP, TTP-HUS)
Malignant Disease	Leukemia, acute and chronic Lymphoma Multiple Myeloma Myelodysplastic disorders Myeloproliferative disorder Breast cancer Gastrointestinal cancer Lung cancer Renal cell cancer Prostate cancer Transitional cell cancer Germ cell tumors Melanoma Thyroid cancer	

Gain an understanding of the value of translational research in patient care by observing new and rapidly emerging treatment modalities in cancer care:

Immunotherapy in cancer
The role of allogeneic and autologous stem cell transplant in cancer Humoral growth factors
New agents (eg. imatinib)

Be able to interpret results of a complete blood count, basic coagulation studies, and manual blood smears.

Understand the indications for and complications of a bone marrow biopsy/aspirate, and lymph node biopsy.

Demonstrate an understanding of the issues surrounding the transfer of unstable patients to a monitored unit.

Demonstrate an understanding of the indications for admission/discharge to hospital.

Communicator

Be able to communicate effectively with patients and families with respect to their medical conditions.

Be able to interact effectively with other healthcare professionals.

Be able to document the patient's condition and progress accurately with emphasis on the relevant issues.

Collaborator

Be able to identify and recognize the need to and benefit of consulting other physicians and healthcare professionals, specifically a general surgeon or an invasive radiologist when a biopsy is required, or a pathologist for biopsy analysis.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use healthcare resources cost-effectively

Be able to work efficiently and effectively

Health Advocate

Be able to educate and counsel patients and families regarding nutrition and alcoholism to optimize anemia risk, as well as behaviour which reduce infections when neutropenic.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents and other healthcare professionals.

Be able to contribute to the development of new knowledge, through the participation in completion of a research project.

Professional

Be able to apply a knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice. In particular, be able to understand and deal with the ethical issues that arise in this patient population, including:

- Consent and capacity
- Level of intervention discussions and end-of-life decisions
- Substitute decision-makers
- Advance directives

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Immunodeficiency Rotation

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in immunodeficiency. The emphasis of this rotation is to expose Internal Medicine residents to the outpatient care of patients infected with HIV in a multi-disciplinary environment.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the presenting problem in HIV-infected patients.

Be able to perform an accurate physical examination that is relevant to the presenting problem.

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios in HIV-infected patients:

Fever (in patients with variable CD4 counts)
Weight loss
Respiratory: dyspnea, cough, hemoptysis
GI: dysphagia, odynophagia, diarrhea, abdominal pain
Hematology: anemia, thrombocytopenia, leukopenia
Nephrology: acute and chronic renal failure
Neurology: confusion, headache, cerebral masses

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions in HIV-infected patients:

Respiratory: pneumonia, including PCP pneumonia
GI: oro-pharyngeal thrush, CMV/HSV esophagitis, CMV enteritis
Hematology: HIV-associated monopenias
Nephrology: HIV nephropathy
Neurology: primary CNS lymphoma, CNS toxoplasmosis, meningitis (including cryptococcal infections)
MAC infection
TB, including pulmonary and extra-pulmonary
Malignancies, including lymphoma, melanoma, and gynecological neoplasms
Immunoreconstitution syndrome

Understand the indications for and complications of a broad variety of anti-retroviral treatments for HIV.

Understand the treatments and prophylactic regimens for opportunistic infections.

Be able to understand the management of patients at all stages of their disease, from new diagnosis to chronic infection to end-stage disease.

Understand the indications for the measurement of viral load, viral genotyping, and CD4 count.

Gain an understanding of the value of translational research in patient care by observing new and rapidly emerging treatment modalities in the care of patients with HIV.

Be able to recognize the indications for hospital admission.

Communicator

Be able to communicate effectively and compassionately with patients and their families with respect to

their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's clinical condition and plan accurately with emphasis on the relevant issues.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding factors that can decrease the risk of transmission of HIV and minimize their risk of opportunistic infections.

Be able to educate patients and their families and friends regarding HIV and its treatment.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice. In particular, be able to recognize and deal with issues surrounding discrimination based on sero-positivity status, and advance directives and end-of-life issues in the context of patients with end-stage disease.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Infectious Diseases

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in infectious diseases.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate.

Be able to perform an accurate physical examination, with emphasis on:

Peripheral signs of infective endocarditis
Examination of the HIV infected patient
(for both effects of disease and treatment)
Clinical assessment of the febrile patient, in the inpatient and outpatient contexts

Be able to provide a reasonable approach to the differential diagnosis, work-up and management of the following clinical scenarios:

Pneumonia
UTI / urosepsis
Infective Endocarditis
Meningitis - Encephalitis
Cellulitis / other necrotizing soft-tissue infections
Osteomyelitis / septic arthritis
Intra-abdominal Infections
Diarrhea (including in the returning traveler)
Fever in the hospitalized patient (line sepsis, etc.)
Skin lesions in the returning traveler
Fever in the returning traveler
Fever of unknown origin
Fever in immunocompromised host (HIV, organ transplant, etc.)
Febrile Neutropenia
Sexually transmitted infections

Be able to demonstrate an understanding of infection control (universal precautions, airborne infections, and contract precautions).

Be able demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

Infective endocarditis (including prophylaxis, indications for surgery)
Clostridium difficile colitis (including prevention and treatment strategies)
Diabetic foot ulcers and infections, including the indications for debridement
Tuberculosis (pulmonary and extra-pulmonary)
Malaria
HIV: New Diagnosis
HIV: Prophylaxis and treatment of Opportunistic Infections
HIV: Treatments of HIV and Immunoreconstitution syndromes

Be able to interpret PPDs.

Understand the spectra, side effects, and dosage adjustments for hepatic and renal disease of currently available antibiotics.

Be able to prescribe antimicrobial agents in an appropriate fashion based upon a thorough clinical assessment of the patient, taking into account the spectra of the antibiotics available.

Be able to demonstrate an understanding of hospital infection control practices and apply these to the care of patients.

Be able to demonstrate an understanding of the indications for admission to and discharge from hospital, in particular the indication for admission to an intensive care setting with the sepsis syndrome.

Communicator

Be able to communicate effectively with patients and families with respect to their medical conditions.

Be able to interact effectively with other healthcare professionals.

Be able to accurately document the patient's condition and progress accurately with emphasis on the relevant issues.

Collaborator

Be able to identify and recognize the need to and benefit of consulting other physicians and healthcare professionals, specifically a general or plastic surgeon when debridement or biopsy is indicated.

Be able to contribute effectively to inter-disciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use healthcare resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding risk factors for disease transmission, and measures to reduce their spread, including hand washing.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents and other healthcare professionals.

Be able to contribute to the development of new knowledge, through the participation in completion of a research project.

Professional

Be able to apply a knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues that arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Intensive Care Unit

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotations in the intensive care unit. It is expected that a resident's knowledge, skills, and attitudes will evolve as they progress from a first-year resident to a third-year resident in the intensive care unit.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the critically ill patient. In particular, be able to perfect the skill of history-taking from third parties and other sources when patients are unable to communicate given the severity of their medical conditions.

Be able to perform an accurate physical examination of the critically ill patient, with emphasis on:

Assessing the comatose patient
Assessing the patient in shock
Assessing the patient in respiratory distress

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

Shock/SIRS
Hypo/hyperthermia
Respiratory failure (hypercapnoeic, hypoxaemic)
Elevated intra-cranial pressure
Coma, including GCS
Cardio-respiratory arrest

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

Allergy/Immunology: Anaphylaxis
Dermatology: Stevens-Johnsons syndrome
Endocrinology: Thyroid storm, myxedema coma, Addisonian crisis, DKA/HONK
Gastroenterology: GI bleed (including variceal hemorrhage), pancreatitis, hepatic encephalopathy
Hematology: coagulopathy and DIC, massive thrombosis and pulmonary embolism
Hypertensive urgencies and crisis
Infectious Diseases: sepsis, febrile neutropenia, infections in immunocompromised hosts
Nephrology: acute renal failure and alterations in renal output
Neurology: coma, Guillain-Barré syndrome, meningitis, acute cord compression
Respirology: ARDS, COPD, status asthmaticus
Other emergencies:
- Poisoning: ASA, methanol, TCA, acetaminophen, iron
- Injuries: smoke inhalation and CO inhalation, electrocution, near drowning
- Hypo-and hyperthermia
- Cardio-respiratory arrest

Demonstrate an understanding of the indications for and complications of:

Inotropic and vasopressor support, demonstrating a knowledge of agents
Mechanical cardiac support (including IABP, CVT consultation)
Non-invasive ventilation, intubation, and extubation
Continuous renal-replacement therapy
Enteral and parenteral nutritional support

Blood product use in the critically ill
Sedation/anxiolysis/analgesia/paralysis

Understand the indications for and complications of central venous access, peripheral arterial access, endotracheal intubation, Swan-Ganz catheter, and temporary transvenous pacemaker.

Understand the principles of and be able to manage mechanical ventilation, including a range of ventilatory modes and strategies.

Be able to interpret arterial blood gas results and hemodynamic tracings.

Be able to perform central venous catheter insertion, peripheral arterial catheter insertion, and airway management including bag and mask ventilation and endotracheal intubation.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of the above procedures.

Demonstrate an understanding of the indications for admission to and discharge from a monitored unit.

Demonstrate an understanding of the issues surrounding the transport of critically ill patients within the hospital and to other centers.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions. Specifically, be able to communicate with critically-ill patients, recognizing that these patients pose unique challenges that require unique solutions. Furthermore, be able to communicate with families of critically-ill patients in order to address their concerns while being realistic in terms of prognosis.

Be able to interact effectively with other health-care professionals of all sorts that are often involved in the care of the critically-ill patient.

Be able to document the patient's condition and progress accurately while in hospital with emphasis on the relevant issues, in the context of multi-system and complex patients in rapid evolution.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Be able to participate in and lead an emergency team in a positive, organized, and effective manner, and to prioritize tasks in critical contexts.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively in the context of multiple demands on a resident's time while managing critically-ill patients.

Health Advocate

Be able to educate and counsel patients and families regarding important factors affecting their health.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice. Specifically, be able to understand and deal with the ethical issues that arise in the critically-ill patient including:

Consent and capacity
Level of intervention discussions and end-of-life decisions
Substitute decision-makers
Advance directives

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Laboratory Medicine

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in Medical Biochemistry appropriate with their level of training. Due to the shortness of the rotation and difference in backgrounds of the participants this rotation will not consist of “hands on work”. It will be comprised of in lab demonstrations, didactic teaching, discussions, and presentations.

The resident is expected to:

Medical Expert

Be able to better understand the process of laboratory testing. Be able to better understand the pre---analytical sources of error. Be able to better understand the interpretation of Laboratory Test Results Be able to better understand the various analytical techniques employed in the modern clinical laboratory including their basis, with emphasis on:

Serum Protein Electrophoresis and Nephelometry
HPLC
Biochemical Genetics
How new laboratory tests are introduced
The process of sending samples to other establishments
Autoimmune Testing
Immunoassays (Endocrine tests)
Point of Care Testing
Mass Spectrometry
Bone Markers of Disease
HLA markers
Molecular Diagnostics
Analysis of Laboratory Data
Toxicology

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient’s clinical condition and plan accurately with emphasis on the relevant issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding availability and utility of laboratory testing.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Medical Oncology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in medical oncology. The emphasis of this rotation is to expose Internal Medicine residents to the outpatient care of patients with cancer.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the presenting problem in oncology.

Be able to perform an accurate physical examination that is relevant to the presenting problem.

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

Febrile neutropenia
Adenocarcinoma and neoplasia of unknown primary site
Oncologic emergencies, including hypercalcemia, spinal cord compression, brain metastases, pleural effusions, and cancer pain syndromes.

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

Breast cancer
Oesophageal, gastric, intestinal, colonic, pancreatic, hepatoma
Lung cancer
Ovarian cancer
Endometrial
Cervical
Renal cell cancer
Transitional cell cancer
Prostate cancer
Male germ cell tumours (seminomatous and NSGCT)
Thyroid cancer
Melanoma
Paraneoplastic syndromes

Understand the indications and controversies surrounding screening for the following malignancies: breast, colorectal, lung, ovarian, and prostate.

Understand the indications for and complications of various biopsy techniques in order to arrive at a tissue diagnosis.

Understand the indications for CT, MRI, PET, bone and gallium scans, and other tests in patients being worked up or followed for malignancy.

Be able to recognize the indications and side effect of a broad variety of chemotherapeutic regimens, with emphasis on nausea and myelosuppression. Be aware of the concepts of "adjuvant," "neo-adjuvant," and "curative" therapies.

Be able to recognize and quantify the performance status of patients with cancer.

Gain an understanding of the value of translational research in patient care by observing new and rapidly emerging treatment modalities in cancer care.

Be able to recognize the indications for hospital admission.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to demonstrate sensitivity towards patient and family concerns in the context of oncological practice.

Be able to interact effectively with other health-care professionals in a multi-disciplinary environment.

Be able to document the patient's clinical condition and plan accurately with emphasis on the relevant issues.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals, including surgeons when resection is being considered.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding the role of lifestyle modification on the management of their cancer and its possible complications.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice. In particular, be able to recognize and deal with end-of-life issues in the context of patients with cancer.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Nephrology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in nephrology.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the renal system.

Be able to perform an accurate physical examination with emphasis on:

Volume status, including JVP determination and peripheral edema
Distinguish the kidney from the spleen on examination
Signs of uremia: pleuro-pericarditis, asterixis, congestive heart failure, and Kussmaul's breathing

Be able to provide a reasonable approach to the differential diagnosis, work-up and management of the following scenarios:

Hypo-hypernatremia
Hypo-hyperkalemia
Hypo-hypercalcemia
Metabolic acidosis/alkalosis
Acute renal failure
Chronic renal failure (workup and complications)
Nephrotic and nephritic syndrome
Proteinuria
Hematuria
Hypertension
Peripheral edema

Be able to demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up and management of the following conditions:

Acute tubular necrosis (including contrast nephropathy)
Acute renal failure secondary to NSAID's
Allergic interstitial nephritis
Renovascular hypertension
Renal tubular acidosis
Diabetic Nephropathy
Hypertensive glomerulosclerosis
Rhabdomyolysis

Be able to interpret urinalysis, urinary sediment microscopy, and urinary electrolytes.

Understand the indications for and complications of renal ultrasonography, renal scan, and renal biopsy.

Demonstrate an understanding of the indications and complications of different modalities of renal replacement therapy.

Demonstrate an understanding of the indications for renal transplantation.

Demonstrate an understanding of the indications for admission to and discharge from hospital.

Communicator

Be able to communicate effectively with patients and families with respect to their medical conditions.

Be able to interact effectively with other healthcare professionals.

Be able to document the patient's condition and progress accurately with emphasis on the relevant issues.

Collaborator

Be able to identify and recognize the need to and benefit of consulting other physicians and healthcare professionals, specifically surgeons when access for dialysis or transplantation is being contemplated.

Be able to contribute effectively in a multi-disciplinary team.

Leader

Be able to use information technology to optimize patient care.

Be able to use healthcare resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding smoking cessation, nutrition, exercise and other risk factors to optimize preservation of renal function and reduce cardiac risk.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents and other healthcare professionals.

Be able to contribute to the development of new knowledge, through the participation in completion of a research project.

Professional

Be able to apply a knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues that arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Neurology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in neurology.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the clinical presentation.

Be able to perform an accurate physical examination, with emphasis on:

- Upper vs. Lower motor neuron findings
- Tremors
- Pupils (Adie's, Argyll-Robertson, Marcus-Gunn)
- Examination of all cranial nerves, including palsies of all nerves with common causes
- Focused mental status examination
- Cerebellar examination
- Posterior column examination
- Compare/demonstrate radiculopathy and peripheral nerve disease (C5, C6, C7, L4, L5, S1 nerve roots and appropriate peripheral nerves)
- Interpret gait abnormalities
- Altered level of consciousness (including Glasgow Coma Scale)

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

- Tremors
- Autonomic Insufficiency
- Polyneuropathy, mononeuritis multiplex, and peripheral neuropathy
- Seizure: first episode, recurrent, and status epilepticus
- Dementia, including normal pressure hydrocephalus
- Acute spinal cord compression
- Alcohol abuse and withdrawal
- Subarachnoid hemorrhage
- Acute neuromuscular weakness
- Brain tumours
- Stroke
- Altered mental status

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

- Approach to stroke/transient ischemic attacks (and stroke syndromes): diagnosis, primary and secondary prevention, treatments
- Multiple Sclerosis: findings, diagnosis, treatment
- Parkinson's Disease
- Myasthenia Gravis
- Guillain-Barre syndrome
- Amyotrophic Lateral Sclerosis
- Meningitis and encephalitis
- Acute spinal cord compression

Understand the indications for and complications of lumbar puncture, CT scan, MRI (both with and without contrast), EEG, and EMG.

Be able to perform a lumbar puncture and interpret the results of cerebrospinal fluid analysis.

Be aware of the criteria for and methods to determine brain death.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on relevant neurological issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals, including neurosurgeons if surgery is being contemplated.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health, in particular factors that impact on their risk of stroke.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals, especially family physicians who will be managing the patients as primary-care givers.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Night Float

Night float is a 1-2 week block of time during which residents function as relatively independent teams working only at night. These teams generally cover inpatients admitted in the Department of Medicine with acute medical problems requiring urgent assessment, cardiac arrests throughout the hospital, and are responsible for admitting patients to the medical clinical teaching units overnight. Generally, consults for admission to medicine in the ER are done by a separate team so this is not part of the responsibilities of the night float team. These teams generally consist of an R1 and either an R2 or R3. The Internal Medicine resident is expected to achieve competency in the areas described below during their rotations in night float.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the presenting complaints across the various domains in internal medicine, with an emphasis on urgent problems occurring on admitted patients in the hospital.

Be able to perform an accurate general physical examination and focused examination of the involved systems, with particular emphasis on:

Evidence-based physical examination skills (see JAMA Rational Clinical Exam series)
Multi-system conditions
Medical complications of patients already admitted to the hospital

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of a broad variety of clinical scenarios, eg. acute chest pain, dyspnea, fever, other vital signs abnormalities, dysuria, diarrhea in a hospitalized patient, GI bleeding, nausea and vomiting, hematemesis or melena / hematochezia in admitted patients.

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of a broad variety of clinical condition eg. ACS, CHF, pneumonia, sepsis, PUD, cellulitis, pyelonephritis, clostridum difficile diarrhea, DVT/PE in admitted patients.

Understand the indications for and complications of central venous catheter insertion, arterial blood gas, lumbar puncture, paracentesis, thoracentesis, and knee joint aspiration.

Be able to perform central venous catheter insertion, arterial blood gas, lumbar puncture, paracentesis, thoracentesis, knee joint aspiration, EKG interpretation, and inspection and interpretation of urinary sediment.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of the above procedures.

Be able to interpret EKG’s and arterial blood gas results.

Demonstrate an understanding of the issues surrounding the transfer of unstable patients to a monitored unit.

Demonstrate an understanding of the issues surrounding the appropriate and timely discharge of patients from the hospital.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions. In particular, be able to effectively communicate with patients and families in the context of limited

previous contact.

Be able to interact effectively with other health-care professionals – specifically, be able to recognize when to call your attending physician to inform them of overnight events.

Be able to document the patient's admission and progress accurately while in hospital with emphasis on the relevant issues overnight.

Collaborator

Be able to identify the need to and benefit of consulting other physicians and health-care professionals. In particular, be able to recognize one's limits of knowledge and expertise, and to know when to call for help overnight.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively in the context of multiple competing demands. Specifically, to be able to identify which issues can wait until the next morning and when issues are urgent and should be addressed overnight.

Health Advocate

Be able to advocate for urgent tests needed for patients overnight, especially radiology tests, and requesting urgent consultations (ICU, CCU, etc.) in the same context.

Scholar

Be able to critically appraise sources of medical information.

Be able to teach medical students, residents, and other health-care professionals.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Obstetrical Medicine

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in obstetrical medicine.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the pregnant patient.

Be able to perform an accurate physical examination of the pregnant patient.

Be able to provide an approach to the differential diagnosis, work-up and management of the following scenarios in the pregnant patient:

- Hypertension
- Valvular heart diseases
- Shortness of breath
- Palpitations
- Seizure
- Thrombocytopaenia
- Hyperglycemia
- Abnormal liver function tests
- Proteinuria

Be able to demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up and management of the following conditions in the pregnant patient:

- Hypertensive disorders of pregnancy:
  - chronic hypertension
  - gestational hypertension
  - pre-eclampsia and eclampsia
- Cardiac disorders
  - valvular heart disease
  - endocarditis prophylaxis
  - cardiomyopathy of pregnancy
- Respiratory disorders: Pneumonia, asthma
- Hyperemesis gravidarum
- Liver diseases of pregnancy, including:
  - cholestasis of pregnancy
  - HELLP
  - fatty liver of pregnancy
  - inflammatory bowel disease
  - viral and auto-immune hepatitis
- Renal disorders
  - acute kidney injury and chronic kidney disease
  - proteinuria and nephrotic syndrome
  - hematuria and glomerulonephritis
  - UTI
- Endocrine disorders
  - diabetes mellitus
  - gestational diabetes

thyroid diseases
Venous thromboembolism
Neurological disorders
Migraines
Seizures
MS
Infectious disorders: HIV, TB
Collage-vascular disorders: RA, SLE

Be able to understand the physiological changes that occur in pregnancy with respect to blood volume, hemodynamics, cardio-respiratory physiology, and renal physiology.

Be able to understand the impact of pregnancy and the post-partum period on chronic medical conditions.

Be able to understand drug prescribing in pregnancy and the post-partum period.

Know when to consult maternal-fetal experts and or medical sub-specialists.

Understand the effects of radiographs, CT scans, nuclear imaging, and other imaging modalities on the pregnant patient.

Demonstrate an understanding of the indications for admission to and discharge from hospital.

Communicator

Be able to communicate effectively with patients and families with respect to issues relating to their pregnancy, health, and fetal well-being.

Be able to interact effectively with other healthcare professionals.

Be able to document the patient's condition and progress accurately with emphasis on the relevant issues.

Collaborator

Be able to identify and recognize the need to and benefit of consulting other physicians and healthcare professionals, specifically obstetricians, family doctors, maternal-fetal experts, high-risk obstetrical units, and geneticists.

Be able to contribute effectively in a multi-disciplinary team.

Leader

Be able to use information technology to optimize patient care.

Be able to use healthcare resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and families regarding factors that impact on their health including cigarette smoking, drug use, and alcohol.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents and other healthcare professionals.

Be able to contribute to the development of new knowledge, through the participation in completion of a research project.

Professional

Be able to apply a knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues that arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Palliative Care

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in palliative care.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the clinical presentations of palliative care patients.

Recognize the physical, psychological, social, and functional consequences of end-stage diseases.

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following symptoms and conditions while demonstrating an understanding of their pathophysiology:

Pain, both acute and chronic, of various origins (bone, neuropathic, etc.)
Constipation
Edematous states, including lymphedema
Nausea and vomiting
Delirium
Dyspnea
Nutritional deficiencies (anorexia and cachexia)

Be able to recognize and manage terminal delirium.

Understand the pharmacology of drugs used to manage symptoms associated with terminally ill patients. In particular, develop an expertise in the management of opioid medications for the treatment of pain.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions. In particular, be able to communicate with patients from different ethnic backgrounds and language groups.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on relevant issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals, including radio-oncologists and medical oncologists.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals, especially family physicians who will be managing the patients as primary-care givers.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice, particularly:

- Competency
- Surrogate decision-makers
- Goals of care and cardiopulmonary resuscitation
- Confidentiality
- Resource allocation

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Radiology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in radiology.

The resident is expected to:

Medical Expert

Understand the indications for, and be able to interpret, chest X-rays and CT scans of thorax with emphasis on:

- Solitary lung nodule
- Pleural effusion
- Congestive heart failure
- Lobar collapse
- Interstitial vs. airspace disease
- Pulmonary fibrosis
- Pulmonary hypertension
- Hilar adenopathy

Understand the indications for, and be able to interpret abdominal X-rays and CT scan of the abdomen, with emphasis on:

- Small/large bowel obstruction
- Bowel edema/inflammation (colitis, ileitis, etc.)
- Liver masses/cysts
- Renal masses/cysts

Understand the indications for, and be able to interpret CT scan of the head, with emphasis on:

- Masses/cysts
- Hemorrhage
- Ischemic infarcts

Understand the indications for:

- MRI
- Angiograms/interventional radiology procedures
- Bone/Gallium scans
- Other nuclear medicine scans
- Ultrasounds
- PET scans

Communicator

Be able to interact effectively with other health-care professionals and discuss the results of various radiological tests.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health.

Scholar

Be able to critically appraise sources of medical information.

Be able to teach medical students, residents, and other health-care professionals.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Respirology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in respirology.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the clinical presentation.

Be able to perform an accurate physical examination, with emphasis on:

- Clubbing
- Maneuvers for thoracic outlet obstruction
- Findings of chronic obstructive pulmonary disease
- Findings of respiratory distress
- Findings of pulmonary hypertension

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

- Wheeze
- Acute and chronic dyspnea
- Cough
- Cavitating lesions, including lung abscess
- Solitary pulmonary nodule
- Mediastinal mass
- Pulmonary fibrosis
- Hemoptysis
- Pleural effusion
- Superior vena cava syndrome
- Hilar adenopathy
- Interstitial lung disease

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

- Pneumonia
- Empyema
- Asthma (including arterial blood gas analysis, criteria for ICU/intubation, status asthmaticus)
- Chronic obstructive pulmonary disease
- Pulmonary embolism
- Cystic fibrosis
- Pneumothorax
- Sarcoidosis
- Tuberculosis
- Obstructive sleep apnea and sleep medicine
- Occupational lung disease
- Lung cancer, including primary and metastatic

Understand the indications for, and provide initial interpretation of, chest X-rays and CT scans of thorax, with emphasis on:

- Solitary lung nodule
- Pleural effusion

Congestive heart failure
Lobar collapse
Interstitial vs airspace
disease Pulmonary
fibrosis Pulmonary
hypertension Hilar
adenopathy

Be able to perform an arterial blood gas and thoracentesis and interpret the results.

Be familiar with the role of procedural ultrasound in optimizing the safe performance of a thoracentesis.

Be able to perform bedside spirometry and interpret the results of pulmonary function testing.

Understand the indications for, and complications of bronchoscopy, thoracoscopy, pleural and lung biopsies, chest tube placement, and thoracentesis.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on relevant pulmonary issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals, including thoracic surgeons if surgery is being contemplated.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient

care. Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health, particularly with respect to: Smoking cessation, COPD rehabilitation, Home ventilation program, CSST.

Scholar

Be able to critically appraise sources of medical information

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals, especially family physicians who will be managing the patients as primary-care givers.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Rheumatology

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in rheumatology.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the clinical presentations of various rheumatologic complaints and conditions.

Be able to perform an accurate physical examination, with emphasis on:

Examination of the peripheral joints (foot and ankle, knee, hip, hand and wrist, elbow, shoulder) and axial skeleton (cervical, thoracic, and lumbosacral including sacroiliac joints)
Extra-articular manifestations of rheumatoid arthritis, lupus, ankylosing spondylosis
Examination for scleroderma
Examination for low back pain

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

Acute monoarthritis
Acute polyarthritis
Chronic polyarthritis
Sacroileitis
Low back pain (with emphasis on the danger signs prompting early evaluation)
Vasculitis
Complications of chronic corticosteroid use
Interpretation of ESR, CRP, and autoantibodies
Interpretation of bone mineral densitometry

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

Gout and pseudogout
Septic arthritis
Osteoarthritis
Rheumatoid arthritis and Sjogren's syndrome
Sero-negative arthopathies
Systemic lupus erythematosis
Ankylosing spondylitis
Scleroderma
Dermatomyositis/Polymyositis
Raynaud’s phenomenon and disease
Temporal arteritis and Polymyalgia Rheumatica
Fibromyalgia
Osteoporosis, particularly in the patient on corticosteroids
Soft-tissue rheumatic pain, including tendonitis and bursitis

Be able to perform arthrocentesis of the knee and interpret the results of synovial fluid analysis.

Understand the indications for and complications of anti-inflammatory, DMARDs, and immunosuppressive drugs in the treatment of rheumatologic conditions.

Understand the indications for and complications of arthrocenteses for all joints, joint X-RAYS, joint scans,

and bone-gallium scans.

Be able to interpret joint fluid microscopy.

Demonstrate an approach to interpreting bone and joint radiographs.

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on the rheumatological issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals, including orthopedic surgeons if surgery is being contemplated.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health, including the benefits of weight loss and exercise for prevention and management of osteoarthritis.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals, especially family physicians who will be managing the patients as primary-care givers.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Scholarly Activity Rotation (SAR)

A scholarly project is ***mandatory*** for all residents beginning their residency after July 1, 2011. This activity may consist of (i) a clinical vignette / case presentation / case report, (ii) a quality assurance / quality improvement (QA/QI) project, (iii) a medical education project, or (iv) a research project. Evidence of a scholarly activity is required and will be placed in each resident's file. In order to meet this goal, each resident will be assigned 4 weeks of time towards a scholarly project (scholarly activity rotation) between PGY1-3. This may be taken as a 4 week rotation or separately in 1 or 2 week blocks of time. All SARs ***must*** have an identified attending supervisor and a completed evaluation form must be submitted for each block of time taken. Proof of completion of a scholarly project is required before the end of PGY3, and will be placed in each resident's teaching portfolio.

Clinical Vignette / Case Presentation / Case Report

A clinical vignette / case presentation / case report is a structured case presentation, with a literature review highlighting the unique aspects of the case in question (either diagnostics, therapeutics, or other aspects), as presented to a group of physicians in various contexts (hospital rounds, provincial or national conference) or as published in a peer-reviewed journal. There must be an identified faculty supervisor to guide the project and provide an evaluation (this faculty supervisor will also provide guidance and review slide sets/submissions for publication).

Quality Assurance / Quality Improvement Project

A quality assurance / quality improvement project is a structured project, with a defined goal of improving the quality of care at your local hospital, based on a problem and goal identified in your local hospital / service. The project includes identifying the area to improve on, structuring the intervention, implementing the change, and monitoring its impact. In a general sense, this follows the PDSA cycle of QI (Plan, Do, Study, Act). These interventions are designed to be implemented in real-life settings, and so an essential component of these projects is to test out the intervention and assess its impact. QA/QI projects, given their scope and nature, may be done in small groups of residents. There must be an identified faculty supervisor to guide the project and provide an evaluation.

Medical Education Project

A medical education project is a project looking at an educational question or intervention, preferably directed towards innovations in the Training Program itself (but these may involve other projects as well). For example, the Crisis Resource Management (CRM) sessions were developed and implemented directly as a result of a resident's interest and motivation in medical education. There must be an identified faculty supervisor to guide the project and provide an evaluation.

Research Project

The general **objective** of a research rotation during core internal medicine training is to provide an introduction to the conduct of clinical or basic science research, in a field relevant to internal medicine. More specifically, the rotation should be an opportunity to learn about research from the investigator's standpoint. Hence the resident research experience should include all phases of a project, from design through data collection, analysis, interpretation, and reporting. Experience of a purely technical nature--work ordinarily performed by a research assistant or technician--is not suitable.

The scope of the project must reflect the limited time available. However, it is crucial that you be able to claim primary intellectual ownership of the work done. Hence it is preferable to complete a small project than to undertake one component of a larger one. To maximize the yield of "protected" research time, the planning stages should be completed before the research block-including study design, preparation of relevant data collection tools, and ethics committee approval (required for nearly all clinical studies, including chart reviews). This requires organization and input from both resident and supervisor. The research rotation itself should be devoted to data collection, analysis, and potentially preparation of results

for presentation/publication.

We encourage residents to be involved in at least one such research project during their first three years of residency training. **Residents can generally take one extra rotation as a research rotation in their first 3 years of training in Internal Medicine (conditional upon satisfactory performance on clinical rotations and with Site Director permission).** This research rotation is above and beyond the 1 month of already-assigned scholarly activity rotation. With this in mind, we will be organizing regular meetings with your local Resident Research Coordinators (JGH: Mark Blostein, MGH: Stella Daskalopolou, RVH: Kevin Schwartzman) throughout your residency to discuss these issues.

Please be advised that residents who undertake a research rotation must:

- submit a summary of the planned project, including a description of the resident's role, to the Teaching Office before the anticipated start date; this summary must be signed by both resident and supervisor,
- include a statement as to the target venue for presentation of the results: the name of the local, national, and/or international conference targeted, and/or the target peer-reviewed journal,
- upon completion of the rotation, have their supervisors complete an evaluation form with comments,
- submit a report of their research experience and of their results to their local Teaching Office, and
- be prepared to present their findings at the annual Resident Research event (evening or day event), held each spring.

Presentation, critical review, and dissemination of results are crucial elements of the research process. Hence presentation of results at a relevant conference is essential, and publication of a manuscript in a peer-reviewed journal is strongly encouraged. Financial support is available to offset travel and conference costs, potentially in conjunction with the research supervisor's funding. **Residents must identify their institutional affiliation in any presentation or publication as "Resident, Internal Medicine Residency Training Program, Department of Medicine, McGill University, Montreal, Quebec, Canada."** Hospital affiliations are NOT acceptable.

Your local Teaching Office must be notified of any presentations or publications that arise out of any research which you take part in before the end of your fourth year of residency. This is in order to track resident research and to comply with Royal College requirements. Please submit copies of abstracts and/or published articles to your local Teaching Office so that they can be placed in your file.

Please review the references below:

Clinical Research During Internal Medicine Residency: A Practical Guide. The American Journal of Medicine, Volume 119, Issue 3, Pages 277-283 K. Hamann, T. Fancher, S. Saint, M. Henderson

Research Guide: A Primer for Residents, other health-care trainees, and practitioners. Bart J. Harvey, Eddy S. Lang, Jason R. Frank. Royal College of Physicians and Surgeons of Canada, 2011.

for tips of how to integrate research into your residency.

Below are the goals and objectives of a research rotation in CanMEDS format:

<u>Medical Expert</u>

The resident will:

Demonstrate expert knowledge of the pathogenesis, epidemiology, manifestations and management of the clinical condition(s) targeted by his/her research project.

Develop a clear, comprehensive and relevant literature review.

Formulate a clear, testable research question/hypothesis.

Acquire proficiency in methods for collecting and analyzing data.

Identify strengths and limitations of study design, methods, and results.

Describe appropriate next steps based on his/her research findings.

Communicator

The resident will:

Present his/her research protocol effectively in oral and written form.

Present research findings effectively both orally and in written form (e.g. conference abstract, poster/slide talk, manuscript).

When appropriate, participate in relevant communication with the research ethics committee, animal care committee, and/or human subjects (e.g. aid in development of consent forms).

Collaborator

The resident will:

Work effectively with research supervisor(s).

Work effectively with all members of the research team e.g. technicians, research assistants, statisticians, etc.

Leader

The resident will identify scientific, logistical, ethical, and financial advantages and disadvantages of various potential methods to address a particular research question.

Health Advocate

The resident will:

Highlight the relevance of research findings to future improvements in health.

Communicate results with subjects, patients, other health professionals, or other stakeholders as appropriate.

Scholar

The resident will:

Synthesize relevant primary research evidence into an up-to-date literature review, placing his/her research question in suitable context.

Critically evaluate related scientific literature.

Demonstrate self-directed learning related to the substantive research question, and the methods used.

Participate actively in relevant scientific seminars and presentations.

Professional

The resident will:

Demonstrate exemplary professional, personal and interpersonal behaviour at all times.

Develop and execute his/her project according to current standards for the ethical and humane conduct of research.

Develop and demonstrate an understanding of the basic concepts of research ethics.

Transplantation Medicine

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in transplantation medicine. The emphasis of this rotation will be to improve the resident's basic knowledge about transplantation and immunosuppression and to gain exposure to the unusual problems faced by the transplant patient.

The resident is expected to:

Medical Expert

Be able to elicit, present and document a history that is relevant and appropriate to the clinical presentations of various rheumatologic complaints and conditions.

Be able to perform an accurate physical examination that is relevant to the presenting problem.

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of and demonstrate an understanding of the pathophysiology of the following scenarios and conditions in the transplant patient:

- Post-transplantation complications (surgical and non-surgical)
- Rejection, acute cellular and antibody mediated
- Acute kidney injury
- Metabolic Complications, including:
  - New onset diabetes after transplantation (NODAT)
  - Hypertension
  - Dyslipidemia
  - Osteoporosis
- Cardiovascular disease and risk factor management
- Cancer (immunosuppression associated, screening, surveillance)
- Infectious complications and prophylaxis

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on relevant issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient

care. Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health,

with emphasis on the importance of concordance with medications.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.

Thrombosis Medicine

The JGH Thrombosis Program encompasses a broad range of clinical activities that relate to diagnosis, risk factors and treatment of venous and arterial thromboembolic disease, management of thrombophilia and issues pertaining to acute and long-term anticoagulation. Specific areas of clinical activity include the Thrombosis Clinic, Anticoagulation Clinic and In-patient Thrombosis Consultation Service. Attending staff include Drs. Mark Blostein, Andrew Hirsch, Susan Kahn (Director, Thrombosis Program) and Vicky Tagalakis, all of whom have expertise in Thrombosis Medicine.

We invite residents to sign up for a Thrombosis Elective at the JGH by contacting Dr. Kahn's assistant Maureen Morganstein at 514-340-8222 #7587, or via email: maureen.morganstein@epi.jgh.mcgill.ca.

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in thrombosis medicine.

The resident is expected to:

Medical Expert

Demonstrate the requisite knowledge and skills to function as a thrombosis consultant in the inpatient and outpatient setting.

Performs clinical assessments that are accurate, concise and relevant.

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of conditions as they relate to thrombosis and its treatment.

Understand the indications for, and be able to interpret commonly used diagnostic modalities in Thrombosis Medicine.

Be able to perform an accurate physical examination, with emphasis on:

- Findings of deep vein thrombosis (DVT) of the lower extremity and upper extremity
- Findings of superficial vein thrombosis (SVT)
- Findings of pulmonary embolism (PE)
- Findings of PE with hemodynamic instability
- Findings of phlegmasia cerulean dolens
- Findings of post-thrombotic syndrome (PTS) of the lower extremity and upper extremity
- Findings of chronic thromboembolic pulmonary hypertension (CTEPH)
- Findings of heparin skin allergy
- Findings of warfarin-induced skin necrosis

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

- Suspected DVT of the lower extremity, upper extremity
- Suspected SVT
- Suspected PE
- Suspected PTS
- Suspected CTEPH
- Suspected heparin-induced thrombocytopenia (HIT)
- Suspected HIT with thrombosis (HITT)
- Suspected unusual site DVT

- Bleed on heparin (low molecular weight heparin; unfractionated heparin)
- Bleed on vitamin K antagonists
- Elevated INR without bleeding
- Bleed on new oral anticoagulants, e.g. dabigatran, rivaroxaban

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

- DVT of the lower extremity and upper extremity
- Anatomically extensive DVT
- SVT
- PE
- Cancer-associated DVT, PE
- Unprovoked DVT, PE
- Pregnancy related DVT, PE
- Unusual site DVT
- PTS
- CTEPH
- Heparin-induced thrombocytopenia (HIT)
- HIT with thrombosis (HITT)
- Thrombophilia-inherited and acquired
- Prevention of venous thromboembolism (VTE) in different patient risk groups (e.g. surgical, medical, pregnant)
- Bridging therapy for patients on chronic anticoagulation
- Long-term management of warfarin, new oral anticoagulants
- Bleed on heparin (low molecular weight heparin; unfractionated heparin)
- Bleed on vitamin K antagonists
- Elevated INR without bleeding
- Bleed on new oral anticoagulants, eg. dabigatran, rivaroxaban

Understand the indications for, and be able to interpret:

- Chest X-rays, CTPA and VQ scans in patients with suspected PE and CTEPH
- Venous ultrasounds, venograms and CT venograms in patients with suspected DVT
- Venous ultrasounds in patients with suspected SVT
- Coagulation testing for monitoring of heparin and vitamin K antagonists
- D-dimer testing in the work-up and management of patients with VTE
- Thrombophilia testing in the work-up and management of patients with VTE or arterial thrombosis
- Limited vs. extensive work-up for underlying cancer in a patient with unprovoked thrombosis
- Platelet counts and HIT assays in the work-up and management of patients with HIT

Understand the indications for, and complications of thrombolytic approaches to the management of severe PE and DVT

Communicator

Be able to communicate effectively with patients and their families with respect to their thrombotic or bleeding conditions.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on relevant thrombosis and/or anticoagulation issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals, including radiologists and vascular surgeons.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to effectively and efficiently manage the consult service.

Prioritizes requests for consultation and follow-up.

Be able to use information technology to optimize patient care.

Be able to use health-care resources cost-effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health, particularly with respect to thrombosis prevention and safe anticoagulation care.

Recognizes and responds\ to those issues where advocacy is appropriate.

Scholar

Be able to critically appraise sources of medical information

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals, especially family physicians who will be managing the patients as primary-care givers.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply knowledge of the professional codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to recognize and resolve ethical issues as they arise in clinical practice, including dealing with unprofessional behaviours in colleagues.

Meets deadlines and is punctual.

Evaluates personal abilities, knowledge, and skills and recognizes personal limitations.

Demonstrates integrity, honesty, compassion, and respect for diversity.

Tropical Medicine

The Internal Medicine resident is expected to achieve competency in the areas described below during their rotation in tropical medicine.

The resident is expected to:

Medical Expert

Be able to elicit, present, and document a history that is relevant and appropriate to the clinical presentation.

Be able to perform an accurate physical examination, with emphasis on:

Skin rashes, lesions, ulcers and their associations with tropical diseases

Be able to provide a reasonable approach to the differential diagnosis, work-up, and management of the following scenarios:

Fever
Diarrhea (acute and chronic, returning traveler)
Dysentery
Eosinophilia

Demonstrate an understanding of the pathophysiology, manifestations, diagnostic work-up, and management of the following conditions:

Intestinal helminths
Intestinal protozoa
Cestodes (hydatid, cystocercus, tapeworms)
Trematodes (schistosoma, clonorchis, fasciola)
Systemic protozoa (malaria, toxoplasma, leishmania, trypanosomes, pneumocystis)
Systemic helminths (filaria)
Bacterial infections (typhoid, leptospirosis, leprosy)
Viral infections (arbovirus, viral hemorrhagic fevers)
Rickettsia

Understand the indications for, be able to perform, and be able to interpret the results of the following clinical procedures:

Filarial skin snips
Schistosoma rectal snips
Leprosy skin slit smears

Understand the indications for and be able to interpret the results of the following laboratory procedures:

Microscopic identification of ova, cysts, trophozoites and worms found in urine or stool specimens
Microscopic examination of blood for malaria (thick and thin smears)
Microscopic examination of skin parasites
Staining techniques (Giemsa, Quick, Hematoxylin, Kinyoun)
Culture techniques
Concentration techniques (formal ether, zinc sulfate, sucrose flotation)

Communicator

Be able to communicate effectively with patients and their families with respect to their medical conditions.

In particular, be able to communicate with patients from different ethnic backgrounds and language groups, keeping in mind cultural contexts.

Be able to interact effectively with other health-care professionals.

Be able to document the patient's condition and progress accurately with emphasis on relevant tropical medicine issues.

Collaborator

Be able to identify the need to, and benefit of consulting other physicians and health-care professionals.

Be able to contribute effectively to interdisciplinary team activities.

Leader

Be able to use information technology to optimize patient

care. Be able to use health-care resources cost-effectively.

Be able to work efficiently and effectively.

Health Advocate

Be able to educate and counsel patients and their families regarding the factors that impact on their health, particularly with respect to transmission of disease and prevention of disease while travelling.

Scholar

Be able to critically appraise sources of medical information.

Be able to educate patients and their families regarding their medical condition.

Be able to teach medical students, residents, and other health-care professionals, especially family physicians who will be managing the patients as primary-care givers.

Be able to contribute to the development of new knowledge, through the completion of or participation in a research project.

Professional

Be able to apply a knowledge of the professional and ethical codes and norms of behaviour that govern the behaviour of physicians in clinical practice.

Be able to apply a knowledge of the legal codes and norms of behaviour that govern the behaviour of physicians in clinical practice, such as reporting certain diseases to public health authorities.

Be able to recognize and resolve ethical issues as they arise in clinical practice.

Be able to recognize and deal with unprofessional behaviours in clinical practice.