

**GENERAL INTERNAL MEDICINE TRAINING PROGRAM
FACULTY OF MEDICINE
UNIVERSITY OF BRITISH COLUMBIA**

This documents provides the:

1. Overall goals and objectives of the General Internal Medicine Training Program
2. Rotation specific objectives:
 - Longitudinal General Internal Medicine Clinic
 - Ambulatory Internal Medicine Sub-specialty Clinics
 - Community General Internal Medicine rotations
 - Obstetrical Medicine
 - Junior Attending on the Clinical Teaching Unit
 - Critical Care Medicine
 - Coronary Care Unit
 - Ambulatory Cardiology

Please read these documents carefully. If you have any questions, please call for clarification.

INTRODUCTION

The Division of General Internal Medicine at the University of British Columbia offers a two-year specialty training program in General Internal Medicine for core Internal Medicine Residents who wish to practice General Internal Medicine. This two-year program may be undertaken for residents who wish to pursue careers in general internal medicine in the community or in a teaching hospital setting. This document describes the process.

On the completion of the program the Fellow will have been provided with the opportunity to develop the skills, knowledge and attitudes to effectively practice General Internal Medicine. The Internal Medicine Fellowship builds on the training acquired during the three core years, with areas of additional focus on essential roles and competencies.

PROGRAM OBJECTIVES OF SPECIALTY TRAINING REQUIREMENTS IN GENERAL INTERNAL MEDICINE

DEFINITION

A General Internist is a specialist of adults trained in the diagnosis and treatment of a broad range of diseases involving all organ systems, and is especially skilled in the management of patients who have undifferentiated or multi-system disease processes. The general internist focuses on the “whole patient” by integrating the care of several “conditions” in one individual. General internists are experts in the diagnosis and care of patients presenting with undifferentiated symptoms as well as known disease states. They are experts in the care of patients presenting with either a single active problem in the face of multiple stable comorbidities or patients with multiple active decompensated comorbidities requiring concurrent diagnosis and treatment, both in the acute care and ambulatory setting. This includes maintaining stability of multiple comorbidities during decompensation of one facet of their illness(es) or during physiological stresses such as during pregnancy or the peri-operative period. While the consultation practice of General Internists may be diverse, and may have a subspecialty interest, the focus of their clinical activities is their unique contribution to the comprehensive care of the whole patient and the spectrum of medical problems (Cook and Sackett, *Annals of RCPSC*. 1995; 28(3): 172 – 174). The setting of general internal medicine practice is varied and includes both small and large communities – practice profile is tailored to the setting.

GENERAL OBJECTIVES

Upon completion of training, a resident in general internal medicine is expected to be a competent specialist in general internal medicine, capable of assuming a consultant's role in the specialty. The resident must acquire the knowledge, attitudes, and skills common to all general internal medicine practice. The resident must develop the unique skills of the general internist to provide comprehensive care of the whole adult patient in an integrated fashion as opposed to an organ-centered or disease-centred approach. They must be competent in the diagnosis, investigation, and treatment and ongoing care of the specific subset of patients seen by General Internists including patients with:

- a. **multi-system disease in the acute care setting** (including critical care).

- b. **acute illness not yet diagnosed to be within one “system”** (example respiratory failure).
- c. **chronic** disease management in collaboration with family medicine of patients with multiple comorbidities in the acute and ambulatory care setting.
- d. **undifferentiated symptoms in the ambulatory care setting.**
- e. **common medical problems in both the acute and ambulatory care setting.**
- f. **high acuity illness with disease in any one system complicated by other comorbidities.**
- g. **less common medical problems that may span multiple systems (example porphyria).**

They must acquire knowledge as to how surgery or pregnancy may change the presentation and management of medical problems. The resident in general internal medicine must develop competencies and skills that will enable him/her to meet societal needs by planning, in conjunction with the program director, to tailor the flexible component of their training to the anticipated practice location. The resident must demonstrate the knowledge, skills and attitudes relating to gender, culture and ethnicity, and incorporate these into the practice of general internal medicine.

*When considering the specific objectives under each CanMeds roles, this patient population is referred to as the general internal medicine patient.

SPECIFIC OBJECTIVES

Medical Expert

Key Competencies:

Physicians are able to:

- Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical and patient-centered medical care;
- Establish and maintain clinical knowledge, skills and attitudes appropriate to their practice.
- Perform a complete and appropriate assessment of a patient;
- Use preventive and therapeutic interventions effectively;
- Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic;
- Seek appropriate consultation from other health professionals, recognizing the limits of their expertise.

Enabling Competencies:

*For all of these the particular emphasis is on the patient defined in the general objectives.

- 1) Demonstrate expertise in the diagnosis, investigation and management of the general internal medicine patient.
- 2) Demonstrate expertise in the differential diagnosis of patients presenting with undifferentiated symptoms or acute illness of unknown etiology.
- 3) Demonstrate the ability to maintain up to date knowledge of internal medicine and apply it to the care of patients.
- 4) Demonstrate expertise in medical peri-operative care including risk stratification, risk modification and post-operative medical management.
- 5) Demonstrate expertise in the management of medical problems of pregnancy, including an understanding of the physiological changes in pregnancy, the impact of pregnancy on medical disorders and the application of therapeutics in pregnancy.

- 6) Recognize drug interactions and side-effects.
- 7) Apply knowledge and technical expertise in performing the procedures in the internal medicine objectives, interpreting the results and demonstrating an understanding of their limitations and complications:
 - a) central venous catheter insertion;
 - b) lumbar puncture;
 - c) peripheral arterial catheter insertion;
 - d) abdominal paracentesis;
 - e) endotracheal intubation;
 - f) thoracentesis;
 - g) knee joint aspiration; and
 - h) electrocardiographic interpretation.
- 8) *For any of the following procedural skills, diagnostic and therapeutic, the trainee will be able to describe the indications, the contraindications, the potential complications and the available alternatives. For any given procedure, the trainee will be able to interpret the results. Trainees should be able to ensure adequate follow-up is arranged for procedures performed or requested. Acquiring expertise in these procedural skills should be based on the needs of the community wherein the trainee is expecting to practice and will vary between trainees. Training in additional procedures to those listed may be required depending on future practice location.*
 - a) Ambulatory blood pressure monitoring
 - b) Exercise stress testing (including nuclear tests)
 - c) Hemodynamic monitoring
 - d) Temporary Pacemaker Insertion
 - e) Ambulatory ECG Monitoring
 - f) Elective Cardioversion
 - g) Transthoracic Pacing
 - h) Echocardiography
 - i) Chest Tube Insertion
 - j) Pulmonary Function Testing and Spirometry
 - k) Overnight oximetry
 - l) Mechanical Ventilation
 - m) Endoscopic Procedures (bronchoscopy, gastroscopy, colonoscopy and sigmoidoscopy)
 - n) Bone Marrow Aspiration and Biopsy
 - o) Skin Biopsy
 - p) Joint Aspiration and injection
 - q) Hemodialysis and peritoneal dialysis
 - r) Renal Biopsy
 - s) Thyroid Biopsy
 - t) Liver Biopsy

Communicator

Key Competencies:

Physicians are able to...

- Develop rapport, trust and ethical therapeutic relationships with patients and families;
- Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues and other professionals;

- Accurately convey relevant information and explanations to patients and families, colleagues and other professionals;
- Develop a common understanding on issues, problems and plans with patients and families, colleagues and other professionals to develop a shared plan of care;
- Convey effective oral and written information about a medical encounter.

Enabling Competencies:

- 1) Provide clear, concise and timely verbal and written communication to other specialties such as surgery, obstetrics, family medicine and/or other subspecialists involved in the care of the general internal medicine patient.
- 2) Discuss the risk-benefit of diagnostic and therapeutic options in patients with multi-system illness, and/or in the setting of pregnancy and surgery.
- 3) Define the role of a consultant versus a primary care giver while involved in the care of surgical and obstetrical patients.

Collaborator

Key Competencies:

- Participate effectively and appropriately in an interprofessional healthcare team;
- Effectively work with other health professionals to prevent, negotiate, and resolve interprofessional conflict.

Enabling Competencies:

- 1) Facilitate the integration of patients with the health care team and the health care community, including:
 - a) Transition from hospital care to the ambulatory care setting.
 - b) Transition from diagnostic care under a general internist to therapeutic care by another subspecialist (example, treatment of newly diagnosed lung cancer).
- 2) Facilitate the care of patients through partnerships with the surgical and/or obstetrical team.

Manager

Key Competencies:

Physicians are able to...

- Participate in activities that contribute to the effectiveness of their healthcare organizations and systems;
- Manage their practice and career effectively;
- Allocate finite healthcare resources appropriately;
- Serve in administration and leadership roles, as appropriate.

Enabling Competencies:

Physicians are able to:

- 1) Coordinate multiple diagnostic and therapeutic interventions.
- 2) Demonstrate understanding of human resource, financial and record keeping issues pertaining to running a medical office.
- 3) Set priorities and manage time to balance patient care, practice requirements, outside activities and personal life.
- 4) Demonstrate ability to manage patient care information obtained in both acute and ambulatory care settings and ensure appropriate and timely follow-up.
- 5) Implement processes to ensure personal practice improvement.
- 6) Employ information technology appropriately for patient care.
- 7) Appreciate the value of intervention (or not) in patients with terminal disease, and investigate, treat as appropriate to such special circumstances.
- 8) Participate in systemic quality process evaluation and improvement, such as patient safety initiatives.

Health Advocate

Key Competencies:

Physicians are able to...

- Respond to individual patient health needs and issues as part of patient care;
- Respond to the health needs of the communities that they serve;
- Identify the determinants of health of the populations that they serve;
- Promote the health of individual patients, communities and populations.

Enabling Competencies:

Physicians are able to:

- 1) Promote preventive health care (e.g. smoking cessation, treatment of dyslipidemia, hypertension, obesity, sedentary lifestyle, alcoholism and illicit drug use).
- 2) Implement preventive strategies including vaccination, cancer screening and the treatment of osteoporosis.
- 3) Identify and discuss end of life issues and facilitate end of life care.
- 4) Promote discussions about end of life care.
- 5) Demonstrate ability to promote appropriate and timely care for the general internal medicine patient.
- 6) Facilitate the link between primary care physicians, specialty, and subspecialty medicine to benefit the care of the general internal medicine patient.
- 7) Demonstrate understanding of the principles of evaluation and management of patients with potential emerging and epidemic diseases (example SARS).

Scholar

Key Competencies:

Physicians are able to...

- Maintain and enhance professional activities through ongoing learning;
- Critically evaluate information and its sources, and apply this appropriately to practice decisions;
- Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others, as appropriate;
- Contribute to the creation, dissemination, application, and translation of new medical knowledge and practices.

Enabling Competencies:

Physicians are able to...:

- 1) Demonstrate scholarly activity in one or more of the following categories:
 - a) Medical Education (example innovation in medical education).
 - b) Research (example Medical Education, Clinical Epidemiology, Basic Science, Clinical Research, and Clinical Trials).
 - c) Administration (example Health Care Policy and Economics).
- 2) Demonstrate the ability to formulate focused questions related to practice, and use a variety of search skills and resources to access and appraise appropriate information.
- 3) Demonstrate effective teaching skills in the knowledge areas unique to general internal medicine including CME activity.
- 4) Implement a personal knowledge management system.

Professional

Key Competencies:

Physicians are able to...

- Demonstrate a commitment to their patients, profession and society through ethical practice;
- Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation;
- Demonstrate a commitment to physician health and sustainable practice.

Enabling Competencies:

- 1) Demonstrate a sound understanding of ethical principles and moral values and apply this to the management of general internal medicine patients during illness and at end of life.
- 2) Recognize limitations in skill set and knowledge including knowing when to involve another care provider.
- 3) Demonstrate an ability to set boundaries consistent with safe and effective patient care.
- 4) Participate in finding solutions for the health care needs of society.

Longitudinal General Internal Medicine: Rotation Specific Objectives

The overall goals of the general internal medicine longitudinal clinic experience are:

- To provide an opportunity for residents to learn and practice *consultative medicine* in a longitudinal fashion
- To provide an experience in the diagnosis, investigation and management of diseases that would not be normally seen in an inpatient setting
- To understand the management of complex diseases over time

Medical Expert

1. Demonstrate the ability to diagnose, appropriately investigate and recommend treatment and follow-up of common problems seen in ambulatory internal medicine. The longitudinal clinic may also provide added experiences in other areas of general internal medicine such as palliative care, HIV care, addiction medicine, and pharmacology. The following list is not exhaustive but highlight important content areas.
 - a. Hematological diseases such as anemia, leucopenia and thrombocytopenia, venous thromboembolism
 - b. Rheumatologic diseases to include common (acute arthritis, gout, rheumatoid arthritis, fibromyalgia) and uncommon (vasculitides)
 - c. Pulmonary diseases such as COPD, pleural effusion, chronic cough
 - d. Atrial fibrillation
 - e. Congestive heart failure
 - f. Endocrine diseases to include common (diabetes mellitus, thyroid disorders, osteoporosis) and uncommon (adrenal disorders)
 - g. Fever of unknown origin
 - h. Gastrointestinal diseases such as abdominal pain, hepatitis, GERD, peptic ulcer disease, colitis, chronic liver disease
 - i. Hyperlipidemia
 - j. Hypertension
 - k. Ischemic heart disease
 - l. Malaise, fatigue or other undifferentiated problems
 - m. Neurological diseases such as TIA, stroke, peripheral neuropathy
 - n. Renal diseases (acute and chronic renal failure, proteinuria, hematuria)
 - o. Risk factor modification for cerebrovascular, cardiovascular and peripheral vascular disease, obesity, smoking cessation, alcohol and illicit drug use
 - p. Wasting illnesses
 - q. Peri-operative risk assessment and management- CV risk, diabetes and anticoagulation management, postoperative respiratory complications
2. Apply current evidence and guidelines to common problems (eg. hypertension, lipid management, diabetes care, cardiovascular diseases)

Communicator

1. Communicate effectively with patients and families their management plans and diagnoses within the time constraints of an outpatient clinic
2. Establish rapport with patients and families, even in difficult or stressful times

Collaborator

1. Recognize the importance of the referring physician in the overall care of the patient
2. Communicate with referring physicians through effective and concise dictated or written communications
3. Understand the key role family practitioners play in the management of patients

Manager

1. Manage time in an outpatient setting, respecting the time and schedule of patients, referring physicians and the needs of the clinic itself
2. Demonstrate appropriate but cost-effective utilization of diagnostic tests, subspecialty referral and emergency triage

Health Advocate

1. Recognize and identify opportunities for primary or secondary prevention strategies in patients (not necessarily restricted to the presenting complaint)
 - a. Previously unaddressed issues
 - b. Optimizations of current plans
2. Encourage and recommend strategies for lifestyle interventions

Scholar

1. Identify personal learning gaps or needs and develop a strategy to meet these needs as they arise
2. Appropriately utilize information technologies to address clinical questions or learning needs
3. Review relevant, key clinical trials or publications pertinent to the cases seen

Professional

1. Deliver the highest quality of care with integrity, honesty and compassion
2. Demonstrate behaviors and attitudes consistent with the role of a consultant
3. Balance personal and professional priorities to ensure personal health and sustainable practice

Ambulatory Internal Medicine Sub-specialty Clinics: Rotation Specific Objectives

The learning objectives of the ambulatory internal medicine sub-specialty clinic are shaped by the following factors:

- The previous clinical experiences of the resident during their core training
- The specific training needs and interests of the resident
- The understanding that the trainee has a responsibility to follow patients who s/he has directed from the clinic to inpatient care for further investigation and management

Medical Expert

1. Demonstrate the ability to diagnose, appropriately investigate and recommend treatment and follow-up of common problems seen in ambulatory internal medicine sub-specialty clinics. The following list is not exhaustive but highlight important content areas that may be seen in the various sub-specialty clinics.
 - a. Hematological diseases such as anemia, leucopenia and thrombocytopenia, pancytopenia, coagulopathy, venous thromboembolism, hypercalcemia of malignancy
 - b. Rheumatologic diseases such as connective tissue diseases, acute arthritis, gout, RA, seronegative spondyloarthropathies, vasculitis
 - c. Pulmonary diseases such as COPD, pneumonia, pleural effusion, pulmonary nodule, chronic cough, asthma, interstitial lung disease
 - d. Cardiovascular diseases such as congestive heart failure, hypertension, hyperlipidemia, ischemic heart disease, atrial fibrillation and common arrhythmias, EKG interpretation, stress testing interpretation
 - e. Endocrine diseases to include diabetes mellitus, thyroid disorders, osteoporosis, SIADH, Cushing's, adrenal insufficiency, pituitary disorders
 - f. Infectious diseases such as fever of unknown origin, HIV, soft tissue infections
 - g. Gastrointestinal diseases such as acute and chronic hepatitis, GERD, peptic ulcer disease, diarrhea, colitis, chronic liver disease, cirrhosis and ascites
 - h. Neurological diseases such as TIA, stroke, peripheral neuropathy, motor weakness, dementia
 - i. Renal diseases such as acute and chronic renal failure, proteinuria, hematuria, glomerulonephritis, nephritic syndrome

Communicator

1. Communicate effectively with patients and families their management plans and diagnoses within the time constraints of an outpatient clinic
2. Establish rapport with patients and families, even in difficult or stressful times

Collaborator

1. Recognize the importance of the referring physician in the overall care of the patient

2. Communicate with referring physicians through effective and concise dictated or written communications
3. Understand the key role family practitioners play in the management of patients

Manager

1. Manage time in an outpatient setting, respecting the time and schedule of patients, referring physicians and the needs of the clinic itself
2. Demonstrate appropriate but cost-effective utilization of diagnostic tests, appropriate referrals and emergency triage

Health Advocate

1. Recognize and identify opportunities for primary or secondary prevention strategies in patients (not necessarily restricted to the presenting complaint)
 - a. Previously unaddressed issues
 - b. Optimizations of current plans
2. Encourage and recommend strategies for lifestyle interventions

Scholar

1. Identify personal learning gaps or needs and develop a strategy to meet these needs as they arise
2. Appropriately utilize information technologies to address clinical questions or learning needs
3. Review relevant, key clinical trials or publications pertinent to the cases seen

Professional

1. Deliver the highest quality of care with integrity, honesty and compassion
2. Demonstrate behaviors and attitudes consistent with the role of a consultant
3. Balance personal and professional priorities to ensure personal health and sustainable practice

Community General Internal Medicine: Rotation Specific Objectives

At the end of a rotation in community general internal medicine, the resident will be able to meet the following objectives as a consultant:

Medical Expert

3. Demonstrate the ability to diagnose, appropriately investigate and recommend treatment and follow-up of common problems seen in ambulatory, community internal medicine, including (in alphabetical order):
 - a. Arthritis and arthralgias
 - b. Chest pain
 - c. Congestive heart failure
 - d. Diabetes (especially Type II DM)
 - e. Electrolyte disorders
 - f. Hyperlipidemia
 - g. Hypertension
 - h. Ischemic heart disease
 - i. Malaise, fatigue or other undifferentiated problems
 - j. Renal failure (acute and chronic)
 - k. Risk factor modification
 - l. Thyroid disorders (eg. nodule, hyper/hypothyroidism)
 - m. Weight loss
 - n. Perioperative risk assessment and management
4. Provide consultative services in an inpatient setting
 - a. Primary responsibility for inpatients
 - i. General internal medicine service
 - ii. Intensive care management
 - b. Provide consultative and directive care for patients admitted under another physician
 - c. Arrange appropriate transfer to tertiary care when needed
5. Gain proficiency in performing or interpreting diagnostic procedures important to community GIM and understand the indications for, and limitations of these procedures:
 - a. Stress testing
 - i. Including appropriate recommendations for subsequent non-invasive and invasive testing
 - b. Interpretation of EKGs
 - c. Interpretation of Holter monitors
 - d. Other procedures dependent on site, attending physician
6. Apply current evidence and guidelines to common problems (eg. hypertension, lipid management, diabetes care, cardiovascular diseases)

Communicator

1. Communicate effectively with patients and families their management plans and diagnoses within the time constraints of an outpatient clinic
2. Establish rapport with patients and families, even in difficult or stressful times

Collaborator

1. Recognize the importance of the referring physician in the overall care of the patient
2. Communicate with referring physicians through effective and concise dictated or written communications
3. Understand the key role family practitioners play in the management of patients

Manager

1. Recognize the different but complimentary and important roles community GIM plays in:
 - i. Providing patient care
 - ii. Educating residents and students
 - iii. Educating community physicians and other colleagues
 - iv. Research activities
2. Manage time in an outpatient setting, respecting the time and schedule of patients, referring physicians and the needs of the clinic itself
3. Demonstrate appropriate but cost-effective utilization of diagnostic tests, subspecialty referral and emergency triage

Health Advocate

1. Recognize and identify opportunities for primary or secondary prevention strategies in patients (not necessarily restricted to the presenting complaint)
 - a. Previously unaddressed issues
 - b. Optimizations of current plans
2. Encourage and recommend strategies for lifestyle interventions

Scholar

1. Identify personal learning gaps or needs and develop a strategy to meet these needs as they arise
2. Appropriately utilize information technologies to address clinical questions or learning needs
3. Review relevant, key clinical trials or publications pertinent to the cases seen

Professional

1. Deliver the highest quality of care with integrity, honesty and compassion
2. Demonstrate behaviors and attitudes consistent with the role of a consultant
3. Balance personal and professional priorities to ensure personal health and sustainable practice

Obstetrical Medicine: Rotation Specific Objectives

At the end of a rotation in community internal medicine, the general internal medicine resident will be able to meet the following objectives:

Medical Expert

1. Acquire knowledge about normal pregnancy including: physiology of normal pregnancy and how this impacts aspects of history, physical examination, diagnostic laboratory and radiology, and clinical therapeutics.
2. Demonstrate the ability to diagnose, appropriately investigate and recommend treatment and follow-up of medical complications of pregnancy including:
 - a. Hypertensive disorders of pregnancy (including pre-existing hypertension, gestational hypertension without proteinuria and pre-eclampsia)
 - b. Chronic renal disease
 - c. Gestational diabetes mellitus
 - d. Thrombocytopenia
 - e. Liver disease (e.g. cholestasis of pregnancy, acute fatty liver of pregnancy)
 - f. Thyroid disease
 - g. Thromboembolism
 - h. Peripartum cardiomyopathy
 - i. Epilepsy
 - j. Migraine
 - k. Postpartum fever
3. Provide consultative services to obstetricians and gynecologists
 - a. Provide consultative and directive care for patients admitted under another physician (who are also specialists)
 - b. Arrange appropriate transfer to quaternary care when needed

Communicator

1. Communicate effectively with patients and families their management plans and diagnoses
2. Establish rapport with patients and families, even in difficult or stressful times
3. Effectively present verbal reports of clinical encounters and plans
4. Maintain accurate and clear records of clinical encounters and plans
5. Communicate with referring physicians through effective and concise dictated or written communications

Collaborator

1. Understand the key role the obstetrician and gynecologist play in the management of pregnant patients
2. Work with others to assess, plan, provide and integrate care for the patient
3. Work with other professionals to prevent conflicts

Manager

1. Manage time in an outpatient setting, respecting the time and schedule of patients, referring physicians and the needs of the clinic itself
2. Work collaboratively with others in their organizations

Health Advocate

1. Identify the health needs of an individual patient and opportunities for advocacy, health promotion and disease prevention for pregnant women with medical complications, both in this pregnancy, after pregnancy, and in subsequent pregnancy(ies)

Scholar

1. Identify personal learning gaps or needs and develop a strategy to meet these needs as they arise
2. Appropriately utilize information technologies to address clinical questions or learning needs
3. Review relevant, key clinical trials or publications pertinent to the cases seen and incorporate the appraised knowledge into clinical practice
4. Identify pregnancy-specific sources of information, particularly about drug exposures in pregnancy

Professional

1. Deliver the highest quality of care with integrity, honesty, respect and compassion
2. Demonstrate behaviors and attitudes consistent with the role of a consultant
3. Recognize and appropriately respond to ethical issues encountered in practice

Junior Attending on the Clinical Teaching Unit: Rotation Specific Objectives

Medical Expert

1. The Medical Expert role serves as the central foundation for this rotation and only PGY5 level trainees who have fulfilled the training requirements to sit the RCPS Internal Medicine examination will be able to do this rotation.
2. This rotation will allow the PGY5 trainee to further develop and refine their diagnostic and therapeutic skills for the ethical and effective care of inpatients with Internal Medicine related health problems through supervising a team of junior trainees (one senior resident, two junior residents and two medical students) during their clinical teaching unit rotation.
3. The PGY5 trainee will meet with the supervising attending physician to review new cases and discuss the relevant learning and teaching issues that arise from patient care.

Communicator

1. Establish effective relationships with the residents and medical students on the team
2. Establish and model effective relationships with patients and their families
3. Provide feedback to the trainees on discharge planning for hospitalized patients with the involvement of the family physician, home care and other caregivers in the development of long-term community health planning
4. Model effective and efficient communication with trainees and colleagues both verbally and through written records and review the trainees discharge summaries as well as provide feedback
5. Encourage discussion, questions and interaction in the clinical encounter
6. Provide team orientation and effective communication for intake rounds post call, ward rounds, formal teaching sessions, mid- and end of rotation with all team members

Collaborator

1. Model how and when to consult other caregivers appropriately
2. Model how to work with the interdisciplinary team to develop appropriate diagnostic and therapeutic strategies for patient care and discharge planning
3. Demonstrate leadership in the health care team
4. Work with the senior and junior residents to assess, plan and review their learning objectives

Manager

1. Model the utilization of resources to effectively balance patient care and health care economics

2. Model effective and efficient patient management strategies by:
 - a. Avoiding duplication of services
 - b. Involving other caregivers
 - i. Obtaining appropriate patient information from other health care sources
3. Demonstrate the appropriate use of information technology
4. Learn to effectively delegate responsibility to junior housestaff
5. Model effective time management

Health Advocate

1. Identify important determinants of patients' health
2. Work to develop effective preventive medicine strategies for patients
3. Intercede on behalf of their patients as the patient weaves his/her way through complex health care institutions and services
4. Recognize and respond to those issues where advocacy is important

Scholar

1. Model how to develop and implement an effective long-term learning strategy
2. Participate in morning report and other scholarly activities (noon rounds, academic half-day)
3. Develop effective teaching strategies to teach the junior housestaff
4. Facilitate teaching of patients about their health problems directly or through the involvement of other professionals

Professional

1. Develop and discuss an ethical framework for the delivery of the highest quality care for junior trainees
2. Understand professional obligations to patients and colleagues
3. Exhibit appropriate personal and interpersonal professional behaviors
4. Act with integrity, honesty and compassion in the delivery of the highest quality health care

Critical Care Medicine: Rotation Specific Objectives

Medical Expert

General Objectives

1. To obtain a working knowledge of critical care medicine by actively participating in the management of critically ill patients.
2. To gain an understanding of the integrative nature of disease in the critically ill patient and the interdisciplinary approach to the management of such patients.
3. To understand the pathophysiology of commonly seen diseases in critically ill patients.
4. To become familiar and proficient with the principles of airway management and ventilator care.
5. To be able to identify the patient at risk, perform an appropriate physical examination, formulate a problem list and institute a course of therapy under the direction of senior personnel.
6. To gain proficiency in procedures commonly carried out in a critical care unit.
7. To become proficient in the management of a cardiac arrest and the acute resuscitation of a traumatized or acutely ill patient.

Specific Objectives

Initial Assessment of the Critically Ill

- Obtain an appropriate history from a patient, family or other medical personnel.
- Perform a problem-oriented physical examination.
- Formulate a problem list from the information gathered.
- Identify problems in order of priority.
- Outline a plan of action, in conjunction with ICU fellow or Consultant.
- Institute appropriate investigations and treatment under the supervision of an ICU fellow or Consultant.

Appropriate Use of the Laboratory in the Management of Critically Ill Patients

Procedural Skills

- Establishment and maintenance of the airway.
- Interpretation of hemodynamic data.
- Techniques of vascular access.
- Insertion of venous flow directed catheters.
- Techniques of ACLS and ATLS.
- Tube thoracostomy.
- Lumbar puncture.
- Physiologic monitoring techniques.
- Other: nasogastric tube or feeding tube insertion.

Knowledge Base

Each candidate rotating through the intensive care unit should develop a fundamental understanding of the diagnosis, incidence, etiology, microbiology, pathophysiology, signs, symptoms, treatments, prognosis and complications of the following conditions. The candidate must be able to recognise the severity of illness in these conditions, provide emergency and life saving support where required and followed up by an appropriate diagnostic and management plan.

- Coma and other Neurological problems
- Respiratory Failure
- Cardiac crises
- Renal Preservation and Support
- The abdomen
- Trauma
- Burns
- Hematological abnormalities and Blood replacement
- Sepsis
- Nutrition: enteral and parenteral
- Toxicology
- Endocrine disturbances of critical illness
- Organ transplantation
- Ethical, legal and philosophical considerations

Coma and other neurological problems

The trainee shall demonstrate knowledge of:

- The pathophysiology of coma and raised intracranial pressure (ICP)
- The investigation of coma, raised ICP and the monitoring techniques involved.
- The available treatment for cerebral resuscitation.
- Metabolic, structural and infectious causes of altered level of consciousness.
- Seizure abnormalities and systemic metabolic consequences of status epilepticus with emphasis on pharmacological management.
- Brain death.
- Polyneuropathies and myopathies of critical illness.
- Environmental and drug related psychopathology including anxiety, sleep disturbances, pain, withdrawal, hallucinations and ICU psychoses.

Respiratory Failure

The trainee shall demonstrate knowledge of:

- The normal anatomy of the respiratory system.
- The physiology of the gas exchange unit, chest wall and lung mechanics, airway dynamics and control of respiration.
- The pathophysiology of disease states leading to respiratory failure, including hypoxemic and hypercarbic respiratory failure.
- An approach to the management of the airway.
- Invasive and non-invasive ventilation techniques and modes.
- Timing of liberation and failure to liberate from mechanical ventilation.
- Complications of mechanical ventilation including ventilator associated pneumonia.

Cardiac Crises (*arrythmias, myocardial infarction, hypertensive emergencies*)

The trainee shall demonstrate knowledge of:

- Methods and application of Advanced Cardiac Life Support.
- Principles of invasive and noninvasive monitoring.
- Pathophysiology and treatment of heart failure.
- Management of ischemic heart disease and myocardial infarction.
- An understanding of cardiac arrhythmias including etiology and therapy..
- An understanding of cardiopulmonary interactions with an emphasis on right heart syndromes.
- Hemodynamic consequences of acute and chronic valvular abnormalities.

Shock States

The trainee shall demonstrate knowledge of:

- Diagnosis and understanding of the pathophysiology and types of shock.
- Understanding the in initial management of shock with emphasis on oxygen delivery and oxygen consumption.
- Practical knowledge of Early Goal Directed Therapy.
- Use of mixed venous oxygen saturation or pulmonary artery catheter-derived measurements to direct resuscitation of shock patients.
- Understand the separate roles of vasopressors and inotropic agents. The approach and limits to titrating this therapy.
- Understanding of multiple organ dysfunction and failure.

Renal Preservation and Support

The trainee shall demonstrate knowledge of:

- Ability to distinguish between prerenal, renal and postrenal failure.
- Pathophysiology, diagnosis, and treatment of common acid-base disorders.
- Pathophysiology, diagnosis and treatment of common fluid and electrolyte disorders.
- Knowledge of the interaction between drugs, nephrotoxins and the kidneys in both normal and diseased states.
- Indication and understanding of intermittent hemodialysis and CVVHDF.

The Abdomen

The trainee shall demonstrate knowledge of:

- The causes, diagnostic techniques and management of the acute abdomen.
- The diagnosis, medical, surgical and radiological management of upper and lower GI bleeding.
- The diagnosis and management of hollow viscus dysfunction.
- The diagnosis and management of acute and chronic hepatic failure with an emphasis on acute fulminant hepatic failure and indications and contraindications for liver transplantation. Knowledge of the liver's role in: the reticuloendothelial system, as a site for metabolism, the production of a variety of enzymes, detoxification of endogenous and exogenous substances and in hemostasis.
- The diagnosis, medical and surgical management of severe pancreatitis.

Trauma

The trainee shall demonstrate knowledge of:

- The need for continuing care of the traumatized patient with regard to all vital systems, whether or not these systems have received the primary trauma.
- The secondary insults that enhance the primary pathogenicity of traumatized organs.
- The long term sequelae, physical and emotional requirements and prognosis of traumatized patients.

Burns

The trainee shall demonstrate knowledge of:

- The pathophysiology of the phases of burn injury:
 - fluid and electrolyte imbalance
 - nutrition depletion
 - sepsis
 - reconstruction
 - rehabilitation
- The knowledge of the airway burn, smoke inhalation and impaired gas transport.
- The importance of environmental control.

Hematological Abnormalities and Blood Replacement

The trainee shall demonstrate knowledge of:

- White blood cell abnormalities including the role of neutropenia and the immunocompromised host.
- The pathogenesis and management of thrombocytopenia.
- Etiology and management of anemia.
- The coagulation and fibrinolytic sequences and disorders of these pathways including hypercoagulable states and coagulopathies.
- Blood component therapy and indications for transfusion.

Sepsis

The trainee shall demonstrate knowledge of:

- Available diagnostic techniques for infectious organisms.
- Epidemiology of infectious disease.
- The immunocompromised host and the diseases and treatment unique to the immunodeficient state.
- Techniques to control and limit nosocomial sepsis.
- Approach to the septic patient in terms of foci of infection.
- The understanding of the systemic inflammatory response syndrome and multiple organ dysfunction.
- The pharmacology, indications, complications, interactions, monitoring and efficacy of antimicrobial agents including antibiotics, antifungals, antivirals and antiparasitics.

Nutrition: Enteral and Parenteral

The trainee shall demonstrate knowledge of:

- Methods of assessing energy requirements and monitoring the effectiveness of supportive care.
- The indications, limitations, methods and complications of enteral and parenteral nutrition.
- The indications, methods, limitations and complications of various access routes for both enteral and parenteral nutrition.

Toxicology

The trainee shall demonstrate knowledge of:

- The importance of vital system support as the cornerstone of care in the intoxicated patient, together with specific antidotes or supportive therapy pertinent to individual intoxicants.
- The pharmacology of common intoxicants including absorption, distribution, detoxification and elimination of intoxicants.
- The available methods to decrease absorption and enhance excretion of intoxicants with emphasis on those agents requiring hemodialysis or hemoperfusion.
- The ongoing patient's needs for emotional and psychiatric support.

Endocrine Disturbances of Critical illness

The trainee shall demonstrate knowledge of:

- The pathophysiology, diagnosis and management of common endocrine disturbances.
- Recognition and treatment of endocrinological emergencies including thyroid storm, myxedema coma, DKA, hyperosmolar syndromes, extreme electrolyte disturbances, Addisons disease, and pheochromocytoma.
- Recognition and treatment of endocrine disturbances developing in the critically ill.
- Disorders of thermoregulation and normal body temperature regulation.

Organ Transplantation

The trainee shall demonstrate knowledge of:

- Indications and acute and chronic complications related to solid organ transplantation.
- Postoperative management concerns of patients undergoing solid organ transplantation.
- Immunosuppressive therapy and infectious complications.
- Diagnosis and therapy towards organ rejection and organ failure.
- Diagnosis and management of bone marrow transplantation complications.
- Specific areas of concern with the bone marrow transplant population including possible futility of care.

Ethical, Legal and Philosophical Considerations

The trainee shall demonstrate knowledge of these concerns as they relate specifically to the critically ill:

- Including consent, power of attorney and alternate decision-makers.

- Resuscitation statistics and outcome.
- Recognition of the legal concerns with the critically ill including mechanism of injury and patient and societal interactions.
- Understanding decisions regarding end of life care.

Communicator

1. Establish a positive therapeutic relationship with the patient and family and communicate with them as well as the admitting service about daily patient progress
2. Seek out and synthesize relevant information from other sources, including the patient's family, caregivers, and other professionals
3. Communicate with ICU team (nurses, residents, attending staff) about patient care issues
4. Keep clear, concise, legible documentation of daily patient progress in the patients' hospital chart
5. Encourage patients, families, and relevant health professionals in shared decision-making to develop a plan of care
6. Participate in end-of-life discussions with ICU team and family members

Collaborator

1. Recognize the importance of the family physician in the outpatient longitudinal care of the patient and to seek input in terms of end-of-life issues and other relevant decisions when appropriate
2. Enlist the help and advice of consultants when indicated
3. Work with members of the ICU team to provide optimal patient care (nurses, physicians, dieticians, physiotherapists, pharmacists)
4. Participate effectively in interprofessional team meetings
5. Work with other professionals to prevent conflicts

Manager

1. Efficiently manage the daily care of several critically ill patients
2. Efficiently and effectively manage new admissions into the ICU
3. Manage appropriate discharge from the ICU
4. Effective time management
5. Participate in systemic quality process of evaluation and improvement, such as patient safety initiatives

Health Advocate

1. Demonstrate attention to patient safety
2. Honour patient confidentiality
3. Obtain consent when required

Scholar

1. Demonstrate commitment to ongoing personal education through posing an appropriate learning question based on the patients seen in the ICU and access and interpret the relevant evidence
2. Critically appraise retrieved evidence to address a clinical question generated by critically ill patient care issues and integrate the conclusion into clinical care
3. Demonstrate ability to teach other members of the ICU team through selecting effective teaching strategies

Professional

1. Display compassion, empathy, integrity, honesty and ethical behaviour
2. Recognize and appropriately deal with ethical issues encountered in the ICU setting
3. Appropriately manage conflicts

Coronary Care Unit: Rotation Specific Objectives

PREAMBLE

Cardiovascular medicine is an integral part of the practice of General Internal Medicine. Cardiac patients account for a majority of the cases seen by a general internist. Accordingly, the post graduate program in Internal Medicine needs to prepare its trainees to enable them to accurately diagnose and manage a wide variety of acute and chronic cardiovascular diseases.

The Coronary Care Unit affords exposure to a wide variety of cardiovascular disease in a supervised setting. This setting allows for graded independence as the trainee gains more comfort and knowledge of specific cardiovascular diseases. However, it should be recognized that the CCU is not an appropriate venue for the exclusive training of cardiovascular medicine to medical residents. The CCU experience needs to be combined with appropriate ambulatory rotations and didactic teaching sessions in order to provide a complete cardiovascular experience for postgraduate trainees in Internal Medicine.

The high prevalence of ischemic heart disease in our society makes this aspect of cardiovascular medicine an obvious focus for resident education. However, the practicing general internist also requires competence in the diagnosis and management of valvular heart disease, arrhythmia management and heart failure. Moreover, trainees need to be knowledgeable regarding the primary and secondary prevention of atherosclerotic vascular disease. Trainees in general internal medicine also need to gain competence in the management of critically ill cardiac patients, including those in cardiogenic shock. Specifically, trainees need to be facile in the diagnosis and initial stabilization of such patients and be knowledgeable regarding the criteria for their appropriate transfer to a tertiary care facility.

Postgraduate trainees need to be aware of the indications and appropriate use of common cardiovascular therapeutics and diagnostics, including their limitations and contraindications. Trainees in internal medicine also require competence in the cardiovascular physical exam and interpretation of electrocardiograms. The CCU can provide an environment in which trainees can gain more comfort in both these areas, but it should be recognized that an ambulatory setting (and not a high volume critical care area such as the CCU) may ultimately be a superior venue to introduce and reinforce learning in these important areas.

At the completion of rotation in the Coronary Care Unit, the GIM PGY4-5 trainees will demonstrate the ability to function in the following areas described below.

Medical Expert

a. ISCHEMIC HEART DISEASE

1. Demonstrate an understanding of the pathophysiology, and natural history of atherosclerotic coronary artery disease (CAD).
2. Demonstrate expertise in the recognition and appropriate triage of CAD patients who present with an unstable acute coronary syndrome (ACS), which comprises non-ST elevation and ST elevation myocardial infarction and unstable angina.
3. Elicit, present, and document a complete chest pain history in order to diagnose chest pain as a result of an unstable cardiac condition and be able to provide a rational and cogent differential.
4. Apply knowledge regarding the use of ancillary biochemical testing or other imaging techniques in order to appropriately triage such patients for appropriate medical therapy and/or revascularization techniques. This requires knowledge of the utility (including indications, contraindications and limitations) of common cardiovascular tests including static electrocardiography (ECG), exercise stress testing, nuclear imaging, echocardiography, plain chest roentgenography, computed tomography, right heart catheterization and intracardiac pressure measurement and coronary angiography.
5. Demonstrate an understanding of the common ECG patterns of unstable cardiac disease, and the limitations of this technique in diagnosing patients with ischemic type chest pain.
6. Demonstrate an understanding of the indications and limitations of invasive and noninvasive tests for risk stratification prior to discharge following an initial presentation with a presumed or actual acute coronary syndrome.

b. CRITICAL CARE CARDIOLOGY

1. Demonstrate expertise in the diagnosis and initial management of cardiogenic shock.
2. Demonstrate an understanding of normal and shock cardiovascular physiology, and ability to differentiate cardiogenic shock from shock states of other etiologies.
3. Demonstrate an understanding of the mechanical complications of myocardial infarction that can lead to the development of cardiogenic shock.
4. Demonstrate an understanding of the supportive technologies for the treatment of cardiogenic shock, including right heart catheterization and intracardiac pressure monitoring, intravenous inotropic and vasoactive medications and intra-aortic balloon pumps.
5. Demonstrate the ability to recognize and understand the appropriateness of timely mechanical revascularization for cardiogenic shock.

c. VALVULAR HEART DISEASE

1. Apply knowledge and expertise in the accurate diagnosis of common valvular and peri-valvular heart lesions including mitral stenosis, mitral regurgitation, aortic

stenosis, aortic regurgitation, mitral valve prolapse and hypertrophic obstructive cardiomyopathy. The initial diagnosis of these conditions is usually made on physical examination.

2. Demonstrate effective cardiac physical examination skills focusing on how to differentiate these and other valvular and subvalvular lesions using palpation and static and dynamic auscultation.
3. Demonstrate an understanding of the natural history of these conditions, their appropriate medical therapy and the indication and timing of definitive mechanical intervention if appropriate.
4. Demonstrate an understanding of the indications of antibiotic prophylaxis of various valvular and perivalvular lesions.
5. Demonstrate an understanding of secondary conditions that predispose individuals to develop various valvular heart conditions, including valvular lesions that complicate acute cardiac syndromes and inherited collagen vascular conditions.

d. ARRHYTHMIAS

1. Demonstrate the ability to consistently and accurately recognize a normal ECG.
2. Apply knowledge and expertise in the electrocardiographic interpretation of common atrial and ventricular arrhythmias including, but not limited to, atrial fibrillation, atrial flutter, AV reentrant tachycardia, AV nodal tachycardia, ventricular tachycardia, acquired AV block, bundle branch blocks and hemiblocks.
3. Demonstrate an understanding of the pharmacological management of common tachyarrhythmias and be familiar with the common indications for permanent and temporary cardiac pacing for bradyarrhythmias.
4. Demonstrate an understanding of the indications for, and the ability to apply the techniques of, emergent DC cardioversion for hemodynamically significant tachyarrhythmias.

e. HEART FAILURE

1. Demonstrate expertise in the ability to define and diagnose the clinical features of diastolic and systolic heart failure.
2. Demonstrate an understanding of the underlying pathophysiology and etiologies that can result in systolic or diastolic dysfunction, and the ability to formulate a rational diagnostic approach to the heart failure patient.
3. Demonstrate the ability to properly and consistently diagnose and manage acute heart failure, including the use of pharmacotherapy of chronic heart failure.
4. Demonstrate an understanding of the emerging technologies for heart failure, including pacing, ventricular assist devices, implantable cardioverter defibrillators and cardiac transplantation.

Communicator

1. Demonstrate effective cardiovascular consultant skills, including the ability to generate and present a competent consultative report, both in written and oral forms.
2. Demonstrate the ability to care for their patients diligently and accurately track their progress in the medical chart, which in turn should reflect a high level of clinical thinking.
3. Demonstrate the ability to generate a complete and cogent discharge summary.
4. Establish positive therapeutic relationships with patients and their families that are characterized by trust, respect and empathy
5. Effectively address challenging communication issues such as obtaining informed consent, delivering bad news, and addressing anger, confusion and misunderstanding

Collaborator

1. Communicate with referring physicians through effective and concise dictated or written communications
2. Demonstrate the ability to work alone and in a group setting, and be aware of when to ask for help from superiors.
3. Recognize and respect the roles of other members of the CCU health care team, including but not limited to nurses, physiotherapists, respiratory therapists and social workers.
4. Enter into interdependent relationships with other professions for the provision of quality care.

Manager

1. Implement patient care practices consistent with the goals of care in patients considering available health resources.
2. Employ information technology appropriately for patient care.

Health Advocate

1. Educate patients and families about and promote the importance of long-term healthy behaviors and preventive cardiology.
2. Demonstrate an understanding of the concept of primary and secondary prevention for atherosclerotic heart disease.
3. Apply knowledge and expertise in the risk stratification of patients at risk for coronary artery disease, and the appropriate titration of medications to prevent acute events.
4. Demonstrate an understanding of the evidence based pharmacological and non-pharmacological therapies that reduce the risk of recurrent events following an acute coronary syndrome.

Scholar

1. Demonstrate the ability of continued self-learning and self-assessment and knowledge acquisition. Formal and informal bedside and didactic teaching made available to residents should serve as a starting point for trainees.
2. Critically appraise retrieved evidence in order to address clinical questions generated by the types of patient problems seen in the CCU and integrate the conclusions into clinical care.
3. Collaboratively identify the learning needs and desired learning outcomes of others.

Professional

1. Demonstrate the ability to care for patients assigned to their care in a responsible and professional manner.
2. Recognize and appropriately respond to ethical issues encountered in the CCU.

Ambulatory Cardiology: Rotation Specific Objectives

Medical Expert

1. Develop the clinical skills to diagnose acute and chronic cardiac conditions
2. Recognize spectrum of presentations of cardiac conditions including hypertension, arrhythmias, CAD, valvular heart disease, CHF, and adult congenital heart disease.
3. Learn basics of ECG, stress test, Holter interpretation, cardiac event monitors and ambulatory blood pressure monitoring.
4. Understand role of Echo, cardiac cath, nuclear cardiology testing.
5. Develop knowledge of therapeutic agents and procedures used for cardiac patients
6. Assess risk factors predisposing to cardiac conditions
7. Learn to risk stratify patients and indications for non-invasive and invasive investigations
8. Learn primary and secondary prevention strategies for cardiac patients: pharmacological and non-pharmacological

Communicator

1. Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect and empathy
2. Respect patient confidentiality, privacy and autonomy in all patient encounters
3. Encourage discussion, questions and interaction in the encounter
4. Effectively present oral reports of clinical encounters and plans
5. Prepare concise consultations and make appropriate recommendations

Collaborator

1. Recognize the importance of the referring physician in the overall care of the patient
2. Communicate with referring physicians through effective and concise dictated or written communications
3. Work closely with attending and other medical staff to assess, plan and integrate care for individual patients
4. To understand the roles and responsibilities of other specialists and allied health staff and provide referrals when appropriate

Manager

1. Recognize the importance of just allocation of healthcare resources (e.g. hospitalization, cardiac catheterization) balancing effectiveness, efficiency and access with optimal patient care
2. Apply evidence and management process for cost-appropriate care through appreciating the cost effectiveness of first, second and third line agents
3. Manage patient flow in the clinic and timely and appropriate follow-up

Health Advocate

1. Educate patients and families about and promote the importance of long-term healthy behaviors and preventive cardiology
2. Counsel patients and their families on risk factors and risk factor modification using the evidence from primary and secondary prevention for atherosclerotic heart disease studies including smoking cessation, physical activity, lipid lowering therapy, blood pressure control, and glycemic control.
3. Identify opportunities for health promotion and disease prevention in the community setting and advocate for public health

Scholar

1. Recognize and reflect on learning issues in practice and pose an appropriate learning question
2. Access the relevant evidence through literature searches
3. Critically appraise the retrieved evidence in order to address the clinical question
4. Present the reviewed topic and integrate the critical appraisal conclusions into clinical care

Professional

1. Exhibit appropriate professional behaviors in practice, including honesty, integrity, compassion and respect
2. Recognize and appropriately respond to ethical issues encountered in practice
3. Appropriately manage conflicts of interest