1. Objectives of Training and Specialty Training

1.1 Objectives of Training

Source: http://rcpsc.medical.org/residency/certification/training/neurosurg_e.html

Definition

Neurosurgery as a discipline arose as a result of an increasing need for special expertise in the surgical and non-surgical treatment of various diseases affecting the nervous system and supporting structures. Thus, the discipline involves the ability to diagnose, and the technical expertise for the effective surgical treatment of the congenital and acquired abnormalities, trauma and diseases affecting the nervous system which, potentially, can be prevented, alleviated, or cured.

General Objectives

Residents must demonstrate the knowledge, skills and attitudes relating to gender, culture and ethnicity pertinent to Neurosurgery. In addition, all residents must demonstrate an ability to incorporate gender, cultural and ethnic perspectives in research methodology, data presentation and analysis.

On completion of the educational program, the graduate physician will be competent to function as a consultant in Neurosurgery.

The resident must be well grounded in the general principles of both Neurosurgery and surgery in general. Thus, the fully-trained resident must demonstrate proficiency and expertise in the care of neurosurgical emergencies, the principles of pre- and post-operative general surgical care, the treatment of deep vein thrombosis, the management of fluid and electrolyte disturbances, the treatment of sepsis, the use of antibiotic therapy and an understanding of the implications of antibiotic prophylaxis, the understanding of vascular shock and its treatment, an understanding of the diagnostic importance of disordered blood gas analyses and their treatment, and the longitudinal (acute, subacute and chronic) management of parenteral nutritional support.

In addition to satisfactory knowledge, clinical ability, and surgical skill as these apply to surgical diseases of the nervous system, the resident will be expected to have shown familiarity with, and knowledge of, the related disciplines of basic neuroscience, neurology, neuropathology, neuroimaging, and neuropsychology.

Residents must demonstrate a detailed knowledge of the normal structure and function of the nervous system and of the pathological processes that derange it. They must demonstrate the diagnostic skills to identify congenital and acquired abnormalities, trauma, and diseases affecting the nervous system and the therapeutic skills for ethical and effective patient care. They must develop learning strategies to enhance their
knowledge and expertise so as to maintain excellent and current standards of care. They must become effective neurosurgical consultants with respect to patient care, education of colleagues and the provision of medical legal opinions.

Finally, and most important, the resident is expected to demonstrate unequivocal high moral and ethical behaviour.

Specific Objectives
Revised into CanMEDS format - November 2003

At the completion of training, the resident will have acquired the following competencies and will function effectively as a:

Medical Expert/Clinical Decision-Maker

General Requirements

- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice for appropriate clinical decisions.
- Demonstrate effective consultation services with respect to patient care, education and legal opinions.
- Recognizes and manages emergency conditions promptly, calmly, and with accurate prioritization.
- Possesses scientific and clinical knowledge adequate to perform diagnostic and therapeutic manoeuvres.
- Records a complete, accurate, well-organized history and physical examination.

Specific Requirements

Upon completion of training, the neurosurgical residents must have demonstrated the following:

Knowledge

1. A comprehensive general knowledge of the principles of surgery, as noted above under General Objectives, as well as specific knowledge of the anatomy of those areas outside the nervous system which are involved in the neurosurgical operations, e.g. the abdominal wall and the contents of the peritoneal cavity.
2. An intimate and precise knowledge of the anatomy of the central and peripheral nervous systems, including the spine and skull, and a working knowledge of the other basic neuroscientific disciplines including physiology, pathology, embryology, endocrinology and neuropsychology, including psychometry.
3. A thorough understanding of the general field of neurology, with particular emphasis on those neurological entities which have important differential diagnostic considerations with respect to neurosurgical care.
4. Familiarity with and understanding of clinical electrophysiology (electroencephalography [EEG], electromyography [EMG], electrocorticography [EcoG], evoked potentials, and neuro-otology), cerebral vascular physiology including cerebral blood flow, and functional cortical localization as derived from neuropsychoical principles.

5. The ability to interpret neuroradiological examinations (plain x-rays, computed tomography [CT], magnetic resonance imaging [MRI], angiography and ultrasonography and radionuclide imaging.

6. An understanding of the physiology and fundamentals of clinical endocrinology, especially neuroendocrinology.

7. An understanding of neuro-ophthalmology and neuro-otology including perimetry, electronystagmography, and audiometry.

8. An understanding of the physiology and fundamentals of neuroanesthesia.

9. An awareness of gross and microscopic neuropathology such that the recognition of morphological features allows the formulation of a differential (morphological) diagnosis with respect to the common neurological and neurosurgical disorders.

10. As a basis for clinical competence, the neurosurgeon must be familiar with and able to describe and discuss:
   - the clinical features, including presenting signs and symptoms, natural history, and prognosis, for the major neurosurgical disorders;
   - the embryological development of the nervous system and how congenital anomalies arise from disorders of this process;
   - the gross and microscopic anatomy of the nervous system, nerve roots, peripheral nerves, muscles and the vascular system of the nervous system; this includes the recognition of the structures in both anatomical and neuro-imaging formats;
   - the anatomy, composition and physiology of myelin;
   - the mechanisms underlying the resting membrane potential, conduction of an action potential and synaptic transmission;
   - axonal transport;
   - the major neurotransmitters and neuromodulators including their clinical significance;
   - the role of trophic factors in the nervous system;
   - the formation and circulation of the cerebrospinal fluid (CSF);
   - the biologic basis for the blood-brain, blood-cerebrospinal fluid and blood-nerve barriers, and their clinical importance in health and disease;
   - cerebral blood flow and cerebral metabolism;
   - the anatomical and physiological basis of consciousness, sleep and wakefulness;
   - the anatomical and physiological basis of speech, memory, learning and behaviour;
   - the anatomical and physiological basis of the following systems: special senses, sensory, motor, autonomic, limbic, and reticular activating system;
   - the physiology of the following major subdivision of the central nervous system: major cortical regions, basal ganglia, thalamus, cerebellum, reticular activating system, respiratory centres and the limbic system;
Clinical Skills

1. The thoroughly practised discipline of obtaining a detailed history and carrying out a detailed neurological examination in order to provide a comprehensive differential diagnosis and localization of diseases affecting the central nervous system.

2. The demonstration of skills in ordering and interpreting appropriate general diagnostic tests (hematology, x-ray, chemistry, etc.) for the satisfactory management of patients.

3. The demonstrated ability to order and interpret specific diagnostic tests relating to the management of neurosurgical patients.

4. The provision of ongoing, high quality, post-operative neurological assessment and care, including neuro-intensive care.

5. The ability to interpret neuroradiological examinations.

Technical Skills
At the completion of training, the neurosurgical residents must have demonstrated a thorough understanding of the surgical anatomy, and the technical ability to satisfactorily and safely perform in patients of all ages:

2. Elective and emergent craniotomies (supratentorial and posterior fossa) and the subsequent:
   - removal of intracranial hematomata;
   - repair of cerebral aneurysms;
   - removal of arteriovenous malformations;
   - surgical treatment of benign and malignant intracranial tumours.
3. The utilization of image-guidance (neuronavigation) technology.
4. The transsphenoidal removal of pituitary tumours.
5. The treatment of simple and compound depressed skull fractures.
6. Neck dissection appropriate to:
   - exposure of the carotid arteries and endarterectomy;
   - tracheostomy;
   - anterior cervical disectomy and fusion.
7. Management of cervical, thoracic and lumbar disc pathology, including the relevant anterior and posterior approaches.
8. The treatment of spinal injuries and other spinal disorders, including internal and external spinal stabilization.
10. The following treatments of cranial and peripheral nerve:
    - procedures for trigeminal neuralgia and other cranial nerve disorders;
    - decompression of the median nerve in the carpal tunnel;
    - transposition or decompression of the ulnar nerve;
    - suture of lacerated nerve.
11. The ability to manage basic/general pediatric neurosurgical conditions including:
    - hydrocephalus; including the etiology, diagnosis, and management by different shunts including ventricular peritoneal, ventriculoatrial, and ventriculopleural, as well as lumboperitoneal.
    - simple craniosynostoses;
    - meningocele, myelomeningocele, and encephalocele;
    - tethered spinal cord syndrome.

Technical Skills in Certain Subspecialized Areas

1. Endoscopy for intracranial cyst fenestration: 3rd ventriculostomy for hydrocephalus; endoscopy for tumour biopsy or excision, and endoscopy assisted microneurosurgery. Ability to perform endoscopic third ventriculostomy, septostomy and develop some familiarity with more complex procedures such as removal of colloid cysts of the third ventricle.
There are certain subspecialized areas within the specialty which are not necessarily a part of neurosurgical training programs in general. The minimum expected of the neurosurgical resident in these areas is an awareness of the techniques, an understanding of the relevant surgical anatomy and recognition of the principles of management. They are as follows:

1. Functional neurosurgery pertaining to:
   - the treatment of pain (including dorsal column/deep brain stimulation), epidural infusion of analgesics;
   - the treatment of spasticity;
   - epilepsy surgery including the use of local anesthesia, functional cortical localization;
   - stereotaxic surgery for movement disorders.
2. Other cranial and peripheral nerve surgery brachial plexus lesions.
3. Radiosurgery.
4. Specialized pediatrics procedures:
   - complex craniofacial disorders;

**Communicator**

**General Requirements**

- Establish therapeutic relationships with patients/families
- Obtain and synthesize relevant history from patients/families/communities
- Listen effectively
- Discuss appropriate information with patients/families and the health care team

**Specific Requirements**

The neurosurgical residents will:

1. Document appropriate histories, physical examinations, and progress notes.
2. Establish communication with the patient and family that supports a trusting and open relationship.
3. Provide information to the patient and family that supports the patient's participation in decision-making.
4. Respond appropriately to patients, families, and colleagues, who express anger, hostility, or a complaint.
5. Share information with other healthcare providers that supports teamwork and effective care planning and provision in an expeditious manner.
6. Be sensitive to the needs of patients and their families as they are affected by gender, cultural and ethnic perspectives.
7. Be able to communicate in a clear, concise and collegial manner with referring physicians.
8. Be able to present data to a group of peers or allied health personnel in a clear and understandable way.

9. Learn the avenues of communication with institutional managers and administrators to be able to clearly express the needs of his/her service.


**Collaborator**

**General Requirements**

Consult effectively with other physicians and health care professionals.
Contribute effectively to other interdisciplinary team activities.

**Specific Requirements**

1. Learn to communicate with other physicians and health care professionals to contribute effectively to interdisciplinary team activities to improve patient care in the management of neurosurgical disorders that benefit from such approaches.

2. Be able to collaborate with allied health care personnel in developing public education tools.

3. Be able to work with healthcare governance at all levels.

4. Contribute administrative skills to the physician team, including direction.

5. Be able to delegate responsibilities where and when appropriate.

6. Listen to concerns expressed by others providing care and assist in resolving these concerns if appropriate.

**Manager**

**General Requirements**

Utilize resources effectively to balance patient care, learning needs, and outside activities.
Allocate finite health care resources wisely.
Work effectively and efficiently in a health care organization.
Utilize information technology (eg. searching medical databases) to optimize patient care, life-long learning and other activities.

**Specific Requirements**

The neurosurgical residents must:

1. Learn time management for clinical activity, learning needs and family and recreational activities.

1. Learn to function efficiently and effectively within a health care organization so as to optimize the application of existing resources.
1. Learn to interact with the larger community to preserve and secure adequate resources for the provision of excellent care.

1. Utilize current information technology for optimal patient care and for personal lifelong learning.

**Health Advocate**

**General Requirements**

Identify the important determinants of health affecting patients.  
Contribute effectively to improved health of patients and communities.  
Recognize and respond to those issues where advocacy is appropriate.

**Specific Requirements**  
Considering the disabling nature of many conditions affecting the nervous system, neurosurgical residents must learn to:

1. Identify the important determinants of health that affect their patients.  
2. Contribute effectively to injury prevention, health maintenance and health enhancement programs in the community.  
3. Be effective advocates of practices that enhance health and well-being.

**Scholar**

**General Requirements**

Develop, implement and monitor a personal continuing education strategy.  
Critically appraise sources of medical information.  
Facilitate learning of patients, house staff/students and other health professionals.  
Contribute to development of new knowledge.

**Specific Requirements**  
The neurosurgical resident must:

1. Acquire current techniques to appraise sources of medical information and develop, implement and monitor a personal education strategy so as to become life-long learners.  
2. Acquire a sufficient awareness of the scientific method, including the principles of epidemiology, in order to critically analyse the literature for continuing medical education and investigation.  
3. Learn to facilitate the learning of patients, medical colleagues, both junior and senior, and other health care professionals.  
4. Strive to contribute to the discovery and development of new knowledge.

**Professional**

**General Requirements**
Deliver highest quality care with integrity, honesty and compassion. Exhibit appropriate personal and interpersonal professional behaviours. Practise medicine ethically consistent with obligations of a physician.

Specific Requirements
The neurosurgical resident must:

1. Have a thorough appreciation of the necessity for methods of quality assurance in the delivery of health care.
2. Learn to deliver the highest quality care with integrity, honesty and compassion, and understand the importance of bio-ethical issues in the delivery of health care.
3. Have the deportment of a professional including the demonstration of a sincere, caring attitude in dealing with patients.
4. Fulfill medical, legal, and professional obligations of the specialist.
5. Meets deadlines, is punctual, monitors patients, and provides follow-up.
6. Understands the principles of ethics and applies these in clinical situations.
7. Demonstrates self-assessment, seeks and accepts advice when necessary.

1.2 Specialty Training Requirements in Neurosurgery
These specialty training requirements apply to those who began training on or after 1 June 1994.

Six years of approved training. This period must include:

1. Two years of core training in surgery (please see the Objectives attached to this document).
2. Three years of approved resident training in neurosurgery including one year of senior residency, in a fully approved program providing progressively increasing responsibility for patient care: up to six months of this period may be spent in pediatric neurosurgery;
3. One year of training that must include:
   - three months of residency in neurology;
   - three months of residency in neuropathology;
   - three months of residency in neuroimaging;

and that may include:

   - further approved resident training in neurosurgery: (additional training in pediatric neurosurgery may be included under this section);
   - clinical or basic research in a department approved by the College;
   - full-time study of basic sciences in a department approved by the College;
   - other approved training or research, relevant to the objectives of the specialty and acceptable to the director of the training program, at a hospital or university centre in Canada or abroad.
1.3 Royal College Objectives of Training and Specialty Training Requirements

Click here for the Royal College Objectives of Training and Specialty Training Requirements in Neurosurgery

2. Neurosurgery Examination

The Royal College of Physicians and Surgeons of Canada: Neurosurgery Examination Information

3. Format of the Comprehensive Objective Education in Neurosurgery

Source: http://rcpsc.medical.org/residency/certification/examformats/329_e.php

Comprehensive objective examinations make it possible to obtain a more complete evaluation of the candidate's strengths and weaknesses. The important feature of comprehensive objective examinations is that candidates do not need to pass the written component in order to take the oral component. Success or failure is based on consideration of all components of the examination. The comprehensive objective examinations are considered a "whole" and cannot be fragmented. Candidates who are unsuccessful at this examination must, if within their period of eligibility, repeat all components of the examination.

3.1 Principles of Surgery Examination

This examination may be taken after a minimum of two years of training that meet the specialty training requirements in one of the surgical disciplines recognized by the College. All candidates must pass this examination to be eligible for the comprehensive objective examination.

3.2 Written Component

Objectives
To assess the candidate's factual and theoretical knowledge in basic and clinical neurosciences as related to neurosurgery (as laid out in the Royal College syllabus for neurosurgery).

Format
The written component consists of two three-hour papers.
Short Answer questions pertinent to clinical neurosurgery - Principles and Practice will be included on both papers. Also included in both papers will be short answer questions on Basic Neurosciences with and without illustrations.

3.3 Oral Component

Objectives
The oral component of the examination covers a broad range of clinically applied knowledge and performance, particularly:

1. Clinical Management Skills (including neuroradiological interpretation)
2. Surgical Problem-Solving
3. Judgment and Safety
4. Communication Skills

Format
The oral component is comprised of three sections of a total duration of approximately 3 hours. There will be stations devoted to intracranial and vascular problems in neurosurgery, stations to spinal and peripheral nerve disorders and station to pediatric neurosurgery. Candidates rotate from station to station.

Each examiner will have prepared topics to be covered, supported by slides, radiologic or photographic imaging and other materials. Each examiner will have a checklist to facilitate evaluation of the candidates' performance, as discussions of the topics proceed. Candidates are free to make notes, if desired.

The oral component will be conducted in a friendly, courteous yet formal and professional manner.

Revised October 2004
Web page updated: 3 November 2004

4. Letter to Rotating Residents

Dear Rotating Resident,

Welcome to adult Neurosurgery at the Hamilton Health Sciences (General Site). We hope you will enjoy your rotation. This outline will summarize the activities on our service and inform you of your responsibilities. Please submit a copy of your program’s learning objectives for this rotation so that we may assist you in fulfilling them.

The Neurosurgical service is arranged in two teams. The RED team has two attending staff (Dr.Murty and Dr.Kachur), and the BLUE team has three attending staff (Drs. Reddy, Devilliers and Wells). Each team has a senior resident and one of the teams has a clinical nurse specialist (Joanna Pierazzo) on a six monthly alternating basis. Please
contact the senior most resident (Dr. Louis Crevier) through the paging system at the Hamilton general Hospital as soon as possible so that you may be assigned to a team. The senior neurosurgical resident on each team will usually make up your call schedule. The call in from home and is not to exceed 1 in 3 as per PAIRO contract guidelines. Please note that call on week days is from 1700 to 0800 hrs and weekend call is from 0800 hrs to 0800 hrs. If you have any specific needs/vacation plans, please notify Dr. Crevier as soon as possible so accommodations can be made.

You are expected to be punctual at work, and diligent with regards to patient care. You will be expected to make rounds with your team before starting in the operating room/other activities of the service. During your rotation, you are expected to attend the staff’s offices and clinics (some out of town) as often as possible. You are also expected to make rounds with your team at the end of the day, and handover to the resident on call. The bulk of your clinical work will be at the General site, with the patients being admitted to 7west, 6 west, 7 south or ICU. On the blue team at times you may have to spend some of your time at the St. Joseph’s Hospital with Dr. Reddy.

You are expected to be courteous in your dealings with other residents, medical and paramedical staff and patients. While you are expected to provide service during your rotation, you are expected to achieve your educational objectives as well. We would like this rotation to be enjoyable for all concerned. If there are any issues that arise during your rotation that cannot be resolved by the senior resident, please do not hesitate to contact either Dr. Hollenberg or Dr. Reddy.

In your dealings with patients and their relatives, please make sure that you coordinate with the rest of the team. When there are multiple relatives, identify the closest and the most appropriate family member and encourage the family to have one spokesperson who can be involved with most of the communications. Please make sure that the whole team (including paramedical staff) conveys similar information to the families. If there are any concerns regarding your dealings with the patients/their relatives, please let your senior resident/staff know as soon as possible.

**Resources:** All the computers at the general site can be used to do literature searches. We do have a small library but this is still in development. Most staff has relevant books in their offices as well. You are welcome to use all the resources of our service when you are with us, but please return any books/other educational resources when you leave our service. Specifically, please DO NOT use the learners’ room after you complete your rotation.

**Educational Activities:**
Tuesday 7-8 am. Once a month there will be research rounds for the Neuroscience and trauma program. The details are being worked out.

Wednesday 9-11 am. MUMC: Core program for the neurosurgical residents. Once a month, there are spine teaching sessions at MUMC on Wednesday mornings.
Friday 7-11am. NAC conference room: Friday mornings are the educational days for our service. The first hour is typically case presentation and x-ray based resident learning sessions, though some times, cases are presented for other staff members’ opinions. The second hour consists of the combined Neurology- Neurosurgery presentations (alternates between neurosurgery and Neurology though at times Neuroradiology and Neuropathology participate). The third hour is usually presented by one of the residents (including you at times) and is didactic. Once a month, there are mortality-morbidity rounds at 7am. At times Bioethics, Medicolegal issues and clinical epidemiology may be the topics. The fourth hour is usually for brain cutting that is conducted by Dr.Provias/Sur of the Neuropathology service.

**Walk Around Rounds:** We are in the process of arranging “walk-around rounds” once a week with all the staff from each team.

**Journal Club:** The division has monthly journal club meetings on the first Monday of the month. The locations vary depending on the staff member hosting the journal club. You are all encouraged to attend the journal club and participate actively.

**Ambulatory Care:** NAC (Neuroscience Ambulatory Centre) is our out-patient clinic. This is used as well as surgeons’ offices to see patients. All the surgeons also see patients in their offices. At times, you may have to assess a patient in the assessment area of the 7 west ward, or in the emergency room, depending on the urgency of the situation.

**Outreach Clinics:** There is currently a satellite clinic in St. Catherine’s some Tuesday afternoons for those working with Dr.Reddy. A similar clinic is attended by Dr.Murty.

**Oncology Clinics:** Drs. Reddy, Murty and Devilliers also participate on a rotating basis in the multimodality brain tumor clinic at the cancer centre on Thursdays (9am to 12 am).

**Operating Room Work:** Depending on your specialty and objectives, you can decide as to how much time you wish to spend in the operating room. The resident working with Dr. Reddy is encouraged to go to the St. Joseph’s Hospital when he operates there (all day Monday usually, but sometimes at other times). Just because you are on one team does not preclude your participation in ANY of the divisions’ educational activities.

**Your Responsibilities:**

- To follow the patients on the wards/ICU of the staff person/persons you are assigned to.
- To round on your teams’ patients in the morning at 7am (starting on 7west)
- To take call for your team during the day (consults in ER and wards etc)
- To round on patients in your team at the end of the day with your team.
- To make daily notations on the charts. Please make sure you note the date and the time.
- To contact family physicians periodically to update them as to the progress of the patients that you are involved with.
To dictate discharge summaries on ALL the patients discharged during your time on the service at the time of discharge or soon thereafter.
To complete the confidential WebEval faculty evaluation forms.

Our responsibilities:

To provide as many educational opportunities as possible for you in and out of the operating room.
Guide you in the right direction in dealings with peers, medical and allied staff.
To meet with you halfway during your rotation to assess whether things need to be changed. You are encouraged to meet with any of the staff to provide feedback about the rotation.

Reading List:

Handbook of neurosurgery by Greenberg.
Handbook of clinical neurology by John Patten.
Examination of the nervous system by R.T Ross

Access to staff:
Dr.Devilliers
Dr.Murty
Dr.Reddy
Dr. Wells
Dr.Kachur
Dr.R.Hollenberg

We would appreciate it if you could leave your home phone numbers. Pagers, E-mail addresses etc with the senior neurosurgical resident you are working with. The staff person you are working with may also wish this information.

Yours Sincerely,
Robert Hollenberg
Program Director in Neurosurgery
Kesava (Kesh) Reddy
Division Head in Neurosurgery

5. Rotation Specific Objectives

5.1 Anesthesia

General Aims

1. To stabilize and to care for the critically ill patient.
2. To improve depth of knowledge, technical skills and decision-making capacity in the care of the anesthetized patient intraoperatively and post-operatively
Educational Objectives

Clinical Skills
Given a patient who is anesthetized or in the post-operative situation, the neurosurgical resident is expected to be able to do the following to the satisfaction of his/her supervisor(s):

1. Take a relevant history.
2. Perform an acceptable physical exam concentrating on the relevant areas.
3. Arrive at an appropriate differential diagnosis.
4. Order appropriate laboratory, radiologic and other diagnostic procedures demonstrating knowledge in the interpretation of these investigations.
5. Arrive at an acceptable plan of management, demonstrating knowledge of the various methods of monitoring, and both non-operative and operative management of the disease process.
6. Manage the patient throughout the entire anesthetic experience including potential complications.

Knowledge Base
Given a preoperative or postoperative patient, the neurosurgical resident must be able to perform the clinical skills listed in section 1, and be able to demonstrate to the satisfaction of his/her supervisor(s) a fundamental knowledge and understanding of the specific disease processes in 2. This is meant to be a guide and is not exhaustive or exclusive.

1. Cardiac arrest and other cardiac crises such as arrhythmias, diminished organ perfusion, pulmonary edema, myocardial infarction, severe hypertension.
2. Shock.
3. Respiratory failure.
4. Coma, status epileptics, and acute neuromuscular diseases.
5. Sepsis.
6. Acid-base disorders, Fluid and electrolyte disorders and principles of renal preservation and support.
7. Hepatobiliary disease as it relates to the neurosurgical patient’s peri-operative period.
8. Vascular crises.
9. Endocrine disturbances in the critically ill related to water and/or glucose metabolism and adrenal, parathyroid, thyroid and pituitary dysfunction.
10. Coagulopathies and blood and blood product replacement therapy.
12. General pharmacology of commonly used drugs in the critically ill.
13. Hypo- and hyperthermia syndromes and other perioperative high-risk conditions.
14. Burns and Trauma
15. Pain, anxiety, and sleep.
16. Intoxications.
17. Transportation of the critically ill.
18. Anesthetic agents, including their physiologic action and complications.

Technical Skills
At the end of a rotation on anesthesia, the resident must be able to show technical competence in the following procedures to the satisfaction of his/her supervisor(s).

1. Establishment and maintenance of the airway, including orotracheal and nasotracheal intubation, cricothyroidotomy and tracheostomy.
2. Emergency bronchoscopy.
3. Techniques used in advanced cardiac and trauma life support.
4. Techniques of arterial and venous access, including arterial lines, CVP lines, and venous cut-downs.
5. Regional anesthesia and epidural anesthesia (optional).
6. Physiologic monitoring techniques, including \( \text{O}_2 \) saturation and measurement of cardiac output.
7. Others - eg. Insertion of Foley catheters, nasogastric tubes and temperature probes

Professional Qualities
At the end of the rotation, the resident must have demonstrated to the satisfaction of his/her supervisor(s):

1. The ability and willingness to work in a cooperative manner with other health care personnel, being sensitive to their roles and abilities, and to be able to give and receive advice in a manner that is consistent with the harmonious operation of a health care team.
2. The ability to communicate with patients and their families explaining to them their disease process and the benefits, risks, and complications, and alternatives of management recommendations in terms each individual can comprehend.
3. Respect for patients’ rights to privacy.
4. Sensitivity to the sexual, moral, ethical, or religious and ethnic characteristics of the patient and family, understanding of the special psychological needs of the patient undergoing surgery, and the capacity for supportive and compassionate care in the course of terminal disease.
5. A knowledge of the ethical and legal aspects of anesthesia.
6. Honesty, reliability, and respectfulness in working with patients and colleagues alike.
7. The discipline of continued self-education and the appropriate application of this current knowledge to the clinical setting; the ability to supervise and educate undergraduate and postgraduate students; the skills to educate colleagues, patients, families, and other health care professionals; the capacity to undertake research, and be aware of the importance of peer review protocols, ethical considerations, and the limitations of such endeavors.
8. The ability to keep succinct, pertinent, and up-to-date medical records.

5.2 General Surgery
General Aims

1. To investigate and manage general surgical patients with acute and chronic illness.
2. To improve depth of knowledge, technical skills and decision-making capacity with respect to the general surgical patient.
3. To gain knowledge and management skills in the principles of surgery.

Educational Objectives

Clinical Skills
Given a patient with general surgical disease, the core surgery resident will be able to do the following to the satisfaction of his/her supervisor(s):

1. Take a relevant history and perform a physical exam concentrating on the appropriate areas.
2. Arrive at an appropriate differential diagnosis.
3. Order appropriate laboratory, radiologic and other diagnostic procedures demonstrating knowledge in the interpretation of these investigations.
4. Arrive at an acceptable plan of management, demonstrating knowledge in operative and nonoperative management of the disease process.
5. To formulate an initial hypothesis in light of conflicting data or events.
6. Manage patients in the ambulatory setting, demonstrating a knowledge of common office techniques and procedures.
7. Manage the patient throughout the entire in-hospital course, demonstrating knowledge of and being able to treat potential complications of the disease processes and operative procedures.
8. Provide a plan for patient follow-up.
9. To identify conditions that require urgent treatment.
10. To supervise the management of the critically ill or traumatized patient.

Given a patient with one of the disease entities listed in Section 2, the neurosurgical resident is expected to be able to perform the clinical skills listed in this section. It is expected that the core surgery resident consistently arrive at a correct diagnosis for common surgical problems. It is expected that the neurosurgical resident will formulate management strategies based on fundamentally sound surgical principles, but that treatment plans will often require corroboration or alteration by more senior individuals. It is expected that he/she will recognize the need for surgical intervention in critically ill patients, and in most elective situations.

Knowledge Base
Given a patient with a general surgical disease, the neurosurgical resident is expected to be able to perform the clinical skills listed in section 1, and be able to demonstrate to the satisfaction of his/her supervisors(s) a fundamental knowledge and understanding of the general areas in 2a and a practical working knowledge of the specific disease processed listed in 2b; the exceptions of depth of knowledge will vary with level of training.
General Areas

Principles of Surgery and Post-Operative Problems

1. Fluid and electrolyte disorders
2. Acid base disturbances
3. Cardiogenic shock
4. Hypovolemic shock
5. Septic shock
6. Neurogenic shock
7. Wound infection, dehiscence, deficiencies and evisceration
8. Thromboelbolic disorders
9. Atelectasis and pneumonia
10. Pressure palsy and pressure ulceration
11. Bladder retention
12. Delerium
13. Organ failure
14. Stress ulceration
15. Malnutrition
16. Obesity
17. Specific nutritional
18. Specific coagulation disorders
19. General coagulopathies
20. Transfusion reactions
21. Graft rejection
22. Organ failure treatable by transplantation

Trauma

1. Airway obstruction
2. Pneumothorax
3. Cardiac tamponade
4. Fractured cervical spine
5. Major vascular injury
6. Head injury trauma
7. Spinal, paraspinal and cord injuries
8. Face and neck which are life threatening
9. Myocardial contusion
10. Pulmonary contusion
11. Aortic rupture
12. Tracheobronchial tree injury
13. Diaphragmatic rupture
14. Esophageal rupture
15. Blunt or penetrating abdominal
16. Fractures, joint injuries, open wounds, compartment syndrome & fracture accompanied by neurovascular compromise
Specific Disease Entities/Clinical Syndromes

1. The Acute Abdomen
   - cholecystitis
   - appendicitis
   - diverticulitis
   - pancreatitis
   - perforated ulcer
   - intestinal ischemia

2. Upper and Lower GI Bleeding

3. Gastric Outlet Obstruction

4. Bowel Obstruction

5. Hernias
   - inguinal
   - femoral
   - umbilical
   - incisional

6. Acute anorectal disease
   - abscess, fistula, hemorrhoids

7. Breast Lumps
   - benign
   - malignant

8. The Neck Lump

9. Hiatus Hernia & Esophageal Cancer

10. Carcinoma of Stomach, Periampullary region, Colorectum

11. Peptic Ulcer disease of Stomach and Duodenum

12. The Jaundiced Patient

13. Inflammatory Bowel Disease

14. Abdominal Abscess and Fistula

Technical Skills
Residents at all levels must master:
ASSISTING (both first and second) in the operating room, developing a facility for anticipation of surgical maneuvers, gentle retraction of tissues, an ability to take direction well, to make reasonable suggestions and enquiry, and to contribute to a positive operating room atmosphere.

A Preamble
Given a patient requiring one of the surgical procedures listed below, the neurosurgical resident will participate in the patient’s care as a member of the operating team. It is expected that the resident will initiate the process of technical skill development by assisting in both simple and complex operations, and by performing, under supervision,
simple procedures. It is expected that the resident will be familiar with surgical instruments and suture materials. It is expected that the resident will be able to position and drape patients for surgical operations. It is expected that the neurosurgical resident will be able to open and close surgical wounds, control bleeding, and demonstrate a knowledge of fundamental principles of tissue handling.

At the end of a rotation in general surgery, the neurosurgical resident must be able to show technical competence in the following procedures to the satisfaction of his/her supervisor(s). Designation is listed as to expectations of “Surgeon” (S) or “Assistant” (A). The resident may act as surgeon or assistant in those procedures marked (SA) depending on various factors at the time of surgery.

**General Diagnostic and Therapeutic Procedures**

1. Arterial puncture: S
2. Venipuncture: S
3. Naso-gastric intubation: S
4. Insertion and removal of permanent feeding line: S
5. Insertion and removal of venous access reservoir: S
6. Proctoscopy & sigmoidoscopy: S
7. Insertion and removal of peritoneal dialysis catheter: S
8. Skin suturing & stapling, know tying: S
9. Selection of abdominal incisions: S
10. Laparotomy & closure of abdominal wall: S
11. Peritoneal tap: S
12. electrocardiogram: S
13. Foley catheter insertion: S
14. Tracheostomy: S

**Specific Procedures**

**Integumentary System**

1. Incision and drainage subcutaneous abscess: S
2. Foreign body removal: S
3. Excision skin and subcutaneous lesions: S
4. Suture of lacerations: S

**Breast**

1. Aspiration of breast cyst: S
2. Excision benign breast tumor: S

**Hemic and Lymphatic System**

1. Splenectomy: A
2. Biopsy of enlarged nodes: (cervical, axillary, inguinal, scalene, submandibular): S
Digestive System

Endoscopy

1. Esophago-gastro-duodenoscopy: S

Gastric

1. Pyloroplasty: SA
2. Gastroenterostomy: SA
3. Closure of perforated ulcer: SA

Intestinal

1. Rigid sigmoidoscopy: S
2. Flexible sigmoidoscopy: S
3. Insertion feeding enterostomy: SA
4. Colostomy: SA
5. Entero-enterostomy: SA
6. Resection and anastomosis of small bowel: A
7. Resection and anastomosis of large bowel: A
8. Proctectomy (AP resection): A
9. Lysis of adhesions: A
10. Appendectomy: S

Anorectal

1. Anoscopy: S
2. Excision thrombosed hemorrhoid: S

Liver

1. Incisional liver biopsy: S
2. Local excision liver lesion: SA

Biliary Tract

1. Cholecystotomy: S
2. Cholecystectomy, open: S
3. Cholecystectomy, laparoscopic: SA
4. Exploration common bile duct: A

Pancreatic

1. Drainage pancreatic abscess: A
2. Whipple procedure: A
3. Distal pancreatic excision: A
Trauma

1. Laparotomy for acute trauma: A
   o splenectomy: A
   o repair liver laceration: A
   o repair ruptured diaphragm: A
   o repair ruptured bladder: A

Abdominal Sepsis

1. Drainage intra-abdominal abscess
   o Abdominal: A
   o Subphrenic: A
   o Phrenic: A

Hernia & Abdominal Wall

1. Insertion Peritoneovenous Shunt: A
2. Laparoscopy: S
3. Repair Inguinal Hernia: S
4. Repair Femoral Hernia: S
5. Repair Ventral Hernia: SA
6. Excision Hydrocele: S
7. Closure Evisceration: A
   o nephrectomy: A

Abdominal Sepsis

1. Drainage intra-abdominal abscess
   o Abdominal: A
   o Subphrenic: A
   o Phrenic: A

Hernia & Abdominal Wall

1. Insertion Peritoneovenous Shunt: A
2. Laparoscopy: S
3. Repair Inguinal Hernia: S
4. Repair Femoral Hernia: S
5. Repair Ventral Hernia: SA
6. Excision Hydrocele: S
7. Closure Evisceration: A

Professional Qualities

Given a patient with a general surgical illness, the neurosurgical resident will be able to demonstrate:
1. The ability and willingness to work in a cooperative manner with other health care personnel, being sensitive to their roles and abilities, and to be able to give and receive advice in a manner that is consistent with the harmonious operation of a health care team.

2. The ability to communicate with patients and their families explaining to them their disease process and the benefits, risks, and complications, and alternatives of management recommendations in terms each individual can comprehend.

3. Respect for patients’ rights to privacy.

4. Sensitivity to the sexual, moral, ethical, religious and ethnic characteristics of the patient and family, understanding of the special psychological needs of the patient with general surgical disease, and the capacity for supportive and compassionate care in the course of terminal disease.

5. A knowledge of the ethical and legal aspects of general surgery.

6. Honesty, reliability, and respectfulness in working with patients and colleagues alike.

7. The discipline of continued self-education and the appropriate application of this current knowledge to the clinical setting; the ability to supervise and educate undergraduate and postgraduate students in general surgery; the skills to educate colleagues, patients, families, and other health care professionals; the capacity to undertake research, and be aware of the importance of peer review protocols, ethical considerations, and the limits!! Intensive Care Unit

**General Aims**

To stabilize and to care for the critically ill patient and to acquire enough depth of knowledge, technical skills and decision-making capacity to care for the critically ill.

**Educational Objectives**

Given a patient in the intensive care unit, the neurosurgery resident will be able to do the following to the satisfaction of his/her supervisor(s):

1. Take a relevant history.
2. Perform an acceptable physical exam concentrating on the relevant areas.
3. Arrive at an appropriate differential diagnosis.
4. Order appropriate laboratory, radiologic and other diagnostic procedures demonstrating knowledge in the interpretation of these investigations.
5. Arrive at an acceptable plan of management, demonstrating knowledge of the various methods of monitoring, and both non-operative and operative management of the disease process.
6. Manage the patient throughout the ICU stay including potential complications.

**Knowledge Base**

Given a patient in the intensive care unit, the core surgical resident must be able to perform the clinical skills listed in section 1, and be able to demonstrate to the satisfaction of his/her supervisors(s) a fundamental knowledge and understanding of the specific disease processes in 2.
Specific Disease Entities

1. Cardiac arrest and cardiac crises: eg. arrhythmias, diminished organ perfusion, pulmonary edema, myocardial infarction, severe hypertension.
2. Shock.
3. Respiratory failure.
4. Coma, status epilepticus, and acute neuromuscular diseases.
5. Sepsis.
6. Acid-base disorders and fluid and electrolyte disorders.
7. Renal preservation and support.
8. The acute abdomen, gastrointestinal hemorrhage, hollow viscus dysfunction, and hepatobiliary disease.
10. Endocrine disturbances in the critically-ill related to water and/or glucose metabolism and adrenal, parathyroid, thyroid and pituitary dysfunction.
11. Coagulation disturbances and blood replacement therapy.
13. Drugs: general pharmacology of commonly used drugs in the critically ill.
15. Burns and trauma.
17. Pain, anxiety, and sleep.
18. Intoxications.

Transportation of the critically ill.
Ventilators: indications, general use, and complications.
Current methods of weaning
Care of the critically head injured and neurologically impaired patient with special attention to basic pathophysiology of neural trauma and ischemia and the role of neuroprotective agents and techniques.
Intracranial pressure-the physiology, pathophysiology, methods of measuring and managing raised intracranial pressure.

Technical Skills
At the end of a rotation, the resident must be able to show technical competence in the following procedures to the satisfaction of his/her supervisor(s).

1. Establishment and maintenance of the airway, including orotracheal and nasotracheal intubation, cricothyroidotomy and tracheostomy.
2. Emergency bronchoscopy.
3. Techniques used in advanced cardiac and trauma life support.
4. Techniques of arterial and venous access, including arterial lines, CVP lines, and venous cutdowns.
5. Insertion of venous flow-directed catheters.
6. Thoracentesis, paracentesis.
7. Tube thoracostomy.
8. Lumbar puncture and catheter ventriculostomy.
9. Physiologic monitoring techniques, including O2 saturation and measurement of cardiac output.
10. Other: eg. insertion of Foley catheter, nasogastric tubes and temperature probe

**Professional Qualities**
At the end of the rotation, the resident must have demonstrated to the satisfaction of his/her supervisor(s):

1. The ability and willingness to work in a cooperative manner with other health care personnel, being sensitive to their roles and abilities, and to be able to give and receive advice in a manner that is consistent with the harmonious operation of a health care team.
2. The ability to communicate with patients and their families explaining to them their disease process and the benefits, risks, and complications, and alternatives of management recommendations in terms each individual can comprehend.
3. Respect for patients’ rights to privacy.
4. Sensitivity to the sexual, moral, ethical, religious and ethnic characteristics of the patient and family, understanding of the special psychological needs of the patient with critical illness, and the capacity for supportive and compassionate care in the course of terminal disease.
5. A knowledge of the ethical and legal aspects of critical illness.
6. Honesty, reliability, and respectfulness in working with patients and colleagues alike.
7. The discipline of continued self-education and the appropriate application of this current knowledge to the clinical setting; the ability to supervise and educate undergraduate and postgraduate students; the skills to educate colleagues, patients, families, and other health care professionals; the capacity to undertake research, and be aware of the importance of peer review protocols, ethical considerations, and the limitations of such endeavors.
8. The ability to keep succinct, pertinent, and up-to-date medical records

**5.3 Intensive Care Unit**

**General Aims**
To stabilize and to care for the critically ill patient and to acquire enough depth of knowledge, technical skills and decision-making capacity to care for the critically ill.

**Educational Objectives**
Given a patient in the intensive care unit, the neurosurgery resident will be able to do the following to the satisfaction of his/her supervisor(s):

1. Take a relevant history.
2. Perform an acceptable physical exam concentrating on the relevant areas.
3. Arrive at an appropriate differential diagnosis.
4. Order appropriate laboratory, radiologic and other diagnostic procedures demonstrating knowledge in the interpretation of these investigations.
5. Arrive at an acceptable plan of management, demonstrating knowledge of the various methods of monitoring, and both non-operative and operative management of the disease process.
6. Manage the patient throughout the ICU stay including potential complications.

Knowledge Base
Given a patient in the intensive care unit, the core surgical resident must be able to perform the clinical skills listed in section 1, and be able to demonstrate to the satisfaction of his/her supervisors(s) a fundamental knowledge and understanding of the specific disease processes in 2.

Specific Disease Entities

1. Cardiac arrest and cardiac crises: eg. arrhythmias, diminished organ perfusion, pulmonary edema, myocardial infarction, severe hypertension.
2. Shock.
3. Respiratory failure.
4. Coma, status epilepticus, and acute neuromuscular diseases.
5. Sepsis.
6. Acid-base disorders and fluid and electrolyte disorders.
7. Renal preservation and support.
8. The acute abdomen, gastrointestinal hemorrhage, hollow viscus dysfunction, and hepatobiliary disease.
10. Endocrine disturbances in the critically-ill related to water and/or glucose metabolism and adrenal, parathyroid, thyroid and pituitary dysfunction.
11. Coagulation disturbances and blood replacement therapy.
13. Drugs: general pharmacology of commonly used drugs in the critically ill.
15. Burns and trauma.
17. Pain, anxiety, and sleep.
18. Intoxications.

Transportation of the critically ill.
Ventilators: indications, general use, and complications.
Current methods of weaning
Care of the critically head injured and neurologically impaired patient with special attention to basic pathophysiology of neural trauma and ischemia and the role of neuroprotective agents and techniques.
Intracranial pressure-the physiology, pathophysiology, methods of measuring and managing raised intracranial pressure.
Technical Skills
At the end of a rotation, the resident must be able to show technical competence in the following procedures to the satisfaction of his/her supervisor(s).

1. Establishment and maintenance of the airway, including orotracheal and nasotracheal intubation, cricothyroidotomy and tracheostomy.
2. Emergency bronchoscopy.
3. Techniques used in advanced cardiac and trauma life support.
4. Techniques of arterial and venous access, including arterial lines, CVP lines, and venous cutdowns.
5. Insertion of venous flow-directed catheters.
6. Thoracentesis, paracentesis.
7. Tube thoracostomy.
8. Lumbar puncture and catheter ventriculostomy.
9. Physiologic monitoring techniques, including O2 saturation and measurement of cardiac output.
10. Other: eg. insertion of Foley catheter, nasogastric tubes and temperature probe

Professional Qualities
At the end of the rotation, the resident must have demonstrated to the satisfaction of his/her supervisor(s):

1. The ability and willingness to work in a cooperative manner with other health care personnel, being sensitive to their roles and abilities, and to be able to give and receive advice in a manner that is consistent with the harmonious operation of a health care team.
2. The ability to communicate with patients and their families explaining to them their disease process and the benefits, risks, and complications, and alternatives of management recommendations in terms each individual can comprehend.
3. Respect for patients’ rights to privacy.
4. Sensitivity to the sexual, moral, ethical, religious and ethnic characteristics of the patient and family, understanding of the special psychological needs of the patient with critical illness, and the capacity for supportive and compassionate care in the course of terminal disease.
5. A knowledge of the ethical and legal aspects of critical illness.
6. Honesty, reliability, and respectfulness in working with patients and colleagues alike.
7. The discipline of continued self-education and the appropriate application of this current knowledge to the clinical setting; the ability to supervise and educate undergraduate and postgraduate students; the skills to educate colleagues, patients, families, and other health care professionals; the capacity to undertake research, and be aware of the importance of peer review protocols, ethical considerations, and the limitations of such endeavors.
8. The ability to keep succinct, pertinent, and up-to-date medical records.
5.4 Head and Neck (St Joseph’s Healthcare)

*Medical expert/clinical decision maker*

**Knowledge-Anatomy**

Know the anatomy and surgical approach to:

- The inferior parathyroid glands
- The superior parathyroid glands
- Thyroid gland/A retrosternal goiter
- Anterior and poseterior cervical triangles and their contents.

**Knowledge-General and Specific Clinical Problems**

Be able to demonstrate diagnostic and therapeutic skills in the following topics

1. **Thyroid**
   - normal physiology, benign and malignant conditions – ESSENTIAL
   - solitary thyroid nodule, multinodular thyroid gland, Thyrotoxicosis, Thyroid “storm”, Grave’s disease/Hashimoto’s disease
   - A decreased sensitive thyroid stimulating hormone (TSH) level

2. **Parathyroid**
   - normal physiology, benign and malignant conditions – ESSENTIAL
   - Primary, secondary and tertiary hyperparathyroidism
   - be aware of the preoperative preparation/management of the following
     - Hypercalcemic crisis

3. **Benign and Malignant Conditions of the Lymphatic System of the Head and Neck Region - ESSENTIAL**

4. **Benign and Malignant Conditions of the Nasal, Oral, and Hypopharynx - DESIRABLE**

5. **Laryngeal Pathology - AWARENESS**

6. **Salivary Gland – normal physiology, benign and malignant conditions - DESIRABLE**
   - Major-parotid, submandibular, sublingual
   - Minor gland

7. Understand the significant issues in the management of anesthesia in endocrine surgery, including airway management during neck surgery

**Technical Skills**

**Preoperative/Postoperative**

1. Know the indications for and how to perform a fine needle aspiration
2. Indications and timing of change of tracheostomy
3. Know and appreciate the appropriate care for Head and Neck Surgery including being aware of possible complications

**Intraoperative**
1. Be able to position a patient for a specific operative approach
2. Know the incisions necessary for various operative procedures
3. Procedures:
   - Tracheostomy-essential
   - Thyroidectomy-Essential
   - Parathyroid Exploration-Essential
   - Limited lymph node dissection-Essential
   - Various modified and radical lymph node dissections-desirable
   - Laryngectomy-awareness
   - Radical and ablative surgery of Head and Neck-awareness
   - Reconstruction of Ablative surgery of Head and Neck-awareness

**Communicator**

Listen and be able to take a complete history from patients and their families
Be able to discuss with patients and their families, in lay terms, the assessment, approach and management (both surgical and non-surgical) of disease processes as they relate to the Head and Neck region
Be able to obtain informed consent on surgical procedures form patients and their families discussing the risks/benefits of operative and non-operative approaches
Communicate in an effective manner with Health Care colleagues
Communicate in a timely manner to Most Responsible Physicians changes in conditions of their patients

**Collaborator**

Participate in interdisciplin ary team meetings regarding patient care issues
Cooperate with all members of the health care team to facilitate patient care

**Manager**

Effectively manage most aspects of patient care within the Emergency department, ward and Operating Room at St Joseph’s Hospital to insure effective and streamlined care

**Health Advocate**

Be able to identify operative risk factors in individual patients
Identify risk factors for Head and Neck disease and counsel patients on these risk factors

**Scholar**

Review texts, recommended reading and review articles in preparation for OR cases
Be able to critically review and appraise information as it relates to Head and Neck Pathology
Read around consults seen in the ER, clinics, and on the ward.

**Professional**

Interact with patients, families, nurses and other health care personnel in a professional manner
Respect all opinions of health care workers as well as the patient and their family
Provide care in an ethical manner

**Selected Bibliography**

Clark OH. Endocrine Surgery of the Thyroid and Parathyroid Glands. St. Louis: CV Mosby Company,
Miller TA, Rowlands BJ. The Physiological Basis of Modern Surgical Care. St. Louis: CV Mosby Company

**5.5 General Internal Medicine**

**Internal Medicine Objectives for Competency in CanMeds Roles**

**Communicator**

The resident will demonstrate the ability to establish a therapeutic relationship with the patient and family. This includes the ability to obtain and share pertinent information with the patient and the health care team.

**Collaborator**

The resident will demonstrate the ability to work effectively in a team environment, by contributing to interdisciplinary patient care activities and by consulting effectively with other physicians.

**Professional**

The resident will practice medicine ethically with integrity, honesty and compassion, always demonstrating respect for others.
The resident’s duties will be discharged reliably and they will always strive for excellence.

**Scholar**
The resident will develop, implement and monitor a personal continuing education strategy that will include the ability to critically appraise the literature. The resident will develop teaching skills in order to facilitate the learning of his/her patients and peers.

Manager

The resident will utilize health care resources effectively to balance patient care, learning needs and outside activities. The resident will be able to utilize information technology to optimize patient care and life-long learning.

Health Advocate

The resident will identify the important determinants of health affecting patients. The resident will recognize and respond to those patient care issues where patient advocacy is appropriate.

Evaluation of Resident's Performance in the CanMeds Competencies

Please rate the resident's performance in the objectives listed below using the following scale:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1=Unsatisfactory</td>
<td>Many major deficiencies</td>
</tr>
<tr>
<td>2=Needs to Improve</td>
<td>Several important deficiencies</td>
</tr>
<tr>
<td>3=Good</td>
<td>Satisfactory performance (at appropriate level)</td>
</tr>
<tr>
<td>4=Very Good</td>
<td>No deficiencies of consequence</td>
</tr>
<tr>
<td>5=Outstanding</td>
<td>NO deficiencies (at appropriate level)</td>
</tr>
</tbody>
</table>

Objective: The resident will display effective CanMeds Competencies

<table>
<thead>
<tr>
<th>The resident will display effective doctor-patient communication skills (communicator)</th>
<th>1 2 3 4 5 N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishes a trusting and professional rapport with the patient and family</td>
<td></td>
</tr>
<tr>
<td>Encourages full participations of the patient/family in decision-making and management</td>
<td></td>
</tr>
<tr>
<td>Can obtain an informed consent</td>
<td></td>
</tr>
<tr>
<td>Provides clear instructions and checks whether the patient/family understand</td>
<td></td>
</tr>
<tr>
<td>Verbally presents the patient's problems clearly, concisely and correctly in the clinical setting</td>
<td></td>
</tr>
<tr>
<td>Clear, concise and legible problem-oriented medical records</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The resident will display good collaborative team skills (collaborator)</th>
<th>1 2 3 4 5 N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Able to request and provide consultations with clear understanding of question being asked</td>
<td></td>
</tr>
<tr>
<td>Able to work effectively in an interdisciplinary team to optimize patient care</td>
<td></td>
</tr>
</tbody>
</table>
Has a straightforward and respectful approach with all health care professionals and peers
Takes on appropriate share of team assignments and assists others as required

The resident is an effective manager (manager) 1 2 3 4 5 N/A
Displays organisational skills with effective time-management
Effectively uses information technology to optimize patient care and continued self-learning
Identifies and addresses issues related to discharge planning

The resident will carry out his/her duties in a professional manner (professional) 1 2 3 4 5 N/A
Recognizes limitations and seeks advice and consultation when needed
Exercises initiative within limits of knowledge and training
Discharges duties and assignments dependably and in a timely and ethical manner
Reports facts accurately, including own errors
Maintains appropriate boundaries in work and learning situations
Respects diversity of race, age, gender, disability intelligence and socio-economic status

The resident will develop a plan for self-improvement (scholar) 1 2 3 4 5 N/A
Attends and contributes to rounds and other learning events
Accepts and acts on constructive feedback
Critically appraises sources of medical information and takes an evidence-based approach to diagnosis and management
Effectively uses opportunities to teach and supervise juniors (clinical clerks)

The resident is a health advocate 1 2 3 4 5 N/A
Identifies situations where patient advocacy is required
Acts as a patient advocate

PGY-1 Objectives for Clinical Skills in General Internal Medicine
Listed below are the General Internal Medicine specific objectives for PGY1 residents. It should be noted that not all objectives will be met on this rotation. Further learning takes place during related rotations, seminars and independent studies.
Manage common problems experienced by the general medical patient:

1. Cardiorespiratory
   o Chest Pain
   o Dyspnea
   o Cough
   o Wheeze
   o Hemoptysis
   o Hypotension/Shock
   o Cardiac Arrest
1. Cardiology
   - Murmurs
   - Palpitations
   - Seizure

2. Gastroenterology
   - Ascites
   - Abdominal pain
   - Hematermesis

3. Hematology
   - Fatigue
   - Bleeding diathesis
   - Lymphadenopathy
   - Unilateral leg swelling

4. Infectious Diseases
   - Fever/chills
   - Fever in immunocomprised host
   - Night sweats
   - Sepsis syndrome/septic shock
   - Skin erythema
   - Vaginal discharge

5. Nephrology
   - Oliguria
   - Dysuria
   - Hematuria
   - Common electrolyte abnormalities
   - Proteinuria
   - Polyuria

6. Neurology
   - Decreased Level of consciousness
   - Confusion
   - Ataxia
   - Coma
   - Headache
   - Dizziness
   - Weakness
   - Tremor
   - Syncope
   - Sensory Loss

7. Miscellaneous
   - Edema
   - Rash
   - Pruritis

8. Hirsutism
   - Breast Mass
   - Neck Mass

9. Psychiatry
Competently perform the following procedures:

- Interpretation of diagnostic tests (EKG, Labs, Chest X-ray, ABG)
- Performance of EKG
- NG tube insertion
- Blood gases
- Intubation

**Evaluation of Resident's Clinical Performance on General Internal Medicine**

Please rate the resident's performance in the objectives listed below using the following scale:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
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</tr>
</thead>
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<td>No deficiencies (at appropriate level)</td>
</tr>
<tr>
<td>3 = Good</td>
<td>Satisfactory performance (at appropriate level)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Objective 1: The resident will display effective clinical skills.**

<table>
<thead>
<tr>
<th>History and Physical</th>
<th>1 2 3 4 5 N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performs a focused, accurate and complete history</td>
<td></td>
</tr>
<tr>
<td>Performs a focused, accurate and complete physical exam</td>
<td></td>
</tr>
<tr>
<td>Knows test characteristics of common physical exam signs</td>
<td></td>
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<tr>
<td>Utilization of Laboratory and Other Investigations</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>Can justify investigations ordered</td>
<td></td>
</tr>
<tr>
<td>Can interpret clinical information and integrate it appropriately</td>
<td></td>
</tr>
<tr>
<td>Able to retrieve and use information regarding test characteristics of common tests (ie. PPV, NPV)</td>
<td></td>
</tr>
<tr>
<td>Problem solving and Clinical Judgement</td>
<td>1 2 3 4 5 N/A</td>
</tr>
<tr>
<td>Good knowledge base</td>
<td></td>
</tr>
<tr>
<td>Able to synthesise clinical information and formulate patient problem list</td>
<td></td>
</tr>
<tr>
<td>Able to incorporate newly learned information in subsequent assessment of patients</td>
<td></td>
</tr>
</tbody>
</table>
Shows good judgement when setting management priorities
Demonstrates a systematic and organised approach to clinical problem solving

<table>
<thead>
<tr>
<th>Implementing a Management plan</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>N/A</th>
</tr>
</thead>
</table>

Able to assess and start initial management in acute emergency
Writes orders that are clear, comprehensive and correct
Is fully aware of the side-effects of therapies ordered
Monitors therapy appropriately

**Objective 2: The resident will display effective technical skills.**

<table>
<thead>
<tr>
<th>Displayed proficiency in the following technical skills:</th>
<th>Yes</th>
<th>Needs Improvement</th>
<th>Not Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>NG tube insertion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arterial blood gases</td>
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<tr>
<td>ECG interpretation</td>
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<tr>
<td>Performance of ECG</td>
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<tr>
<td>Chest X-Ray interpretation</td>
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</tbody>
</table>

6.1 A Survival Guide for Clinical Neurosciences

[http://www.neurosurvival.ca/title.html](http://www.neurosurvival.ca/title.html)

6.2 Neurosurgical Instruments (Images and Videos)