McGill

Department of Anesthesia

Residency Training Program

Rotation Goals and Objectives

CBD Program

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McGill

Department of Anesthesia

TTD Rotation Goals and Objectives

PGY1 ADULT ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic and clinical sciences as applicable to anesthesia:
    - **Anatomy**:
        - Airway anatomy and assessment: ability to bag and/or intubate
        - Anatomy of the back: epidural / spinal spaces
    - **Physiology**:
        - Cardiac risk assessment - understand risks associated with cardiac disease in patients undergoing noncardiac surgery
        - Pulmonary risk assessment - indications for PFTs
        - Gastric emptying - NPO guidelines
        - Fluid / electrolytes / acid-base physiology
        - Hemostasis and transfusion medicine
    - **Pharmacology** and indications for use of drugs:
        - common anesthesia drugs:
            - Inhalational agents
            - Induction agents
            - Muscle relaxants
            - Analgesics: opioids, NSAIDs, acetaminophen
            - Local anaesthetics: lidocaine, bupivacaine
        - common i.v. cardiac drugs:
            - amiodarone,
            - verapamil, diltiazem
            - labetalol, esmolol
            - atropine
        - common vasopressors
            - phenylephrine (Neosynephrine)
            - ephedrine
            - norepinephrine (Levophed)
            - epinephrine
- Demonstrate knowledge of :
    - **general internal medicine** - cardiovascular, respiratory, renal, hepatic, endocrine, hematologic and neurologic co-existing diseases
    - **age-related** variables in medicine - adult and geriatric patient care.
    - the principles and practice of **anesthesia** - patient support during surgery or obstetrics.
    - the principles of management of patients with **acute pain**
- Demonstrate clinical skills necessary for the practice of anesthesia: preoperative assessment, intraoperative support and postoperative management of patients
    - Perform appropriate **preoperative assessment** of adult patients
        - ASA classification / emergency procedures
        - Assessment of severity and stability of pre-existing organ system disease
        - Guidelines for ordering preop lab tests
        - Airway assessment - Prediction of ease of ventilation/intubation
        - Potential anesthesia risks: malignant hyperthermia, allergies

    - **Intraoperative** patient management;
        - Knowledge of the use of standard intraoperative **monitors**
        - **Airway** management – see techniques
        - Acquire clinical experience with various **anaesthetic techniques :** GA, Regional (spinal, epidural), sedation
    - Provide appropriate **post-op care**
        - Transfer/transport/report of post-op patients
        - Provision of post op analgesia and antiemesis therapy
    - Recognition and management of **emergencies**
        - Anaphylaxis
        - Upper airway obstruction
        - Intraoperative bronchospasm
        - ACLS protocole
- Develop increasing **technical** expertise in
    - Placement of peripheral IV's
    - (exposure to central lines, pulmonary artery catheter)
    - Insertion of arterial lines
    - Ventilation with bag and mask
    - Laryngoscopy and intubation of the normal airway
        - Use of airway equipment
            - Stylets
            - Bougies
            - Laryngeal mask
    - Spinals, lumbar epidurals
- Recognize that prior to provision of anesthetic care, **optimization** involving specific medical intervention and modification of risk factors may be required.
- Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including **informed consent**

COMMUNICATOR

- Establish a **professional and empathetic relationship** with patients and families
- Obtain and collate relevant **history** from patients, and families.
- **Listen** effectively.
- **Discuss** appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible **documentation**.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures as for **informed consent**

COLLABORATOR

- **Consult** effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the **management of operating rooms**:
  - Patient flow and post op disposition: work effectively and efficiently in a health care organization
  - anesthetic expenditures: Allocate finite health care resources wisely
- Demonstrate knowledge of **Canadian anesthesia practice guidelines**:
  - standard intraoperative monitors
  - BCLS/ACLS
  - Airway algorithm
- **Record** appropriate information for anesthetics and consultations provided.
- Utilize **information technology** to optimize patient care, and life long learning.
- Demonstrate principles of **quality assurance**, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important **determinants of health** affecting patients.
- Provide compliance with **national practice guidelines** and equipment standards for anesthesia.
- Recognize the **opportunities** for anesthesiologists to advocate for resources for chronic pain management, emerging medical technologies and new health care practices in general

SCHOLAR

- Develop, implement, and monitor a **personal continuing education strategy**.
- **Critically appraise** sources of medical information: develop criteria for evaluating the anesthetic literature
- **Facilitate learning** of patients, students, and other health professionals

PROFESSIONAL

- Deliver **highest quality care** with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal **professional behaviors**.
- Practice medicine **ethically** consistent with the obligations of a physician
- **Include the patient/family** in discussions concerning appropriate diagnostic and management procedures.
- **Respect** the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show **recognition of limits** of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

McGill

Department of Anesthesia

Foundations Rotation Goals and Objectives

ADULT ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to anesthesia, including anatomy, physiology, pharmacology, biochemistry and physics.
    - Knowledge of the anatomy related to the anesthesia practice:
        - Airway anatomy
        - Central and peripheral blocks anatomy
        - CVS/Respiratory physiology and anatomy
        - Renal/hepatic anatomy and physiology
        - Fluid/electrolyte/hematology/endocrinology physiology
    - Knowledge of the pharmacology and indications for use of drugs commonly used in anaesthetic practice
        - Inhalational agents
        - Induction agents
        - Muscle relaxants
        - Narcotic analgesics
        - Local anaesthetics
    - Have a clear understanding of the function of the anaesthesia machine and basic anaesthesia monitors
    - Physics especially the physics of gases and fluids and the principles of electrical safety
- Demonstrate clinical skills necessary for the practice of anesthesia, including preoperative assessment, intraoperative support and postoperative management of patients of different physical status, for commonly performed surgical and obstetrical procedures
    - Perform appropriate preoperative assessment of adult patients.
        - This will include assuring optimal medical management in cooperation with the patient's other physicians and involve consultation when appropriate.
        - Understand the pathophysiology of the patient's disease process and its relation to anaesthesia and surgery.
            - ASA classification
            - Assessment of severity and stability of pre-existing organ system disease
            - Make use of appropriate examinations and laboratory tests.
            - Understand when delay to prepare the patient before surgery is beneficial and when it is deleterious
        - Airway assessment
            - Prediction of ease of ventilation/intubation
            - Recognition of the difficult airway
            - ASA Difficult Airway Algorithm
        - Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent
    - Perform appropriate intraoperative management of the patient taking into account the patient's status.
        - Select a safe effective anaesthetic technique, considering the possibilities of local, regional and general anaesthesia and understanding the particular needs of the surgery planned.

- Demonstrate knowledge of age related variables in medicine as they apply to neonatal, adult and geriatric patient care.
- Demonstrate knowledge of special concerns for different types of surgical procedures (refer to list)
- Select appropriate monitoring methods, both invasive and non-invasive, and use additional equipment (e.g. heaters, humidifiers, and positioning aids) as required.
- Know the Canadian Anaesthesiologists Society practice guidelines.
- Safely conduct the intraoperative anaesthetic management of the patient.
    - Demonstrate technical expertise in
        - Venous and arterial cannulation
        - Difficult airway management
        - Airway management adjuncts including stylets, bougies, laryngeal mask, FASTRACH, lighted stylet, and fibreoptic bronchoscope for intubation.
        - Regional anaesthesia including subarachnoid block, epidural block, brachial plexus block, and IV (Bier) block
    - Rationally manage perioperative fluid Rx
    - Know the appropriate use and risks of blood products
- Safely manage anesthetic intraoperative complications and acute perioperative problems
    - Know BCLS and ACLS protocols
- Maintain accurate and complete records

- Provide appropriate post-operative care
    - Transfer/transport of post-op patients
    - Transfer of care to PACU nurse (report)
    - Provision of post op analgesia and antiemesis therapy
    - Knowledge of PACU staffing, facilities, monitoring, standards
    - Knowledge of PACU discharge criteria to ward or home
    - Management of complications in PACU:
        - Postoperative nausea and vomiting
        - Respiratory: hypoxia/hypercarbia/obstruction
        - CVS
        - CNS, N.B. delayed awakening
        - Pain
        - Hypothermia
        - Metabolic derangements

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the management of operating rooms.
- Demonstrate knowledge of the contributors to anesthetic expenditures.
- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard intraoperative monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
        - ASA Airway algorithm
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for chronic pain management, emerging medical technologies and new health care practices in general

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

PEDIATRIC ANESTHESIA

The pediatric anesthesia training at McGill consists of 3 to 4 months of clinical pediatric exposure at the Montreal Children's Hospital and Shriners Hospital for Children. The resident will participate in the delivery of care for pediatric patients undergoing various procedures. The objective of this rotation is to familiarize the resident with considerations and particular techniques related to pediatric anesthesiology. The following goals and objectives list the minimum of what is expected of residents in terms of their knowledge base, procedural skills, perioperative patient management, attitude and communication skills. The resident is highly encouraged to formulate an anesthetic management plan for each procedure. The depth of comprehension of resident's knowledge base, their technical skills, clinical judgment and decision making capacities as well as their ability to critically appraise medical literature are expected to increase as resident become more senior. By the end of this rotation, the resident should be able to manage ASA class 1 and 2 patients greater than 2 years of age (over 1 year of age for senior residents) with limited assistance for uncomplicated surgery including induction, maintenance, emergence, charting and transportation to the PACU.

The resident is expected to demonstrate adequate preparation in reading and chart review for assigned clinical cases.

Upon completion of this rotation, the resident should be able to:

Medical Expert/Clinical Decision-maker

• Demonstrate knowledge and understanding of the basic anatomy and physiology, as applicable to pediatric anesthesia, including the maturation process which takes place in all systems.

- Cardiovascular system
  - -Anatomy and physiology relevant to the transitional circulation
  - -Maturation of the myocardium and the autonomic nervous system
  - -Normal values for different stages of development
  - -Pediatric basic and advanced life support (N.B. attendance at MCH PALS is encouraged)
- Pulmonary system
  - -Anatomic features of neonatal, infant, pediatric and adolescent airway
  - -Physiology of the respiratory system and its maturation over time with respect to: control of respiration, compliance, lung volumes, oxygen consumption/metabolic rate, normal values for different stages of development
- Central nervous system
  - -Anatomy-fontanels
  - -Physiology: intracranial pressure and volume, cerebral blood flow, autoregulation
- Genitourinary system
  - -Renal maturation
  - -Fluid and electrolyte management/fluid distribution
  - -Maintenance requirements

- Gastrointestinal system
  - -Glucose control
  - -Maturation of hepatic function
- Thermoregulation
  - -Body surface area
  - -Heat loss
  - -Ability to thermoregulate
- Psychological issues
  - -Anxiety and coping mechanism in different age groups
  - -Separation anxiety, parental anxiety
  - -Effects of hospitalization

• Demonstrate knowledge and understanding of pediatric pharmacology for ASA class 1 and 2 neonatal and pediatric patients, including

- Absorption
- Volume of distribution
- Protein binding
- Pharmacokinetics/ pharmacodynamics and calculation of drug dosage
  - -Premedication
  - -Inhaled anesthetics
  - -Induction drugs
  - -Sedative-hypnotic drugs
  - -Narcotics
  - -Muscle relaxants
- Metabolism
- Clearance
- Excretion
- Toxicity

• Demonstrate clinical skills necessary for the preoperative assessment of the pediatric patient using relevant historical, physical and laboratory information.

- Demonstrate knowledge of pediatric medicine for the assessment of children with concomitant medical disease.
- Summarize fasting guidelines of pediatric patients.
- Recognize that prior to provision of anesthetic care, specific medical intervention or modification of risk factors may be required.
- Demonstrate knowledge of basic legal and bioethical issues encountered in pediatric anesthetic practice including informed consent (include blood transfusion consent for child of Jehovah's Witness parents).

• Demonstrate knowledge of the anesthetic considerations and clinical skills to institute a safe anesthetic management for pediatric patients undergoing procedures

- Preoperative preparation (ventilator, equipment selection, routine and resuscitative medications)
- Monitoring the pediatric patient
- Induction of anesthesia
- Bag-mask ventilation
- Endotracheal tubes/LMA placement
- Intravenous fluid therapy
- Massive transfusion
- Appropriate timing of extubation
- Neonatal anesthesia
- Regional anesthesia and analgesia
- Full stomach and emergency surgery

• Demonstrate knowledge of specific anesthetic considerations for pediatric patients with concomitant disease/disorder and formulate an appropriate perioperative patient management plan

- Neonate/premature/ ex-premature
- Child with recent upper respiratory tract infection (URTI)
- Asthma
- Cystic fibrosis
- Obstructive sleep apnea
- Chronic lung disease
- Physiology of repaired simple cardiac lesions
- Non-cardiac surgery in patients with unrepaired ASD, VSD, PDA
- Mediastinal masses
- Hydrocephalus, raised ICP
- Spina bifida
- Cerebral palsy
- Seizure disorder
- Developmental delay
- Down’s syndrome
- Gastroesophageal reflux
- Hepatobiliary disease
- Renal insufficiency or failure
- Sickle cell/ thalassemia/ hemophilia
- Anemia
- Myopathies
- Malignant disease
- Septic shock
- Diabetes
- Thyroid diseases
- Obesity
- Mucopolysaccharidosis
- Malignant hyperthermia/ masseter spasm

- Atypical plasma cholinesterases
- Anxiety

• Formulate an anesthetic management, describe the potential complications and initiate anesthesia care for common procedures (when applicable), including

- General surgery
  - Inguinal hernia repair
  - Orchidopexy
  - Laparotomy/laparoscopy
  - Pyloromyotomy
  - Necrotizing enterocolitis
  - Omphalocele/gastroschisis
  - Pectus excavatum repair
  - Thoracic surgery
  - Congenital diaphragmatic hernia repair
  - Tracheo-esophageal fistula repair

- Otolaryngology
  - Tonsillectomy and adenoidectomy
  - Post-tonsillectomy/adenoidectomy bleeding
  - Myringotomy
  - Tympanoplasty
  - Mastoidectomy
  - Endoscopic sinus surgery/polyps excision
  - Thyroidectomy
  - Removal of foreign body in airway
  - Bronchoscopy (rigid/flexible)
  - Epiglottitis/croup
  - Retropharyngeal abscess
  - Tracheostomy

- Ophthalmology
  - Strabismus repair
  - Cataract surgery
  - Open eye injury

- Neurosurgery
  - Intracranial/ posterior fossa tumor resection
  - Drainage of extra/subdural hematoma
  - VP shunt insertion/revision
  - Craniosynostosis
  - Myelomeningocele/encephalocele repair
  - Spinal cord tumour excision

- Orthopedic surgery
  - Fracture reduction
  - Hip reconstruction
  - Soft tissue surgery
  - Scoliosis surgery
  - Multiple trauma

- Urology
  - Circumcision, hypospadias repair

Hydrocelectomy
Ureteric reimplantation
Cystoscopy
Nephrectomy
Insertion peritoneal dialysis catheter

- Plastic surgery
  Burns, debridement/skin graft
  Cleft lip/palate repair
  Correction of congenital limb deformities

- Others
  Endoscopies
  Dental extractions/restoration
  Muscle biopsy
  Remote location: sedation for MRI/CT, interventional radiology, BMA/LP, examination under anesthesia.

• Demonstrate competence in technical skills related to the pediatric patient
  - Knowledge and utilization of pediatric equipment and breathing systems
  - Airway management of the neonate and pediatric patient
  - Management of the difficult airway
  - Peripheral and central venous access
  - Arterial line insertion
  - Regional anesthesia, including single shot caudal blocks and peripheral nerve blocks

• Demonstrate clinical skills necessary to evaluate and manage problems which may arise perioperatively
  - Need for post-operative admission
  - Uncooperative patient
  - Hypotension/Hypovolemia
  - Laryngospasm
  - Anaphylaxis
  - Post extubation stridor
  - Delirium
  - Nausea and vomiting
  - Need for resuscitation

• Demonstrate clinical skills necessary for the perioperative pain management of patients undergoing pediatric surgery
  - Knowledge of options for perioperative analgesia including systemic analgesia, local infiltration, regional nerve blocks, neuraxial analgesia (their indications, contraindications, advantages and disadvantages in pediatric population).
  - Demonstrate competence in ordering the perioperative modalities.

- Demonstrate competence in follow-up of pain management, conversion to enteral opioids and weaning.

Communicator

• Establish a professional and empathetic relationship with patients and families.
• Use a variety of approaches in dealing with children of all ages, including developmentally delayed children.
• Obtain and collate relevant history from patients and families, listen effectively.
• Discuss appropriate information with patients and families and other members of the health care team.
• Recognize the psychological impact of hospitalization, anesthesia and surgery on both the patients and their families.
• Ensure informed consent is obtained prior to undertaking invasive procedures.
• Communicate an anesthetic plan effectively to all members of the anesthetic team in a timely manner.
• Communicate effectively peri-operatively with all members of the health care team.
• Keep clear, concise, legible documentation.

Collaborator

• Consult effectively with other physicians and health care professionals to provide optimal patient care.
• Work as an integral member of the perioperative team:
  - Interact and collaborate effectively with all health professionals by recognizing and acknowledging their roles and expertise
  - Resolve conflicts if necessary
  - Provide feedback
  - Assume a leadership role where appropriate.

Manager

• Demonstrate knowledge and practice according to national standards and guidelines.
  - Knowledge of the use of standard intraoperative monitors
  - Knowledge of practice guidelines: BCLS/ACLS/NALS/PALS, Pediatric Airway algorithm
• Record appropriate information for anesthesiology care and consultations provided.
• Allocate finite health care resources wisely.
• Work effectively and efficiently in a health care organization.
• Utilize information technology to optimize patient care and lifelong learning.

Health Advocate

• Identify the important determinants of health affecting patients.
• Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
• Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general.
• Demonstrate principles of quality assurance and be able to conduct morbidity and mortality reviews.

Scholar

• Develop, implement and monitor a personal continuing education strategy.
• Critically appraise sources of medical information.
• Develop criteria for evaluating the anesthesiology literature and make evidence-based decision.
• Demonstrate willingness and an ability to impart acquired knowledge to more junior residents, medical students, other health care professionals and patients, if necessary.
• Synthesize and present information to colleagues and the anesthesiology department in an effective way (during Grand rounds for example).

Professional

• Deliver highest quality care with integrity, honesty, compassion and respect for diversity.
• Demonstrate an increasing sense of responsibility and "case ownership".
• Exhibit appropriate personal and interpersonal professional behaviours.
• Introduce him/herself and other members of the anesthetic team appropriately to patient and their family.
• Include the patient/family in discussions concerning appropriate diagnostic and management procedures, demonstrate respect for their opinion.
• Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
• Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
• Practice medicine ethically consistent with the obligations of a physician.

PEDIATRIC EMERGENCY MEDICINE

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of age related variables in medicine as they apply to neonatal and pediatric patient care.
- Demonstrate knowledge of normal physiology
  - Normal growth and development
  - Normal feeding practices of infants and children
  - Normal fluid and electrolyte requirements of infants and children
  - Normal laboratory values for infants and children
- Demonstrate knowledge of common syndromes and exposure to the special needs of the chronically handicapped child/the child with multiple anomalies
  - Down's syndrome
- Demonstrate assessment of the new-born
  - Jaundice
  - Failure to thrive/feeding problems
  - Prematurity
- Demonstrate clinical skills necessary for basic resuscitation and life support as practiced in pediatric emergency care facilities
  - NALS/PALS/ATLS protocols
  - Acute respiratory distress
  - Coma
  - Sudden infant death
- Develop clinical expertise in the assessment of the severity of illness and the degree of urgency of treatment
- Demonstrate clinical skills necessary to pediatric emergency care including the ability to investigate, diagnose, and manage appropriately common problems seen in the Pediatric Emergency Room, including
  - Respiratory distress/Wheezing Foreign
  - body aspiration/Cystic fibrosis
  - Febrile illnesses, infections
  - Gastro-enteritis/vomiting/ diarrhea/dehydration
  - Abdominal pain
  - DKA, Renal/Hepatic Insufficiency
  - Multiple trauma/Poisoning
  - Seizure disorder
  - Child abuse and deprivation
- Demonstrate competence in all technical procedures commonly employed in pediatric emergency room practice, including airway management, ivs, cardiovascular resuscitation, patient monitoring and life support.
- Understand the psychosocial problems affecting the health of a child, e.g. divorce, death, chronic illness in the family

COMMUNICATOR

- Develop communication skills specifically related to the paediatric patient
  - Unique interview and examination techniques
  - Providing information re: treatment, prevention to parents
- Establish a professional relationship with patients and families.
- Obtain and collate relevant history from patients, and families.
- Listen effectively.

- Discuss appropriate information with patients and families and other members of the health care team
- Appreciate need for communication with child's primary physician/pediatrician

COLLABORATOR

- Consult effectively with other physicians and health care professionals
- Function as active member of the health care team in the Emergency Room, including appropriate use of consultation

MANAGER

- Organize efficient use of resources in ER to optimize diagnostic and therapeutic processes
- Work effectively and efficiently in a health care organization.
- Manage disposition of child expeditiously (home, SSU, ward, PICU, OR)

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Use opportunities to educate parents and families concerning relevant health issues.

SCHOLAR

- Critically appraise sources of medical information.
- Demonstrate ability to use resources in ER to improve knowledge
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors including need for confidentiality.
- Practice medicine ethically consistent with the obligations of a physician
- Periodically review his/her own personal and professional performance against national standards.
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

EMERGENCY MEDICINE

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate clinical skills necessary for basic resuscitation and life support as practiced in critical care facilities
  - ACLS protocols
  - ATLS protocol
  - Acute respiratory distress
  - Coma
- Develop clinical expertise in the assessment of the severity of illness and the degree of urgency of treatment
- Demonstrate clinical skills necessary to general internal medicine and intensive care including the ability to investigate, diagnose, and manage appropriately common problems seen in the Emergency Room, including
  - Multiple trauma
  - Poisoning
  - Chest pain
  - Respiratory distress
  - Seizures
  - Headache
  - Syncope, dizziness
  - New onset neurological deficit
  - Abdominal pain
  - DKA/diabetic coma
  - Thyrotoxicosis/ myxedema
  - Renal/Hepatic Insufficiency
  - Acute musculoskeletal pain
- Demonstrate competence in all technical procedures commonly employed in emergency room practice, including airway management, cardiovascular resuscitation, patient monitoring and life support.

COMMUNICATOR

- Establish a professional relationship with patients and families.
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team

COLLABORATOR

- Consult effectively with other physicians and health care professionals
- Function as active member of the health care team in the Emergency Room, including appropriate use of consultation

MANAGER

- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.

HEALTH ADVOCATE

- 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.

SCHOLAR

- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Periodically review his/her own personal and professional performance against national standards.
- Include the patient in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

INTENSIVE CARE UNIT

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to internal medicine and surgery, including anatomy, physiology, pharmacology, biochemistry and physics.
- Demonstrate knowledge of general internal medicine with particular reference to the cardiovascular, respiratory, renal, hepatic, endocrine, hematologic and neurologic systems
- Demonstrate knowledge of the pathophysiology, assessment and treatment of some ICU problems
    - CNS
        - Decreased level of consciousness and comatose state
        - Seizures and status epilepticus
        - Cerebral aneurysm
        - Raised ICP
        - Cerebral trauma
        - Intracerebral bleed
        - Spinal trauma, acute quadri- and paraplegia
        - Declaration of brain death
    - Cardiac syndromes
        - Myocardial ischemia, infarction, myocarditis, pericarditis
        - Hypertensive crisis
        - Cardiac dysrrhythmias
        - Right and left sided heart failure
    - Respiratory
        - Community and hospital acquired infections
        - Ventilator acquired pneumonia
        - Obstructive airways disease, status asthmaticus
        - Respiratory failure
        - ARDS
        - Pulmonary trauma
        - Smoke inhalation, burns
        - Pulmonary aspiration
    - Renal
        - acute renal insufficiency and failure
        - acute disturbances in electrolyte and acid-base status
    - Gastrointestinal
        - Pancreatitis
        - Upper and lower GI bleeding
        - GI perforation and shock
        - Hepatic insufficiency, fulminant hepatic failure
        - Acute poisoning, intoxication
        - Mesenteric ischemia, infarction
        - Toxic megacolon
        - Intra-abdominal compartment syndrome
    - Hematologic
        - Anemia
        - Thrombocytopenia
        - DIC
        - Primary fibrinolysis

        - Anticoagulant therapy
        - Blood component therapy
        - Massive transfusion
    - Endocrine
        - SIADH
        - Diabetes Insipidus
        - Diabetic ketoacidosis, coma
        - Thyroid storm
        - Myxedema
        - Adrenal insufficiency
    - Infectious and immune
        - Septic shock
        - Febrile neutopenia
        - Fever of unknown origin
        - Iatrogenic nosocomial infections
    - Trauma
        - ATLS protocol
        - Upper and lower airway trauma
        - Penetrating and non-penetrating chest and abdominal trauma
        - Orthopedic trauma
        - Genitourinary trauma
        - Burns
    - Resuscitation
        - BCLS and ACLS protocols
    - Shock
        - Types: hypovolemic, cardiogenic, distributive, obstructive
        - Acute stabilization
        - New therapies (i.e. Activated Protein C, Factor VII)
- Develop clinical expertise in the multi-system assessment of critically ill patients
    - Develop expertise in clinical assessment: history, physical, labs
    - Develop expertise in identifying patients requiring critical care and admission to an intensive care setting
    - Develop expertise in identifying patients mandating resuscitation/intubation prior to transport to the ICU setting
    - Acquire triage skills when assessing multiple critically ill patients
    - Recognize when a patient no longer requires a critical care setting
    - Development and execution of treatment plans under supervision
- Understand ICU care of specific patients subsets:
    - Geriatric
    - Pregnant
    - Obese / morbidly obese
    - Psychiatric
- Understand the post-operative care as applicable to the ICU:
    - Cardiac surgery
        - ACBP
        - Valve surgery
    - Vascular surgery
        - Aneurysm repair
    - Neurosurgery
        - Evacuation of hematoma
        - ICP monitor / lumbar CSF drain
    - Thoracic surgery

        - Pneumonectomy
    - General surgery
        - Sepsis
        - Transplant
        - Pheochromocytoma
    - ENT
        - Tracheostomy physiology
- Understand principles and indication of artificial support
    - Cardiovascular
        - Pressors / inotropes
        - Intra-aortic balloon pump
    - Respiratory
        - Non-invasive and invasive ventilation
        - Oxygen therapy
    - Renal
        - Dialysis (CVVH, hemodialysis, peritoneal)
    - GI
        - Parenteral and intravenous nutritional support
        - Mechanical variceal bleeding tamponade (Blackemore tube)
- Demonstrate knowledge of indications, limitations and complications of different monitoring devices:
    - ECG and ST monitoring,
    - X-ray/CT/MRI evaluation,
    - invasive arterial monitoring,
    - CVP/PAC/CO monitoring,
    - end-tidal CO2 monitoring,
    - arterial and venous blood gas analysis,
    - pulse oxymetry monitoring,
    - EEG/ICP monitoring
- Demonstrate competence in technical procedures commonly employed in ICU, including intravenous, central venous, arterial cannulations, pulmonary catheterization, chest tube insertion, fiberoptic bronchoscopy and endotracheal intubation.
- Recognize that prior to provision of anesthetic care specific medical intervention and modification of risk factors may be required

COMMUNICATOR

- Develop appropriate communication skills to deal with critically ill patients and their stressed and grieving families
- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team about daily patient progress
- Communicate effectively by telephone to the attending physician relevant clinical information on which decisions will be based
- Keep clear, concise, legible documentation of daily patient progress in the patients' hospital chart
- Communicate effectively (both in written and verbal form) a concise yet complete medical summary to the next medical team assuming patient care
- Participate in end-of-life discussions with ICU team and family members

COLLABORATOR

- Develop an understanding of the multidisciplinary approach to health care and the role of the multidisciplinary meeting
- Consult effectively with other physicians and health care professionals to provide optimal patient care (nurses, physicians, dieticians, physiotherapists, pharmacologists, ethicists, …)

MANAGER

- Understand the limited physical capacity of intensive care unit and manage admissions, discharges, and holdings in such a way so as to not compromise care: allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Demonstrate attention to patient safety
- Honor patient confidentiality
- Obtain consent when required
- 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.
- Develop an approach to dealing with medical errors

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

ENT SURGERY

MEDICAL EXPERT

1. Demonstrate knowledge of the oto rhino laryngeal anatomy.
2. Understanding means to evaluate the different structures using:
    - use of head mirror and headlight
    - nasopharyngoscopy using the mirror, the flexible nasopharyngoscope and the telescope
    - indirect laryngoscopy using mirror and flexible nasopharyngolaryngo-scope
    - use and interpretation of videostrobolaryngoscopy with flexible and rigid scopes
    - otoscopy
    - use of the operating microscope in the examination and management of ear disease
    - evaluation of facial nerve function
2 Performance and interpretation of audiological and vestibular tests
3. Interpretation of radiological and other imaging techniques
4. Management of common otolaryngological emergencies:
    - epistaxis (cautery, anterior and posterior packing)
    - airway problems (foreign body, epiglottitis, croup)
    - esophageal emergencies (foreign body, caustic ingestion)
    - deep neck infections
    - facial trauma
    - the dizzy patient
    - acute otitis media, otitis externa
5. Operative objectives
    - Understand and apply sterility protocols
    - Understand nerve protection requirements
    - Understand the "shared airway"
    - Get experience with surgical airway pathologies
    - Get experience with surgical airway management
    - Ability to assist in some surgeries
    - Get experience with ENT topicalization

COMMUNICATOR

During this rotation, residents must understand the cultural diversity which surrounds them and learn how to respect this diversity while establishing therapeutic relationships with patients and their families under the guidance of attending staff and chief residents. Resident must learn to use this relationship to then obtain relevant history from patients and their families. Residents must be able to take relevant diagnostic and therapeutic information and discuss this with patient and family members in a language they understand.

COLLABORATOR

During this rotation, residents must acquaint themselves with the type and number of specialists around them and, when it is appropriate, consult these physicians as well as other allied health care professionals in a manner in which the patient may be the direct beneficiary. Residents must also understand the importance of effectively

interacting with these individuals and obtaining and using their expertise in striving for improved patient outcomes. Residents are also introduced to otolaryngology inter-disciplinary activities such as in the head and neck clinic and the voice clinic.

MANAGER

Residents must be aware of all the resources available and use these resources effectively to achieve improved health care for the patient. Residents must also learn how to manage their time effectively and efficiently on a professional level. This includes prioritization of tasks in order of importance. Familiarization of available information technology and its use to optimize patient care is also an important component of the manager role.

HEALTH ADVOCATE

Residents become familiar with the important determinant of health affecting patients, and how these determinants vary in each of the subspecialties of otolaryngology. In doing so, residents then learn to transfer this information in a useful way to the patient to modify behaviours in such a way as to achieve an improved health outcome. Residents must also learn to act as patient advocates in situations where this will clearly result in a positive patient outcome.

SCHOLAR

It is important for residents at this level to develop and implement a reading program as they become familiar with the educational resources available in hard copy and through the internet. Using various resources of medical information, residents are expected to regularly consult and appraise the literature and begin to clinically evaluate this literature. Both clinical and educational activities should stimulate the resident to ongoing learning which is in fact the beginning of life long learning. Residents at this level also learn the importance of exchanging information with peers and colleagues to enrich their own knowledge and that of others.

PROFESSIONAL

Residents must learn that as medical professionals, they must work with integrity, honesty and compassion. They must also exhibit appropriate personal and interpersonal professional behaviours. Integrating these qualities into daily life allow for the practice of ethical medicine consistent with the obligations of a physician. Information technology must be continuously updated in order to optimize patient care and self directed life long learning.

OBSTETRIC ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to obstetric anesthesia, including normal anatomical and physiological changes and their impact on planning anesthetics
    - Physiology of the uteroplacental unit – placental drug transfer
    - Effect of anesthesia/analgesia on uterine blood flow/activity
- Demonstrate clinical skills necessary for the preoperative assessment of the pregant patient
    - Pre-existing medical conditions and their impact on anesthesia care
        - Cardiac/respiratory diseases
        - Obesity
        - Diabetes
        - Neurologic disorders/Chronic back problems
    - Pathophysiology and anesthetic considerations of high risk pregnancy
        - Pre-eclampsia, eclampsia, HELLP
        - Obstetrical haemorrhage
        - Pre-term labor
        - Abnormal positions/multiple births
    - Antepartum fetal evaluation
    - Informed consent in the pregnant patient
    - The pregnant patient presenting for non-obstetrical surgery
- Demonstrate the knowledge of the anesthetic considerations for obstetrical procedures and their postoperative management
    - Labor analgesia
        - Systemic analgesics
        - Inhaled agents
        - Epidural analgesia
            - Choice of local anesthetic
            - The "walking" epidural
            - Effect of regional anesthesia on labor progress
            - Complications of regional analgesia
            - Combined spinal/epidural
        - Intrathecal opiates for labor
    - Anesthesia for Caesarean section
        - Epidural
        - Spinal
        - General
    - Anesthesia for other procedures
        - Cerclage
        - Dilatation and curettage

- Demonstrate the clinical skills necessary for the management of complications and emergencies in the obstetrical patient
    - Diagnosis and treatment of anesthetic complications
        - Hypotension
        - Intravascular injection of local anesthetic
        - Total spinal anesthesia
        - Post-dural puncture headache
        - Aspiration pneumonitis

- Diagnosis and treatment of amniotic fluid embolism
- Resuscitation
  - CPR in the pregnant patient
  - Neonatal resuscitation

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with obstetrician, neo and perinatologist, midwife and Birthing Unit nurses to assure optimal management of patients
- Work effectively as an integral member of the Birthing Unit team.

- Function effectively in the Birthing unit utilizing the abilities of all team members, includes the ability to resolve conflicts, provide feedback and assume a leadership role where appropriate.

MANAGER

- Be able to utilize resources effectively to provide anesthesia services to the Birthing unit simultaneously with other areas of in hospital coverage
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning
- Practice according to national standards and provincial guidelines for the management of Obstetrical patients
- Record appropriate information for anesthetics and consultations provided.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients
- Provide expertise and leadership in maintaining and improving the standards of obstetrical anesthesia practice and patient care.
- Act as an advocate for quality management of pain during labour and delivery and improved patient safety

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

OBSTETRICS

MEDICAL EXPERT/CLINICAL DECISION-MAKER

At the completion of the rotation the PGY-1 Trainee will be able to identify major perinatal issues that can lead to increased infant/maternal morbidity and mortality.

Specific

1. Be aware of the progression of normal labor and delivery including:
    a. Four stages of labor;
    b. Intrapartum fetal monitoring;
    c. Determining the position and lie of the fetus; *and*
    d. Identifying abnormal/high risk situations during labour;
2. Discuss options for intrapartum analgesia.
3. Discuss high risk obstetrical situations including:
    a. Multiple gestation;
    b. Prematurity;
    c. PROM;
    d. Assisted deliveries; *and*
    e. Grand multiparity.
4. Be able to discuss the diagnosis and initial treatment of:
    a. Antepartum hemmorhage;
    b. Postpartum hemorrhage;
    c. Pre-eclampsia/HELLP syndrome;
    d. Fetal bradycardia; *and*
    e. Retained placenta.

Procedures

The PGY-1 will have had the opportunity to gain experience in the following technical skills:

1. Physical examination of the pregnant patient;
2. Assessing cervical dilatation;
3. Vaginal delivery;
4. Assisting at Caesarean Section; *and*
5. Principles of episiotomies and repair of tears.

COMMUNICATOR

The Trainee will be able to:

1. Effectively communicate with patients and their families;
2. Discuss management plans with patients and family members in a clear understandable fashion;
3. Take an appropriate obstetrical and gynecologic history from patients and ancillary sources;
4. Present cases to the attending staff in a clear, concise manner;
5. Provide emotional support for patients and their families; *and*
6. Chart in a clear and legible fashion.

COLLABORATOR

1. Consult effectively with other physicians and health care professionals
2. Function as active member of the health care team in the Obstetrics Department, including appropriate use of consultation

MANAGER

1. Effectively manage the inpatient service, triage appropriately, as well as assess patients elsewhere in the hospital when needed;
2. Ensure that admissions and orders are done in a timely manner so that they can be carried out expeditiously; *and*
3. Supervise junior members of the health care team appropriately.

HEALTH ADVOCATE

1. Be an advocate for the patient
2. Ensure that the patient's safety is placed above all else
3. Ensure that all standards of care are met when caring for each patient
4. Use limited health care resources in an appropriate manner

SCHOLAR

1. Embark on self-directed learning and will continue to read around cases, consult the literature and improve his/her knowledge base;
2. Attend all rounds and teaching sessions;
3. The resident will come to the hospital prepared and organized in order to care for the patients; *and*
4. Teach junior members (medical students) of the health care team.

PROFESSIONAL

1. Deliver highest quality care with integrity, honesty and compassion.
2. Exhibit appropriate personal and interpersonal professional behaviors.
3. Practice medicine ethically consistent with the obligations of a physician
4. Periodically review his/her own personal and professional performance against national standards.
5. Include the patient in discussions concerning appropriate diagnostic and management procedures.
6. Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
7. Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

ACUTE PAIN

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to acute pain, including anatomy, physiology, pharmacology, biochemistry and physics.
    - Knowledge of the pharmacology and indications for use of drugs commonly used in acute pain management
        - Starting doses/ frequencies
        - Comparative/equivalent dose
        - Opioids
            - Types/receptors
            - Rational drug substitution
            - Dose/duration/adverse reactions
            - Spinal vs systemic routes
            - Opioid tolerant patient (chronic therapy, abuse)
            - Physical dependence/Addiction
        - NSAIDS and acetaminophen
            - Routes and dosage
            - Risks/benefit
            - Plateau effect
        - Local anesthetics
            - Mechanism of action
            - Toxicity
    - Knowledge of the anatomy and physiology of the regional route:
        - Risks/benefits; efficacy
        - Catheter placement and anatomy
        - Medications and adjuvants
        - Anticoagulation
- Demonstrate clinical skills necessary for postoperative pain management
    - Formulate a comprehensive plan for perioperative pain management
    - Know indications/ contraindications/efficacy
        - Local anesthetics
        - NSAIDS/acetaminophen
        - Opioids
    - PCA
        - Bolus/ lockout/ basal infusion
        - Titration to need
        - Risks/ benefits
    - Neuraxial analgesia
        - Dose/ breakthrough/ infusion/ bolus
        - Titration to need
        - Risks/ benefits
    - Manage transitions of pain therapy (routes/ in to outpatient)
    - Adjust management to specifics of situation (patient/ available resources)
- Recognize that prior to provision of acute pain procedures, specific medical intervention and modification of risk factors may be required
- Demonstrate knowledge of basic legal and bioethical issues encountered in acute pain provision including informed consent
- Demonstrate clinical skills necessary for pain assessment
    - Use a structured interview to assess pain
        - History: pain assessment scale

        - Topographic classification
        - Pathophysiological classification
    - Physical Examination
        - Neurological exam
    - Lab investigation
        - Coagulation status
- Recognize cultural influences in presentation and response patterns to acute pain
- Demonstrate knowledge, recognition and management of complications associated with acute pain procedures/provision
    - Mental status change
    - Convulsions
    - Spinal headache
    - Respiratory depression
    - Cardiac dysrhythmias
    - Cardiac arrest
    - Patchy block
    - Neurological deficit
    - Inadequate analgesia
    - Catheter malfunction
    - Nausea/vomiting
    - Urinary retention
    - Ileus/constipation

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard procedure monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization

- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for acute pain.
- Recognize the opportunities for anesthesiologists to advocate for resources for pain management

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

McGill

Department of Anesthesia

Core Rotation Goals and Objectives

CARDIOVASCULAR ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to cardiovascular anesthesia, including anatomy, physiology, pharmacology, biochemistry and physics of the cardiovascular system.
    - Knowledge of the anatomy
        - Heart
        - Aorta and its branches
        - Arterial circulation
        - Peripheral venous circulation
        - Cardiac conduction system
        - Cardiac and vascular nerves
        - Pericardium
    - Cardiovascular catheterization and angiography
        - Catheterization
        - Determination of shunts
    - Knowledge of the physiology
        - Cardiac cycle
        - Cardiac electrophysiology
        - Coronary circulatory physiology and autoregulation
        - Cardiac output determinants
        - Myocardial mechanics
            - Starling curves
            - Pressure-volume loops
        - Peripheral circulatory physiology
        - Autonomic nervous system regulation
    - Knowledge of the pharmacology and indications for use of drugs commonly used in cardiovascular anesthetic practice
        - Cardiac inotropes, pressors, vasodilators
        - Antiarrhythmics
        - Heparin and heparin substitutes
        - Protamine
        - Antifibrinolytics: amicar, tranexamic acid, aprotinin

- Demonstrate knowledge of management of cardiopulmonary bypass including specific considerations for organ protection
    - Pulsatile vs nonpulsatile flow
    - Bubble vs membrane oxygenator
    - Priming solutions
    - Cardioplegia solutions
    - Retrograde vs anterograde
    - Retrograde cerebral perfusion in DHCA
    - Temperature management and monitoring
    - Control of blood glucose
    - Ph stat vs Alpha stat

- Demonstrate knowledge of the pathophysiology and hemodynamic considerations in patients with cardiovascular problems:
    - Coronary artery disease (N.B. coronary anatomy)
        - Ventricular dysfunction

        - Right/ left
            - End stage cardiac failure
    - Valvular heart disease
        - Rheumatic
        - Acquired
    - Cardiomyopathies
        - IHSS
    - Tamponade
    - Cardiac tumors
    - Cardiac transplantation

- Demonstrate knowledge of anesthetic considerations (evaluation/management) in patients undergoing different procedures:
    - Myocardial revascularization
    - Urgent or "cath lab crash" for cardiac surgery
    - MIDCAB: techniques
    - Ischemic preconditioning for off-pump revascularization
    - Fast-tracking techniques
    - Valvular repair
    - Valvular replacement
        - Mechanical
        - Bioprosthetic
        - Homograft
        - Ross procedure
    - Resection of cardiac tumor
        - Atrial myxoma
    - Congenital heart disease in adults
    - Septal myomectomy
    - Surgery requiring deep hypothermic circulatory arrest
        - Aortic arch resection
    - Cardiac transplantation

- Demonstrate knowledge and expertise in the use of specialized monitors
    - PAC
    - TEE
    - ASA/ SCA guidelines on perioperative TEE
    - Thromboelastograph/ Sonoclot
    - CNS monitoring

- Demonstrate technical expertise in procedure related to CV anesthesia:
    - Arterial line insertion (radial +/- brachial, axillary, femoral)
    - Central venous canulation (internal/external jugular, subclavian, femoral)
    - TEE probe Insertion / Comprehensive 2D echo evaluation
- Demonstrate ability to adequately induce and maintain anesthesia in patients undergoing CV surgical procedures
- Demonstrate ability to adequately fluid resuscitate patients
    - Rationally manage perioperative fluid Rx
    - Know the appropriate use and risks of blood products
- Demonstrate the ability to manage perioperative complications
    - Cardiogenic shock
        - IABP
        - RVAD/ LVAD

- RV failure
- LV failure
- Tamponade
- Atrial /ventricular arrhythmias
- Myocardial ischemia/ infarct
- Pulmonary oedema
- Pulmonary hypertension
- Bleeding coagulopathies
- Protamine reactions
- Allergic reactions/ anaphylaxis
- Know BCLS and ACLS protocols

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the management of operating rooms.
- Demonstrate knowledge of the contributors to anesthetic expenditures in CV anesthesia.
- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard intraoperative monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
        - Blood transfusion
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.

- Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

THORACIC ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate clinical skills necessary for the preoperative assessment of the patient undergoing thoracic surgery
    - Pertinent history and physical exam
    - Appropriate investigations
        - PFT for lung respectability
            - Spirometry
            - Flow-volume loops
            - Split-lung function tests
            - PA balloon occlusion test
        - Exercise testing
        - ABG
        - V/P scans
        - Risk stratification
    - Assessment and optimization of underlying disease
        - COPD
        - Special considerations in pulmonary malignancy
        - Asthma
        - Cystic Fibrosis
        - Pulmonary Fibrosis
        - Pulmonary hypertension
    - Demonstrate knowledge of internal medicine for the assessment of patients with concomitant medical disease
        - Myasthenia gravis
        - Myasthenic syndrome
    - Recognize that prior to provision of anesthetic care specific medical intervention and modification of risk factors may be required.
    - Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent
- Demonstrate the knowledge of the anesthetic considerations in thoracic procedures
    - Demonstrate understanding of indications and applications of intraoperative monitoring
        - Arterial catheterization
        - CVP
        - PA catheterization
        - TEE
    - Demonstrate understanding of the physiology of the lateral position and open thorax
    - Demonstrate understanding and management of one-lung anesthesia
        - Absolute/Relative indications
        - Methods of lung separation
        - Management of intraoperative hypoxemia
    - Demonstrate pertinent choice of anesthetic for thoracic surgery
        - Hypoxic pulmonary vasoconstriction
    - Demonstrate technical skills related to thoracic anesthesia
        - Arterial line placement
        - Selection and placement of double lumen tubes
        - Checking placement: clinical, FOB

        - Management of malposition
        - Lung isolation in the difficult airway patient
        - Techniques and placement of bronchial blockers
        - Placement and use of thoracic epidurals
    - Demonstrate appropriate management for specific thoracic procedures
        - Bronchoscopy
        - Mediastinoscopy
        - Thoracoscopy
        - Lobectomy
        - Pneumonectomy
        - Tracheal resection
        - Bronchopulmonary lavage
        - Airway laser surgery
        - Esophageal surgery
        - High frequency ventilation
    - Demonstrate management of specific situations
        - Mediastinal mass
        - Bronchopleural fistula/empyema
        - Pulmonary haemorrhage
        - Lung cysts/bullae
        - Lung abscess
        - Pneumothorax
        - Foreign body in airway
- Demonstrate clinical skills necessary for the postoperative management of patients undergoing thoracic surgery
    - Postoperative pain management
        - Relation of post-op respiratory dysfunction and pain
    - Postoperative complications
        - Pulmonary Hemorrhage
        - Herniation
        - Pneumothorax
        - Respiratory distress
        - Arrhythmia

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard intraoperative monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
        - Airway algorithm
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

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DIFFICULT AIRWAY MANAGEMENT

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Required Competencies:
  - Identify features of a difficult airway
  - Knowledge of indications, set-up, use and care of tools listed below
    - Inhalational induction and LMA insertion
    - Inhalational induction and ETT intubation
    - Iv induction, Fastrach insertion and intubation
    - Bougie-facilitated intubation
    - Lighted stylet-facilitated intubation
    - Bullard-facilitated intubation
    - Flexible fiberoptic intubation awake
    - Flexible fiberoptic intubation asleep
    - Nasal intubation (with and without adjuncts)
    - Awake intubation
    - Topicalization technique
    - Superior laryngeal nerve block
    - Cricothyroid puncture for topicalization
    - Acceptable dose of LA
    - Sedation and monitoring
- Optional competencies:
  - LMA-facilitated FOB examination
  - Fastrach intubation with adjuncts
  - Straight blade laryngoscopy
  - Levering blade intubation
  - Digital intubation
  - Retrograde intubation (simulator)
  - Combitube insertion (simulator)
  - Cricothyrotomy (simulator)
  - Laryngeal dissection (anatomy lab)
  - Assist with tracheostomy under local

COMMUNICATOR

- Demonstrate effective communication with patient (description of procedures, informed consent)
- Effectively communicate with OR team regarding equipment and assistance required
- Provide thorough documentation on anesthetic record
- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.

- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Collaborate with OR team members to ensure optimal management of patients (i.e. ENT surgeon when required)
- Consult effectively with other physicians and health care professionals to provide optimal patient

MANAGER

- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
- Demonstrate proper care of airway equipment
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting airway pathologies.
- Appropriately inform patients with difficult airways (post-op visit, formal letter)
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for airway management, emerging medical technologies and new health care practices

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Use all learning aids available (textbooks, web-based resources, mannequins, simulator, anatomy lab)
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.

OBSTETRIC ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to obstetric anesthesia, including normal anatomical and physiological changes and their impact on planning anesthetics
    - Physiology of the uteroplacental unit – placental drug transfer
    - Effect of anesthesia/analgesia on uterine blood flow/activity
- Demonstrate clinical skills necessary for the preoperative assessment of the pregant patient
    - Pre-existing medical conditions and their impact on anesthesia care
        - Cardiac/respiratory diseases
        - Obesity
        - Diabetes
        - Neurologic disorders/Chronic back problems
    - Pathophysiology and anesthetic considerations of high risk pregnancy
        - Pre-eclampsia, eclampsia, HELLP
        - Obstetrical haemorrhage
        - Pre-term labor
        - Abnormal positions/multiple births
    - Antepartum fetal evaluation
    - Informed consent in the pregnant patient
    - The pregnant patient presenting for non-obstetrical surgery
- Demonstrate the knowledge of the anesthetic considerations for obstetrical procedures and their postoperative management
    - Labor analgesia
        - Systemic analgesics
        - Inhaled agents
        - Epidural analgesia
            - Choice of local anesthetic
            - The "walking" epidural
            - Effect of regional anesthesia on labor progress
            - Complications of regional analgesia
            - Combined spinal/epidural
        - Intrathecal opiates for labor
    - Anesthesia for Caesarean section
        - Epidural
        - Spinal
        - General
    - Anesthesia for other procedures
        - Cerclage
        - Dilatation and curettage

- Demonstrate the clinical skills necessary for the management of complications and emergencies in the obstetrical patient
    - Diagnosis and treatment of anesthetic complications
        - Hypotension
        - Intravascular injection of local anesthetic
        - Total spinal anesthesia
        - Post-dural puncture headache
        - Aspiration pneumonitis

- Diagnosis and treatment of amniotic fluid embolism
- Resuscitation
  - CPR in the pregnant patient
  - Neonatal resuscitation

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with obstetrician, neo and perinatologist, midwife and Birthing Unit nurses to assure optimal management of patients
- Work effectively as an integral member of the Birthing Unit team.

- Function effectively in the Birthing unit utilizing the abilities of all team members, includes the ability to resolve conflicts, provide feedback and assume a leadership role where appropriate.

MANAGER

- Be able to utilize resources effectively to provide anesthesia services to the Birthing unit simultaneously with other areas of in hospital coverage
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning
- Practice according to national standards and provincial guidelines for the management of Obstetrical patients
- Record appropriate information for anesthetics and consultations provided.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients
- Provide expertise and leadership in maintaining and improving the standards of obstetrical anesthesia practice and patient care.
- Act as an advocate for quality management of pain during labour and delivery and improved patient safety

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

NEONATAL INTENSIVE CARE UNIT

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of age related variables in medicine as they apply to neonatal patient care.
- Demonstrate knowledge and competence in management of neonatal problems including:
    - relevant aspects of fetal development, pregnancy, maternal illness, labor and delivery
    - the process of adaptation to extra uterine life
    - diagnosis and differential diagnosis
    - recognition of the seriously ill newborn
    - emergency management and resuscitation
    - respiratory support including surfactant administration, and circulatory support
    - neonatal nutrition, feeding, metabolic problems, and drug therapy
    - evaluation and care of the infant who has neurological impairment, congenital anomalies, or requires surgical intervention
    - problems encountered in the follow-up of the high risk neonate
- Elicit a history and perform a physical examination that is relevant, accurate, and appropriate to the newborn's problem.
- Demonstrate an approach towards solving the newborn's problems.

COMMUNICATOR:

- Cooperate and communicate with physicians and allied health personnel. Demonstrate ability as a skilled liaison between parents and various support services.
- Establish therapeutic relationships and communicate skillfully with families of sick neonates.
- Present the patient's problems clearly, concisely, and accurately both verbally in the clinical setting and in the medical record.

COLLABORATOR:

- Interact and consult appropriately with all healthcare personnel who care for newborns
- Elaborate a patient care plan in collaboration with members of the interdisciplinary team

MANAGER:

- Understand the importance of shared responsibility for healthcare provision in a multidisciplinary setting.
- Utilize information technology to optimize patient care and life-long learning.
- Use health care resources wisely.
- Organize work effectively, prioritizing urgent problems and delegating in a feasible and timely manner.

HEALTH ADVOCATE:

- Act as an advocate for further improvements in outcome for the fetus and newborn.
- Identify 'at risk' patients or families and access appropriate services in the health and social system.
- Recognize remediable determinants of infant health and take appropriate measures in the community.

SCHOLAR:

- Ongoing self-directed acquisition of clinical knowledge.
- Ability to critically appraise information to make appropriate clinical decisions.
- Ability to participate in teaching responsibilities.

PROFESSIONAL:

- Deliver highest quality care with integrity and honesty.
- Work harmoniously and helpfully as part of the NICU team.
- Reliably fulfill the duties of house officer with reliable attendance during the rotation.
- Communicate with families with compassion and empathy. This includes the ability to be supportive to parents of infants who are dying, critically ill, handicapped, hospitalized for prolonged periods, or have uncertain outcomes.
- Recognize personal limitations, seeking assistance and consulting with others as required.
- Demonstrate respect for the difficulties of making ethical decisions in complex situations.

PEDIATRIC ANESTHESIA

The pediatric anesthesia training at McGill consists of 3 to 4 months of clinical pediatric exposure at the Montreal Children's Hospital and Shriners Hospital for Children. The resident will participate in the delivery of care for pediatric patients undergoing various procedures. The objective of this rotation is to familiarize the resident with considerations and particular techniques related to pediatric anesthesiology. The following goals and objectives list the minimum of what is expected of residents in terms of their knowledge base, procedural skills, perioperative patient management, attitude and communication skills. The resident is highly encouraged to formulate an anesthetic management plan for each procedure. The depth of comprehension of resident's knowledge base, their technical skills, clinical judgment and decision making capacities as well as their ability to critically appraise medical literature are expected to increase as resident become more senior. By the end of this rotation, the resident should be able to manage ASA class 1 and 2 patients greater than 2 years of age (over 1 year of age for senior residents) with limited assistance for uncomplicated surgery including induction, maintenance, emergence, charting and transportation to the PACU.

The resident is expected to demonstrate adequate preparation in reading and chart review for assigned clinical cases.

Upon completion of this rotation, the resident should be able to:

Medical Expert/Clinical Decision-maker

• Demonstrate knowledge and understanding of the basic anatomy and physiology, as applicable to pediatric anesthesia, including the maturation process which takes place in all systems.

- Cardiovascular system
  - -Anatomy and physiology relevant to the transitional circulation
  - -Maturation of the myocardium and the autonomic nervous system
  - -Normal values for different stages of development
  - -Pediatric basic and advanced life support (N.B. attendance at MCH PALS is encouraged)
- Pulmonary system
  - -Anatomic features of neonatal, infant, pediatric and adolescent airway
  - -Physiology of the respiratory system and its maturation over time with respect to: control of respiration, compliance, lung volumes, oxygen consumption/metabolic rate, normal values for different stages of development
- Central nervous system
  - -Anatomy-fontanels
  - -Physiology: intracranial pressure and volume, cerebral blood flow, autoregulation
- Genitourinary system
  - -Renal maturation
  - -Fluid and electrolyte management/fluid distribution
  - -Maintenance requirements

- Gastrointestinal system
  - -Glucose control
  - -Maturation of hepatic function
- Thermoregulation
  - -Body surface area
  - -Heat loss
  - -Ability to thermoregulate
- Psychological issues
  - -Anxiety and coping mechanism in different age groups
  - -Separation anxiety, parental anxiety
  - -Effects of hospitalization

• Demonstrate knowledge and understanding of pediatric pharmacology for ASA class 1 and 2 neonatal and pediatric patients, including

- Absorption
- Volume of distribution
- Protein binding
- Pharmacokinetics/ pharmacodynamics and calculation of drug dosage
  - -Premedication
  - -Inhaled anesthetics
  - -Induction drugs
  - -Sedative-hypnotic drugs
  - -Narcotics
  - -Muscle relaxants
- Metabolism
- Clearance
- Excretion
- Toxicity

• Demonstrate clinical skills necessary for the preoperative assessment of the pediatric patient using relevant historical, physical and laboratory information.

- Demonstrate knowledge of pediatric medicine for the assessment of children with concomitant medical disease.
- Summarize fasting guidelines of pediatric patients.
- Recognize that prior to provision of anesthetic care, specific medical intervention or modification of risk factors may be required.
- Demonstrate knowledge of basic legal and bioethical issues encountered in pediatric anesthetic practice including informed consent (include blood transfusion consent for child of Jehovah's Witness parents).

• Demonstrate knowledge of the anesthetic considerations and clinical skills to institute a safe anesthetic management for pediatric patients undergoing procedures

- Preoperative preparation (ventilator, equipment selection, routine and resuscitative medications)
- Monitoring the pediatric patient
- Induction of anesthesia
- Bag-mask ventilation
- Endotracheal tubes/LMA placement
- Intravenous fluid therapy
- Massive transfusion
- Appropriate timing of extubation
- Neonatal anesthesia
- Regional anesthesia and analgesia
- Full stomach and emergency surgery

• Demonstrate knowledge of specific anesthetic considerations for pediatric patients with concomitant disease/disorder and formulate an appropriate perioperative patient management plan

- Neonate/premature/ ex-premature
- Child with recent upper respiratory tract infection (URTI)
- Asthma
- Cystic fibrosis
- Obstructive sleep apnea
- Chronic lung disease
- Physiology of repaired simple cardiac lesions
- Non-cardiac surgery in patients with unrepaired ASD, VSD, PDA
- Mediastinal masses
- Hydrocephalus, raised ICP
- Spina bifida
- Cerebral palsy
- Seizure disorder
- Developmental delay
- Down’s syndrome
- Gastroesophageal reflux
- Hepatobiliary disease
- Renal insufficiency or failure
- Sickle cell/ thalassemia/ hemophilia
- Anemia
- Myopathies
- Malignant disease
- Septic shock
- Diabetes
- Thyroid diseases
- Obesity
- Mucopolysaccharidosis
- Malignant hyperthermia/ masseter spasm

- Atypical plasma cholinesterases
- Anxiety

• Formulate an anesthetic management, describe the potential complications and initiate anesthesia care for common procedures (when applicable), including

- General surgery
  - Inguinal hernia repair
  - Orchidopexy
  - Laparotomy/laparoscopy
  - Pyloromyotomy
  - Necrotizing enterocolitis
  - Omphalocele/gastroschisis
  - Pectus excavatum repair
  - Thoracic surgery
  - Congenital diaphragmatic hernia repair
  - Tracheo-esophageal fistula repair

- Otolaryngology
  - Tonsillectomy and adenoidectomy
  - Post-tonsillectomy/adenoidectomy bleeding
  - Myringotomy
  - Tympanoplasty
  - Mastoidectomy
  - Endoscopic sinus surgery/polyps excision
  - Thyroidectomy
  - Removal of foreign body in airway
  - Bronchoscopy (rigid/flexible)
  - Epiglottitis/croup
  - Retropharyngeal abscess
  - Tracheostomy

- Ophthalmology
  - Strabismus repair
  - Cataract surgery
  - Open eye injury

- Neurosurgery
  - Intracranial/ posterior fossa tumor resection
  - Drainage of extra/subdural hematoma
  - VP shunt insertion/revision
  - Craniosynostosis
  - Myelomeningocele/encephalocele repair
  - Spinal cord tumour excision

- Orthopedic surgery
  - Fracture reduction
  - Hip reconstruction
  - Soft tissue surgery
  - Scoliosis surgery
  - Multiple trauma

- Urology
  - Circumcision, hypospadias repair

Hydrocelectomy
Ureteric reimplantation
Cystoscopy
Nephrectomy
Insertion peritoneal dialysis catheter

- Plastic surgery
  Burns, debridement/skin graft
  Cleft lip/palate repair
  Correction of congenital limb deformities

- Others
  Endoscopies
  Dental extractions/restoration
  Muscle biopsy
  Remote location: sedation for MRI/CT, interventional radiology, BMA/LP, examination under anesthesia.

• Demonstrate competence in technical skills related to the pediatric patient
  - Knowledge and utilization of pediatric equipment and breathing systems
  - Airway management of the neonate and pediatric patient
  - Management of the difficult airway
  - Peripheral and central venous access
  - Arterial line insertion
  - Regional anesthesia, including single shot caudal blocks and peripheral nerve blocks

• Demonstrate clinical skills necessary to evaluate and manage problems which may arise perioperatively
  - Need for post-operative admission
  - Uncooperative patient
  - Hypotension/Hypovolemia
  - Laryngospasm
  - Anaphylaxis
  - Post extubation stridor
  - Delirium
  - Nausea and vomiting
  - Need for resuscitation

• Demonstrate clinical skills necessary for the perioperative pain management of patients undergoing pediatric surgery
  - Knowledge of options for perioperative analgesia including systemic analgesia, local infiltration, regional nerve blocks, neuraxial analgesia (their indications, contraindications, advantages and disadvantages in pediatric population).
  - Demonstrate competence in ordering the perioperative modalities.

- Demonstrate competence in follow-up of pain management, conversion to enteral opioids and weaning.

Communicator

• Establish a professional and empathetic relationship with patients and families.
• Use a variety of approaches in dealing with children of all ages, including developmentally delayed children.
• Obtain and collate relevant history from patients and families, listen effectively.
• Discuss appropriate information with patients and families and other members of the health care team.
• Recognize the psychological impact of hospitalization, anesthesia and surgery on both the patients and their families.
• Ensure informed consent is obtained prior to undertaking invasive procedures.
• Communicate an anesthetic plan effectively to all members of the anesthetic team in a timely manner.
• Communicate effectively peri-operatively with all members of the health care team.
• Keep clear, concise, legible documentation.

Collaborator

• Consult effectively with other physicians and health care professionals to provide optimal patient care.
• Work as an integral member of the perioperative team:
  - Interact and collaborate effectively with all health professionals by recognizing and acknowledging their roles and expertise
  - Resolve conflicts if necessary
  - Provide feedback
  - Assume a leadership role where appropriate.

Manager

• Demonstrate knowledge and practice according to national standards and guidelines.
  - Knowledge of the use of standard intraoperative monitors
  - Knowledge of practice guidelines: BCLS/ACLS/NALS/PALS, Pediatric Airway algorithm
• Record appropriate information for anesthesiology care and consultations provided.
• Allocate finite health care resources wisely.
• Work effectively and efficiently in a health care organization.
• Utilize information technology to optimize patient care and lifelong learning.

Health Advocate

• Identify the important determinants of health affecting patients.
• Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
• Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general.
• Demonstrate principles of quality assurance and be able to conduct morbidity and mortality reviews.

Scholar

• Develop, implement and monitor a personal continuing education strategy.
• Critically appraise sources of medical information.
• Develop criteria for evaluating the anesthesiology literature and make evidence-based decision.
• Demonstrate willingness and an ability to impart acquired knowledge to more junior residents, medical students, other health care professionals and patients, if necessary.
• Synthesize and present information to colleagues and the anesthesiology department in an effective way (during Grand rounds for example).

Professional

• Deliver highest quality care with integrity, honesty, compassion and respect for diversity.
• Demonstrate an increasing sense of responsibility and "case ownership".
• Exhibit appropriate personal and interpersonal professional behaviours.
• Introduce him/herself and other members of the anesthetic team appropriately to patient and their family.
• Include the patient/family in discussions concerning appropriate diagnostic and management procedures, demonstrate respect for their opinion.
• Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
• Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
• Practice medicine ethically consistent with the obligations of a physician.

PEDIATRIC INTENSIVE CARE UNIT

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of age related variables in medicine as they apply to neonatal and pediatric patient care.
- Demonstrate knowledge of normal physiology
  - Normal growth and development
  - Normal feeding practices of infants and children
  - Normal fluid and electrolyte requirements of infants and children
  - Normal laboratory values for infants and children
- Demonstrate knowledge of the pathophysiology and management strategies of
  - Respiratory distress syndrome
  - Systemic inflammatory response syndrome
  - Renal and liver transplants
  - Bronchiolitis
  - Seizure disorders
  - Head injury
  - Burns
- Demonstrate knowledge of the basic pathophysiology of common types of congenital heart disease
- Demonstrate the daily management of PICU patients
  - Fluid and electrolyte therapy
  - TPN
- Demonstrate competence in technical procedures commonly employed in the pediatric ICU, including intravenous cannulations, airway management, central venous cannulations, arterial lines cannulations, chest tubes insertion and spinal taps.
- Demonstrate Knowledge of ventilation strategies, indications and application
  - Pressure-regulated volume control
  - High frequency oscillation
  - Prone ventilation
  - Permissive hypercapnia
  - ECMO
- Demonstrate Knowledge of pacemakers in the management of postoperative congenital heart disease
  - Programming
  - Percutaneous/transesophageal methods
- Understand the psychosocial problems affecting the family of a child hospitalized in the PICU.

COMMUNICATOR

- Develop communication skills specifically related to the paediatric patient
  - Unique interview and examination techniques
  - Providing information re: treatment, prevention to parents
- Establish a professional relationship with patients and families.
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team

- Gain experience delivering information to parents in stressful circumstances, understanding grief support techniques

COLLABORATOR

- Understand the PICU team approach to patient care (Role of nurses, consultants, psychologists, counselors)
- Consult effectively with other physicians and health care professionals
- Function as active member of the health care team in the PICU, including appropriate use of consultation

MANAGER

- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.

HEALTH ADVOCATE

- 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.

SCHOLAR

- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

REGIONAL ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Understand the physiology and pharmacology of Local Anesthetics
- Be able to recognize and treat the signs and symptoms of Local Anesthetic toxicity
- Know the Motor and Sensory Distribution of the Upper and Lower Extremity
- Describe the Anatomy underlying the interscalene, supraclavicular, infraclavicular, axillary, femoral, popliteal fossa, and ankle blocks
- List the indications, contraindications, and complications of various regional blocks.
- Understand the basics of Peripheral Nerve Stimulation
- Know the differences in needle and catheter sets used for various blocks
- Be able to perform interscalene, infraclavicular/axillary, femoral, and popliteal fossa blocks
- Know how to evaluate the distribution of sensory and motor blockade after block placement

COMMUNICATOR

- Communicate effectively with patients what to expect during block placement and how to care for blocks postoperatively
- Follow up with patients post operatively to determine block duration, residual block, and overall satisfaction
- Give appropriate handover of all concerns to the on call housestaff
- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Communicate effectively with patients what to expect during block placement and how to care for blocks postoperatively
- Follow up with patients post operatively to determine block duration, residual block, and overall satisfaction
- Give appropriate handover of all concerns to the on call housestaff

MANAGER

- Be familiar with the planned regional blocks the day before to familiarize yourself with technical aspects and timing of blocks
- Be able to prepare for block placement in a timely and efficient manner by ensuring all equipment and block areas are fully stocked.
- Appreciate management issues in performing blocks with an appreciation of OR time
- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Provide expertise and leadership in promoting the field of regional anesthesia to the patients and all members of the OR team
- Act as an advocate in upholding safe standards of regional anesthetic practice including monitoring, sedation, technical aspects of regional anesthetic blocks, and follow-up

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Demonstrate appropriate respect for the opinion of patients and team members in the provision of acceptable regional anesthetic techniques Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

NEUROANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of neuroscience as applicable to neuroanesthesia, including anatomy, physiology, pharmacology and physics.
    - Physiology of the blood-brain barrier and consequences of its disruption
        - Clinical implications for fluid management
    - Physiology of normal and pathological cerebral circulation
        - The cerebral circulation in subarachnoid haemorrhage
    - Normal brain metabolism and function (neurotransmitters, EEG)
        - Pathophysiology of cerebral ischemia, cell death
    - ICP
        - Normal physiology, formation/circulation of CSF
        - Pathophysiology of raised ICP
        - Treatment of raised ICP
    - Structure and function of the spinal cord
        - Blood flow
        - Consequences of trauma/ischemia
        - Treatment options for cord injuries
- Demonstrate clinical skills necessary for the preoperative assessment of the neurosurgical patient
    - Demonstrate knowledge of internal medicine for the assessment of patients with concomitant medical disease
    - Recognize that prior to provision of anesthetic care specific medical intervention and modification of risk factors may be required.
    - Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent
- Demonstrate the knowledge of the anesthetic considerations in neurosurgical procedures
    - Anesthetic induction techniques for abnormal intracranial dynamics
    - Airway management
        - Techniques of airway management (especially fiberoptic bronchoscope)
        - Techniques of airway anesthesia
        - Techniques for cases requiring cervical spine immobility
    - Conduct of general anesthesia for
        - Epilepsy surgery
        - Neurovascular surgery (carotid endarterectomy, AVM, aneurysm clipping)
        - Evacuation of intracranial mass lesions (tumors, abscesses)
        - Posterior fossa surgery
        - Sitting position
        - Spinal surgery (lumbar, thoracic, cervical)
        - Head trauma
    - Anesthetic management of “awake” craniotomies
    - Special intraoperative concerns in neurosurgery
        - Positioning techniques
        - Position-related injuries
        - Body temperature management
        - Fluid balance

        - Air embolism
    - Anesthetic considerations of specialized neurological monitoring
        - Intraoperative EEG
        - SSEP
        - Transcranial Doppler monitoring
- Demonstrate clinical skills necessary for the postoperative management of neurosurgical patients in NICU
    - Demonstrate basic management of critically ill neurological/ neurosurgical disease
        - Respiratory assessment and support
            - Assessment of respiratory function in progressive neurological disorders
            - Timing of respiratory support
            - Techniques of chronic respiratory assistance
        - Endocrine evaluation and therapy (N.B. post pituitary surgery)
            - SIADH
            - Cerebral salt-wasting syndrome
        - Cardiological implications of neuro conditions
            - Acute sub-arachnoid haemorrhage
    - Demonstrate knowledge of measurement and management of intracranial hypertension
    - Demonstrate knowledge of the pathogenesis, natural history and therapy of
        - "Hypertensive" haemorrhage
        - Subarachnoid haemorrhage and vasospasm
        - Acute ischemic stroke
        - Status epilepticus
    - Demonstrate knowledge of issues related to brain death
        - Definition, diagnosis
        - Ethics
        - Management of potential organ donors

- Demonstrate skills and knowledge of basic neuroradiology
    - Plain X-rays, including C-spine
    - CT scan
        - Signs of increased ICP
        - Presence and extent of subarachnoid blood
        - Position and extent of mass lesions
    - MRI
- Demonstrate clinical skills for anesthesia for neuroradiological procedures
    - MRI
        - Angiogram
        - Interventions: angioplasty, embolization, arterial stent insertion

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.

- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard intraoperative monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
        - Airway algorithm
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

ACUTE PAIN

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to acute pain, including anatomy, physiology, pharmacology, biochemistry and physics.
    - Knowledge of the pharmacology and indications for use of drugs commonly used in acute pain management
        - Starting doses/ frequencies
        - Comparative/equivalent dose
        - Opioids
            - Types/receptors
            - Rational drug substitution
            - Dose/duration/adverse reactions
            - Spinal vs systemic routes
            - Opioid tolerant patient (chronic therapy, abuse)
            - Physical dependence/Addiction
        - NSAIDS and acetaminophen
            - Routes and dosage
            - Risks/benefit
            - Plateau effect
        - Local anesthetics
            - Mechanism of action
            - Toxicity
    - Knowledge of the anatomy and physiology of the regional route:
        - Risks/benefits; efficacy
        - Catheter placement and anatomy
        - Medications and adjuvants
        - Anticoagulation
- Demonstrate clinical skills necessary for postoperative pain management
    - Formulate a comprehensive plan for perioperative pain management
    - Know indications/ contraindications/efficacy
        - Local anesthetics
        - NSAIDS/acetaminophen
        - Opioids
    - PCA
        - Bolus/ lockout/ basal infusion
        - Titration to need
        - Risks/ benefits
    - Neuraxial analgesia
        - Dose/ breakthrough/ infusion/ bolus
        - Titration to need
        - Risks/ benefits
    - Manage transitions of pain therapy (routes/ in to outpatient)
    - Adjust management to specifics of situation (patient/ available resources)
- Recognize that prior to provision of acute pain procedures, specific medical intervention and modification of risk factors may be required
- Demonstrate knowledge of basic legal and bioethical issues encountered in acute pain provision including informed consent
- Demonstrate clinical skills necessary for pain assessment
    - Use a structured interview to assess pain
        - History: pain assessment scale

        - Topographic classification
        - Pathophysiological classification
    - Physical Examination
        - Neurological exam
    - Lab investigation
        - Coagulation status
- Recognize cultural influences in presentation and response patterns to acute pain
- Demonstrate knowledge, recognition and management of complications associated with acute pain procedures/provision
    - Mental status change
    - Convulsions
    - Spinal headache
    - Respiratory depression
    - Cardiac dysrhythmias
    - Cardiac arrest
    - Patchy block
    - Neurological deficit
    - Inadequate analgesia
    - Catheter malfunction
    - Nausea/vomiting
    - Urinary retention
    - Ileus/constipation

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard procedure monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization

- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for acute pain.
- Recognize the opportunities for anesthesiologists to advocate for resources for pain management

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

CHRONIC PAIN

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of basic science as applicable to chronic pain, including anatomy, physiology, pharmacology and physics.
    - Pain transmission and modulation:molecular biology, neurophysiology
    - Anatomy of the vertebral column and spinal cord, the nerve plexuses (brachial, femoral, sacral) the cranial and peripheral nerves, and the sympathetic nervous system
    - Pharmacology of antidepressants, anticonvulsants, opioids, local anesthetics, neurolytics, locally administered corticosteriods and opioids
- Demonstrate clinical skills necessary for the assessment of the chronic pain patient
    - Pain assessment tools including
        - Verbal rating scale,
        - Visual Analog Scale,
        - Numerical Scale,
        - McGill Pain Questionnaire
        - Factors biasing pain measurement
    - Clinical assessment
        - History: differential of painful diseases
        - Laboratory, electrophysiological, radiologic evaluation
        - Psychosocial, psychiatric evaluation
- Demonstrate clinical skills for the diagnosis and treatment of the following pain syndromes
    - Low back pain
    - Myofascial pain
    - Orofacial pain
    - Headache
    - Pain associated with cancer
    - Pain associated with neurological disease: multiple sclerosis, syringomyelia, Parkinsonism)
    - AIDS-related pain
    - Pain associated with rheumatological diseases
    - Neuropathic pain
        - Central pain
        - Spinal cord injury
        - Postherpetic neuralgia
        - Peripheral neuropathies
        - Pain of unknown etiology
        - Pain in children
        - Pain in the elderly

- Demonstrate the knowledge and understanding of chronic pain management especially with regards to its multimodal and multidisciplinary aspects
    - Pharmacotherapy
        - Analgesics: opioid, nonopioid
        - Antidepressants
        - Anticonvulsants, sodium channel blockers
        - NMDA antagonists

  - Physical therapies: cold, heat, manipulation, exercise, TENS
  - Nerve blocks
  - Neurosurgical therapies: ablative, neuroaugmentative
  - Psychological techniques: cognitive, behavioural, psychodynamic
  - Vocational/rehabilitation evaluation.

- Demonstrate knowledge of possible problems of chronic drug use in the pain patient
  - Drug abuse, addiction
  - Physical and psychological dependence
  - Tolerance
- Demonstrate the knowledge and technical skills of common chronic pain procedures
  - Recognize that prior to provision of anesthetic care specific medical intervention and modification of risk factors may be required.
  - Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent
  - Demonstrate knowledge of indications, contraindications, efficacy and complications of nerve blocks, spinal/epidural injections, joint and bursa injections, continuous infusion techniques
  - Demonstrate technical skills of procedures in chronic pain:
    - Trigger point injections
    - Peripheral nerve blocks: intercostal, occipital, lateral femoral cutaneous
    - Stellate ganglion blocks
    - Lumbar sympathetic blocks
    - Celiac blocks
    - Sacral blocks
    - Spinal/epidural opioid and local anesthetic infusions
- Understand the psycho-social aspects of chronic pain
  - Understand the multifactorial etiology of chronic pain.
  - Understand variability of the pain experience
    - Inter-individual variability of response to pain
    - Socio-cultural variation of pain experience
  - Understand widespread impact of chronic pain on all aspects of life
  - Understand expectations of chronic pain patients of Pain Clinic.
  - Understand special problems of caring for the chronic pain patient:
  - Recognition of the limits of pain medicine in helping patients with multiple problems
  - Recognition of the effect of emotional distress, cognitive dysfunction, and malingering on the presentation and success of pain therapy
  - Recognition of the complexity of factors in chronic pain (physical, psychological, social)
  - Recognition of the importance of physicians' reactions to chronic pain patients (i.e. countertransference) in their doctor-patient relationship

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team

- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care considering the multimodal treatment of chronic pain

MANAGER

- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting chronic pain patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices regarding chronic pain

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

CORONARY CARE UNIT

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to cardiology, including anatomy, physiology, pharmacology, biochemistry and physics.
- Demonstrate knowledge of general internal medicine with particular reference to the cardiovascular system
- Demonstrate knowledge of the pathophysiology, assessment and treatment of common cardiac problems
    - Chest pain assessment
    - Myocardial ischemia/infarction
    - Congestive heart failure
        - Acute pulmonary oedema
    - Cardiogenic shock
    - Arrhythmias
        - Use of pacemakers
        - Cardioversion
- Development of clinical expertise with acutely ill cardiac patients
    - Clinical assessment: history, physical, labs
    - Development and execution of treatment plans under supervision
- Demonstrate knowledge of specialized means of assessment and monitoring of the CVS:
    - PAC
    - Echocardiography
    - EKG
    - Nuclear medicine investigations
- Demonstrate knowledge of age related variables in medicine as they apply to adult and geriatric patient care.
- Demonstrate clinical skills necessary for basic resuscitation and life support as practiced in coronary care facilities.
- Demonstrate clinical skills necessary to coronary care medicine including the ability to investigate, diagnose, and manage appropriately factors that influence a patient's medical and surgical care.
- Recognize that prior to provision of anesthetic care specific medical/cardiac intervention and modification of risk factors may be required.
- Demonstrate competence in all technical procedures commonly employed in CCU, including intravenous, central venous, arterial cannulations, pulmonary catheterization and endotracheal intubation.

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team

COLLABORATOR

- Consult effectively with other physicians and health care professionals
- Function as active member of the health care team in the CCU, including appropriate use of consultation.

MANAGER

- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- 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.

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
- Periodically review his/her own personal and professional performance against national standards

CARDIAC CONSULTS

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to cardiology, including anatomy, physiology, pharmacology, biochemistry and physics.
- Demonstrate knowledge of general internal medicine with particular reference to the cardiovascular system. Demonstrate knowledge of systemic medical conditions on the cardiac system:
    - Pregnancy
    - Ageing
    - Obesity
    - Chronic renal failure
    - Sepsis
    - Electrolyte disturbances
- Demonstrate knowledge of the pathophysiology, assessment and treatment of common cardiac problems
    - Coronary heart disease
        - Acute ischemia
    - Congestive heart failure
        - Left and right ventricular dysfunction
        - Acute pulmonary oedema
    - Valvular heart disease
        - Bacterial endocarditis
    - Congenital heart disease in adults
    - Cardiomyopathies
    - Pericardial disease
        - Acute tamponade
    - Hypertension
        - Hypertensive crisis
    - Arrhythmias
        - Syncope
        - Pacemakers
        - Cardioversion
- Demonstrate knowledge of specialized means of assessment of the CVS:
    - Echocardiography
    - EKG
    - Nuclear medicine investigations
- Demonstrate knowledge of age related variables in medicine as they apply to adult and geriatric patient care.
- Demonstrate understanding of the guidelines for perioperative cardiac risk assessment and preoperative optimization

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain/collate relevant history from patients, and families. Listen effectively.

- Discuss appropriate information with patients and families and other members of the health care team
    - To help patients understand their perioperative cardiac risks
    - To work effectively with the Cardiology consultant and the requesting service to make sure that the consult patient care work flows smoothly and with clear understanding of the patient issues with the consultant

COLLABORATOR

- Consult effectively with other physicians and health care professionals
- Work with the various investigation units and the team requiring the consult to ensure that patient issues are dealt with efficiently and completely
- Function as active member of the health care team in with relation to cardiology service including appropriate response to consultation.

MANAGER

- Know the guidelines regarding cardiac assessment and risk stratification as to make a rational approach to investigations
- Ensure appropriate follow-up of patient issues arising from the consults
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Help patients to understand the impact of their lifestyle on their cardiac issues
- Help consulting staff understand the anesthetic implications of any treatment strategies

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
    - Have the ability to critically review the current cardiac risk assessment literature
- Facilitate learning of patients, students, and other health professionals Contribute to the education of other members of the consult team

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
- Periodically review his/her own personal and professional performance against national standards

ECHOCARDIOGRAPHY

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to cardiology, including anatomy, physiology, pharmacology, biochemistry and physics
    - Cardiac anatomy/physiology
    - Physics of ultrasound
    - Possible artefacts and pitfalls
- Demonstrate understanding of the principles of the assessment of the cardiovascular system by the use of echocardiography
    - Transthoracic/transesophageal echocardiographic views
    - Assessment of ventricular systolic function
    - Assessment of diastolic function
    - Hemodynamic assessment
    - Stress testing
- Demonstrate knowledge of manifestations of cardiovascular pathologies on echocardiography
    - Coronary artery disease
    - Valvular heart disease
    - Prosthetic valve evaluation
    - Infective endocarditis
    - Cardiomyopathies
    - Pericardial disease
    - Diseases of the aorta
    - Pulmonary hypertension
- Demonstrate knowledge of possible manifestations of some systemic illnesses on echocardiography
- Demonstrate understanding of the guidelines for perioperative cardiac risk assessment with the use of the echocardiography, and relation to surgical indications.

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain/collate relevant history from patients, and families. Listen effectively.

- Discuss appropriate information with patients and families and other members of the health care team
    - To help patients understand their perioperative cardiac risks
    - To work effectively with the Cardiology consultant and the requesting service to make sure that the consult patient care work flows smoothly and with clear understanding of the patient issues with the consultant

COLLABORATOR

- Consult effectively with other physicians and health care professionals
- Work with the various investigation units and the team requiring the consult to ensure that patient issues are dealt with efficiently and completely
- Function as active member of the health care team in with relation to cardiology service including appropriate response to consultation.

MANAGER

- Know the guidelines regarding cardiac assessment and risk stratification as to make a rational approach to investigations
- Ensure appropriate follow-up of patient issues arising from the consults
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Help patients to understand the impact of their lifestyle on their cardiac issues
- Help consulting staff understand the anesthetic implications of any treatment strategies

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
    - Have the ability to critically review the current cardiac risk assessment literature
- Facilitate learning of patients, students, and other health professionals Contribute to the education of other members of the consult team

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
- Periodically review his/her own personal and professional performance against national standards

PALLIATIVE CARE

Medical Expert/Clinical Decision-maker

Symptom management

- Pain how to assess and treat different types of pain and pain syndromes associated with cancer.
    - the current theories on how cancerous growth excites a pain response.
    - the pharmacology of NSAIDs, opioids and adjuvant drugs used in the treatment of pain.
    - about tolerance, physical dependence, addiction and routes of administration of opioids, especially morphine, hydromorphone and methadone.
    - about non-pharmacologic approaches to pain management including anesthetic and surgical options.
    - demonstrate a clear understanding of the various interventional pain treatment options which includes indications, contraindications and complications.
- Dyspnea, Delirium, Nausea and Vomiting, Constipation, Bowel Obstruction, Decubitus ulcers, Anxiety, Depression, etc.
    - what is currently known about the pathophysiology and treatment of these different symptoms.
    - the common syndromes associated with cancer.

Emergencies

- the management of hypercalcemia, severe dyspnea, severe pain, spinal cord compression, SVC syndrome, pathologic fractures, seizures and hemorrhage in the palliative setting.

Communicator

- Establish a professional and empathetic relationship with patients and families
- Obtain/collate relevant history from patients, and families. Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
    - to work with patients and families to determine appropriate goals of treatment for stage of disease.
    - issues related to outpatient management and management of symptoms in a home setting.
    - cultural/spiritual issues and alternative/unorthodox therapies as they relate to the palliative care situation.
    - issues related to bereavement of families and caregivers, including management of grief.

Collaborator

- Consult effectively with other physicians and health care professionals

- Work with the various investigation units and the team requiring the consult to ensure that patient issues are dealt with efficiently and completely
- participate effectively in the numerous multidisciplinary rounds that are organized on a regular basis.
- recognize the importance of the contributions from various paramedical, psychosocial and spiritual experts

Manager

- demonstrate an understanding of the organization of a well established tertiary care palliative care service which includes home care, outpatient clinics and hospital in patient care.
- collaborate effectively with the various care coordinators in order to ensure that resources are used as efficiently as possible.

Health Advocate

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Help patients to understand the impact of their lifestyle on their pulmonary issues
- Help consulting staff understand the anesthetic implications of any treatment strategies

Scholar

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals Contribute to the education of other members of the consult team

Professional

- Ethics
    - will be exposed to numerous ethical issues that will require careful attention and skill in order to manage these issues effectively.
- Compassion
    - recognize as with all areas of medicine the delivery of compassionate care is tantamount however during the terminal phase of illness, these skills are of particular importance.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
- Periodically review his/her own personal and professional performance against national standards

COMMUNITY ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate clinical skills necessary for the preoperative assessment of patients outside a tertiary centre
    - Understand adequate procedure and patient selection
    - Demonstrate knowledge of internal medicine for the assessment of patients with concomitant medical disease
    - Recognize that prior to provision of anesthetic care specific medical intervention and modification of risk factors may be required.
    - Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent
- Demonstrate knowledge and clinical expertise (appropriate for resident level) in different types of anesthesia practiced in a community hospital
    - Adult anesthesia
    - Thoracic anesthesia
    - Pediatric anesthesia
    - Neuroanesthesia
- Demonstrate clinical skills necessary for the postoperative management of patients in a community hospital
    - Postoperative pain management
    - Postoperative complications management
- Practice autonomy with independent decision-making in the absence of other medical specialty resource personnel.

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care
- Demonstrate capacity to integrate a different practice/milieu

MANAGER

- Exposure to aspects of operating room management
    - Scheduling
    - Planning
    - Equipment management
- Exposure to different departmental procedures, practices, and policies.

- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard intraoperative monitors
    - Knowledge of practice guidelines
        - BCLS/ACLS
        - Airway algorithm
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely. Work effectively and efficiently
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients in a community.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general in a community.

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals in a community

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

ADULT ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to anesthesia, including anatomy, physiology, pharmacology, biochemistry and physics.
    - Knowledge of the anatomy related to the anesthesia practice:
        - Airway anatomy
        - Central and peripheral blocks anatomy
        - CVS/Respiratory physiology and anatomy
        - Renal/hepatic anatomy and physiology
        - Fluid/electrolyte/hematology/endocrinology physiology
    - Knowledge of the pharmacology and indications for use of drugs commonly used in anaesthetic practice
        - Inhalational agents
        - Induction agents
        - Muscle relaxants
        - Narcotic analgesics
        - Local anaesthetics
    - Have a clear understanding of the function of the anaesthesia machine and basic anaesthesia monitors
    - Physics especially the physics of gases and fluids and the principles of electrical safety
- Demonstrate clinical skills necessary for the practice of anesthesia, including preoperative assessment, intraoperative support and postoperative management of patients of different physical status, for commonly performed surgical and obstetrical procedures
    - Perform appropriate preoperative assessment of adult patients.
        - This will include assuring optimal medical management in cooperation with the patient's other physicians and involve consultation when appropriate.
        - Understand the pathophysiology of the patient's disease process and its relation to anaesthesia and surgery.
            - ASA classification
            - Assessment of severity and stability of pre-existing organ system disease
            - Make use of appropriate examinations and laboratory tests.
            - Understand when delay to prepare the patient before surgery is beneficial and when it is deleterious
        - Airway assessment
            - Prediction of ease of ventilation/intubation
            - Recognition of the difficult airway
            - ASA Difficult Airway Algorithm
        - Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent
    - Perform appropriate intraoperative management of the patient taking into account the patient's status.
        - Select a safe effective anaesthetic technique, considering the possibilities of local, regional and general anaesthesia and understanding the particular needs of the surgery planned.

- Demonstrate knowledge of age related variables in medicine as they apply to neonatal, adult and geriatric patient care.
- Demonstrate knowledge of special concerns for different types of surgical procedures (refer to list)
- Select appropriate monitoring methods, both invasive and non-invasive, and use additional equipment (e.g. heaters, humidifiers, and positioning aids) as required.
- Know the Canadian Anaesthesiologists Society practice guidelines.
- Safely conduct the intraoperative anaesthetic management of the patient.
    - Demonstrate technical expertise in
        - Venous and arterial cannulation
        - Difficult airway management
        - Airway management adjuncts including stylets, bougies, laryngeal mask, FASTRACH, lighted stylet, and fibreoptic bronchoscope for intubation.
        - Regional anaesthesia including subarachnoid block, epidural block, brachial plexus block, and IV (Bier) block
    - Rationally manage perioperative fluid Rx
    - Know the appropriate use and risks of blood products
- Safely manage anesthetic intraoperative complications and acute perioperative problems
    - Know BCLS and ACLS protocols
- Maintain accurate and complete records

- Provide appropriate post-operative care
    - Transfer/transport of post-op patients
    - Transfer of care to PACU nurse (report)
    - Provision of post op analgesia and antiemesis therapy
    - Knowledge of PACU staffing, facilities, monitoring, standards
    - Knowledge of PACU discharge criteria to ward or home
    - Management of complications in PACU:
        - Postoperative nausea and vomiting
        - Respiratory: hypoxia/hypercarbia/obstruction
        - CVS
        - CNS, N.B. delayed awakening
        - Pain
        - Hypothermia
        - Metabolic derangements

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the management of operating rooms.
- Demonstrate knowledge of the contributors to anesthetic expenditures.
- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard intraoperative monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
        - ASA Airway algorithm
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for chronic pain management, emerging medical technologies and new health care practices in general

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

CLINICAL MENTORSHIP / SIMULATION TEACHING

The mentorship / teaching rotation is aimed at facilitating the transition from a junior to a senior anesthesia resident role. There is a strong emphasis in the acquisition of teaching, mentoring and managing skills in a collaborative fashion.

Specific Objectives:

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice.
- Demonstrate knowledge of the basic sciences as applicable to anesthesia, including anatomy, physiology, pharmacology, biochemistry and physics.
- Demonstrate knowledge of the principles and practice of anesthesia as they apply to patient support during surgery or obstetrics.
- Demonstrate knowledge of the principles of management of patients with acute pain.
- Demonstrate clinical skills necessary for the practice of anesthesia, including preoperative assessment, intraoperative support and postoperative management of adult patients of any physical status, all ages and for all commonly performed surgical and obstetrical procedures.
- Recognize that prior to provision of anesthetic care specific medical intervention and modification of risk factors may be required.
- Demonstrate knowledge of the role of the consultant anesthesiologist in the provision of safe anesthetic services within teaching facilities.
- Demonstrate competence in technical procedures commonly employed in anesthetic practice, including airway management, cardiovascular resuscitation, patient monitoring and life support, general, and regional anesthetic and analgesic techniques and postoperative care.
- Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent

COMMUNICATOR

- Exhibit role-modeling in making the implicit communicator role explicit
- Establish a professional relationship with patients and families.
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures.
- Communicate effectively with medical colleagues, nurses, and paramedical personnel in inpatient, outpatient, and operating room environments.
- Demonstrate appropriate oral and written communication skills.

COLLABORATOR

- Exhibit role-modeling in making the implicit collaborator role explicit
- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.
- Demonstrate ability to function in the clinical environment using the full abilities of all team members.

MANAGER

- Exhibit role-modeling in making the implicit manager role explicit
- Utilize simulation centre resource effectively
- Manage effectively a team as leader or participant
- Utilize personal resources effectively in order to balance patient care, continuing education, and personal activities.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
- Record appropriate information for anesthetics and consultations provided.
- Demonstrate principles of quality assurance.

HEALTH ADVOCATE

- Exhibit role-modeling in making the implicit health advocate role explicit
- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients.
- Recognize and respond to those issues where advocacy is appropriate.

SCHOLAR

- Facilitate learning of junior resident through clinical mentorship
- Apply clinical teaching principles including knowledge, techniques and feedback provision.
- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals.
- Contribute to the development of new knowledge.
- Develop criteria for evaluating the anesthetic literature.
- Critically assess the literature using these criteria.

PROFESSIONAL

- Exhibit role-modeling in making the implicit professional role explicit
- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician.
- Include the patient in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
- Establish a pattern of continuing development of personal clinical skills and knowledge through medical education.

PULMONARY FUNCTION TESTING

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to respiratory including anatomy, physiology, pharmacology, biochemistry and physics.
- Demonstrate knowledge of assessment of the pulmonary function
    - Clinical spirometry
        - Vital capacity
        - Time expired spirogram
        - Maximum breathing capacity
        - Respiratory muscle strength
    - Physiologic determinants of maximum flow rates
        - Flow-volume relationships
        - Airway compression and flow limitation
        - Sites and mechanisms of decreased airflow in disease
    - Measurement of airway obstruction
        - Airway resistance
        - Forced expiratory maneuvers
        - Flow-volume loops
    - Tests of early lung dysfunction
        - Alveolar-arterial oxygen tension difference
        - Frequency dependence of compliance
        - Multiple-breath nitrogen washout
        - Single-breath nitrogen washout
        - Closing volume
        - Maximum expiratory flow rates
        - Defining normal values
        - CO diffusion
- Demonstrate understanding of the guidelines for perioperative respiratory risk assessment and preoperative optimization
    - Pulmonary function testing in surgical patients
    - Evaluation of the patient for lung resection
    - Preoperative measures to improve lung function
- Demonstrate knowledge of age related variables in medicine as they apply to adult and geriatric patient care

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain/collate relevant history from patients, and families. Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
    - To help patients understand their perioperative respiratory risks
    - To work effectively with the Respiratory consultant and the requesting service to make sure that the consult patient care work flows smoothly and with clear understanding of the patient issues

COLLABORATOR

- Consult effectively with other physicians and health care professionals

- Work with the various investigation units and the team requiring the consult to ensure that patient issues are dealt with efficiently and completely
- Function as active member of the health care team in with relation to respiratory service including appropriate response to consultation.

MANAGER

- Know the guidelines regarding respiratory assessment and risk stratification as to make a rational approach to investigations
- Ensure appropriate follow-up of patient issues arising from the consults
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Help patients to understand the impact of their lifestyle on their respiratory/cardiac issues
- Help consulting staff understand the anaesthetic implications of any treatment strategies

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
    - Have the ability to critically review the current respiratory risk assessment literature
- Facilitate learning of patients, students, and other health professionals Contribute to the education of other members of the consult team

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
- Periodically review his/her own personal and professional performance against national standards

Recommended readings:

Anesthesia, Miller, chapter 26: Pulmonary Function Testing

PULMONARY CONSULTS

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to respiratory medicine, including anatomy, physiology, pharmacology, biochemistry and physics.
- Demonstrate knowledge of general internal medicine with particular reference to the respiratory system. Demonstrate knowledge of the implications of systemic medical conditions on the respiratory system:
    - Pregnancy
    - Ageing
    - Obesity
    - Cardiac dysfunction
    - Liver cirrhosis
    - Myasthenia gravis
    - scoliosis
- Demonstrate knowledge of the pathophysiology, assessment and treatment of common respiratory problems
    - obstructive lung disease
        - acute bronchospasm
        - status asthmaticus
        - COPD / emphysema
    - restrictive lung disease
    - pulmonary vascular disease
    - pulmonary hypertension
    - embolic lung disease
    - ARDS
    - Aspiration syndrome
    - Sleep apnea syndrome
    - Respiratory infection
        - Modes of transmission
        - Immunocompromised host
- Demonstrate knowledge of specialized means of assessment of the pulmonary system:
    - PFT's
    - Arterial blood gas
    - Chest X-ray
    - Diagnostic bronchoscopy
    - Nuclear medicine investigations / V/Q scan
- Demonstrate understanding of the guidelines for perioperative pulmonary function risk assessment and preoperative optimization
    - Pulmonary function testing in surgical patients
    - Evaluation of the patient for lung resection
    - Preoperative measures to improve lung function
- Demonstrate knowledge of age related variables in medicine as they apply to adult and geriatric patient care.

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain/collate relevant history from patients, and families. Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
    - To help patients understand their perioperative pulmonary risks
    - To work effectively with the Respiratory consultant and the requesting service to make sure that the consult patient care work flows smoothly and with clear understanding of the patient issues with the consultant
    - Plan for post-operative patient care and consult with other care teams as needed

COLLABORATOR

- Consult effectively with other physicians and health care professionals
- Work with the various investigation units and the team requiring the consult to ensure that patient issues are dealt with efficiently and completely
- Function as active member of the health care team in with relation to respirology service including appropriate response to consultation.

MANAGER

- Know the guidelines regarding cardiac assessment and risk stratification as to make a rational approach to investigations
- Ensure appropriate follow-up of patient issues arising from the consults
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Help patients to understand the impact of their lifestyle on their pulmonary issues
- Help consulting staff understand the anesthetic implications of any treatment strategies

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
    - Have the ability to critically review the current respiratory risk assessment literature
- Facilitate learning of patients, students, and other health professionals Contribute to the education of other members of the consult team

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
- Periodically review his/her own personal and professional performance against national standards

Recommended readings:

Anesthesia, Miller, chapter 48: Anesthesia for thoracic surgery

INTENSIVE CARE UNIT

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to internal medicine and surgery, including anatomy, physiology, pharmacology, biochemistry and physics.
- Demonstrate knowledge of general internal medicine with particular reference to the cardiovascular, respiratory, renal, hepatic, endocrine, hematologic and neurologic systems
- Demonstrate knowledge of the pathophysiology, assessment and treatment of some ICU problems
    - CNS
        - Decreased level of consciousness and comatose state
        - Seizures and status epilepticus
        - Cerebral aneursym
        - Raised ICP
        - Cerebral trauma
        - Intracerebral bleed
        - Spinal trauma, acute quadri- and paraplegia
        - Declaration of brain death
    - Cardiac syndromes
        - Myocardial ischemia, infarction, myocarditis, pericarditis
        - Hypertensive crisis
        - Cardiac dysrrhythmias
        - Right and left sided heart failure
    - Respiratory
        - Community and hospital acquired infections
        - Ventilator acquired pneumonia
        - Obstructive airways disease, status asthmaticus
        - Respiratory failure
        - ARDS
        - Pulmonary trauma
        - Smoke inhalation, burns
        - Pulmonary aspiration
    - Renal
        - acute renal insufficiency and failure
        - acute disturbances in electrolyte and acid-base status
    - Gastrointestinal
        - Pancreatitis
        - Upper and lower GI bleeding
        - GI perforation and shock
        - Hepatic insufficiency, fulminant hepatic failure
        - Acute poisoning, intoxication
        - Mesenteric ischemia, infarction
        - Toxic megacolon
        - Intra-abdominal compartment syndrome
    - Hematologic
        - Anemia
        - Thrombocytopenia
        - DIC
        - Primary fibrinolysis

        - Anticoagulant therapy
        - Blood component therapy
        - Massive transfusion
    - Endocrine
        - SIADH
        - Diabetes Insipidus
        - Diabetic ketoacidosis, coma
        - Thyroid storm
        - Myxedema
        - Adrenal insufficiency
    - Infectious and immune
        - Septic shock
        - Febrile neutopenia
        - Fever of unknown origin
        - Iatrogenic nosocomial infections
    - Trauma
        - ATLS protocol
        - Upper and lower airway trauma
        - Penetrating and non-penetrating chest and abdominal trauma
        - Orthopedic trauma
        - Genitourinary trauma
        - Burns
    - Resuscitation
        - BCLS and ACLS protocols
    - Shock
        - Types: hypovolemic, cardiogenic, distributive, obstructive
        - Acute stabilization
        - New therapies (i.e. Activated Protein C, Factor VII)
- Develop clinical expertise in the multi-system assessment of critically ill patients
    - Develop expertise in clinical assessment: history, physical, labs
    - Develop expertise in identifying patients requiring critical care and admission to an intensive care setting
    - Develop expertise in identifying patients mandating resuscitation/intubation prior to transport to the ICU setting
    - Acquire triage skills when assessing multiple critically ill patients
    - Recognize when a patient no longer requires a critical care setting
    - Development and execution of treatment plans under supervision
- Understand ICU care of specific patients subsets:
    - Geriatric
    - Pregnant
    - Obese / morbidly obese
    - Psychiatric
- Understand the post-operative care as applicable to the ICU:
    - Cardiac surgery
        - ACBP
        - Valve surgery
    - Vascular surgery
        - Aneurysm repair
    - Neurosurgery
        - Evacuation of hematoma
        - ICP monitor / lumbar CSF drain
    - Thoracic surgery

        - Pneumonectomy
    - General surgery
        - Sepsis
        - Transplant
        - Pheochromocytoma
    - ENT
        - Tracheostomy physiology
- Understand principles and indication of artificial support
    - Cardiovascular
        - Pressors / inotropes
        - Intra-aortic balloon pump
    - Respiratory
        - Non-invasive and invasive ventilation
        - Oxygen therapy
    - Renal
        - Dialysis (CVVH, hemodialysis, peritoneal)
    - GI
        - Parenteral and intravenous nutritional support
        - Mechanical variceal bleeding tamponade (Blackemore tube)
- Demonstrate knowledge of indications, limitations and complications of different monitoring devices:
    - ECG and ST monitoring,
    - X-ray/CT/MRI evaluation,
    - invasive arterial monitoring,
    - CVP/PAC/CO monitoring,
    - end-tidal CO2 monitoring,
    - arterial and venous blood gas analysis,
    - pulse oxymetry monitoring,
    - EEG/ICP monitoring
- Demonstrate competence in technical procedures commonly employed in ICU, including intravenous, central venous, arterial cannulations, pulmonary catheterization, chest tube insertion, fiberoptic bronchoscopy and endotracheal intubation.
- Recognize that prior to provision of anesthetic care specific medical intervention and modification of risk factors may be required

COMMUNICATOR

- Develop appropriate communication skills to deal with critically ill patients and their stressed and grieving families
- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team about daily patient progress
- Communicate effectively by telephone to the attending physician relevant clinical information on which decisions will be based
- Keep clear, concise, legible documentation of daily patient progress in the patients' hospital chart
- Communicate effectively (both in written and verbal form) a concise yet complete medical summary to the next medical team assuming patient care
- Participate in end-of-life discussions with ICU team and family members

COLLABORATOR

- Develop an understanding of the multidisciplinary approach to health care and the role of the multidisciplinary meeting
- Consult effectively with other physicians and health care professionals to provide optimal patient care (nurses, physicians, dieticians, physiotherapists, pharmacologists, ethicists, …)

MANAGER

- Understand the limited physical capacity of intensive care unit and manage admissions, discharges, and holdings in such a way so as to not compromise care: allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Demonstrate attention to patient safety
- Honour patient confidentiality
- Obtain consent when required
- 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.
- Develop an approach to dealing with medical errors

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information..
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

RESEARCH ROTATION

Introduction

The objective of this rotation is to familiarize the resident with the development of a research hypothesis, data gathering and results presentation.

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate cognitive understanding of current state of research project approval procedural concepts
- Demonstrate ability to define and understand the following concepts
    - § Hypothesis generation
    - § Hypothesis testing
    - § Research design
    - § Bias and its elimination
    - § Statistical analysis including power, life table analysis
    - § Quality of life analysis
    - § Study design
    - o Demonstrate understanding of scientific review process
- Demonstrate understanding of ethical implications of consent process, including written consent forms
- Demonstrate understanding of the process of defending the research proposal
- Demonstrate how to write a Research protocol
    - o Choice of hypothesis presented by the mentor
    - o Literature study: to develop the background of the study hypothesis
    - o Detailed definition of study hypothesis including primary or secondary objectives
    - o Determination of means necessary to conduct the study: manpower, equipment, services etc.
    - o Determination of Sample size and statistical methods
    - o Development of methodology for research protocol
    - o Determination of time frame Specific considerations: e.g. Health Canada approval
    - o Impact of research on medical field: academia, patient care
    - o Budget calculation
- Demonstrate how to write an informed consent form
    - o Ethical considerations
    - o Legal considerations
    - o Choice of language
    - o Informed consent for under-age patients, incapable to consent etc.
- Demonstrate an understanding of particularities of consent forms
    - o Background
    - o Purpose
    - o Alternative treatments
    - o Payment
    - o Voluntary studies

    - Risk consideration
    - Genetic studies
- Demonstrate the ability to apply additional forms
    - Initial review
    - Executive summary
    - Media release form
    - CMPA release forms
- Demonstrate answering a Scientific review
    - Procedures
    - Response to reviewers
- Demonstrate mastering an Ethics board presentation
    - Procedures
    - Presentation of members
    - Q&A – FAQ

COMMUNICATOR

The resident will learn how good research is dependant and facilitated by establishing effective relationships and communicate effectively with multiple personnel including research subjects, hospital quality assurance staff, other researchers, bioethics board and funding agencies. Development of communication skills will be facilitated by proposal writing, meetings and discussion of ideas, paper writing and formal presentations.

COLLABORATOR

Research projects are often team efforts involving multiple experts including, health care professionals as well as specific technology experts in quality assurance, biostatistics and basic science. The resident will learn to contribute or lead effectively as a team member in carrying out the research project(s).

MANAGER

The research resident will learn to allocate finite research resources and wisely; utilize time and resources effectively to balance research needs, learning needs, and outside activities; work effectively and efficiently in a health care organization; effectively utilize information technology such as literature searches and databases to optimize research project design, implementation and continued self-learning

HEALTH ADVOCATE

The research resident will learn to recognize the importance of advocacy activities in responding to the challenges represented by those social, environmental, and biological factors that determine the health of patients and society. The resident will recognize advocacy as an essential and fundamental component of health promotion that occurs at the level of the individual patient, the practice population, and the broader community.

SCHOLAR

The resident will develop, implement and monitor a personal continuing education strategy. The resident will contribute to development of new knowledge through research projects. The resident will learn to apply the principles of critical appraisal to sources of medical information by incorporating a spirit of scientific enquiry and use of evidence into clinical decision making. The resident will demonstrate the abili ty to select an appropriate study hypothesis, efficiently search for and assess the quality of evidence in literature and define a research project practically and theoretically.

PROFESSIONAL

The research resident will learn to conduct research with integrity and honesty. The resident will learn ethical issues surrounding specific research through discussions with project supervisor and formal submission to the research ethics board of MUHC or McGill University.

McGill

Department of Anesthesia

TTP Rotation Goals and Objectives

PERIOPERATIVE MEDICINE

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Reduce perioperative morbidity by screening patient data and initiating further patient encounters /investigations as appropriate.
- Perform preoperative anesthetic assessments with accurate assessments of the airway and cardiac, respiratory, and neurologic systems.
    - Become proficient in airway evaluation.
    - Improve skills at directed history and physical examination.
    - Identify patients who require further necessary preoperative preparation, consultation or investigation.
    - Be knowledgeable about the most current guidelines for cardiac evaluation and care before non-cardiac surgery.
    - Understand the basic principles of cardiac investigations, their interpretation, limitations, and their costs / benefits.
    - Learn effective outpatient preparation strategies for surgical patients presenting with common medical problems such as asthma, diabetes mellitus, ischemic heart disease, and sleep apnea.
    - Recognize the difficulties and limitations of preoperative evaluation with short time intervals before anticipated surgery.
    - Develop anesthetic management plans with the consultant anesthesiologist.
    - Be able to present the various anesthetic techniques available for the surgical procedure and inform the patient about the specific risks and benefits of each technique.
    - Be able to discuss the strategies for blood conservation techniques and the potential risks of blood transfusion.
    - Inform patients which pain management services may be offered to them and the potential advantages and disadvantages of each.
    - Be able to prepare and educate the patient regarding the need for specialized postoperative care (e.g. monitoring, ICU admission, potential for postoperative ventilation).
    - Address the role and indications for common preoperative therapies (anxiolytics, bronchodilators, antisialagogues, steroids, perioperative β-blockers, antacids etc).
- Address patient inquiries as to pertinent complications and risks of anesthesia.
- Appreciate the processes involved preoperative evaluation and testing and be able to describe the key factors in the organization of an anesthesia consult clinic.
- Maintain a professional attitude and behavior while interacting with patients and other members of the health care team.

COMMUNICATOR

- Develop communication skills in preoperative consultation to benefit the patient, the referring physician, and the consultant.
- Demonstrate the ability to discuss the risks and benefits of the various anesthetic techniques relevant to the patient and procedure.
- Be able to dictate a clear, concise anesthetic consultation letter including the anesthetic considerations and a clear plan for the perioperative management.

- Know the appropriate organization, content, format and length of consultation notes.
- Learn to communicate with the referring physician directly to discuss the need for further investigations, postponement of surgery, or special perioperative needs
- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care
- Collaborate with the family physician and / or the referring physician to ensure optimal patient assessment and preparation (e.g., baseline test results, blood pressure management)

MANAGER

- Considers health care resources when determining preoperative testing needs.
- Demonstrates knowledge of the departmental guidelines for management of patients in the perioperative period (e.g., sleep apnea, sickle cell anemia, malignant hyperthermia, implantable cardioverter-defibrillator, ambulatory surgery, monamine oxidase inhibitors).

HEALTH ADVOCATE

- Provide appropriate education to ensure patients are well informed and well prepared for their procedure.
- Encourage patients to optimize their health status preoperatively (e.g., smoking cessation, blood pressure control, use of nCPAP etc)
- Identify the important determinants of health affecting patients in a community.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general in the perioperative setting.

SCHOLAR

- Demonstrates ongoing review of procedures / policies with goal of detecting areas of potential improvement
- Critically evaluates the medical literature pertaining to preoperative evaluation.
- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, students, and other health professionals in the preoperative clinic.

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

ADULT ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to anesthesia, including anatomy, physiology, pharmacology, biochemistry and physics.
    - Knowledge of the anatomy related to the anesthesia practice:
        - Airway anatomy
        - Central and peripheral blocks anatomy
        - CVS/Respiratory physiology and anatomy
        - Renal/hepatic anatomy and physiology
        - Fluid/electrolyte/hematology/endocrinology physiology
    - Knowledge of the pharmacology and indications for use of drugs commonly used in anaesthetic practice
        - Inhalational agents
        - Induction agents
        - Muscle relaxants
        - Narcotic analgesics
        - Local anaesthetics
    - Have a clear understanding of the function of the anaesthesia machine and basic anaesthesia monitors
    - Physics especially the physics of gases and fluids and the principles of electrical safety
- Demonstrate clinical skills necessary for the practice of anesthesia, including preoperative assessment, intraoperative support and postoperative management of patients of different physical status, for commonly performed surgical and obstetrical procedures
    - Perform appropriate preoperative assessment of adult patients.
        - This will include assuring optimal medical management in cooperation with the patient's other physicians and involve consultation when appropriate.
        - Understand the pathophysiology of the patient's disease process and its relation to anaesthesia and surgery.
            - ASA classification
            - Assessment of severity and stability of pre-existing organ system disease
            - Make use of appropriate examinations and laboratory tests.
            - Understand when delay to prepare the patient before surgery is beneficial and when it is deleterious
        - Airway assessment
            - Prediction of ease of ventilation/intubation
            - Recognition of the difficult airway
            - ASA Difficult Airway Algorithm
        - Demonstrate knowledge of basic legal and bioethical issues encountered in anesthetic practice including informed consent
    - Perform appropriate intraoperative management of the patient taking into account the patient's status.
        - Select a safe effective anaesthetic technique, considering the possibilities of local, regional and general anaesthesia and understanding the particular needs of the surgery planned.

- Demonstrate knowledge of age related variables in medicine as they apply to neonatal, adult and geriatric patient care.
- Demonstrate knowledge of special concerns for different types of surgical procedures (refer to list)
- Select appropriate monitoring methods, both invasive and non-invasive, and use additional equipment (e.g. heaters, humidifiers, and positioning aids) as required.
- Know the Canadian Anaesthesiologists Society practice guidelines.
- Safely conduct the intraoperative anaesthetic management of the patient.
    - Demonstrate technical expertise in
        - Venous and arterial cannulation
        - Difficult airway management
        - Airway management adjuncts including stylets, bougies, laryngeal mask, FASTRACH, lighted stylet, and fibreoptic bronchoscope for intubation.
        - Regional anaesthesia including subarachnoid block, epidural block, brachial plexus block, and IV (Bier) block
    - Rationally manage perioperative fluid Rx
    - Know the appropriate use and risks of blood products
- Safely manage anesthetic intraoperative complications and acute perioperative problems
    - Know BCLS and ACLS protocols
- Maintain accurate and complete records

- Provide appropriate post-operative care
    - Transfer/transport of post-op patients
    - Transfer of care to PACU nurse (report)
    - Provision of post op analgesia and antiemesis therapy
    - Knowledge of PACU staffing, facilities, monitoring, standards
    - Knowledge of PACU discharge criteria to ward or home
    - Management of complications in PACU:
        - Postoperative nausea and vomiting
        - Respiratory: hypoxia/hypercarbia/obstruction
        - CVS
        - CNS, N.B. delayed awakening
        - Pain
        - Hypothermia
        - Metabolic derangements

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with other physicians and health care professionals to provide optimal patient care

MANAGER

- Demonstrate knowledge of the management of operating rooms.
- Demonstrate knowledge of the contributors to anesthetic expenditures.
- Demonstrate knowledge of the guidelines concerning anesthetic practice and equipment in Canada.
    - Knowledge of the use of standard intraoperative monitors
        - Monitoring standards
    - Knowledge of practice guidelines
        - BCLS/ACLS
        - ASA Airway algorithm
- Record appropriate information for anesthetics and consultations provided.
- Allocate finite health care resources wisely.
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients.
- Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
- Recognize the opportunities for anesthesiologists to advocate for resources for chronic pain management, emerging medical technologies and new health care practices in general

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviors.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

PEDIATRIC ANESTHESIA

The pediatric anesthesia training at McGill consists of 3 to 4 months of clinical pediatric exposure at the Montreal Children's Hospital and Shriners Hospital for Children. The resident will participate in the delivery of care for pediatric patients undergoing various procedures. The objective of this rotation is to familiarize the resident with considerations and particular techniques related to pediatric anesthesiology. The following goals and objectives list the minimum of what is expected of residents in terms of their knowledge base, procedural skills, perioperative patient management, attitude and communication skills. The resident is highly encouraged to formulate an anesthetic management plan for each procedure. The depth of comprehension of resident's knowledge base, their technical skills, clinical judgment and decision making capacities as well as their ability to critically appraise medical literature are expected to increase as resident become more senior. By the end of this rotation, the resident should be able to manage ASA class 1 and 2 patients greater than 2 years of age (over 1 year of age for senior residents) with limited assistance for uncomplicated surgery including induction, maintenance, emergence, charting and transportation to the PACU.

The resident is expected to demonstrate adequate preparation in reading and chart review for assigned clinical cases.

Upon completion of this rotation, the resident should be able to:

Medical Expert/Clinical Decision-maker

• Demonstrate knowledge and understanding of the basic anatomy and physiology, as applicable to pediatric anesthesia, including the maturation process which takes place in all systems.

- Cardiovascular system
  - -Anatomy and physiology relevant to the transitional circulation
  - -Maturation of the myocardium and the autonomic nervous system
  - -Normal values for different stages of development
  - -Pediatric basic and advanced life support (N.B. attendance at MCH PALS is encouraged)
- Pulmonary system
  - -Anatomic features of neonatal, infant, pediatric and adolescent airway
  - -Physiology of the respiratory system and its maturation over time with respect to: control of respiration, compliance, lung volumes, oxygen consumption/metabolic rate, normal values for different stages of development
- Central nervous system
  - -Anatomy-fontanels
  - -Physiology: intracranial pressure and volume, cerebral blood flow, autoregulation
- Genitourinary system
  - -Renal maturation
  - -Fluid and electrolyte management/fluid distribution
  - -Maintenance requirements

- Gastrointestinal system
  - -Glucose control
  - -Maturation of hepatic function
- Thermoregulation
  - -Body surface area
  - -Heat loss
  - -Ability to thermoregulate
- Psychological issues
  - -Anxiety and coping mechanism in different age groups
  - -Separation anxiety, parental anxiety
  - -Effects of hospitalization

• Demonstrate knowledge and understanding of pediatric pharmacology for ASA class 1 and 2 neonatal and pediatric patients, including

- Absorption
- Volume of distribution
- Protein binding
- Pharmacokinetics/ pharmacodynamics and calculation of drug dosage
  - -Premedication
  - -Inhaled anesthetics
  - -Induction drugs
  - -Sedative-hypnotic drugs
  - -Narcotics
  - -Muscle relaxants
- Metabolism
- Clearance
- Excretion
- Toxicity

• Demonstrate clinical skills necessary for the preoperative assessment of the pediatric patient using relevant historical, physical and laboratory information.

- Demonstrate knowledge of pediatric medicine for the assessment of children with concomitant medical disease.
- Summarize fasting guidelines of pediatric patients.
- Recognize that prior to provision of anesthetic care, specific medical intervention or modification of risk factors may be required.
- Demonstrate knowledge of basic legal and bioethical issues encountered in pediatric anesthetic practice including informed consent (include blood transfusion consent for child of Jehovah’s Witness parents).

• Demonstrate knowledge of the anesthetic considerations and clinical skills to institute a safe anesthetic management for pediatric patients undergoing procedures

- Preoperative preparation (ventilator, equipment selection, routine and resuscitative medications)
- Monitoring the pediatric patient
- Induction of anesthesia
- Bag-mask ventilation
- Endotracheal tubes/LMA placement
- Intravenous fluid therapy
- Massive transfusion
- Appropriate timing of extubation
- Neonatal anesthesia
- Regional anesthesia and analgesia
- Full stomach and emergency surgery

• Demonstrate knowledge of specific anesthetic considerations for pediatric patients with concomitant disease/disorder and formulate an appropriate perioperative patient management plan

- Neonate/premature/ ex-premature
- Child with recent upper respiratory tract infection (URTI)
- Asthma
- Cystic fibrosis
- Obstructive sleep apnea
- Chronic lung disease
- Physiology of repaired simple cardiac lesions
- Non-cardiac surgery in patients with unrepaired ASD, VSD, PDA
- Mediastinal masses
- Hydrocephalus, raised ICP
- Spina bifida
- Cerebral palsy
- Seizure disorder
- Developmental delay
- Down’s syndrome
- Gastroesophageal reflux
- Hepatobiliary disease
- Renal insufficiency or failure
- Sickle cell/ thalassemia/ hemophilia
- Anemia
- Myopathies
- Malignant disease
- Septic shock
- Diabetes
- Thyroid diseases
- Obesity
- Mucopolysaccharidosis
- Malignant hyperthermia/ masseter spasm

- Atypical plasma cholinesterases
- Anxiety

• Formulate an anesthetic management, describe the potential complications and initiate anesthesia care for common procedures (when applicable), including

- General surgery
  - Inguinal hernia repair
  - Orchidopexy
  - Laparotomy/laparoscopy
  - Pyloromyotomy
  - Necrotizing enterocolitis
  - Omphalocele/gastroschisis
  - Pectus excavatum repair
  - Thoracic surgery
  - Congenital diaphragmatic hernia repair
  - Tracheo-esophageal fistula repair

- Otolaryngology
  - Tonsillectomy and adenoidectomy
  - Post-tonsillectomy/adenoidectomy bleeding
  - Myringotomy
  - Tympanoplasty
  - Mastoidectomy
  - Endoscopic sinus surgery/polyps excision
  - Thyroidectomy
  - Removal of foreign body in airway
  - Bronchoscopy (rigid/flexible)
  - Epiglottitis/croup
  - Retropharyngeal abscess
  - Tracheostomy

- Ophthalmology
  - Strabismus repair
  - Cataract surgery
  - Open eye injury

- Neurosurgery
  - Intracranial/ posterior fossa tumor resection
  - Drainage of extra/subdural hematoma
  - VP shunt insertion/revision
  - Craniosynostosis
  - Myelomeningocele/encephalocele repair
  - Spinal cord tumour excision

- Orthopedic surgery
  - Fracture reduction
  - Hip reconstruction
  - Soft tissue surgery
  - Scoliosis surgery
  - Multiple trauma

- Urology
  - Circumcision, hypospadias repair

Hydrocelectomy
Ureteric reimplantation
Cystoscopy
Nephrectomy
Insertion peritoneal dialysis catheter

- Plastic surgery
  Burns, debridement/skin graft
  Cleft lip/palate repair
  Correction of congenital limb deformities

- Others
  Endoscopies
  Dental extractions/restoration
  Muscle biopsy
  Remote location: sedation for MRI/CT, interventional radiology, BMA/LP, examination under anesthesia.

• Demonstrate competence in technical skills related to the pediatric patient
  - Knowledge and utilization of pediatric equipment and breathing systems
  - Airway management of the neonate and pediatric patient
  - Management of the difficult airway
  - Peripheral and central venous access
  - Arterial line insertion
  - Regional anesthesia, including single shot caudal blocks and peripheral nerve blocks

• Demonstrate clinical skills necessary to evaluate and manage problems which may arise perioperatively
  - Need for post-operative admission
  - Uncooperative patient
  - Hypotension/Hypovolemia
  - Laryngospasm
  - Anaphylaxis
  - Post extubation stridor
  - Delirium
  - Nausea and vomiting
  - Need for resuscitation

• Demonstrate clinical skills necessary for the perioperative pain management of patients undergoing pediatric surgery
  - Knowledge of options for perioperative analgesia including systemic analgesia, local infiltration, regional nerve blocks, neuraxial analgesia (their indications, contraindications, advantages and disadvantages in pediatric population).
  - Demonstrate competence in ordering the perioperative modalities.

- Demonstrate competence in follow-up of pain management, conversion to enteral opioids and weaning.

Communicator

• Establish a professional and empathetic relationship with patients and families.
• Use a variety of approaches in dealing with children of all ages, including developmentally delayed children.
• Obtain and collate relevant history from patients and families, listen effectively.
• Discuss appropriate information with patients and families and other members of the health care team.
• Recognize the psychological impact of hospitalization, anesthesia and surgery on both the patients and their families.
• Ensure informed consent is obtained prior to undertaking invasive procedures.
• Communicate an anesthetic plan effectively to all members of the anesthetic team in a timely manner.
• Communicate effectively peri-operatively with all members of the health care team.
• Keep clear, concise, legible documentation.

Collaborator

• Consult effectively with other physicians and health care professionals to provide optimal patient care.
• Work as an integral member of the perioperative team:
  - Interact and collaborate effectively with all health professionals by recognizing and acknowledging their roles and expertise
  - Resolve conflicts if necessary
  - Provide feedback
  - Assume a leadership role where appropriate.

Manager

• Demonstrate knowledge and practice according to national standards and guidelines.
  - Knowledge of the use of standard intraoperative monitors
  - Knowledge of practice guidelines: BCLS/ACLS/NALS/PALS, Pediatric Airway algorithm
• Record appropriate information for anesthesiology care and consultations provided.
• Allocate finite health care resources wisely.
• Work effectively and efficiently in a health care organization.
• Utilize information technology to optimize patient care and lifelong learning.

Health Advocate

• Identify the important determinants of health affecting patients.
• Provide direction to hospital administrators regarding compliance with national practice guidelines and equipment standards for anesthesia.
• Recognize the opportunities for anesthesiologists to advocate for resources for pain management, emerging medical technologies and new health care practices in general.
• Demonstrate principles of quality assurance and be able to conduct morbidity and mortality reviews.

Scholar

• Develop, implement and monitor a personal continuing education strategy.
• Critically appraise sources of medical information.
• Develop criteria for evaluating the anesthesiology literature and make evidence-based decision.
• Demonstrate willingness and an ability to impart acquired knowledge to more junior residents, medical students, other health care professionals and patients, if necessary.
• Synthesize and present information to colleagues and the anesthesiology department in an effective way (during Grand rounds for example).

Professional

• Deliver highest quality care with integrity, honesty, compassion and respect for diversity.
• Demonstrate an increasing sense of responsibility and "case ownership".
• Exhibit appropriate personal and interpersonal professional behaviours.
• Introduce him/herself and other members of the anesthetic team appropriately to patient and their family.
• Include the patient/family in discussions concerning appropriate diagnostic and management procedures, demonstrate respect for their opinion.
• Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
• Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.
• Practice medicine ethically consistent with the obligations of a physician.

OBSTETRIC ANESTHESIA

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate knowledge of the basic sciences as applicable to obstetric anesthesia, including normal anatomical and physiological changes and their impact on planning anesthetics
    - Physiology of the uteroplacental unit – placental drug transfer
    - Effect of anesthesia/analgesia on uterine blood flow/activity
- Demonstrate clinical skills necessary for the preoperative assessment of the pregant patient
    - Pre-existing medical conditions and their impact on anesthesia care
        - Cardiac/respiratory diseases
        - Obesity
        - Diabetes
        - Neurologic disorders/Chronic back problems
    - Pathophysiology and anesthetic considerations of high risk pregnancy
        - Pre-eclampsia, eclampsia, HELLP
        - Obstetrical haemorrhage
        - Pre-term labor
        - Abnormal positions/multiple births
    - Antepartum fetal evaluation
    - Informed consent in the pregnant patient
    - The pregnant patient presenting for non-obstetrical surgery
- Demonstrate the knowledge of the anesthetic considerations for obstetrical procedures and their postoperative management
    - Labor analgesia
        - Systemic analgesics
        - Inhaled agents
        - Epidural analgesia
            - Choice of local anesthetic
            - The "walking" epidural
            - Effect of regional anesthesia on labor progress
            - Complications of regional analgesia
            - Combined spinal/epidural
        - Intrathecal opiates for labor
    - Anesthesia for Caesarean section
        - Epidural
        - Spinal
        - General
    - Anesthesia for other procedures
        - Cerclage
        - Dilatation and curettage

- Demonstrate the clinical skills necessary for the management of complications and emergencies in the obstetrical patient
    - Diagnosis and treatment of anesthetic complications
        - Hypotension
        - Intravascular injection of local anesthetic
        - Total spinal anesthesia
        - Post-dural puncture headache
        - Aspiration pneumonitis

- Diagnosis and treatment of amniotic fluid embolism
- Resuscitation
  - CPR in the pregnant patient
  - Neonatal resuscitation

COMMUNICATOR

- Establish a professional and empathetic relationship with patients and families
- Obtain and collate relevant history from patients, and families.
- Listen effectively.
- Discuss appropriate information with patients and families and other members of the health care team
- Keep clear, concise, legible documentation.
- Ensure adequate information has been provided to the patient prior to undertaking invasive procedures

COLLABORATOR

- Consult effectively with obstetrician, neo and perinatologist, midwife and Birthing Unit nurses to assure optimal management of patients
- Work effectively as an integral member of the Birthing Unit team.

- Function effectively in the Birthing unit utilizing the abilities of all team members, includes the ability to resolve conflicts, provide feedback and assume a leadership role where appropriate.

MANAGER

- Be able to utilize resources effectively to provide anesthesia services to the Birthing unit simultaneously with other areas of in hospital coverage
- Work effectively and efficiently in a health care organization
- Utilize information technology to optimize patient care, and life long learning
- Practice according to national standards and provincial guidelines for the management of Obstetrical patients
- Record appropriate information for anesthetics and consultations provided.
- Demonstrate principles of quality assurance, and be able to conduct morbidity and mortality reviews

HEALTH ADVOCATE

- Identify the important determinants of health affecting patients
- Provide expertise and leadership in maintaining and improving the standards of obstetrical anesthesia practice and patient care.
- Act as an advocate for quality management of pain during labour and delivery and improved patient safety

SCHOLAR

- Develop, implement, and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Develop criteria for evaluating the anesthetic literature
- Facilitate learning of patients, students, and other health professionals

PROFESSIONAL

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practice medicine ethically consistent with the obligations of a physician
- Include the patient/family in discussions concerning appropriate diagnostic and management procedures.
- Respect the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Show recognition of limits of personal skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

RESEARCH ROTATION

Introduction

The objective of this rotation is to familiarize the resident with the development of a research hypothesis, data gathering and results presentation.

MEDICAL EXPERT/CLINICAL DECISION-MAKER

- Demonstrate cognitive understanding of current state of research project approval procedural concepts
- Demonstrate ability to define and understand the following concepts
    - § Hypothesis generation
    - § Hypothesis testing
    - § Research design
    - § Bias and its elimination
    - § Statistical analysis including power, life table analysis
    - § Quality of life analysis
    - § Study design
    - o Demonstrate understanding of scientific review process
- Demonstrate understanding of ethical implications of consent process, including written consent forms
- Demonstrate understanding of the process of defending the research proposal
- Demonstrate how to write a Research protocol
    - o Choice of hypothesis presented by the mentor
    - o Literature study: to develop the background of the study hypothesis
    - o Detailed definition of study hypothesis including primary or secondary objectives
    - o Determination of means necessary to conduct the study: manpower, equipment, services etc.
    - o Determination of Sample size and statistical methods
    - o Development of methodology for research protocol
    - o Determination of time frame Specific considerations: e.g. Health Canada approval
    - o Impact of research on medical field: academia, patient care
    - o Budget calculation
- Demonstrate how to write an informed consent form
    - o Ethical considerations
    - o Legal considerations
    - o Choice of language
    - o Informed consent for under-age patients, incapable to consent etc.
- Demonstrate an understanding of particularities of consent forms
    - o Background
    - o Purpose
    - o Alternative treatments
    - o Payment
    - o Voluntary studies

    - Risk consideration
    - Genetic studies
- Demonstrate the ability to apply additional forms
    - Initial review
    - Executive summary
    - Media release form
    - CMPA release forms
- Demonstrate answering a Scientific review
    - Procedures
    - Response to reviewers
- Demonstrate mastering an Ethics board presentation
    - Procedures
    - Presentation of members
    - Q&A – FAQ

COMMUNICATOR

The resident will learn how good research is dependant and facilitated by establishing effective relationships and communicate effectively with multiple personnel including research subjects, hospital quality assurance staff, other researchers, bioethics board and funding agencies. Development of communication skills will be facilitated by proposal writing, meetings and discussion of ideas, paper writing and formal presentations.

COLLABORATOR

Research projects are often team efforts involving multiple experts including, health care professionals as well as specific technology experts in quality assurance, biostatistics and basic science. The resident will learn to contribute or lead effectively as a team member in carrying out the research project(s).

MANAGER

The research resident will learn to allocate finite research resources and wisely; utilize time and resources effectively to balance research needs, learning needs, and outside activities; work effectively and efficiently in a health care organization; effectively utilize information technology such as literature searches and databases to optimize research project design, implementation and continued self-learning

HEALTH ADVOCATE

The research resident will learn to recognize the importance of advocacy activities in responding to the challenges represented by those social, environmental, and biological factors that determine the health of patients and society. The resident will recognize advocacy as an essential and fundamental component of health promotion that occurs at the level of the individual patient, the practice population, and the broader community.

SCHOLAR

The resident will develop, implement and monitor a personal continuing education strategy. The resident will contribute to development of new knowledge through research projects. The resident will learn to apply the principles of critical appraisal to sources of medical information by incorporating a spirit of scientific enquiry and use of evidence into clinical decision making. The resident will demonstrate the abili ty to select an appropriate study hypothesis, efficiently search for and assess the quality of evidence in literature and define a research project practically and theoretically.

PROFESSIONAL

The research resident will learn to conduct research with integrity and honesty. The resident will learn ethical issues surrounding specific research through discussions with project supervisor and formal submission to the research ethics board of MUHC or McGill University.