INTRODUCTION
The adult tertiary rotations are the largest component of the training program. The goals and objectives for this component mirror very closely the overall program goals and objectives. The adult tertiary experience is divided between the Health Sciences Centre and St. Boniface General Hospital. Each provides a different case mix and approach, all contributing toward the ultimate fulfillment of the Goals and Objectives detailed below. The incremental achievement of these goals and objectives is fundamental for these rotations. Residents will rotate through adult tertiary periods during each year of their residency. Upon completion of the program it is expected that residents meet the goals and objectives listed below in their entirety. The document “Expectations Regarding Incremental Achievement of Goals and Objectives” is critical in interpreting for each level of training the degree to which these goals and objectives should be met.

GOALS AND OBJECTIVES
The University of Manitoba Training Program for Residents in Anesthesia has been developed in accordance with the guidelines of the Royal College of Physicians and Surgeons of Canada.

The following Rotation Specific Goals and Objectives for Adult Anesthesia at the Health Sciences Centre site and at the St. Boniface General Hospital site, provide additional emphasis to particular components of the Overall Program Goals and Objectives.

Please refer also to the National Curriculum for Canadian Anesthesia Residency for more information on expected knowledge and skills.

All appropriate Program Goals and Objectives also apply to this rotation.

1) Medical Expert/Clinical Decision Maker
By the end of the training in adult tertiary anesthesia, the resident will be able perform the following with respect to patients with all varieties of pre-existing conditions, and for the entire spectrum of surgical complexity, excluding cardiac surgery:

   a) Explain the adult anatomy, physiology of the following systems and pathophysiology of the disease states that affect them:
      i) Cardiovascular
      ii) Upper airway and respiratory system
      iii) Central and peripheral nervous systems
      iv) Hepatic
b) Explain the concepts in physics, biochemistry, and pharmacology, relevant to anesthesia, as detailed in the overall program curriculum

c) Appropriately select and administer a complete spectrum of anesthetic and analgesic agents for the induction and maintenance of anesthesia, taking into account the relative advantages and disadvantages of each approach and tailoring that approach to the specific anesthetic goals for each individual case

d) Appropriately select and administer a complete spectrum of drugs for cardiovascular support and resuscitation during anesthesia and the perioperative period, taking into account the relative advantages and disadvantages of each approach and tailoring that approach to the specific anesthetic goals for each individual case

e) Independently perform specific techniques for the administration of general, local and regional anesthesia, with a sufficient spectrum of choice to meet the anesthetic goals for all patients within the scope of practice defined above

f) Identify and manage complications as they occur in the perioperative period

g) Identify risk factors for postoperative complications and modify anesthetic plans to minimize those complications

h) Assess the suitability for discharge to ICU, intermediate care, ward and home settings

i) Identify and address the risk factors that may impede recovery in the perioperative period including (but not limited to):

   i) PONV
   ii) Pain
   iii) Postoperative cognitive dysfunction/delirium
   iv) ileus
   v) cigarette smoking
   vi) morbid obesity

j) Explain the principles of the function of all anesthetic equipment, including the anesthetic machine, mechanical ventilator, safe delivery of anesthetic gases, monitoring equipment

k) Use the anesthesia machine to provide anesthesia care, including performing appropriate safety inspection
l) Identify and correct equipment malfunction before and during anesthesia care

m) Select, apply, and interpret the information from the appropriate monitors, including invasive and NIBP, 5-lead EKG, neuromuscular monitor, oximeter, end-tidal gas monitor, temperature, urine output, and invasive monitors of cardiac output and filling.

n) Identify and correct sources of error in the above monitoring equipment

o) Select and administer appropriate fluids and blood products, taking into account the indications, contraindications, and correct procedures

p) Identify and manage complications of fluid and blood product administration in the entire perioperative period

q) Appropriately assess the patient, assess risks, and formulate and implement an appropriate individualized plan for perioperative patient management taking into account the implications of the underlying patient problem, surgical procedure, coexisting patient factors including other medical problems, anxiety, discomfort, culture, language, ethnicity, age, and gender

r) Appropriately modify management in response to monitoring information, and change in patient, anesthetic, or surgical factors

s) Provide anesthetic care with specific reference to pregnant patients for obstetric and non-obstetric procedures, patients in the geriatric age group, and ambulatory patients

t) Initiate appropriately individualized perioperative pain management strategies

u) Manage adult patients in a variety of settings including:
   i) elective, urgent and emergent/trauma procedures
   ii) sites distant from the operating room
   iii) unforeseen emergencies (e.g. Malignant Hyperthermia)

v) Independently perform all technical skills necessary to manage adult patients in the perioperative period including:
   i) routine and difficult airway management including airway topicalization & fiberoptic bronchoscopy
   ii) techniques of monitored anesthesia care (MAC)
   iii) local, neuraxial and regional anesthesia (with the aid of ultrasonography)
   iv) techniques of general anesthesia including induction, maintenance, and emergence techniques
   v) peripheral and central venous access (the latter with the aid of dynamic ultrasound imaging), invasive monitoring (all with the consideration of sterile technique)
vi) resuscitation of the critically ill adult patient (with reference to ACLS and ATLS procedures and protocols)

2) Communicator

By the end of the training in adult tertiary anesthesia, the resident will be able perform the following:

a) Establish a therapeutic relationship with patients and/or family members as appropriate, including
   i) Encouraging patient participation in decision-making, and to do this in consultative, elective, and emergent situations, and in challenging situations such as patient anger, confusion, language or ethno-cultural differences, or extremes of age
   ii) Listening to patients, answering their questions, and decreasing their anxiety
   iii) Demonstrate respect and empathy in relationships with patients

b) Gather sufficient information from the patient, family members, and/or medical personnel to identify all issues that will have implications for perioperative management
   i) medical and surgical status of the patient
   ii) patient expectations, beliefs, and concerns (in addition to medical problem information), while also considering the influence of age, gender, and ethno-cultural, spiritual, and socio-economic background on the medical problem
   iii) Articulate the above findings and concerns to the attending Anesthesiologist and other members of the health care team.

c) Impart sufficient information to patients and appropriate family members or delegates to allow a complete understanding of the implications of the planned procedure, options, risks and benefits

d) Obtain complete informed consent for anesthetic care

3) Collaborator

By the end of the training in adult tertiary anesthesia, the resident will be able perform the following:

a) Consult other physicians and allied health professionals in order to provide optimal perioperative care

b) Coordinate care of adult patients with other members of OR team, PAC/POAC, ward, ICU staff and other physicians

c) Communicate effectively with other team members
d) Manage urgent and crisis situations such as cardiac arrest, trauma, anaphylaxis, and malignant hyperthermia, as a team member or a team leader

e) Resolve conflicts or provide feedback where appropriate

**Manager**

By the end of the training in adult tertiary anesthesia, the resident will be able perform the following

f) Utilize personal and outside resources effectively to balance patient care, continuing education, practice, and personal activities

g) Manage assigned room/slate regarding maintaining the schedule, changing the schedule in response to emergencies, delays, additional cases etc.

h) Manage after hours scheduling of cases including prioritisation and adapting to changes

i) Schedule co-residents slate assignments when responsible as Senior/slating resident

j) Use limited health resources appropriately including

   i) time for patient assessment, OR equipment preparation, anesthesia induction and emergence, OR changeover
   ii) expenses of anesthesia resources including cost-effective drug and technique choice, equipment and invasive monitoring options

k) Participate in the assessment of outcomes of patient care and practice including Quality Assurance (QA) methods. This will include

   i) maintaining a personal record of experience and outcomes (log of experience)
   ii) participating in any appropriate case reviews

l) Explain how an anesthetic department is structured and managed

**4) Health Advocate**

By the end of the training in adult tertiary anesthesia, the resident will be able perform the following

a) Recognize individual and systemic issues with an impact on anesthetic care and safety of the adult patient

b) Participate in and lead where appropriate patient safety procedures such as briefing, time out and debriefing.

c) Communicate identified concerns and risks to patients, other health care professionals, and administration as applicable
d) Intervene on behalf of individual patients and the system as a whole regarding quality of care and safety

e) Identify and react to risks to health care providers specifically including, but not limited to:
   i) substance abuse among anesthesiologists and other health care providers
   ii) dangers to workplace health and safety

f) Implement CAS and CSA standards and guidelines related to anesthetic practice and equipment

5) Scholar
By the end of the training in adult tertiary anesthesia, the resident will be able perform the following
   a) Develop and maintain a personal learning strategy which will continue to maintenance of certification

   b) Seek out and critically appraise literature to support clinical care decisions and practice evidence-based application of new knowledge

   c) Contribute to the appropriate application, dissemination, and development of new knowledge

   d) Teach medical students, other residents, faculty members, other health professionals, and patients using the principles and methods of adult learning

6) Professional
Throughout the training in adult tertiary anesthesia the resident shall:

   a) deliver the highest quality patient care with integrity, honesty, and compassion

   b) Fulfill the ethical and legal aspects of patient care

   c) Maintain patient confidentiality

   d) Demonstrate appropriate interpersonal and professional behaviour

   e) Recognize personal limits through appropriate consultation (with staff supervisors, other physicians, and other health professionals) and show appropriate respect for those consulted

   f) Recognize conflict in patient care situations, professional relationships, and value systems, and demonstrate the ability to discuss and resolve differences of opinion.

   g) Accept constructive feedback and criticism, and implement appropriate advice
h) Continually review personal and professional abilities and demonstrate a pattern of continuing development skills and knowledge through education

i) Identify problems of physical and mental health including chemical dependence, stress, and depression, and ways to deal with these problems in oneself and others
CLINICAL RESPONSIBILITIES

1) Daily
   a) **Preoperative assessment**: The resident will assess each patient on his/her slate preoperatively at the earliest reasonable opportunity. Inpatients scheduled the night beforehand or earlier must be assessed by the resident the night beforehand at the latest. To that end, the resident will review the slating for the next day at the end of each OR day, to determine his/her responsibilities with respect to preoperative assessment and communication with staff.
   
   b) **Anesthetic planning**: For each case, the resident will generate an anesthetic plan with a level of detail commensurate with the expectations described for his/her level of training in the “Expectations for Incremental Achievement of Goals and Objectives”.
   
   c) **Communication with Attending staff**: It is the responsibility of the resident to ensure that this plan is discussed with and approved by the attending anesthesiologist before proceeding. It is also the responsibility of the resident to contact the attending anesthesiologist on the day prior to the slate. That contact will be used at the mutual discretion of the staff and resident to prepare a teaching plan, review the anesthetic plans, and make any applicable special plans for the conduct of the slate as a whole.
   
   d) **Preparation**:
      i) The resident shall arrive in the hospital with sufficient time to complete the following and start the first case at the slated time
         (1) check and prepare all necessary equipment for the first case
         (2) make any arrangements that will be required for the efficient conduct of the slate
         (3) assess the first patient and review the assessment and plan with attending anesthesiologist
      ii) The resident will prepare for each subsequent case with sufficient alacrity to ensure the efficient conduct of the slate.
   
   e) **Administration of Anesthesia**: The resident will implement the anesthetic plan, including modification in response to evolving conditions, from preoperative assessment and optimization through to postoperative disposition, with a degree of autonomy commensurate with the expectations for his/her level of training.
   
   f) **Postoperative Followup**: The resident will attend to any postoperative investigation or management that derives from either the initial anesthetic plan or intraoperative events. The resident will follow up on any complications and communicate the results of that followup to the attending anesthesiologist. The resident will direct the postoperative management of such complications in concert with the attending anesthesiologist to point of their resolution or delegation to an appropriate health care provider.

2) Call
   a) The resident shall take call as indicated on the call schedule for the clinical site in which s/he is rotating. This call shall conform to the relevant policies on call found in the Residency Program Policy Manual. While on call, the resident is
expected to perform all of the same functions as outlined above for an elective slate, within the context of emergency care.

3) Consults:
   Residents shall see consults in the following circumstances:
   a) Any patient for whom s/he has been slated if one has been requested.
   b) Any outstanding consults while on call or late call, secondary to availability for the OR
   c) During days slated into the preanesthetic clinic
   d) As delegated by the attending staff or Floor Director

OTHER RESPONSIBILITIES
1) Teaching
   Residents shall participate in the clinical teaching of medical students, junior residents, and paramedical trainees that are slated to work with them.

2) Talk Rounds and Grand rounds
   Resident will attend all talk rounds and Grand rounds that occur at their site during their rotation with the following exceptions
   i) While on holidays
   ii) Wednesday morning talk rounds when on call Wednesday evening
   iii) Illness

3) Evaluations
   Residents must complete their faculty evaluations for each staff they work with in a given period and submit them electronically as outlined in the Residency Program Policy Manual.

LEARNING RESOURCES
During this rotation, the following resources will be available to residents in addition to those available at all times through the University Department:

1) Clinical teaching- The most important learning resource during clinical rotations is the direct teaching that occurs during discussion with staff of the management of actual cases, and topics of interest. The quality of this discussion is enhanced by communication in advance to generate a teaching plan.

2) Site Library- each tertiary site has a collection of current textbooks relevant to the pattern of practice of the site

3) Computer access- each tertiary site has computer access within the OR for resident use in accessing literature

4) Anesthesia Toolkit – This resource may be accessed electronically by the residents through the University of Manitoba Health Sciences Library. It contains a wealth of links to useful books, journals, articles useful for clinical anesthesia but also making effective presentations, teaching, providing patient resources, and understanding evidence-based medicine. Anesthesia Toolkit can be accessed at http://umanitoba.ca/faculties/medicine/anesthesia/