ANESTHESIA/FAMILY MEDICINE ENHANCED SKILLS ANESTHESIA PROGRAM
The Department of Anesthesia & Perioperative Medicine

The Enhanced Skills Anesthesia Program is a one year program designed to provide family physicians with the knowledge and skills to be able to provide anesthesia care for low risk patients undergoing relatively uncomplicated procedures particularly in smaller rural communities. It is of interest to recent graduates from family medicine training programs who wish to acquire the skills necessary for independent anesthetic practice.

Participants in the program rotate through the three teaching sites, community and/or rural hospitals so that they will acquire the knowledge, skills and experience required to provide anesthesia to a wide variety of patients in a number of settings.

The terminal objective for the program is to train practitioners to the level where they will be effective and safe practitioners of anesthesia in the small hospital setting. The program has been successfully achieving this end for more than 25 years.

While striving to optimize the breadth and depth of clinical experience for the trainee, the program is also designed to be a flexible educational experience. Thus, the program is custom-tailored to each individual trainee, based on the trainee's past experience and educational objectives.

Learning Environment

The majority of the anesthesia training will be provided at St. Joseph's Health Care and the Victoria and University sites of London Health Sciences Centre, as well as a two block community experience at our sister site in St. Thomas (St. Thomas Elgin General Hospital) - a 20 minute drive from the centre of London.

St. Joseph's Health Care provides the resident with exposure to operative cases similar to those likely to be found in a community hospital setting. There is a focus on ambulatory anesthesia and regional anesthesia.

The Victoria Hospital site of London Health Sciences Centre rotation emphasizes heavily the trauma, obstetrics and emergency aspects of the anesthetic practice. The family medicine resident will be expected to provide airway management under anesthesia consultant supervision in both emergent and non-emergent situations. The operating room experience at Victoria Hospital is also designed to expose the resident to a variety of cases that the family medicine anesthetist would expect to encounter for both adult and pediatric patients. Obstetrical anesthesia experience is also coordinated at Victoria Hospital. This will allow
development of proficiency in the various techniques of analgesia for labour and delivery, including epidural analgesia, patient-controlled analgesia, and inhalational analgesia.

University Hospital allows for the exposure to more complicated medical patients, an introduction to Neuro-resuscitation and anesthesia, and also has general and sports medicine cases.

The St. Thomas Elgin General site allows for community based exposure and gives an opportunity to work with Family Medicine Anesthesia practitioners.

Elective time in other disciplines appropriate to the trainee's educational objectives can be arranged on an elective basis. The main elective to be considered in the enhanced skills anesthesia training program is one to two blocks of intensive care medicine. This rotation would allow the family medicine resident exposure to the types of cases that a community hospital ICU may be called on to handle.

The opportunity to participate in research appropriate to the family practice anesthetist is continuously available.

The family medicine resident is expected share an on-call schedule (in compliance with PAIRO guidelines), along with other anesthesia residents.

Hierarchal Structure

1) Director – Dr. Jeff Granton
2) Site coordinators (to ensure goals & objectives are achieved and evaluations are completed):
   a. Victoria Hospital – Dr. R. Gverzdys
   b. University Hospital – Dr. R. Craen
   c. St. Thomas-Elgin Hospital – Dr. M. Soderman
   d. St. Joseph’s Hospital – Dr. P. Armstrong
3) Administrative support – Ms. Linda Szabo

Organization

1. Ambulatory and OB – 4 blocks
2. General anesthesia – 5 blocks
3. Specialized anesthesia – 1 block
4. Critical care – 1 block
5. Electives – 2 blocks

Ambulatory: Occurs at St Joseph’s Hospital (SJH) and the focus is on outpatient surgery. Specialty areas include plastic surgery, orthopaedic surgery, general surgery, ophthalmology,
urology (including lithotripsy). Trainees get a great deal of experience with regional anesthesia and conscious sedation techniques.

**General/OB:** Occurs at Victoria Hospital (VH), which has a vast array of services. Specialty areas include, OB/GYN, high-risk obstetrics, vascular surgery, thoracic surgery, general surgery, trauma, paediatric surgery, orthopaedic surgery, ENT and plastic surgery. Patients at this centre have a very high burden of illness and trainees get experience managing challenging cases. So much so, that the level of difficulty can often cause some anxiety for the trainee at the initiation of the rotation.

**Specialty:** Occurs at University Hospital (UH), which has several highly specialized services. The family medicine/anesthesia trainees rotate at UH primarily to gain experience with neuro-anesthesia. This allows them to round out their training. However they do gain exposure to other specialty areas including arthroplasty, plastic surgery, ENT (ear/sinus), general surgery, cardiac surgery and transplant.

**Critical Care:** During this rotation the resident is expected to gain a working knowledge of critical care medicine and an understanding of the common pathophysiology of critically ill patients. Residents will also become familiar with the principles of hemodynamic monitoring, airway management and ventilator care. This can be an unfamiliar environment for the family medicine/anesthesia trainee and does take some adjustment.

**Electives:** Elective time in other disciplines appropriate to the trainee’s educational objectives can be arranged on an elective basis. General community anesthesia electives are usually arranged at St. Thomas-Elgin General Hospital.

**Scholarly Activities**

1. All residents in the Enhanced Skills program are required to complete a scholarly project. A written report is not required but welcome. A formal presentation at resident research day in June is required. Topics should be discussed with Dr. Grushka (Enhanced Skills Program Director) and Dr. Granton. Please refer to the Enhanced Skills Orientation Manual for more direction regarding project requirements and departmental assistance with funds, ethics approval, literature reviews, etc.

2. An introductory course in anesthesia is operated for the new anesthesia trainees each year. These include the Enhanced Skills-Anesthesia residents and the new Royal College anesthesia trainees. Enhanced Skills-Anesthesia trainees are also expected to be involved with the afternoon academic half day sessions which are run for the Royal College anesthesia trainees. Special effort is made to highlight areas of focus for the family practice trainee in these sessions. Individual hospital-based seminar series are run at the various hospital sites. Each Wednesday morning the individual hospital sites have their
weekly rounds that cover everything from morbidity and mortality reviews to individual case discussions. The Department of Anesthesia enjoys the presence of visiting professors on a regular basis. The visiting professors present a topic of their focus at a city-wide round and often conduct a resident lecture as well. There is an active evidence-based Journal Club. The foregoing academic activities provide a full range of educational opportunities for the Enhanced Skills-Anesthesia trainee. As well, the anesthesia trainee is assigned to an individual staff anesthetist on a daily basis for the practical clinical teaching aspect. This allows time on a daily basis for supervised clinical activity, as well as on-going discussion of practical and academic aspects of anesthesia.

3. All anesthesia residents attend the annual Anesthesia Resident Research Day held in June in partnership with McMaster University.

4. The resident is encouraged to teach at PGY-1/PGY-2 academic half day on a topic related to their field of specialization. This can be discussed with the Academic Program Director (Dr. Wickett) and the Enhanced Skills Program Director (Dr. Grushka).

5. The Enhanced Skills resident may attend both PGME and Family Medicine Grand rounds.

6. The Enhanced Skills-Anesthesia will participate in C-STAR simulations with fellow Royal College Anesthesia residents.

**Duties**

1. On-call
   *Residents will rotate through at least four sites. Call will vary by site and will not exceed 1:4. Call duties will be shared by residents in the Royal College Anesthesia program when both types of trainees are present.*

2. Research
   *See above.*

3. Teaching
   *See above.*

**Evaluation**

1. The resident will be supervised on a daily basis and will obtain 1 evaluation per rotation from a site director on the one45 system.

2. The resident can meet informally with the site director at the mid-way point of each block to discuss cases and review any concerns.

3. A midterm review with the program director will take place to ascertain the resident’s progression either in person, by phone or by video-link (skype).
OVERALL GOALS
The goals and educational objectives are to provide pre-anesthetic assessment of the patient, to determine the levels of anesthetic risk and to provide competent, safe anesthesia for patients requiring "non-radical" surgery in the community setting, to provide management of emergency situations requiring anesthesia skills (cardiac arrest, trauma, obstetric problems, stabilization for transport), to coordinate transfer as necessary, and to fully recognize the limitations of self and facility.

Finally, the onus is placed on the Family Physician-anesthetist to update professional skills when required and to know one's own limitations.

PROGRAM OBJECTIVES
Family Medicine Expert

1. The Family Medicine Resident will become knowledgeable in the following as it pertains to the discipline of anesthesia:
   1.1. The Family Medicine Resident will understand the age-related differences in anatomy, physiology, and pharmacology among children, adults, pregnant women, and the elderly:
       1.1.1. Knowledge of the practice guidelines of the Canadian Anesthesiologists’ Society.
       1.1.2. Knowledge of anatomy and physiology of the airway and the following systems: cardiovascular, respiratory, renal, hepatic, endocrine, neurologic and hematologic.
       1.1.3. Knowledge of pharmacology pertaining to inhalation drugs, induction agents, opioids, and other common analgesics, muscle relaxants and reversal agents, local anesthetics and cardiac resuscitation drugs.
       1.1.4. Knowledge of commonly used therapeutic drugs and other health related products and their interactions with anesthetic agents.
   1.2. The Family Medicine Resident will be able to identify the pathophysiologic variables that have an impact on the use of anesthetic drugs and techniques:
       1.2.1. Knowledge of effects on pharmacology of diminished cardiovascular, respiratory, renal, hematologic, hepatic, and neurologic function.
1.3. The Family Medicine Resident can apply knowledge in creating anesthetic plans with respect to anesthetic drugs and techniques:

1.3.1. Knowledge of indications and contraindications, risks and benefits of general anesthetic techniques.

1.3.2. Knowledge of indications and contraindications, risks and benefits of regional anesthetic techniques to include central neuraxial blocks.

1.3.3. Knowledge of basic bioethical issues encountered in anesthesia practice including informed consent.

1.3.4. Demonstrates skill in establishing and maintaining cardiovascular and respiratory support.

1.4. The Family Medicine Resident will become knowledgeable with respect to the following general requirements that pertain to the practice of anesthesia:

1.4.1. Administering anesthesia requires knowledge and skills for maintaining and controlling the cardio respiratory function of patients who are relatively well or for patients with single or multi-system dysfunction or failure. The person who administers the anesthetic must know the effects of various pharmacologic agents on these patients. These skills are necessary during surgical procedures but are also required in other clinical situations. These skills are particularly important in non-urban areas, to maximize the care of patients with limited staff.

(a) Pre-Anesthetic Assessment:
It is especially important for the Family-Physician anesthetist to carefully screen patients pre-operatively to determine their physical status (ASA category) and suitability for surgery. This allows the practitioner to identify cases that may be beyond the capabilities of either the anesthetist or the facility. The Family-Physician anesthetist must be able to recognize which patients require immediate stabilization and transport to a tertiary care facility. In addition, the circumstances in which a delay in surgery is advised must also be understood. The Family-Physician anesthetist must understand the pathophysiology of the patient's disease process and its relation to anesthesia and surgery and be able to make use of appropriate examination and laboratory tests, and to recommend measures to achieve preoperative optimization of the patient's medical condition.

(b) Airway Control:
The Family-Physician anesthetist should be skilled at the assessment of the airway, for patency, protection and ease of intubation. Management skills include bag mask ventilation, laryngeal mask insertion and intubation. Use of advanced techniques for intubation is also expected.
(c) Ventilation:
The management of patients requiring a ventilator is necessary for general anesthesia, short-term care in the rural setting and for care during transport. In the intensive care setting, the Family-Physician anesthetist must be skilled in the management of mechanical ventilation, non-invasive and invasive monitoring and appropriate pharmacotherapy for chronic, acute or emergency respiratory problems.

(d) Cardiovascular Status:
The cardiac status of the anesthetized patient must be assessed, continually monitored, and managed with appropriate drug therapy. The Family-Physician anesthetist must be skilled in acute resuscitation during cardiac arrest.

1.4.2. Administering anesthesia requires general knowledge of the following specific applications:

(a) Surgical:
To provide anesthesia during surgery the Family Physician-anesthetist must be able to:

- Select a safe and effective anesthetic technique.
- Select appropriate invasive or noninvasive monitoring methods and use additional equipment as required.
- Safely conduct intraoperative management.
- Effectively manage complications of anesthesia within prescribed limits.
- Select and supervise appropriate postoperative management of the patient.
- Know when it is appropriate to transfer the care of the patient to another practitioner.
- Use anesthesia equipment and demonstrate an understanding of its principles and basic maintenance.
- Respond to the special needs of specific groups of patients such as children, pregnant women, geriatric patients, ambulatory patients.
- Plan and enact a plan for postoperative pain control.

The GP anesthetist must be able to respond to:

- Emergency anesthesia (situations in which the risk of further illness or death would increase during transportation).
- Urgent anesthesia (when the safety of the patient might be compromised during transportation).
• Elective anesthesia (to maintain surgical/anesthetic support skills for the convenience of the patient and the community).

(b) **Trauma Management:**
In the area of trauma management the Family Physician-anesthetist must be skilled in airway management, cardio respiratory stabilization, insertion of vascular lines, assessing the status of the patient, evaluating the urgency of surgery, and ventilation management, as well as in the identification and management of life-threatening emergency situations.

(c) **Obstetrical Anesthesia:**
The Family Physician-anesthetist must demonstrate skill in epidural anesthesia for the management of pain during labour and delivery. In addition provide regional and if required general anesthesia for Cesarean sections, manage the complications of pregnancy requiring an anesthetic (spontaneous abortion, antepartum hemorrhage, premature labour, fetal distress, prolonged second stage) and be able to provide neonatal resuscitation.

(d) **Medical Management:**
The Family Physician-anesthetist must be able to demonstrate appropriate management of acute or chronic cardiac arrhythmias or myocardial infarction; management of acute or chronic respiratory diseases; short-term ventilation and the preoperative screening of patients requiring referral to another centre.

(e) **Social and Ethical Considerations in the Rural Setting:**
The availability of anesthetic and surgical services improves the convenience of health care in rural communities. In addition, surgery in community hospitals maintains a base of expertise and skills in rural areas and reduces patient load in urban centres. The physician’s personal responsibility for continuing medical education and skill development must be instilled during training. All physicians should be aware of the problems of impairment by fatigue or by chemical dependence and of the need for quality assurance and peer review.

2. **The Family Medicine Resident will become knowledgeable in the following as it pertains to perioperative anesthesia:**

2.1. **Performs preoperative risk assessment to identify medical conditions, institutional limitations or personal limitations requiring appropriate referral of the patient:**

2.1.1. Demonstrates clinical skills in pre-anesthetic assessment with respect to the airway and bodily systems.

2.1.2. Advises patients re optimization of medical conditions.
2.1.3. Advises patients of the risks and benefits of the anesthetic plan including plans for referring the patient.

2.2. Intra-Operative Care:
   2.2.1. Creates appropriate anesthetic plans with appropriate monitoring.
   2.2.2. Anticipates problems and is capable of managing them.

2.3. Post-Operative Care:
   2.3.1. Demonstrates appropriate choices for post-operative management including management of acute pain to include use of local anesthetic techniques and intravenous patient controlled analgesia

3. The Family Medicine Resident will become knowledgeable in the following as it pertains to resuscitation and life support:
   3.1. Demonstrates skill in the initial resuscitation (exemplified by resuscitation courses such as PALS, NALS, ACLS and ATLS).

4. The Family Medicine Resident will become knowledgeable in the following as it pertains to technical competence in the field of anesthesia:
   4.1. Knows the design and function of anesthetic equipment:
      4.1.1. Provides expertise to the community related to the acquisition and maintenance of anesthetic equipment.
      4.1.2. Uses components of the gas machine appropriately (anesthesia delivery circuits, vaporizers, ventilators, scavenging systems).
      4.1.3. Uses monitors, airway equipment and vascular access devices appropriately.
      4.1.4. Can detect when equipment malfunctions or provides incorrect data.
      4.1.5. Demonstrates appropriate use of anesthesia equipment including performance of pre-anesthetic check of the gas machine according to CAS standards.
   4.2. Demonstrates a level of competence acceptable for level of training with respect to the procedures commonly employed in anesthesia practice:
      4.2.1. Demonstrates clinical skills necessary for competent airway management with a suitable variety of alternate management skills including invasive airway skills.
      4.2.2. Demonstrates clinical skills in initiating vascular access and patient monitoring (non-invasive and invasive), including arterial and central venous line insertion.
      4.2.3. Demonstrates clinical skills in performing regional anesthesia/analgesia techniques to include neuraxial and peripheral nerve blocks.
      4.2.4. Demonstrates clinical skills necessary for management of labour analgesia and anesthesia.
      4.2.5. Demonstrates clinical skills necessary for the provision of anesthesia for children, excluding neonates and infants.
4.2.6. Demonstrates knowledge and basic clinical skills for outpatient management of chronic and palliative care pain.

Manager

GP-Anesthesia residents will:

- Order appropriate and economical selection of diagnostic and screening tests.
- Make referrals effectively.
- Demonstrate understanding of roles of all health care providers in the team.
- Understand how to mobilize a health care team in an emergency situation.
- Demonstrate the ability to make effective diagnostic decisions.
- Understand the need and ability to assess for risk management, quality assurance and improvement.
- Understand the role of information management in the care of hospitalized patients.

Communicator

GP-Anesthesia Residents will be able to communicate effectively with patients, family members and members of the health care team:

- Demonstrates listening skills.
- Demonstrates language skills (verbal, writing, charting).
- Demonstrates non-verbal skills (expressive and receptive).
- Demonstrates skills in adapting communication appropriately to a patient’s or colleague’s culture and age.
- Demonstrates attitudinal skills (ability to respectfully hear, understand and discuss an opinion, idea or value that may be different from their own).
- Apply these communication skills to facilitate shared and informed decision-making.
- Function within a team composed of members from various health care disciplines.
- Recognizing situations where a specialist consultation is appropriate, and effectiveness in communicating the purpose of the referral, the patient’s clinical condition and pertinent previous medical history.

Collaborator

GP-Anesthesia Residents will be able to collaborate:

- Work collaboratively in different models of health care.
- Engage patients and families as active participants in their care.
- Understand the role of the anesthetist as a teacher and consultant.

Health Advocate

GP-Anesthesia Residents will be able to advocate for the health of patients:
• Acting as an effective patient advocate.
• Provides care with patient safety as primary concern.
• Employs risk reduction strategies (such as sterile technique when appropriate).

Professional

GP-Anesthesia Residents will have demonstrated professionalism:
• Demonstrates (i.e. day to day behaviour) that reassures that the resident is responsible, reliable and trustworthy.
• Identify patients at risk because of social, family or other health situations.
• Demonstrate leadership, professional and ethical qualities.
• Able to appropriately deal with issues surrounding confidentiality and consent.
• Able to identify ethical problems and have an approach to their solution.
• Able to demonstrate an understanding of medicolegal issues relevant to professional activities.
• Demonstrates compassion and empathy.
• Demonstrates appropriate time management skills.
• The resident will demonstrate effective performance in stressful and emergency situations.
• The resident will demonstrate awareness of stress management, fatigue, substance abuse and quality assurance.

Scholar

GP-Anesthesia Resident will have demonstrated their scholarly proficiencies:
• Strategies for lifelong learning and continuing maintenance of professional competence.
• Demonstrates self-directed learning based on reflective practice.
• Access, critically evaluate and use medical information in health care decisions.

Developed by: Dr. Daniel Grushka, Dr. Jeff Granton & Anesthesia Program Subcommittee
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