UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
ANESTHESIOLOGY RESIDENCY PROGRAM

CA-1 YEAR GENERAL OR GOALS AND OBJECTIVES

University and Memorial Campuses

The CA-1 year involves twelve 1-month experiences at our rotation sites of University Campus and Hahnemann Campus, 8 of which encompass experiences in the general operating rooms (inclusive of a 2 month orientation process) at both University and Memorial campuses.

GOALS OF ROTATION

As each experience at the various sites is unique, please see the individual rotation goals and objectives for further information re: PACU, Pre-Admission Testing, and Ambulatory Anesthesia rotations.

The goal of the General OR rotations at University and Memorial Campuses are similar: to provide the resident with the experience and education necessary for the early development of all basic skills critical for excellent management of the anesthetized patient This rotation provides an overview to preoperative preparation, choice of anesthetic techniques, anesthesia delivery systems, airway management, positioning, monitoring, intravenous induction agents, opiates, neuromuscular blockers, reversal agents, and inhaled anesthetic agents. The resident will become comfortable with induction and emergence. The resident will learn about the different modes of ventilation and be able to choose the appropriate mode for the patient's condition and the surgical procedure.

Residents on this rotation may be assigned to provide anesthesia for General Surgery, Orthopedic Surgery, Trauma, ENT Surgery, Urological Surgery, Gynecological Surgery, and offsite (Endoscopy, MRI, Electrophysiology, CT scan and Interventional Radiology). While at the University campus, CA-1 residents may be assigned to more complex cases; in such cases, residents will have direct one-to-one supervision by a faculty member, with the expectation that maximal guidance will be necessary for teaching and patient management.

COMPETENCIES

At the conclusion of the rotations, the resident should be familiar with the following areas

I. MEDICAL KNOWLEDGE

Residents will develop basic knowledge in the following areas:

a. Anatomy – Particular attention to anatomy relevant to anesthesia i.e. airway, (Mallampati classification & airway assessment), cardiopulmonary system, central nervous system, sympathetic and parasympathetic nervous system, spinal cord

b. Physiology – Cardiac, respiratory, neurophysiology, renal and hepatic physiology, as well as physiology of neuromuscular transmission

c. Pathophysiology – An understanding of the most commonly encountered coexisting diseases, including diabetes, hypertension, coronary artery disease, peripheral vascular disease, pulmonary disease including COPD and asthma, GI disorders, morbid obesity, neurologic and neuromuscular disorders; coagulation disorders; hepatic and renal disease and endocrine disorders; knowledge of the pathophysiology and management of malignant hyperthermia and pseudocholinesterase deficiency.

d. Anesthesia Equipment – anesthesia machine, gas delivery systems, vaporizers and ventilators, scavenging systems, analyzer systems, hemodynamic monitoring equipment

e. Pharmacology – Volatile agents; intravenous anesthetic agents; induction agents including propofol, etomidate, ketamine; benzodiazepines; opioids; neuromuscular blocking agents and their reversal agents; local anesthetics; resuscitation medications; pressors and inotropes

f. Basics of Anesthesia Management – ASA classification, the components of a complete pre-anesthetic assessment; basic principles of induction, maintenance an emergence from general anesthesia; understand the principles and anatomy of regional anesthesia; know proper positioning techniques and common position injuries in patients in the supine, prone, lithotomy and lateral positions; fluid management, including crystalloid/colloid and blood transfusion therapy; information needed for completion of anesthesia record; understand the basics of blood gas analysis

II. PATIENT CARE

By the completion of the CA-1 general OR rotations, the resident will be able to:

- Demonstrate proficiency in the gathering of information and recording information in the preoperative evaluation note, in particular information that could impact anesthetic management
- Demonstrate proficiency in examining the patient to determine if acute or chronic physical problems are present that could lead to anesthetic complications
- Develop an appropriate anesthetic plan for individual patients
- Demonstrate proficiency in techniques for peripheral venous cannulation as well as arterial cannulation using sterile technique
- Perform a daily anesthetic machine checkout at the beginning to the day that includes high pressure and low pressure circuit leak tests, a check for expiratory and inspiratory valve movement, inspection of CO2 absorbent, inspection of oxygen sensor analyzer, inspection and flushing of flow sensor, monitor power-up, function of suction canister and suction tubing.
- Have all necessary equipment available and checked for adequate function
- Ventilate most patients with a facemask attached to the anesthesia circuit.
- Demonstrate proficiency in endotracheal intubation in most patients
- Demonstrate proficiency in the placement of laryngeal mask airways
- Manage induction and maintenance of a general anesthetic with minimal assistance in ASA I and II patients for straightforward general operative cases; including use of the PYXIS for checkout of medication
- Complete an airway assessment and recognize possible difficult airway with knowledge of associated management plans
- Explain indications for invasive monitoring, as well as method of placement and common complications of arterial line and central line placement
- Demonstrate organization of workspace to allow efficient and timely patient care as well as case turnover
- Recognize common intraoperative complications and be able to discuss differential

diagnoses and initiate management (hypertension, hypotension, hypoxemia, inadequate anesthesia, inadequate urine output)

- Recognize common postoperative complications and be able to discuss differential diagnoses and initiate management (nausea, vomiting, hypo/hypertension, inadequate urine output, hypoxemia, agitation)

- Demonstrate an understanding of indications and contraindications for regional anesthesia

- Demonstrate an understanding of indications and contraindications for monitored anesthesia care, as well s demonstrate proper techniques

- Demonstrate an understanding of the need to maintain normothermia, and demonstrate proper techniques to prevent and/or treat hypothermia

- Demonstrate appropriate use of acute pain management techniques, including patient-controlled analgesia, epidural analgesia, and intravenous analgesia utilizing both opioids and anti-inflammatory medication

- Demonstrate an understanding of proper fluid management, including the ability to calculate fluid deficits, estimate blood volume, and manage oliguria

- Demonstrate the ability to manage major trauma, massive blood loss, hemodynamic instability in critically ill patients with the close supervision and assistance of faculty

III. INTERPERSONAL AND COMMUNICATION SKILLS

At the end of the CA-1 general OR rotations, the resident will:

- Be able to explain the need for, and demonstrate, effective communication with patient

- Develop skills in good doctor-patient communication, particularly in the pre-anesthetic assessment as well as discussion of risks and benefits of appropriate anesthetic plans

- Be able to obtain informed anesthesia consent

- Develop and demonstrate effective communication skills amongst the healthcare team throughout the entire peri-operative period

- Be exposed to behaviors that contribute to effective communication by faculty role-Modeling

IV. PROFESSIONALISM

Residents will be able to define and demonstrate professional medical behavior by:

- Notifying the attending anesthesiologist of any intraoperative problems and at the time of emergence from anesthesia. demonstrating respect, caring and compassion for patients

- Demonstrating respect for colleagues and team members in both words and actions

- Observing patient confidentiality

- Dressing appropriately

- Arriving at work on time and prepared

- Complying with all departmental and institutional policies and procedures
- Answering pages in a timely fashion
- Attending all educational activities and completing all necessary materials as requested by residency program
- Completing all documentation as required by departmental policy
- Learning the ethical principles of informed consent, do-not-resuscitate orders, patient confidentiality and business practices

V. PRACTICE-BASED LEARNING

Residents will develop an understanding of the importance of life-long learning and various methods of practice-based learning through:

- departmental didactic lectures and Grand Rounds
- quality improvement conferences
- journal clubs with emphasis on evidence-based medicine
- practice-based case presentations
- mock oral board exams
- local and national meetings
- journals and web-based educational tools
- simulation based experiences
- portfolio entries in order to 'learn from experience'

VI. SYSTEM-BASED PRACTICE

Residents will gain an understanding of the role they play in the health care system and how their patient care both influences, and is influenced by, other parts of the health care system:

- Residents will participate in quality improvement programs
- Importance of working as a team will be emphasized
- The role of health care costs in the pre-operative care amd anesthetic management of their patients will be emphasized
- Patient flow issues will be utilized as a starting point of discussions of systems-based issues
- Cost efficiency will be included in the discussions by faculty of anesthetics management plans
- Residents will understand how case turnover effects overall system flow
- Residents will demonstrate proper management of controlled substances

- Residents will demonstrate an understanding of the need for, and demonstrate, legible written communication and accurate record keeping