

Goals & Objectives

Name of Rotation:

Pediatric Anesthesia Rotation: UCSF/Moffitt-Long

Supervisor:

Marla Ferschl and Pediatric Anesthesia Faculty

Rotation Description:

This is a month-long rotation for residents in Anesthesiology. The residents rotate through Pediatric Anesthesiology at UCSF usually during their CA2 year. The primary assignments during this rotation are in the Moffitt Long Pediatric Operating Rooms, but may also include experience in radiology suites (e.g., MRI, CT, interventional) or radiation oncology.

Core Competencies:

Patient Care: Residents are expected to provide compassionate, appropriate and effective patient care for the treatment of disease processes and promotion of health in the pediatric surgical population. Residents will be taught to appropriately prioritize patient care relevant to the current surgical procedure by conducting a preoperative evaluation including relevant diagnostics, leading to proposing an anesthetic plan based appropriate for the proposed surgery and based on the pre-operative evaluation. The resident should demonstrate an appropriate balance between attention to the details of surgical care and the overall context of treating the patient's illness. The resident will be supervised to obtain consultations appropriately. The resident will be supervised and taught to perform technical procedures and provide appropriate pre-, intra-, and post-operative care.

Medical Knowledge: Residents will be expected to demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and behavioral data relevant to the anesthetic care of the pediatric surgical patient. Residents will be expected to assess diagnostic information critically and constructively, and to recognize the psychosocial aspects of illness across the spectrum of pediatric patients from the newborn through adolescence. The resident should be able to critically evaluate the medical literature and apply new knowledge to the delivery of safe and effective patient care, emphasizing the pediatric patient.

Practice-Based Learning and Improvement: Residents will be expected to critically evaluate the care of patients, appraise and assimilate scientific evidence, and continuously improve patient care delivered on the basis of ongoing self-evaluation and learning. The resident will be expected to use knowledge to educate families, medical students, allied health personnel, peers, and other health professionals as appropriate. Resident should be capable of self-identifying strengths, deficiencies, and the limits of their knowledge and expertise. The resident will be expected to be receptive to constructive criticism (formative evaluation feedback) regarding the care of patients and performance. Resident should be able to set learning and improvement goals, and identify and perform activities appropriate to meeting those goals.

Interpersonal and Communication Skills: Residents will be expected to demonstrate interpersonal and communication skills that result in effective information exchange and collaboration with patients, families and health professionals. These skills include the ability to communicate across a broad range of socio-economic and cultural backgrounds and ability to communicate with physicians, health professionals, and families effectively. The resident is expected to be able maintain comprehensive, timely and readable anesthetic and other medical records. The resident is expected to work effectively as a member of the operating room healthcare team and serve appropriately as a consultant to other physicians and health professionals throughout the peri-operative period.

Professionalism: The residents are expected to carry out professional responsibilities and adhere to ethical principles. The residents should demonstrate respect for patient privacy and autonomy and are accountable to patients, the medical center/school, and the medical profession. The residents should demonstrate compassion, integrity and respect for others as well as responsiveness to patients' needs that supersede self-interest. The residents are expected to demonstrate sensitivity and responsiveness to a broad patient population including diversity in gender, age, culture, race, religion, disability, and sexual orientation. Residents are expected to demonstrate the ability to manage personal stress effectively, answer pages or messages in a timely fashion, and complete assigned tasks in a timely fashion. The resident is expected to adhere to policies of the training program, medical center, and the profession. Residents are expected to understand how to maintain appropriate professional boundaries and to demonstrate integrity, honesty and compassion.

Systems-Based Practice: Residents are expected to understand and be capable of interacting effectively with different systems of care and to demonstrate the ability to provide high-quality care in a cost-effective manner. Residents will be taught to incorporate consideration of cost-awareness and risk-benefit analysis into patient care decisions and to advocate for high quality care for all patients.

Rotation Goals:

1. The residents will learn about normal and abnormal pediatric development relevant to the pre-operative evaluation, intra-operative management, and postoperative care. The resident will learn how developmental changes in physiology affect perioperative care.

(Competencies Addressed: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement)

2. The residents will gain confidence in the pre-operative assessment of neonates and young children, and be able to recognize the impact on formulating an efficient, cost-effective, safe perioperative plan with surgeons, pediatricians and other personnel in the operating room, recovery room, and ward/ICU.

(Competencies Addressed: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, Systems-Based Practice)

3. The residents will be exposed to a variety of pediatric surgery (e.g., general, otolaryngologic, orthopedic, plastics, etc) both inpatient and outpatient, that require an understanding of physiology, pharmacology, and principles of monitoring. Residents will maintain a log of cases to document providing anesthetic care for 100 patients less than 12 years of age undergoing surgery or other procedures requiring anesthetics. Within this patient group, 20 children must be less than three years of age, including five less than three months of age. Data from this rotation will be combined with that from other rotations/experiences with pediatric patients.

(Competencies Addressed: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Systems-Based Practice)

Rotation Objectives:

1. Gain experience with a wide variety of pediatric surgical cases across the full spectrum of ages from newborn through adolescence.

- The primary clinical assignment will be in either OR 21 or 22. The objective is to balance cases between the two operating rooms to allow experience with general surgery, orthopedics, neurosurgery, plastic surgery, and ENT.
- Experience with all age groups is essential. Residents will maintain a log of daily cases. See attached log.
- Residents do not participate in the general M-L operating room call responsibilities of anesthesia residents. However, if 2 pediatric operating rooms are clinically active, the residents will remain until relief can be provided by either the general operating room team or the pediatric anesthesia faculty on

call.

(Competencies Addressed: Patient Care, Medical Knowledge, Professionalism Interpersonal and Communication Skills, Practice-Based Learning)

2. Conduct a comprehensive age-based pre-operative evaluation.

The resident will contact the faculty to discuss an anesthetic plan for each patient.

- The resident will acquire data about the medical history specifically relevant to the proposed surgical procedure.
- The resident will acquire data about a full "review of systems," medications/allergies, and prior anesthetics/surgeries.
- If the patient is an inpatient, a face-to-face pre-operative visit is required. Questions from family/patient are addressed, with consultation from faculty as needed. Orders for NPO status, intravenous fluids (if relevant), pre-medication must be written. Risks/benefits of the anesthesia must be discussed with family and patient (age-appropriate).
- If the patient is an outpatient, the pre-operative evaluation will focus on the PREPARE and UCARE documentation.
- The resident and the faculty will agree on a preliminary plan including: premedication, positioning, monitoring, anesthetic agents, post-operative pain control, and site for recovery (e.g., PICU, ICN, PACU).
- On the day of surgery, the immediate pre-operative assessment will include documentation of NPO status, assessment for pre-medication/parental presence, cardio-respiratory status (e.g., URI, fever, need for blood product availability), and consent (surgical and blood). Questions from patient and family are addressed, with consult from the faculty. Risks/benefits of the anesthesia must be discussed with family and patient (age-appropriate).
- Concerns/questions about the surgical plan, consent, medical status must be discussed with faculty and surgical colleagues. Discussion with surgical colleagues may require faculty input.

(Competencies Addressed: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Professionalism)

3. Develop and conduct rational intra-operative care. See section, Specific Topics, #5.

- Premedication: age-related
- Induction techniques, including parental presence
- The resident will develop an intra-operative plan appropriate for the patient's age, clinical status, surgical procedure that includes:
 - fluid management (crystalloid, blood products; glucose/insulin)
 - choice of agents (narcotics, inhaled agents)
 - appropriate monitoring
 - airway management
 - LMA vs ETT
 - Cuffed vs uncuffed ETT, size for age, depth
 - laryngospasm
 - anticipate/plan for post-operative pain requirements
 - ain competence in procedures
- Intravenous access
- Caudal anesthesia
- Epidural anesthesia
- Communicate as needed with anesthesia attending, surgeon, family

(Competencies Addressed: Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Professionalism, Practice-Based Learning)

4. Attend and participate in teaching conferences, Monday/Tuesday/Thursday

- The schedule for 0630-0700 teaching topics will be emailed before the first day of the rotation.
- The schedule for the Tuesday afternoon teaching will be emailed before the first day of the rotation.
- Pediatric wiki has been posted on the Department of Anesthesia intranet.
<https://wiki.library.ucsf.edu/display/Pedianesthesia/>. If the link does not work, log onto the intranet, enter the education section, go to wiki, and find the section labeled "pediatric files". The section labeled "roadmap to the wiki" provides an outline to the content.

(Competencies Addressed: (Patient Care, Medical Knowledge)

5. Specific Topics for Pediatric Anesthesia Rotation

- Newborn: AGA/LGA/SGA
 - Physiology
 - Transitional circulation: Normal blood pressure, heart rate
 - Pulmonary: Normal respiratory rate/compliance/resistance/FRC
 - Hepatic
 - Renal
 - CNS
 - Fluids/electrolyte requirements, including glucose, calcium
 - Evaluation of volume status
 - Normal laboratory values: CBC, platelets, electrolytes, calcium, glucose, PTT/PT
 - Pharmacology of inhaled and intravenous agents
 - Specific lesions
 - Tracheo-esophageal fistula
 - Diaphragmatic hernia
 - Abdominal wall defects
 - Meningomyelocele/encephalocele
- Premature infants
 - NEC
 - Intracranial hemorrhage
 - PDA
- Ex-premature infants: chronic lung disease, CNS injury
- Older infant/child
 - Tonsillectomy/adenoidectomy
 - Foreign bodies: esophageal/tracheal
 - Cleft lip/palate
 - Craniofacial
 - Brain tumor
 - Neuroblastoma/rhabdomyosarcoma
- Congenital heart disease
 - Left-to-right shunting
 - Right-to-left shunting
 - Single ventricle physiology
- Developmental delay/seizures/"cerebral palsy"
- Myopathies
- Non-operating room anesthesia: MRI/CT/Cardiac catheterization/Radiation Oncology

(Competencies Addressed: Patient Care, Medical Knowledge)