

**ROTATION SUMMARY**  
**PEDIATRIC ANESTHESIA ELECTIVE**

**Rotation Contacts and Scheduling Details**

**Rotation Director:** Kelly Yeh, MD  
Director of Pediatric Anesthesia  
Santa Clara Valley Medical Center  
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**Administrator:** Helen Evans  
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**Length of elective:** 4 week elective; anesthesia may be combined with pediatric sedation to total 4 weeks. This elective is offered throughout the year. The rotation is open to all training levels. One month advance notice for scheduling is required.

The rationale behind a 4 week rotation includes the following: 1) as a visitor, you will have to get to know the attendings before they may be willing to give up procedures for you. This may take a few days. 2) To really understand the pharmacokinetics and pharmacodynamics of the various anesthetic drugs, you must see how they affect the patients over time and over many different cases and patients.

**Positions Available:** The elective can accommodate one pediatric resident per month most months of the year; 12-13 positions are traditionally available.

**Introduction**

This elective may be undertaken as a full-time elective in pediatric anesthesia, or as a combination of pediatric anesthesia and sedation. For the pediatric sedation portion of the elective, please contact Suzanne Mendez, MD.

The aim of this rotation is to increase resident skills related to airway management, vascular access, and pharmacology. Generally residents increase proficiency via observation and hands on experience in the Operating Room. The rotation leadership recognizes that most participants have focused interest in anesthesia and select the rotation to maximize procedural and airway opportunities. To maximize these opportunities, however, participants must function as part of the anesthesia team, develop a level of trust with the anesthesia faculty, and show a commitment to the rotation.

**Weekly Schedule**

<b>Time</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>0700</b>		Meet Team in Preop or OR	Meet Team in Preop or OR	Meet Team in Preop or OR	Meet Team in Preop or OR
<b>0730</b>		Cases Begin	Cases Begin	Cases Begin	Cases Begin
<b>0800</b>	Meet Team in Preop or OR				
<b>0830</b>	Cases Begin				

\*\* Morning Report and Noon Conference: you are not restricted from attending the pediatric department lectures or conferences, however, keep in mind that things move along quickly in the OR. From the anesthesia attending and trainee’s perspective—think of each case like a dinner party with your relatives: it is not nice to come in and do a procedure without helping to set up beforehand, meet the patient and family, or clean up afterwards.

**Dr. Kahana supports your ability to make the appropriate decision for your own training regarding which conferences to attend.** If an opportunity in the OR presents itself and this opportunity would be foregone by attending morning report, stay and take advantage of the opportunity. If however, things are slow, attendance at conference is expected.

Additionally, given the disproportionate number of opportunities during the morning, residents should attempt to **attend continuity clinic in the afternoon while on the anesthesia rotation.**

## **Rotation Specifics**

### **Orientation**

Please review the readings in advance of the rotation. It is the resident's responsibility to take initiative and ask questions as this is a very different clinical environment with its own culture.

### **Assignments**

Each day you will be assigned to a specific room working with an attending anesthesiologist. Those assignments are made the afternoon of the day before the actual OR day. Check with the anesthesia scheduler to determine your assignment and whether there is a patient to see for preoperative assessment.

### **Pagers**

The Resident is expected to carry her pager from 6am through the end of the work-day on weekdays.

### **Call Schedule & Weekends**

There are no call or weekend responsibilities associated with this elective.

### **Resident Roles and Responsibilities**

Most Pediatric Residents opt to partake in an Anesthesia elective to gain procedural and airway management experience. Interest in the pharmacology and other Anesthesia skills may be limited. We recognize each individual learner's goals; however, in order to accommodate you obtaining your educational goals, we request that you function as part of the anesthesia team and participate in some of the non-procedural duties. You should know your clinical assignment the afternoon before the actual OR day and should discuss the patients and the anesthesia care plan with the attending anesthesiologist by phone or in person the afternoon or evening before the actual OR day. You should plan to arrive at the hospital by 7 in the morning of the OR assigned that day to allow time to prepare your room for the day and to further discuss patient management with the attending anesthesiologist to whom you are assigned. You are expected to work in the OR for the entire day which typically ends in the early to mid afternoon unless you are going to your continuity clinic. Please be certain that the attending anesthesiologist knows your clinic is scheduled for the afternoon when you discuss patient management that morning.

### **Evaluation and Feedback**

1. This rotation requires you to keep a case and procedure log including date, name of patient, type of surgery, name of attending or fellow, and the procedures you did. A copy of the log must be submitted to Dr. Yeh in order to complete the rotation. You should also add this log to your Medhub Profile or Professional File in the Program office
2. Dr. Yeh will use the list of individuals you worked with to solicit feedback and then complete a group evaluation of your performance.

### **References**

Cote, Lerman, and Todres, [A Practice of Anesthesia for Infants and Children](#), 4<sup>th</sup> Edition  
Stoelting and Miller, [Basics of Anesthesia](#), 4<sup>th</sup> Edition

## Anesthesia Competency-based Goals and Objectives

### Goal 1. Recognize and manage upper airway obstruction and desaturation.

Resident Objectives:	Instructional Strategies	Assessment of Competency	ACGME Competency Goals
Identify conditions that result in upper airway obstruction.	Attending discussion Readings	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Medhub evaluation</li> </ul>	MK PC
State indications for and demonstrate use of oropharyngeal airway vs. nasal trumpet.	Attending discussion Readings	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Medhub evaluation</li> </ul>	MK PC
Discuss routine care of a tracheostomy and know how to recognize tracheostomy obstruction; demonstrate proficiency in replacement of a tracheostomy tube.	Attending discussion Readings	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Medhub evaluation</li> </ul>	MK PC
Recognize desaturation that requires intervention and describe the indications for use of appropriate oxygen delivery devices (e.g., simple nasal cannula, simple O2 mask, Venturi mask, partial rebreather and non-rebreather masks).	Review percentages of FIO2 delivered for various oxygen delivery devices.  Set-up oxygen delivery equipment and oxygen saturation monitoring and participate in troubleshooting malfunctioning equipment.	<ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Medhub evaluation</li> </ul>	MK PC

### Goal 2. Participate in the care and management of pediatric patients requiring general and local anesthesia.

Resident Objectives:	Instructional Strategies	Assessment of Competency	ACGME Competency Goals
Assist the anesthesiologist or surgeon in addressing issues related to pre-anesthesia evaluation, risk assessment and preparation.	<ul style="list-style-type: none"> <li>• Review pre-op evaluations/history/physical/labs and anesthetic risk for all cases in which one is participant.</li> <li>• Assess airway anesthetic risk in all cases</li> <li>• Review cases requiring referral for cardiac assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	SBP MK PC P

List specific pre-anesthetic considerations for children with the following conditions: recent upper respiratory infection, reactive airway disease, upper airway obstruction (croup, epiglottitis, airway foreign body), congenital heart disease, neonatal apnea, obstructive sleep apnea, diabetes, seizure disorder.	Readings Anesthesia cases	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	MK
List specific anesthetic considerations for children with the following conditions: genetic disorders, musculoskeletal disorders and conditions requiring emergency surgery.	Readings Anesthesia cases	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	MK
State NPO guidelines for LPCH and rationale for these.	Review NPO status for cases. Review LPCH guidelines.	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	MK SBP
Assist in the psychosocial preparation of the child and parents for anesthesia and practice different techniques based on age.	Observe Attending/Fellow introductions and strategies for alleviating anxiety. Reflect on most effective strategies.	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	ICS P
Recognize the importance of and describe in general terms the complication of malignant hyperthermia.	Readings	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	MK
Demonstrate understanding of the following principles of intraoperative anesthetic management:	Calculate ETT size, cuff versus uncuffed, leak, length, and confirm ETT placement.	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> <li>• Procedure log</li> </ul>	MK PBLI
1. IV access and fluid management during anesthesia	Apply monitoring equipment Place IVs		
2. Non-invasive monitoring of blood pressure, heart rate, oximetry and capnography	Demonstrate suctioning Provide PPV with varying types of bag mask devices		
3. Temperature control in the peri-anesthetic period			

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4. Anesthetic equipment
  5. Bag mask ventilation devices (self-inflating bag, anesthesia bag)
  6. Airway devices (oral/nasal airways, endotracheal tubes, laryngeal mask airways)
  7. Laryngoscopes
  8. Use of physical examination and monitoring methods for early detection of airway obstruction
  9. Airway suction devices
  10. Oxygen supplementation devices
  11. Anesthetic induction and reversal techniques, including basic pharmacology of inhalation anesthetic agents, intravenous anesthetic agents, muscle relaxants, local anesthetics, narcotic analgesics, and agents to reverse muscle relaxation

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Understand the basic pharmacology of commonly used agents for local anesthesia and their side effects.	Readings Attending discussion Anesthesia conferences	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	PC MK
Describe post-anesthesia management of: <ul style="list-style-type: none"> <li>- Nausea and vomiting</li> <li>- Post-surgical pain</li> <li>- Reestablish PO post-anesthesia</li> <li>- Discharge criteria</li> </ul>	Follow-up on patients course in PACU and during inpatient hospitalization  Attending discussion  Anesthesia conferences	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> </ul>	PC

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### Goal 3. Develop understanding of and basic approach to common diagnostic and therapeutic procedures.

Resident Objectives:	Instructional Strategies	Assessment of Competency	ACGME Competency Goals
Define and perform (unless observation noted) the following procedures; list indications, contraindications, and possible complications: <ul style="list-style-type: none"> <li>- Anesthesia/analgesia: local/topical</li> <li>- Anesthesia/analgesia: pain management</li> <li>- Intravenous line placement</li> <li>- Seldinger technique (observe)</li> <li>- Endotracheal intubation</li> <li>- Suction nares, oral pharynx, tracheostomy</li> <li>- Bag-mask ventilation</li> <li>- Initiate mechanical ventilation</li> <li>- Interpret and respond to blood gases</li> <li>- EKG / cardiac monitoring</li> <li>- Pulse oximeter placement and monitoring</li> <li>- Capnometry monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• Perform all of the specified procedures on multiple occasions</li> </ul>	<ul style="list-style-type: none"> <li>• Direct Observation</li> <li>• Medhub</li> <li>• Procedure Log</li> </ul>	MK PC P PBLI

Modified from Kittredge, D. Baldwin C.D., Bar-on, M.E., Beach, P.S., Trimm, R.F. (Eds.). (2004). APA Educational Guidelines for Pediatric Residency. Ambulatory Pediatric Association Website.

PBLI = practice based learning and improvement

ICS = interpersonal and communication skills

P= professionalism

MK= medical knowledge

PC= patient care

SBP = systems based practice