

division of

Pediatric Anesthesia & Pain Management

Lucile Salter Packard Children's Hospital

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Orientation to Pediatric Anesthesia

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Orientation To Pediatric Anesthesia

Clinical Duties

Usually children come into the preop clinic and will be evaluated by the pediatric anesthesia nurse practitioner. Inpatients should be preop'd by the resident staff. Some patients come in the morning of surgery for the first time. Regardless of which occurs, it is your responsibility to perform an evaluation *and obtain consent* from a parent/guardian prior to commencing the anesthetic. Preoperative charts can be found the evening prior to surgery in the LPCH PACU, and you can always obtain up to the minute laboratory data, Xray reports, and dictations by accessing the LPCH Meditech computer network at LPCH. If you have a home computer and modem, you can access Meditech from home, too. See our administrative assistant to obtain an application for an ID and a password for Meditech.

The on-call resident picks up operating room cases starting at 1700, but I encourage residents to finish their own cases if they are likely to finish by 1800 for the sake of continuity, professionalism, and to foster good relations with the surgeons.

Misc. Notes on Our Clinical Practices

Inductions.

Virtually all children from 6 months to ~10 years require some degree of pharmacologic sedation prior to separating from their parents and going to the OR. We make liberal use of midazolam given orally in doses of 0.5 mg/kg to obtain preoperative sedation, even in "full-stomach" situations. This dose rarely if ever produces unconsciousness, but usually produces a cooperative child. Please call the PACU (7-8700) to have your next patient premedicated 10-20 minutes prior to the end of the previous case to facilitate fast turn over times.

If the child already has an IV, then midazolam 0.1 mg/kg should be administered. If an IV induction is anticipated, then please consider using EMLA cream on the IV site, remembering that one hour of application is required for adequate local anesthesia. You may also choose to perform inhalation or IV inductions with the parents present, using our induction room in the PACU.

Intravenous Lines.

Please place T-Pieces on **all** lines. Please use Buretrols for children under 12 months of age, and micro-drip chambers on children under 10 years of age. All children under 10 years of age should also have arm boards on the limb with the IV. IV sites should be dressed with a sterile transparent dressing and tape. Please do not use plastic "eye" tape on immunosuppressed patients.

Glucose containing solutions

should not be routinely used in the OR. Administer D2LR to children less than 6 months of age or to children who are malnourished by mixing 2 grams of glucose (4cc of D50W) to every 100cc of LR in the Buretrol. Otherwise, LR is our standard IV solution. Do not use NS in big cases during which large quantities of crystalloid are administered. This has been associated with postoperative metabolic acidosis in our population. A good alternative to NS is Normosol, which is compatible with blood products as it does not contain calcium.

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Regional Anesthesia.

Our pediatric surgeons have come to expect certain clinical practices. For example, regional anesthesia is used whenever practical to minimize intraoperative drug requirement and to smooth the postoperative course. Most often, this means performing lumbar or caudal epidural blocks, with or without catheters, but other commonly used techniques include the use of intrathecal opioids for cardiac surgery and spine fusions, and the use of thoracic epidural anesthesia for virtually all thoracotomies and upper abdominal surgery. Brachial plexus anesthesia is commonly used during hand surgery, especially for children with epidermolysis bullosa. Please consult one of the pediatric anesthesiologists as needed for recommendations regarding regional anesthesia, and for assistance in placing blocks.

Invasive Vascular Lines.

When central venous catheters are inserted, the placement of the catheter tip must be confirmed with a portable chest radiograph in the operating room at the time of line placement, unless the child is going to an intensive care unit after surgery and will remain intubated and mechanically ventilated. In this case the line placement radiograph may be obtained in the ICU following surgery. The purpose of this is to avoid the need to re-suture central lines in awake uncooperative children. CVP catheter tips should not be allowed to remain in the right atrium, but should ideally lie in the SVC or at the SVC-RA junction. Peripheral arterial lines are usually secured using benzoin and ¼" Steri-Strips rather than suture, with a sterile transparent occlusive dressing and tape over the Steri-Strips. Femoral lines are secured using suture. All children with invasive lines should be transported to the ICU with the lines attached to pressurized infusion bags, to maintain line patency.

Fiberoptic Intubations.

There is a pediatric fiberoptic intubation cart that is kept in the APU. The cart includes two bronchoscopes, a video camera and monitor, and a color video printer. This equipment is only for the use of the personnel in pediatric anesthesia under the supervision of one of the pediatric anesthesia faculty members or fellows. There are two Olympus bronchoscopes: 3.5mm (smallest ETT size 4.5 mm) and 2mm (smallest ETT size 3.0mm).

After discussion with your attending, you are encouraged to use the fiberoptic equipment to intubate normal children to become facile in its use.

After using a bronchoscope, please place the entire 'scope in the blue basin kept on the cart, and fill the basin with 1 bottle of sterile water. If the 3.5mm 'scope was used, suction a few cc's of water through the 'scope to remove blood and secretions from the suction channel. Park the cart outside your operating room, and call the telephone number printed on the basin for the cart to be picked up and the 'scope to be cleaned. Nights and weekends the equipment will be cleaned by the anesthesia technicians.

If you get the cart from the APU for your use, you are responsible for assuring that it was cleaned and returned to the APU.

PICU/NICU Interface

Patients transported from an ICU to the operating room should be accompanied by an anesthesiologist, and often by both the attending and resident/fellow.

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At the end of the case, the ICUs must receive a 45 minute heads up telephone call from you or your resident/fellow. Call the ICU, ask to speak with the nurse who will take care of the child, and tell her ventilator settings or oxygen therapy to expect, what lines to be ready for, what drips are being used, etc. Make sure they get called again about 10-15 minutes prior to leaving the operating room for a final notice. The circulator can make this final phone call.

When you take a child to the PICU or NICU, keep all invasive lines attached to pressure bags and transducers to maintain line patency. They can use your transducers and bags, saving considerable money.

Sign out should be made to the ICU bedside nurse and to the ICU resident staff. Speak directly with the ICU attending in unusual circumstances or when you have special concerns about the operating room-PICU transition and the ongoing care of the child.

Pain Service

All children treated with epidurals and PCA are managed by the pediatric pain management service. At the end of the case, remember to page the pain service nurse (Sandy Sentivany, beeper 1-8779), and tell them about the patient and what ongoing therapy you've planned. Always call the pain attending if you're unsure of protocols or have questions about what is appropriate or what works.

Useful Phone Numbers and Beepers

Peds Anesthesia Administrative Office	3-5728
PACU Preop Area	7-8700
PACU Postop Area	7-8701
PICU	7-8850
NICU	7-8800
Peds Inpatient Pain Service Office	7-8057
Peds Inpatient Pain RN (Sandy Sentivany)	Beeper 18779,
Peds Outpatient Pain Service Office	4-5338
Peds Outpatient Pain RN (Chris Almgren)	Beeper 28521, 415-607-4298

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