Welcome to your obstetric anesthesia rotation!
This manual should serve as an overview for the month.

There are 3 residents rotating in a month. Typically there are 2 people on each day, and one person is post-call as in-house calls are for 24 hrs. Of the 2 people, one is a short day resident and the other is on call. The short day resident does the elective sections and procedures in LD 3. The on-call resident is responsible for the floor epidurals and holds the OB-Code pager and phone. There are daily task that can be divided up between the residents, which includes doing daily post-ops on patients who have received anesthesia services (ie, epidurals, spinalcs, and general anesthesia). Everything should be explained below, and you can always ask a senior resident or attending if you are unsure.

**Useful Information: codes provided on OB rotation**

- Combination for the OB break room door: ----
- Bathrooms are located inside the OB break room and PACU
  - Combination for male locker room/bathroom: ----
  - Combination for female locker room/bathroom: ----
- OB anesthesia call room ----
- A Pyxis machine with controlled drugs is in PACU
- A Pyxis machine near the L&D front desk contains non-controlled drugs, uterine stimulants (Hemabate, Methergine), and antibiotics.
- The anesthesia workroom and pharmacy supply closet are located in the anesthesia office.
- Padlock for anesthesia cart in OR LD Room 3: ----
- Anesthesia cart in anesthesia workroom: ----
- Returning medications trays in Pyxis: similar to main OR except it is labeled under “used trays,” not “completed trays”
- Vending machines and coffee are located in the staff lounge.
- Hats and masks are required to be worn once you enter the OR hallway.

**Resident Responsibilities and Expectations**

- The OB/GYN labor board should be checked every morning and often throughout the day. Ask questions. Maintain open lines of communication with the obstetricians and labor nurses.
- The resident coming off duty should check the anesthesia machine and make the room ready for any cesarean section (C/S). If time allows, complete the post-op evaluations of cases from the previous day. Every patient requires a post op note to be written; however, it is up to the anesthesia team to decide who completes these on a daily basis.
- When covering the labor unit, you should know the basic medical background of all admitted patients. After an anesthesia consult has been initiated by the obstetrician complete your evaluation and review/present the patient to your attending. Procedures are never performed on any patient without prior knowledge/discussion with an attending anesthesiologist.
• Every effort should be made to respond to consults within 20-30 minutes. If a significant delay is anticipated provide suggestions on alternative therapies until you or your attending can attend to the patient.

• Keep a tally of procedures performed for your own records. Per ACGME standards, successful completion of the resident program (graduation) requires a minimum of:
  o 40 epidurals and 40 spinals
  o 20 Cesarean and 40 vaginal deliveries
Overview of the Educational Goals and Objectives
Please refer to the detailed Goals and Objectives located under Assessments and Competencies.

Knowledge
• Pain pathways during labor and delivery
• The major physiology changes in the pregnant woman as pregnancy progresses, at term, during labor and delivery, and in the post-partum period
• Uteroplacental circulation and respiratory gas exchange and what various physiologic implications of different forms of anesthesia do to the circulation and exchange
• The effects of regional and general anesthesia on uterine activity and labor
• Alternative forms of anesthesia for the pregnant patient including systemic, intrathecal, and other regional anesthetic techniques
• Tocolytic agents
• Fetal monitoring
• Pathophysiologic conditions: preeclampsia and hemorrhage

Skills
• Anesthesia for the surgical pregnant patient
  o Epidural anesthesia
  o Spinal anesthesia
  o General anesthesia
• Analgesia for the pregnant patient in labor
  o Epidurals
  o Spinals
  o Systemic medications

Performance
• How these physiologic changes affect the anesthetic management of the pregnant patient
• Choice of local anesthetics in obstetrics, sites of action, differential blockade, advantages and disadvantages, doses for epidural, intrathecal sites, use of adjuvants
• When various anesthetic techniques are appropriate and inappropriate in obstetrics, such as regional anesthesia, (spinal, epidural, other) or general anesthesia
• Appropriate anesthetic management of the patient presenting for a C/S, under either emergent or non-emergent conditions
• Anesthetic management and implications of the parturient with preeclampsia/eclampsia.
• Anesthetic management and implications for the bleeding parturient
• Anesthesia for post-partum sterilization as well as dilation and curettage and termination of pregnancies
• Anesthesia for pre-term L&D
**OB/GYN Anesthesia Work Day Schedule**

0700 Receive report *If Grand Rounds is scheduled, receive report at 0800*

**Short day Person:** Typically responsible for C-sections and assisting with other daily tasks. May cover pre-op of patients with upcoming planned C-sections.

For C-sections: Prepare patient (5-10 min) – check ID band, consent, and allergies
- Place/check IV, type and screen, review H&P, placenta location, reason for C/S
- Adequate fluids available, emergency drugs, controlled drugs, pitocin, Ancef/Mefoxitin
- Oftentimes the C/S go once the OB team has rounded, which is often around 8am. Be sure to have the patient in the room and ready at the time OB has requested

**Checklist for OR L&D 3:** Standard machine check and proper OR management.

1. Ambu bag
2. Suction catheter
3. Anesthesia machine
4. Emergency C/S drug kit – ONLY USE FOR CODE 77 (emergency C-section). You will need to replace these drugs at end of case.
5. Working GlideScope with 2 blades and stylette
6. Spinal/ CSE kit with gloves and chlorhexidine sticks
7. General anesthesia tray – make sure not used (need sux and Pitocin)

**On call Person:** Carries the OB-Code Pager and Cisco call phone, places epidurals. Assists with completing daily tasks.
- Postop patients (see log book)
- Epidural carts – check that it is stocked
- Always communicate with OB residents and anesthesia attending.
- The OB residents have sign-outs 6:30am and 5pm every weekday (weekends, 7am and 7pm). The on-call anesthesia resident should go to these sign-outs in the OB resident workroom, if possible, to discuss patients.
- Seek problem patients!
- Be aware of what’s happening on OB Service especially sick patients or those at high risk for urgent C/S.
- Always discusses high-risk patients with your attending on an individual basis. Notify your attending and come up with a plan for the patients on OB floor.

**Epidural cart checklist:** be sure to place epidural orders in computer. (Anesthesia epidural adult subphase)

1. Epidural set
2. Chlorhexidine stick
3. Gloves
4. Epidural pump with the micropump tubing
5. Tegaderm dressings
6. Phenylephrine and ephedrine stick
7. Silk tape
8. LIPID RESCUE – check expiration date and ensure this is in the cart at all times

**Pharmacy PACU Pyxis**

1. Drugs may be checked out from the PACU Pyxis for patients on L&D. These include but are not limited to:
   - Duramorph (preservative-free morphine) – under Morphine PF
   - Fentanyl
   - Midazolam
   - Propofol
   - Ketamine
   - Premixed epidural infusions (0.125% bupivacaine w/fentanyl 2 mcg/mL)
   - Succinylcholine is not available since it must be refrigerated. It is in the general anesthesia trays

2. If problems occur with the Pyxis, please call Pharmacy at 1-3114 or 1-4814. You can also call the pharmacy to restock if items begin running low.

3. All drugs should be kept in the top drawer of the cart in the OB anesthesia lounge under the room number of the patient. They should also be clearly marked with patient identifiers.

4. All drugs should be used or returned/wasted prior to the end of your shift with the resident that is coming in during the day.

**Documentation**

Obstetric anesthesia can be a highly litigious field, therefore it is very important that you accurately document the care you provide your patients.

On the labor epidural record please remember to:

1. Document Fetal heart rate and maternal vital signs hourly
2. Maternal comfort (hourly)
3. Record the sensory level (upper/thoracic and lower/sacral)
   i. Sensory level of T10 (umbilicus)-L2 (upper thigh) is usually required for adequate 1st stage analgesia
   ii. Sensory level of T10 (umbilicus)-S2 (Achilles tendon) is usually required for adequate 2nd stage analgesia
   iii. Sensory level of T6 (xiphoid)-S5 is usually required for adequate analgesia for cesarean delivery
Please make certain the following items are documented on your paperwork

1. Patient label (on ALL copies)
2. Name of delivering attending
3. Date(s) of service
4. ASA classification
5. Name(s) of anesthesia providers
6. Anesthesia start time (Time of epidural start and/or time of OR start)
7. Anesthesia end time (For Continuous labor epidural) Time of placental delivery or end of care)
8. Postoperative diagnosis (Intrauterine pregnancy plus any other diagnosis)

Please complete the appropriate charges for pharmacy, anesthesia billing, and perioperative services. The bins are clearly labeled (see images).

The correct forms for the patient’s chart are shown next to the bins. Patient forms/records (see images) can be given to the patient’s nurse or placed into the patient’s chart.
Preoperative Evaluation

The preanesthesia survey is used to document the preoperative assessment of the patient. If the patient is a vaginal birth after cesarean (VBAC) candidate or a repeat cesarean section, the placental location as noted on the prenatal ultrasound report should be documented as well as the patient’s complete blood count and type and screen result. This information will facilitate the decision to initiate blood component therapy in the event of an emergency.

Informed consent for neuraxial anesthesia

Please include information about epidural as well as spinal anesthesia.

Be certain to discuss the routine complications associated with regional anesthesia including

- Headache
- Backache
- Nerve injury/paresthesia
- High block
- Inadequate or failed block
- Bleeding
- Infection
- Allergic reactions

Incidence-relevant complications are listed below:

Significant drop in blood pressure 1:50
Not working well enough for labor 1:8
Not working well enough for caesarean 1:20
Severe headache (epidural) 1:100
Severe headache (spinal) 1:500
Temporary nerve damage 1:1000
Nerve damage more than six months 1:13 000
Epidural abscess 1:50 000
Meningitis 1:100 000
Epidural haematoma 1:170 000
Accidental unconsciousness 1:100 000
Severe injury, including paralysis 1:250 000

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Routine lab work:

- Routine platelet count is not necessary in healthy patients
- Literature suggests platelet count is useful with suspected pregnancy associated hypertension (pre- clampsia, HELLP syndrome, coagulation disorders)
- Routine blood cross match is not necessary for routine/uncomplicated pregnancy
- T&S or crossmatch should be ordered based on anticipated hemorrhage such as placenta accreta, placenta previa, or prior uterine surgery
Epidural (or Combined Spinal-Epidural) Note

- Nurse will record time out once the patient is positioned (this will be your anesthesia start time).
  - Monitor BP and pulse ox during the procedure
- Perform a sterile prep and drape (hat, mask, and sterile gloves)
- Document interspace infiltrated subcutaneously with local anesthetic
- Document type and gauge of needle and number of attempts to pierce the interspace
- Document means of determining loss of resistance (saline or air)
- Document the presence or absence of blood/CSF/paresthesia. (If paresthesia elicited, note duration, side and means of resolution (spontaneously, redirection of needle, withdrawal of needle, etc.)
- **If CSE is performed**, document the type and gauge of spinal needle used, presence or absence of blood, paresthesia, free flowing CSF. Also note amount and baricity of drug injected (eg, 2.5 mg of isobaric bupivacaine with 10 mcg of fentanyl)
- Document gauge and type of catheter (20 ga multiorifice is in the standard kit) and how far threaded to space and at skin (5 cm to the space/10 cm at the skin)
- Document the presence or absence of blood, CSF or paresthesia with insertion or aspiration
- Document the application of a sterile dressing
- Document the response to test dose (Any signs or symptoms of intrathecal [IT] or intravenous [IV] injection?)

Spinal Note

- Nurse will record time out once the patient is positioned (this will be your anesthesia start time)
  - Monitor BP and pulse ox during the procedure
- Sterile prep and drape (hat, mask, sterile gloves)
- Document the interspace infiltrated with local anesthetic
- Document the type and gauge of spinal needle utilized
- Document the number of attempts to pierce the duramater
- Document the dose and baricity of drug utilized
- Document the patient and fetal response to the block (eg, Pt tolerated well with T6 anesthetic block achieved, fetal heart rate remained reassuring)

Anesthesia Billing Sheet

- Labor anesthesia start time is the time out for epidurals
- C/S anesthesia start is the time you entered the OR for C/S
- Labor anesthesia end time is the time of placental delivery or C/S start time
- C/S anesthesia end time – end time of anesthesia care (usually time that report given to PACU nurse)
Neuraxial Morphine

Neuraxial morphine is usually reserved for inpatients undergoing abdominal procedures (abdominal hysterectomy, cesarean section or tubal ligation) due to the necessity of monitoring these patients for respiratory distress. Therefore, patients who are being discharged to home on the day of surgery are NOT candidates for neuraxial morphine.

The dose given intrathecally varies from 0.1 to 0.25 mg. Higher intrathecal doses have a higher incidence of side effects (pruritus, nausea/vomiting, respiratory depression).

The dose given epidurally varies from 3-4mg. When given with Chloroprocaine, preservative-free morphine tends to have a decreased potency therefore a higher dose of 5 mg via the epidural route may be of benefit to the patient.

Neuraxial morphine has onset of approximately one (1) hour and duration of 18-24 hours. Traditionally, no additional sedative, narcotics (IV, IM or PO) including promethazine are given during this period because of the risk of synergistic respiratory depression. Once, neuraxial anesthesia with morphine is given, place order in powerchart “OB anesthesia L&D epidural/intrathecal narcotic narcotic bolus adult subphase,” select prohibited medications and place a time restriction of 24 hrs for patient to receive additional sedating medications. The use of oral analgesics and sometimes parenteral opioids and sedatives can be given at reduced doses cautiously to select patients provided provisions are undertaken to regularly evaluate the patient visually for any signs of respiratory depression (hypoventilation, pinpoint pupils, and unresponsiveness). This evaluation is best done by a member of the anesthesiology department.

Dural tap during epidural placement and PDPH management

If there is a Dural tap while performing epidural the attending should be informed immediately.

Your options are to thread the epidural catheter in the intrathecal space and treat with low dose LA and opioids and manage it for rest of the pregnancy. 1-2 mls of low dose mixture from Epidural bag can if injected followed by infusion @ 1-2 mls/hr.

Other option is to repeat epidural in higher space.

PDPH:

Symptoms: Spinal headache is characterized by a throbbing frontal or retro-bulbar pain, which is relieved by lying flat and worsened by sitting or standing and by bright light. It is often accompanied by occipital pain and 'buzzing' in the ears. However, all sorts of neurological symptoms have been ascribed to dural tap and cured by blood patching - atypical presentations are well described

Management:

Bed rest in the horizontal position and adequate hydration are often recommended although the evidence for their efficacy is lacking. Symptomatic treatment with analgesics (acetaminophen, non-steroidal anti-inflammatory drugs) and antiemetic’s may control the symptoms and reduce the need for more aggressive forms therapy.

PO/IV caffeine is available in our pharmacy

Epidural blood patch is treatment of choice for PDPH.

1. Must always be undertaken under the direct supervision with your attending
2. The woman must be apyrexial - otherwise no patch.
3. Give a full explanation of the cause of the headache and the reasons for performing a blood patch. Explain that it is successful on the first occasion in up to 80% of cases, but that a subsequent procedure might be necessary. Some pain may be referred to the back; hip or leg during and immediately after the procedure, and backache may develop and persist for up to two weeks.
4. MRI studies have shown that spread of the clot is principally cephalic; therefore identify epidural space at or below the original puncture site. Inject through the Tuohy needle.

5. Take 20 ml blood aseptically and inject over approximately 1 minute.
6. If back or leg pain (due to arachnoid irritation) occurs, stop injecting and wait a few seconds. If pain persists, abandon procedure.
7. Leave patient lying flat for 1-2 hours, then mobilize cautiously.
Communication

We are always trying to maintain and improve the lines of communication with our obstetrical colleagues, particularly when emergent circumstances arise. We are strongly urging obstetricians to directly consult and discuss their patients with us, on a physician-to-physician level, without a nurse intermediary. When a nurse intermediary is used, please be respectful of the nurse, but confirm the information with your obstetrical counterpart (resident to resident; attending to attending, etc.).

Transportation to the OR

To ensure that all members of the obstetrical care team are actively involved, no patient is to be taken to the operating room without the escort of nursing, anesthesia and the availability of a qualified obstetrical provider. Failure to comply with this mutually agreed upon policy is justification for filing a hospital incident report. In cases of emergency, the nursing or anesthesia provider may opt to forgo transport assistance in order to prepare for the patient’s emergent surgical care.

Anesthesia Technician Support

A dedicated OB anesthesia technician should be available during the day shift. He/she is responsible for assisting with patient transport, monitor placement, patient positioning and OR clean up. He/she can be reached via the paging system. The assigned individual will write his/her name and pager number on the OB Anesthesia patient board. Keyva is typically the assigned tech for OB and women’s OR.

Patient Visitors

- During labor epidural placement the number (or absence) of visitors allowed is at the discretion of the anesthesiology provider.
- Please be certain no one contaminates your sterile field.
- Video recording of the epidural placement, testing, and test dose is not allowed.
- During C/S the anesthesia team can only take responsibility for one visitor. Any additional visitors must be under the responsibility of another physician, either from the pediatric or obstetrical team. It is the responsibility of the obstetric provider to arrange for a chaperone for additional visitors.
Useful Numbers

Admissions 1-2267
5 South 1-1308
7th Floor Concierge Desk 1-0026
7th Floor Lounge 1-4504
7th Floor PACU 1-1427, 1-0488
7 South 1-1584
7 West (Ante/postpartum) 1-2488
8 West 1-7205
8th Floor Concierge Desk 1-7303
8th Floor Waiting Room 1-1232, 1-1233
Labor & Delivery 1-2688, 1-2687, 1-2689
L&D OR #1 1-8720
L&D OR #2 1-9611
L&D OR #3 1-9610
Main OR Front Desk 1-3341, 3-4400
Main PACU 1-3754
OR Posting Board 1-2754
Page operator 1-3893
Paging 1-7243
Pharmacy
  • Main Hospital Pharmacy 1-3321, 1-4815
  • OR pharmacy 1-2083
Pregnancy Test results 1-6846
Preop Clinic 1-3005

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