Welcome to OB! This manual is designed to provide you with basic information to assist you in your first few days on the floor. Much of the general knowledge you have gained regarding anesthesia will carry over into the obstetric arena. However, as you will find, the L&D experience is unique.

As always, an integral part of learning is asking questions. There is a lot to learn up here and it can feel overwhelming. If you don’t know, ask.

Enjoy your time on Labor and Delivery!
THE FIRST WEEK

You will be assigned to L&D every day of your “primer week.” On Monday, please meet the team on the 10th floor at 6:45 am. Sign out from the call team occurs at 7:00.

During your first week, responsibilities revolve around performing parturient risk assessments, placing spinals and epidurals, and learning the basics of labor analgesia and cesarean delivery. You will be paired one-on-one with one of the staff while you are learning to place epidurals, and during your first few cesarean sections. By Friday, you should aim to be able to do these things with some independence. However, you must always notify your attending when doing an epidural placement (they may be busy elsewhere while you get started).

In order to prepare you for your weekend calls, we try to maximize the number of procedures you do during the week. You will find that you are often the first person called when there is work to be done. Although it can be exhausting, it is necessary in order to get you the most experience possible.

Your week concludes with OB calls on Friday and Sunday. On Friday, there is a third resident on call as the “back up,” as we recognize that you may need a bit more help on your first call.

THE FLOOR

**Starting August of this year, there will be construction on the floor, so the layout will change.**

On your first day, you will be given a tour by the fellow or one of the seniors. As you arrive on the 10th floor at the patient elevators, the reception desk is in front of you. Through the double doors is the labor and delivery floor. As you walk down the hall, the first area on your right is triage. Women are often monitored here before they are
admitted to the labor floor. Along this same corridor is the pharmacy drug machine. We rely on this as the supply of most of the drugs we use on L&D. You will become very familiar with it.

There are 13 labor rooms (numbered 1-12, and 14), organized in a horseshoe around the main nursing station. Each room has an infant warmer with equipment for neonatal resuscitation. Rooms 6-14 can be turned into an anesthetizing location in an emergency (i.e. if all 3 OR’s are in use), and there is an anesthesia machine in the corridor that can be wheeled in, should this situation occur. (It doesn’t very often!)

The nursing station is located in the center of the department and is usually a very busy place. The board is behind the desk and contains most basic information regarding each patient on the floor including stage of labor, obstetrician, type of anesthesia, and current obstetric interventions. The board is full of abbreviations & acronyms. There is a list of translations posted online and included in this packet.

On the other side of the desk is a set of glass doors, beyond which is the recovery area. There are 5 slots (R1-R5) used for patients pre and post cesarean. This area is also used for the workups (for those who aren’t in labor, for cytotec placement for induction.)

Next to the recovery rooms is our anesthesia office. This serves as our “home base” during the day and is also the senior call room. The junior call room and the attending call room are just outside the L&D area, beyond the elevators. [will be in the hallway after construction is started] On your Friday call day, the backup resident will need to stop by the lobby front desk to pick up a spare call room pass. This call room is usually located in another part of the hospital.

There are 3 operating rooms on L&D: A, B, and C. C is the largest room and is often chosen for multiple births (i.e. twins or triplets). A is most often (although not always) used for emergencies. The machines, bluebells, drug box, and monitors are similar to those in main OR. The differences in OR set-up are listed below. Please keep all 3 OR’s set up for a STAT Cesarean at all times.
There is a workroom in the back near OR B, which contains most of our supplies. The emergency airway cart is located outside the workroom. There is a Level One and a Glidescope inside the workroom. You are expected to know where these items are in case of an emergency.

There is a restroom located just to the left of the main board, through the single door. There is also a small (and co-ed) locker room on the floor which has another restroom. The code to the locker room is 1-2-3-4-5. Two bathrooms (one shower) are located next to the attending/junior call rooms.

DAILY SCHEDULE

Before 7:00 sign out, the following should be completed:

- OR’s should be checked and ready for cases
- Drugs should be drawn up in the workroom (details below)
- All patients on the board should be seen/interviewed

The post-call team is responsible to ensure everyone on the board has been interviewed. The first year residents coming in for the day are responsible for the rooms and drugs check. You should arrive by 6:45 (or earlier) in order to accomplish this.

Morning sign out is a formal presentation for each patient on the board. For example, a healthy, uncomplicated parturient may be presented as follows:

“32 yo G2P1 at 38wks, 5’5” and 175lbs BMI of 29, Class II airway, no past medical history, no pregnancy related problems; admitted in spontaneous labor, 4 cm dilated and an epidural placed 2 hours ago. Epidural has been functioning and pt. comfortable.”

We also mention important patients/issues we are aware of on the peri-partum floors.
In order to facilitate sign outs, we use the printed AIMS H&P. When you interview a patient, you should fill out the OB screen H&P, which is then used during sign out. Make sure that any important issues are added to the care, such as dural punctures, airway concerns, or abnormal labs. This ensures that our hand offs are both complete and accurate.

Following AM sign out, the senior resident/fellow will assign the tasks for the day. There can be up to 4 cesareans scheduled: at 8, 10, 12, and 2PM. The resident doing the 8AM case should start seeing the patient immediately after board sign out, and be prepared for a briefing by 7:45.

On Wednesday, sign out is around 8:30 AM and the first Cesarean usually begins at 10:00. You should go to Grand Rounds and M&M, and present to L&D immediately afterwards.

The rest of the day is spent placing and managing labor epidurals and doing both the scheduled and add-on cesareans. Every morning the senior resident will round on all patients who delivered the previous day. There are often scheduled anesthesia consults that come in. These patients will be seen by the fellow or a CA-3. Less frequently, a patient will come for a “pre-op.” This is not a formal consult, but simply a pre-anesthetic interview, and these patients can be seen by anyone. Every day, 2 of the residents (often those on call, but this isn’t always the case) should carry code pagers. We respond to all codes and anesthesia stats on the East Campus.

You will quickly find that the pace on L&D varies greatly. Some days are relatively slow, and there is ample time for teaching. Other days can be extremely busy and stressful. Whatever the pace is, at any given moment, there could be a true obstetric emergency. Disasters happen on OB and they happen quickly. We ALWAYS have to be prepared.

We take turns running down to the cafeteria to get lunch, as the schedule permits. When you do this, please bring your food back up to L&D and eat in our office. This way you are available should there be an emergency.
Every effort will be made to get you to your regular lectures. Monday through Friday your day on OB ends around 4:30 PM, when the board is signed out to the call team.

LECTURES

Although the exact timing varies depending on clinical work, you can expect a daily lecture/discussion while on OB. The first week’s schedule is relatively firm. The topics below are designed to give you a solid grasp of the basics.

Please aim to have read the following topics:

- Monday: Spinal & Epidural Anesthesia, Local Anesthetics
- Tuesday: Physiologic Changes of Pregnancy, Intro to PIH
- Wednesday: Options for Labor Analgesia
- Thursday: Anesthetic Options for Cesarean
- Friday: Complications of Labor Epidurals

SEEING PATIENTS

We aim to see every patient who comes to the floor shortly after arrival. Even if they desire NCB (natural childbirth), every patient on L&D can become an emergency cesarean or have a postpartum hemorrhage, and advanced knowledge of potential problems can be lifesaving.

Your history and exam should include basic PMH, complications with this pregnancy, OB history including previous deliveries, and bleeding issues/disorders. If needed, follow-up on labs with particular attention to platelets and coags. A good airway exam is vitally important.

You should complete the OB H&P (File → Enter → OB Screen). It is vital to complete the OB version as much of the information that distinguishes the obstetric patient is found
only on that page (in addition to the billing being tied to that information). Once that is complete and the consent is signed, if appropriate, put a check in the anesthesia column on the main board. If there is a significant issue (e.g. high risk, difficult airway) put an asterisk with the check, so others know to stop and look at the chart carefully. DO NOT put a check if you have not seen the patient and only collected information from the medical records.

The initial interview is an information gathering process; DO NOT ‘sell’ our services at any time. Many patients are happy to discuss anesthesia services at the time, but some feel uncomfortable doing so. If appropriate, we ask the patient to sign our consent form at the time of the initial interview. If the patient asks about anesthesia, or if the nursing note documents a plan of epidural anesthesia are two ways of determining if this is appropriate. When discussing the risks of spinal/epidural it is important to mention localized tenderness at the site, spinal headache, and failure to provide adequate anesthesia with the need for replacement or GA in the event of a stat cesarean.

MISCELLANEOUS

Around 10 am, and again at 10 pm, a team meeting is held at the board. Everyone (OB’s, anesthesiologists, and nurses) assembles at the main desk when this announced. As a group, we briefly discuss all patients on the board. If you are not engaged in patient care, you should be there.

Politics! The labor nurses, obstetricians, midwives, neonatologists, and anesthesiologists work as a team to care for patients, and each team member has certain ideas regarding what is “ideal” patient management. Anytime there is a collection of hundreds of people there will be the possibility that some don’t get along. If you find yourself in an uncomfortable situation, 1) Ensure patient safety, and 2) Discuss with your attending.
Most of these situations arise due to poor communication or misinterpretation of intent. Be kind & respectful and do not compromise patient care.

For most families, the birthing process is a joyful experience. However, disasters happen. Before you enter a room, try to be aware of any issues (i.e. current or past fetal demise) that may complicate the patient’s course or emotions. Please be careful, this mistake has been made!

There are several research projects ongoing nearly all the time on labor and delivery. Your patient may be enrolled in a study, and you may be asked to help with not violating the protocol. If any of the current studies interest you, or if you have an idea of your own, speak up.

OR SET-UP

All 3 OR’s should be ready for a stat Cesarean at all times. The machine check should be done by 7AM. This is a FULL CHECK of the machine, equipment, supplies and setup. Make sure to check the laryngoscopes, ETT available and make sure there is suction. There should be a new drug box in the drawer (intact plastic binder). When there is a STAT there will not be time to set up anything, so everything must be immediately available.

Aspects of the room set-ups that differ from the OR’s:

- Ensure that there are a variety of sizes of ET tubes ready (sizes 6.5, 6.0, 5.5)
- Place an O₂ mask, phenylephrine and ephedrine syringes on the machine
- Set up fluid warmer
- Ensure there is cefazolin, hemabate (2) and methergine (2) in the fridge
- Ensure the bed is ‘set-up’ for an urgent/emergent case
- Ensure the room temp is at the appropriate setting.
Drugs to Draw Up in AM (Prior to Sign Out)

We keep a set of medications in the workroom that are used to bolus an epidural in various circumstances. These should always be available and “fresh” (i.e. < 24h old). The recipes for these drugs are posted in the workroom. Label each syringe with the drug, concentration, date & time it expires, and your initials.

0.125% (1/8%) Bupivacaine:

- Used for breakthrough labor pain.
- A handful of these in syringes (volume = 8 cc) should be available.

Epinephrine

- Drawn into a TB syringe. Draw up 0.25 cc
- These are used as an additive for the labor analgesia solution

2% Lidocaine (+NaHCO3):

- Used to convert LEA for cesarean in non-urgent scenario
- Does not need to be pre-drawn

3% Chloroprocaine (CPC) (+NaHCO3):

- Used to convert LEA for cesarean in emergent situation
• We keep a 20 cc syringe and a bottle of CPC and bicarbonate in a STAT bag for emergency. Does not need to be pre-drawn.

LABOR EPIDURALS & CSE’s

After insertion of an epidural with a negative test dose we routinely bolus 15cc of 0.04%Bupivacaine/Fentanyl solution (from the pump) followed by an infusion of 15cc/hr. In the case of a Combined Spinal-Epidural (CSE) the patient receives 2mg bupivacaine plus 12.5mcg fentanyl intrathecally, and therefore the 15cc bolus is omitted. The epidural test dose can be given and then 0.04%BF is infused at a rate of 15cc/hr.

LEVEL CHECKS

When you are called for a “level check,” it means that the patient is uncomfortable. Your goal is to determine: 1) If the epidural is functioning at all, or 2) if the epidural level is adequate. You can use a bag of ice to assess temperature sensation or a blunt tipped needle to assess pain sensation. If the patient has full sensation of cold and pain you can try administering a bolus, but most likely the epidural is not in the epidural space and will need to be replaced. Speak with someone more senior. You should always check the catheter, noting the position and any leakage. Catheters do disconnect and they do fall out. It is embarrassing to find you have been bolusing the bed.

If the level is simply “low,” asymmetric, or there is pain despite an adequate level, the patient requires a higher concentration or volume of local anesthetic solution. The first step is generally to bolus with 8cc 1/8% bupivacaine (drawn up in the morning and kept in the workroom) +/- 100mcg fentanyl. A bolus of fentanyl should be administered no more than once per hour.
Drugs to Remove from Omnicell:

You should receive a laminated card that also contains this information:

(hint: do not lose this card. Take a picture of it with your phone for safe keeping)

**Spinal for Cesarean:**

100mcg fentanyl, 0.5 mg astramorph (the small vial), 2 gm cefazolin (if allergic, clinda + gent / if MRSA Vanco and cefazolin). Bupivacaine 0.75% is in the workroom and in the epidural carts.

**CSE for Cesarean:**

Same as above. **DO NOT** get the small pre-mixed IT syringe. This is used for labor CSE’s and is inadequate for Cesarean analgesia.

**Labor Epidural:**

BF bag, bicitra

**Labor CSE:**

Pre-mixed IT syringe, BF bag, bicitra

**Converting Labor Epidural for Cesarean:**

Cefazolin, ondansetron, astramorph (3mg in 6ml syringe), and 3%CPC or 2% Lidocaine plus 1/10 sodium bicarbonate +/- 1:200,000 epinephrine (both bicarb and epi are from the workroom).
OBSTETRIC ISSUES:

You will become an expert in many obstetric topics, because they are vitally important to us as anesthesiologists. Here is a brief intro to a few. You will need to read about these on your own as well.

Pregnancy Induced Hypertension/Preeclampsia

A triad of hypertension, proteinuria and edema occurring after the 20th week of gestation. Occurs in 7% of pregnancies, most commonly in nullips. Can progress to eclampsia (presence of seizures). Among a lot of other things, preeclampsia can be associated with the HELLP syndrome (Hemolysis, Elevated Liver enzymes, and Low Platelet count). This is important for us because elevated PT/PTT and/or a low platelet count are contraindications to neuraxial anesthesia. Check labs on these patients before placing an epidural.

Uterine Atony

Can cause maternal hemorrhage. You need to be familiar with the following medications used to treat atony:

Oxytocin (Pitocin):

Used to induce or augment uterine contractions, or to maintain uterine tone postpartum. 20 units of oxytocin in 1 Liter NS is routinely given after delivery in cesareans. Rapid IV infusion may cause hypotension and reflex tachycardia.

Methylergonovine (Methergine):

An ergot alkaloid, causes generalized smooth muscle contraction. Can cause severe systemic hypertension. Caution in preeclampsia due to abnormal vasospasm
Dose: 0.2mg IM

15-methyl prostaglandin F2α (Hemabate):

A prostaglandin causing uterine contraction. Can cause severe bronchospasm

Dose: 250mcg IM

Misoprostol (Cytotec):

A prostaglandin E₁. Comes in tablets of 200mcg

Dose: 1mg (5 tablets) is given per rectum by the RN