Rotation Title: Anesthesiology for Obstetrics

I. Definition: Obstetric Anesthesia is a 2-month required rotation for the CA-2 resident. which includes anesthesia for all elements of Obstetrics. Obstetric Anesthesia may also be selected as a one month, or more, elective rotation for CA-3 residents.

II. Curriculum: All residents rotating through the service will be expected to gain an understanding of the basic principles both clinical and cognitive of managing the perinatal anesthetic needs of the parturient including all segments of risk stratification within this group. Development of competence in pre-anesthetic assessment and planning, intra-anesthetic management, rational responses to and prevention of complications and post-anesthetic care appropriate to the management of the parturient in a community hospital will be expected. In addition, CA-3 residents will attain additional facility in these areas allowing them to assist in the training of junior residents and act with increasing autonomy in the are of normal and high risk parturients. Independent research projects to advance scientific knowledge in the field are encouraged for CA-3 residents.

III. Performance Assessments:

A. Self Assessment
You (the resident) are to check off each criterion as the material is mastered. Self reflection on your own competencies is critical.

B. Faculty Assessment
Faculty will periodically review your self assessment and discuss their assessments of your competencies. The overall scores on the six competencies will be reported to you at least weekly.

C. Mentor Assessment
Your mentor should meet with you quarterly and review your entire portfolio. The mentor should report areas in which you have deficiencies (for your level of training). This report may be to you and/or to the program director as determined by your mentor.

IV. Competencies Assessed (Performance Criteria):

A. Patient Care: During the course of this rotation, the resident is expected to show increasing competency in each of the following areas …

1. Identification of parturients who need anesthesia care during labor.
2. Identifying analgesia options for labor.
3. Placement of lumbar epidural catheters for analgesia with minimal assistance in the majority (>90%) of cases
4. Use of infusion pump to provide continuous analgesia.
5. Preparation of an obstetric operating rooms for emergency C-section
6. Placement of a subarachnoid block with minimal assistance for elective or repeat C-section in the majority (>90%) of cases.
7. Placement of saddle block with minimal assistance for assisted vaginal delivery.
8. “Crash”, rapid sequence induction with staff assistance for maternal/fetal emergency.
9. Provision anesthesia for removal of retain placental fragments with staff assistance.
10. Recognition and response to epidural wet tap.
11. Diagnosis and management of post-dural puncture headache (PDPH).
12. Provision of anesthesia for cervical cerclage.
13. Provision of anesthesia for post-partum tubal ligation.

B. Medical Knowledge: During the course of this rotation, the resident is expected to show increasing competency in each of the following …

1. Physiologic changes of normal pregnancy.
2. Pathophysiology of common clinical conditions producing high risk pregnancy (some are listed below).
3. Advantages and disadvantages of analgesic methods for labor including epidural, inhalational, pudendal and IV sedation.
4. Analgesia and anesthesia for cesarean section including epidural, spinal, general and emergency sections.
5. Pharmacodynamics of common non-anesthetic medications used in obstetrics and their interactions with anesthetics including oxytocin, ergot preparations, magnesium, terbutaline, indomethacin, prostaglandins and steroids.
6. Discussing the pharmacokinetics and pharmacodynamics of local anesthetics including toxicity issues and appropriate selection for the spectrum of clinical indications.
7. Listing options for post-operative or post-delivery analgesia in the parturient and differentiate rational selection among the various modalities.
8. Describing basic principles and rationale of fetal assessment including stress and non-stress tests, biophysical profile and fetal monitoring
9. Describing basic principles and sequencing of neonatal evaluation and resuscitation.
10. Identifying and developing a differential diagnosis, and describe the management of abnormal bleeding in the perinatal period.
11. Pathophysiology and management of pregnancy induced hypertension, preeclampsia and eclampsia.
12. Diabetes in pregnancy, its effects on the parturient and the fetus, and appropriate management.
13. Obesity in pregnancy, including its pathophysiology, and the management of the parturient and the neonate.
14. Management of the difficult airway in the parturient.
15. Mechanisms and management of amniotic fluid embolus.
16. Mechanisms and management of post dural puncture headache.
17. Management of non-obstetric surgery in pregnancy.
18. Perinatal pharmacology
19. Fetal circulation
20. Normal labor patterns
21. Fetal monitoring
    a. Early, late and variable fetal heart rate decelerations
    b. Fetal heart rate variability
    c. Indicators of fetal well-being and fetal asphyxia
22. Premature labor
23. Multiple gestations
24. Third trimester bleeding
25. Vaginal delivery after prior C-section
26. Risk factors for cerebral palsy and relationship to peripartum fetal asphyxia

The resident on their obstetric anesthesia rotations shall be responsible for mastering all material listed in Appendix A. These will be assessed by written and oral examinations.

C. Practice Based Learning and Improvement: During the course of this rotation, the resident is expected to show increasing competency in each of the following …

1. Management of breakthrough pain during labor analgesia
2. Follow-up with delivered patients
3. Track case counts showing involvement in variety of increasing complex cases
4. Attend and/or present at M&M and journal clubs
5. Read the Obstetric Anesthesia Digest to obtain expert opinions pertaining to the management of parturients and their fetuses / neonates

6. Look up and report to attending physicians the scientific evidence for the appropriate obstetric care and anesthetic care of both usual and unusual cases. This should be done at least weekly. A copy of this report may be placed in your portfolio.

D. Interpersonal and Communication Skills

During the course of this rotation, the resident is expected to show increasing competency in each of the following …

1. Be able to form a rational pain control plan with a patient in pain during labor.
2. Inform the obstetric staff of any changes in maternal/fetal condition that occur during anesthesia care.
3. Cooperative with the obstetric nursing team to assure patient satisfaction.

E. Professionalism: During the course of this rotation, the resident is expected to show increasing competency in each of the following …

1. Adhere to procedures designed for maternal privacy and security for the newborn.
2. Demonstrate the ability to achieve control of the parturient in severe pain.
3. Work with all levels of professionals working to provide obstetric care, including midwives.
4. Provide consultation services for complicated obstetric patients.
5. Confirm effective analgesia after C-section.

F. Systems-Based Practice: During the course of this rotation, the resident is expected to show increasing competency in each of the following …

1. The medical-legal aspects of obstetric anesthesia
2. Understanding community support system for women and infants
3. Understand the interactions between anesthesiologists, obstetricians, neonatologists and pediatricians

Revised: **June 7, 2007**

Appendix A: Medical Knowledge expected to be mastered during the Obstetric Anesthesia Rotation

Lecture 142

Maternal Physiology

1) Effects of Pregnancy on Uptake and Distribution
2) Respiratory (Anatomy, Lung Volumes and Capacities, Oxygen Consumption, Ventilation, Blood Gases, Acid Base)
3) Cardiovascular (Aorto-caval Compression, Regulation of Uterine Blood Flow)
4) Renal
5) Liver (Albumin/Globulin ratio, Protein Binding of Drugs)
6) Gastrointestinal (Gastric Acid, Motility, Anatomic Position, Gastroesophageal Sphincter Function)
7) Hematology (Blood Volume, Plasma Proteins, Coagulation)
8) Placenta
   (a) placental exchange – O_2, CO_2
   (b) placental blood flow
   (c) barrier function

Lecture 143

Maternal-Fetal Pharmacology

1) anesthetic drugs and adjuvants
2) oxytocic drugs (indications, adverse effects)
3) tocolytic drugs (indications, adverse effects)
4) antiseizure drugs; interactions (magnesium sulfate)
5) mechanisms of placental transfer
6) fetal disposition of drugs
7) drug effects on newborn

Lecture 145

Obstetric Anesthetic Techniques and Risks
(Elective vs. Emergency, General vs. Regional)

1) systemic medications: opioids, sedatives, inhalational agents
2) regional techniques
   (a) epidural, caudal, spinal, combined spinal/epidural
   (b) paracervical block, lumbar sympathetic block, pudendal block
3) complications (aspiration, nerve palsies)

Lecture 146

Obstetric Anesthesia and Labor

1) Physiology of Labor (Metabolism, Respiration, Thermoregulation)
2) Influence Of Anesthetic Technique On Labor

Lecture 147

Obstetric Anesthesia for Cesarean Section

1) Cesarean Delivery: Indications, Urgent/Emergent, Anesthetic Techniques and Complications, Difficulty Airway, Aspiration Prophylaxis

Lecture 151

Problems of Term And Delivery - Part 1

1) intrapartum fetal assessment (fetal heart rate monitoring, fetal scalp blood gases, fetal pulse oximetry)
2) preeclampsia and eclampsia
3) supine hypotensive syndrome
4) aspiration of gastric contents
5) embolic disorders (amniotic fluid embolism, pulmonary thromboembolism)

Lecture 152

Problems of Term And Delivery - Part 2

1) antepartum hemorrhage (placenta previa, abruptio placenta, uterine rupture)
2) postpartum hemorrhage (uterine atony, placenta accreta)
3) cord prolapse
4) retained placenta
5) dystocia, malposition, and malpresentations (breech, transverse lie)

Lecture 153

Problems of Term And Delivery - Part 3

1) maternal cardiopulmonary resuscitation
2) fever and infection
3) preterm labor
4) vaginal birth after cesarean section
5) multiple gestation