Obstetrical Curriculum for the PGY-2 Resident

Sinai Hospital of Baltimore Maryland
Department of Obstetrics and Gynecology

I. Educational Purpose

The PGY-2 obstetrical experience further builds upon those skills developed during the first year. In this rotation the resident perfects the basic skills necessary for management of routine and high-risk obstetrical patients during the intrapartum and postpartum periods. Residents become competent with performance of operative vaginal delivery, breech delivery, and multiple gestations. In addition, managerial responsibilities are developed, as the PGY-2 resident is responsible for supervising and educating interns and medical students rotating on the labor and delivery unit. Exposure to antepartum care is achieved by regular attendance at both routine and high-risk prenatal clinics at Park West Ambulatory Center.

II. Goals and Objectives

By completion of the PGY-2 year, the resident should demonstrate skillful management of antepartum, intrapartum, and postpartum patients, as described within the context of the six core competencies.

The resident should be able to…

1. Medical Knowledge
   - Describe the impact of pregnancy on maternal medical conditions, and conversely, the impact of various maternal medical conditions upon pregnancy outcome.
   - Implement appropriate medical and surgical management for patients with medical complications of pregnancy.
   - Describe the risk factors for, etiologies of, complications of, and management of late trimester pregnancy loss, intrauterine growth restriction, intrauterine fetal demise, preterm labor and PPROM.
   - Perform and interpret assessments of fetal well-being, including: non-stress testing, contraction stress testing, biophysical profile, fetal scalp stimulation, Doppler velocemetry
   - Describe the factors that predispose to multiple gestation, diagnose multiple gestation by physical findings and sonographic examination, manage complications associated with multiple gestation, and develop proper delivery plans for such.
   - Describe the appropriate criteria for and contraindications to VBAC, and recognize and treat possible complications, scar dehiscence, hemorrhage, fetal compromise, and infection.
   - Describe the clinical significance of heritable diseases and karyotype abnormalities
   - Describe the etiology of common antepartum conditions such as: preterm labor, bleeding in pregnancy, premature rupture of membranes, IUGR, as well as potential fetal and neonatal complications for each.
Describe the etiology of common antepartum conditions such as: preterm labor, bleeding in pregnancy, premature rupture of membranes, IUGR, as well as potential fetal and neonatal complications for each.

Perform and interpret assessments of fetal well-being, including: non-stress testing, contraction stress testing, biophysical profile, fetal scalp stimulation, vibroacoustic stimulation, Doppler velocimetry.

Describe the normal course of labor; identify abnormalities of labor and describe methods of labor augmentation as well as intervention for abnormal labor.

Describe appropriate indications for induction of labor, methods of cervical ripening / labor induction, and potential complications for each.

Counsel parturients regarding various forms of obstetrical anesthesia, including: local, intravenous, pudendal, epidural, spinal and general.

Demonstrate understanding of pharmacologic agents commonly used in obstetrics, the influence on transplacental transfer, and teratogenic effects of drugs associated with the following: labor inducing agents, tocolytics, analgesics, antibiotics, insulin, heparin, etc.

Evaluate and provide immediate care for the newborn, including: neonatal resuscitation, Apgar score assignment, and cord blood analysis.

Describe maternal complications that may arise in the postpartum period and methods for their resolution.

Provide basic supportive care of the postpartum patient, including: contraceptive needs, emotional evaluation and lactation consultation.

2. Patient Care (Clinical Skills)

Perform uncomplicated operative vaginal deliveries independently (but with attending physician supervision).

Demonstrate skillful repair of third and fourth degree perineal lacerations, cervical and vaginal lacerations.

Appropriately manage obstetrical emergencies, s.a. obstetrical hemorrhage, shoulder dystocia, uterine rupture, trauma, etc.

Perform external cephalic version with attention to potential maternal and/or fetal complications.

Demonstrate level-appropriate skills in classical and low vertical cesarean delivery.

Demonstrate competence as a surgical assistant during the performance of cesarean hysterectomy.

Perform a comprehensive work up for intrauterine fetal demise, and properly manage labor induction or uterine evacuation for the patient with an IUFD.

Accurately assess the obstetrical patient with multiple gestation, including fetal growth assessment, fetal positioning, and delivery plan.

Deliver routine prenatal care to “high risk” obstetrical patients in Park West Ambulatory Center.
• Manage an infected or dehisced operative incision, and demonstrate adequate wound care treatment.
• Describe the indications for and interpret results of common diagnostic tests for medical conditions in pregnancy
• Assess, recognize, manage, and treat fetal and maternal complications as it pertains to medical conditions

**Patient Care (Management Skills)**
• Multi-task and triage the care of all antepartum and intrapartum patients in the labor and delivery unit.
• Multi-task and manage intern and medical student staff for the best utilization of manpower.
• Respond to acute intrapartum emergencies with appropriate interventions and recommendations for staff.
• Continually update patient care team (attending physician, nursing staff, NICU staff, anesthesia, etc) on status of patient(s).
• Supervise and lend guidance to intern and medical student.

3. **Practice Based Learning**
• Formulate and answer important clinical questions that arise from patient care interactions.
• Use personal experience with challenging patients to optimize future relationships with patients.
• Incorporate feedback from evaluations to improve skill base.
• Keep an updated patient log as detailed in the ACGME website.
• Participate in quality assurance activities of the department.
• Use of information technology: UpToDate, Internet/Palm Pilot, Medline literature search, Cochrane Database, etc.

4. **Communication/Interpersonal Skills**
• Present pertinent obstetrical history and physical findings to team members and consultants in a clear, concise fashion.
• Demonstrate caring and respectful interactions with the obstetrical patient and her family.
• Counsel patients in language and manner appropriate to their educational and emotional/maturity level.
• Continually update patient care team (attending physician, nursing staff, NICU staff, anesthesia, etc) on status of patient(s).
• Interact respectfully and professionally with all members of the patient care team, including: attending physicians, nursing staff, resident staff, medical students, social services, translators, etc.
• Counsel patient regarding impact and risks of pregnancy on maternal medical conditions
• Counsel patient about lifestyle modifications to improve pregnancy
5. **Professionalism**
   - Demonstrate responsibility for the welfare of all patients on the labor and delivery and postpartum units.
   - Demonstrate accountability for one’s actions and clinical decisions.
   - Acknowledge errors or omissions in patient care, and work toward timely resolution or alleviation of such.
   - Demonstrate truthful and timely disclosure of adverse outcomes to the patient and designated individuals.
   - Advocate for patients within the healthcare system.
   - Maintain sensitivity to issues of diversity, with patients and with staff.
   - Uphold the ethical principles of our specialty, as detailed by ACOG.
   - Participate actively in the education of fellow residents and medical students.

6. **Systems-Based Practice**
   - Order diagnostic tests with attention to cost-effectiveness and clinical relevance.
   - Effectively use consultants and ancillary services personnel to create an effective patient care team.
   - Follow clinical pathways as detailed in triage and L&D protocols.
   - Demonstrate judicious and efficient resource utilization.
   - Demonstrate an understanding for the roles and responsibilities of healthcare team members.
   - Participate in quality improvement activities of the department.

III. **Types of Clinical Encounters**

PGY-2 residents interact with and are responsible for the care of both Park West (clinic) and private practice attending physicians’ patients in the inpatient hospital setting. A wide variety of normal and abnormal obstetrical pathology is encountered in these antepartum, intrapartum, and postpartum patients.

The PGY-2 resident will be responsible for managing a variety of medical conditions complicating pregnancy, including:

- Diabetes mellitus
- Diseases of the urinary system
- Infectious diseases
- Hematologic disorders
- Cardiopulmonary disease
- Gastrointestinal disease
- Neurologic disease
- Endocrine disorders
- Collagen vascular disorders
- Psychiatric disorders
- Substance abuse
- Emergency care / trauma

In addition, the PGY-2 resident will become proficient in the diagnosis and management of various pregnancy related complications, including:

- Chronic pregnancy loss
- Cervical incompetence
- Second and third trimester bleeding
- Multi-fetal gestation
- Fetal malpresentation
- Pre-term labor and PPROM
- Isoimmunization
- Hypertensive disorders of pregnancy
- Fetal growth restriction
- Intrauterine fetal death
- Post-term pregnancy

Procedures to be mastered in the PGY-2 year:
- Pre-term spontaneous vaginal delivery
- Operative vaginal delivery
- Repair of third and fourth degree perineal lacerations
- Primary LTCS of preterm, multifetal, or malpresented pregnancy
- Repeat cesarean delivery
- Classical or low vertical cesarean delivery
- External cephalic version

IV. Rotation Structure
The PGY-2 resident will review the curriculum prior to the first day of the rotation with the Chief Resident and the Supervising Faculty Associate. Goals and objectives will be reviewed and expectations for performance clarified.

The PGY-2 Obstetrics Resident Responsibilities

Arrive in-house no later than 6:00 a.m.

- Postpartum rounds on service vaginal deliveries and personal surgical (Cesarean section) patients
- Present service vaginal deliveries and post-op patients during morning report,
- Attend Morning Report, Chairman’s Rounds, Grand Rounds, Journal Club
- Attend all scheduled lectures, Tumor Board
- Prepare OB lectures as assigned (ACOG guidelines)
- Cover Labor and Delivery during the day starting after Morning Report
- Cover the floor during Grand Rounds
- Attend weekly continuity clinics as scheduled
- Cesarean section experiences are to include: primary (if PGY-I not available), repeats, breech presentation, emergencies
- Circumcision of service patients on PPD#1 if PGY-I not available, circumcision of service post-op patients on POD#1/2/3
- Sign-out to night float team prior to leaving for the day. Sign out is at 6:00pm
• Follow up service patients labs, assist PGY-I with culture (lab) book on labor and delivery
• Dictate own Cesarean sections or operative deliveries, discharge summaries for Cesarean sections and service postpartum stays greater than 48 hours
• Assist PGY-I in presenting patients during morning report
• May be required to attend HROB clinic and assist MFM resident
• Prepare Journal Club presentations as assigned

The PGY-2 resident will actively participate in:
- Morning Conference sessions “Board Review” sessions, during which the care plans of all current obstetrical inpatients are presented and reviewed under staff supervision
- Routine prenatal clinic
- High-risk prenatal clinic
- At all other times, it is expected that the PGY-2 resident will remain on the labor floor, involved directly with patient care encounters and supervision of junior level residents/students.

V. Resident Supervision
The resident's daily activities fall under the management of the Chief Resident and the Attending this provides opportunity for immediate feedback.

Deliveries and procedures are performed under the direct supervision of an attending physician at all times, including nights, weekends, and holidays. This is ensured by 24-hour in-house coverage by attending staff.

VI. Reading List and Educational Materials
- Fetal Heart Rate Monitoring, Freeman
- ACOG Compendium
- UpToDate Clinical Reference Library
- Drugs in Pregnancy and Lactation
- Operative Obstetrics
- Sonography in Obstetrics and Gynecology, Fleisher
- Medline & Cochrane Database

VII. Method of Evaluation
• Residents will receive on-site timely formative feedback from the Chief Resident and attending physician(s) during this rotation.
• All deliveries and obstetrical procedures will be scored for both operative skills and for the resident’s ability to discuss the clinical management of the patient.
• Global and 360 degree summative evaluations of PGY-2 residents are performed every three months and reflect input from the attending staff, nurses, medical students, and patients.
• Cognitive assessment of the residents’ obstetrical skills is achieved by the obstetrical score from the CREOG examination.
• Formalized resident evaluation is performed every three months, presented in the form of a written document that will become part of the resident’s permanent file. Either the Program Director and/or the Assistant Program Director formally review the composite evaluation with each resident.

VIII. CALL/NIGHT FLOAT RESPONSIBILITIES

Night Float begins at 6:00 p.m. (Mon – Thurs). Sign-out is after morning report. (Fri) Sign-out is at 8:00 a.m. on weekends (Sat/Sun). On holidays that fall on a weekday, sign-out is at 7:00 a.m.
All non-surgical and surgical patients are to be seen prior to the start of call responsibilities.

Night Float:
• Round on personal surgical (c/section) patients
• Manage B1 floor calls on postpartum/post-op patients with the senior resident
• Manage B6 floor calls on benign gyn patients with the senior resident
• Primary cesarean section experience/uncomplicated service vaginal deliveries and assistance with private deliveries
• Must attend continuity clinics as scheduled
• Learn basics of L&D triage with the assistance of senior resident, carry the OB Triage Resident Vocera
• Post-call intern should be presenting Triage/Labor patients in morning report with the assistance of the rest of the night float team
• Present service post-op patients with the assistance of senior resident
• Duty ends after Morning Report/Lectures/Grand Rounds/Tumor Board/Clinic
• Attend Chairman’s Rounds, Grand Rounds, Journal Club
• Attend all scheduled lectures, Tumor Board
• Prepare Journal Club presentations as assigned

Weekend Call:
• Rounds as determined by outgoing and incoming call teams
• Manage B1 floor calls on postpartum/post-op patients with the senior resident
• Manage B6 floor calls on benign gyn patients with the senior resident
• First call for Triage, carry the OB Triage Resident Vocera
• Primary cesarean section experience/uncomplicated service vaginal deliveries and assistance with private deliveries
• Manage L&D patients with the assistance of senior residents
• Circumcision of service patients if not done during the day
Genomics

Obstetrics

The passage of genetic information from one generation to the next is the ultimate demonstration of genomics in action. The obstetrician’s presence during this event demands both an understanding of genetics and genomics and using this understanding for the good of the patient, her family and her unborn.

A. Basic mechanism of genetic inheritance

1. Describe the basic structure and replication of DNA.

2. Describe the processes of mitosis and meiosis.

3. Describe common terms associated with genetic expression.
   a. Exon
   b. Intron
   c. Codon
   d. Transcription
   e. Translation

4. Describe the clinical significance of karyotype abnormalities, such as: (PC)
   a. Trisomy
      i. 13
      ii. 18
      iii. 21
   b. Polyploidy
   c. Monosomy
   d. Sex chromosome abnormalities
   e. Deletions
   f. Inversions
g. Translocations

h. Mosaicism

i. Chimeras

5. Describe the normal process of gametogenesis. (MK)

6. Describe the normal process of fertilization and the combination of genetic information.

B. Clinical implications of heritable disease

1. Describe the clinical significance of heritable diseases, such as cystic fibrosis, Tay-Sachs disease, and hemophilia.

2. Counsel patients about the techniques for and implications of testing for heritable diseases.

3. Discuss treatment and surveillance options for patients or newborns with genetically derived disease.

C. Genetic counseling

1. Elicit a history for inherited disorders, ethnic- or race specific risks, and teratogen exposure.

2. Describe the concepts of penetrance and variable expression and their impact on prognosis for a given genetic disorder.

3. Distinguish between various forms of genetic inheritance:

   a. Autosomal dominant

   b. Autosomal recessive

   c. X-linked

   d. Mitochondrial

   e. Genomic imprinting

4. Counsel patients about the manifestations of common genetic disorders.

5. Describe the indications for, and limitations of, noninvasive diagnostic tests for fetal aneuploidy and structural malformations (e.g., ultrasonography, serum analytes).
6. List ultrasonography findings that are often associated with genetic disorders for:
   a. Duodenal atresia
   b. Omphalocele
   c. Nuchal translucency/nuchal skin fold
   d. Echogenic bowel
   e. Heart defects
   f. Diaphragmatic hernia
   g. Ventriculomegaly

7. Counsel patients about the risks and benefits of various methods of invasive fetal testing, such as:
   a. Chorionic villus sampling
   b. Amniocentesis/ Cordocentesis
   d. Pre-implantation genetic testing

8. Order and interpret appropriate maternal and fetal/neonatal tests to evaluate possible causes of fetal demise.

9. Counsel a patient with an abnormal fetus regarding management options.

10. Counsel a patient and her family after adverse pregnancy outcome about such factors as recurrence, future care, and possible interventions.

11. Counsel a patient and other health care professionals about fetal effects from exposure to various pharmacologic agents or to indicated diagnostic studies utilizing ionizing radiation.

12. Counsel a patient about the genetic implications of advancing maternal and paternal age.

D. Describe the indications and uses for umbilical cord stem cells and counsel patients on the advantages and disadvantages of cord blood banking.
Procedures
The following Table lists the procedures pertinent to obstetric care and summarizes
the level of technical proficiency that should be achieved by a graduating resident.
The resident should either understand a procedure (including indications,
contraindications, and principles) or be able to perform it independently. These
distinctions are based on the premise that knowledge of a procedure is implicit in
the ability to perform it.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Understand</th>
<th>Understand And Perform</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antepartum</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amniocentesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd trimester—genetic diagnosis</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>3rd trimester—assessment of fetal lung maturity</td>
<td>X 3,4</td>
<td></td>
</tr>
<tr>
<td>Cervical cerclage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transabdominal</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Transvaginal</td>
<td>X 2,3,4</td>
<td></td>
</tr>
<tr>
<td>Chorionic villus sampling</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Cordocentesis</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Fetal assessment, antepartum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biophysical profile</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Contraction stress test</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Nonstress test</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Vibroacoustic stimulation</td>
<td>X N/A</td>
<td></td>
</tr>
<tr>
<td>Intrauterine transfusion</td>
<td>X 3</td>
<td></td>
</tr>
<tr>
<td>Ultrasound examination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal and endovaginal</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Abdominal ultrasonography, targeted examination</td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td>Color Doppler ultrasonography</td>
<td>X 1</td>
<td></td>
</tr>
</tbody>
</table>
Three-dimensional ultrasonography    X 1
Doppler velocimetry                X 1
Version of breech, external        X
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Understand And Perform</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intrapartum</strong></td>
<td></td>
</tr>
<tr>
<td>Amnioinfusion</td>
<td>X 1</td>
</tr>
<tr>
<td>Amniotomy</td>
<td>X 1</td>
</tr>
<tr>
<td>Anesthetic/analgesic procedures</td>
<td></td>
</tr>
<tr>
<td>Administration of parenteral</td>
<td></td>
</tr>
<tr>
<td>analgesics/sedatives</td>
<td>X</td>
</tr>
<tr>
<td>Administration of narcotic antagonists</td>
<td>X</td>
</tr>
<tr>
<td>Epidural anesthesia</td>
<td>X 1</td>
</tr>
<tr>
<td>General anesthesia</td>
<td>X 1</td>
</tr>
<tr>
<td>Spinal anesthesia</td>
<td>X 1</td>
</tr>
<tr>
<td>Cesarean delivery</td>
<td></td>
</tr>
<tr>
<td>Classical</td>
<td>X 3,4</td>
</tr>
<tr>
<td>Low transverse</td>
<td>X 1</td>
</tr>
<tr>
<td>Low transverse</td>
<td>X 1</td>
</tr>
<tr>
<td>Low vertical</td>
<td>X 2</td>
</tr>
<tr>
<td>Cesarean hysterectomy</td>
<td>X 3,4</td>
</tr>
<tr>
<td>Curettage for adherent placenta</td>
<td>X 2</td>
</tr>
<tr>
<td>Dilation and evacuation for second-trimester</td>
<td></td>
</tr>
<tr>
<td>fetal death</td>
<td>X 1</td>
</tr>
<tr>
<td>Episiotomy and repair</td>
<td>X 1</td>
</tr>
<tr>
<td>Procedure</td>
<td>Understand</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Fetal assessment, intrapartum</strong></td>
<td></td>
</tr>
<tr>
<td>Fetal heart rate monitoring</td>
<td>X 1</td>
</tr>
<tr>
<td>(internal/external)</td>
<td>X 1</td>
</tr>
<tr>
<td>Fetal scalp pH determination</td>
<td>X 1</td>
</tr>
<tr>
<td>Fetal scalp stimulation test</td>
<td>X 1</td>
</tr>
<tr>
<td>Vibroacoustic stimulation test</td>
<td>X N/A</td>
</tr>
<tr>
<td><strong>Forceps delivery</strong></td>
<td></td>
</tr>
<tr>
<td>Outlet</td>
<td>X 2</td>
</tr>
<tr>
<td>Low</td>
<td>X 2</td>
</tr>
<tr>
<td><strong>Hypogastric artery ligation</strong></td>
<td>X 1</td>
</tr>
<tr>
<td><strong>Induction of labor with prostaglandins or oxytocin</strong></td>
<td>X 1</td>
</tr>
<tr>
<td><strong>Manual removal of the placenta</strong></td>
<td>X 2</td>
</tr>
<tr>
<td><strong>Skin incision</strong></td>
<td></td>
</tr>
<tr>
<td>Vertical</td>
<td>X 1</td>
</tr>
<tr>
<td>Transverse</td>
<td>X 1</td>
</tr>
<tr>
<td><strong>Suction evacuation for first trimester fetal death</strong></td>
<td>X 1</td>
</tr>
<tr>
<td><strong>Uterine artery ligation</strong></td>
<td>X 3</td>
</tr>
<tr>
<td><strong>Vacuum extraction</strong></td>
<td></td>
</tr>
<tr>
<td>Outlet</td>
<td>X 2</td>
</tr>
<tr>
<td>Low</td>
<td>X 2</td>
</tr>
<tr>
<td><strong>Vaginal delivery, breech</strong></td>
<td>X 1</td>
</tr>
<tr>
<td><strong>Vaginal delivery, spontaneous</strong></td>
<td>X 1</td>
</tr>
<tr>
<td>Postpartum Procedure</td>
<td>Understand</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Circumcision, neonatal (with anesthesia)</td>
<td>X 1</td>
</tr>
<tr>
<td>Hematoma evacuation</td>
<td>X 1</td>
</tr>
<tr>
<td>Intraabdominal</td>
<td>X 1</td>
</tr>
<tr>
<td>Vulvar</td>
<td>X 3,4</td>
</tr>
<tr>
<td>Vaginal</td>
<td>X 1</td>
</tr>
<tr>
<td>Neonatal resuscitation, immediate</td>
<td>X 1</td>
</tr>
<tr>
<td>Repair of genital tract lacerations</td>
<td>X 2,3,4</td>
</tr>
<tr>
<td>Cervical</td>
<td>X 2,3,4</td>
</tr>
<tr>
<td>Perineal (second, third, and fourth degree lacerations)</td>
<td>X 2,3,4</td>
</tr>
<tr>
<td>Vaginal</td>
<td>X 1</td>
</tr>
<tr>
<td>Sterilization</td>
<td>X 1,2,3,4</td>
</tr>
<tr>
<td>Wound care</td>
<td>X 2</td>
</tr>
<tr>
<td>Débridement</td>
<td>X 2</td>
</tr>
<tr>
<td>Incision and drainage of abscess or hematoma</td>
<td>X 2</td>
</tr>
<tr>
<td>Repair of dehiscence</td>
<td>X 3,4</td>
</tr>
<tr>
<td>Secondary closure</td>
<td>X 3,4</td>
</tr>
</tbody>
</table>