The OB/GYN Survival Guide

An Introduction to Obstetrics and Gynecology
at the University of Michigan

This handbook was written by University of Michigan residents and faculty for University of Michigan students, new residents and other guests to the department. Some information may not apply to off-site locations; however, we hope all will find it helpful.

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GYNECOLOGY

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WELCOME!

Welcome to Obstetrics and Gynecology
at the University of Michigan!

We are excited to have you join our obstetrics and gynecology teams. This booklet was written to orient students, new residents, and other guests to our department.

The obstetrics and gynecology services are clinically separate and are presented separately in this guide.

Obstetrics and Gynecology M3 Clerkship
Intended Learning Outcomes 2013-2014

1. You should plan to complete all of the ILOs. Even if you do not participate in every subspecialties listed, you are still responsible for completing the associated ILOs.
2. If you do not encounter a patient, participate in a didactic session or a simulation corresponding to a particular ILO, please go to APGO.org, click on "Objectives." read the associated outline/sample case and answer the questions.
4. This is not a substitute for completing your CLTP. You must also complete your CLTP as you go.

Gynecology (Outpatient Clinic)

1. Develop competence in the medical interview and physical examination of women and will incorporate ethical, social and diversity perspectives to provide culturally competent health care.
   - □ Perform pelvic exam (including speculum and bimanual examination)
   - □ Perform clinical breast exam
   - □ Conduct, record and present GYN patient H & P

2. Apply recommended prevention strategies to women throughout the lifespan.
   - □ Annual well-woman exam

3. Recognize your role as a leader and advocate for women. (one of following)
   - □ Domestic violence screening, teen pregnancy

4. Describe menstrual cycle physiology, discuss puberty and menopause, and explain normal and abnormal bleeding.
   - □ Menopause/perimenopause
   - □ Abnormal uterine bleeding

5. Develop a thorough understanding of contraception, including abortion and sterilization.
    - □ Contraceptive counseling
6. Provide a preliminary assessment of patients with sexual concerns.
    - □ Take a sexual history
7. Demonstrate knowledge of common benign gynecological conditions.
    - □ Vulvar/vaginal benign disease
    - □ Fibroids
    - □ Endometriosis
8. Formulate a differential diagnosis of the acute abdomen and chronic pelvic pain.
    - □ Pelvic pain
    - □ Ectopic pregnancy
9. Describe the etiology and evaluation of infertility
10. Describe common breast conditions and outline the evaluation of breast complaints.
    - □ Perform clinical breast examination
    - □ Breast mass
    - □ Nipple discharge
    - □ Mastitis
11. Pelvic Organ Prolapse-
    - □ Discuss the levels of pelvic organ support
    - □ Identify symptoms
    - □ Identify risk factors
    - □ Identify surgical and non-surgical treatment options for prolapse
12. Lower Urinary Tract Symptoms
    - □ Take a history regarding voiding and storage disorders to identify symptoms of irritation, obstruction, and incontinence

- □ Define types of urinary incontinence: stress, urge, mixed, overflow, functional, continuous
- □ Explain primary evaluation for urinary incontinence: urinalysis, post void residual, voiding diary, stress test
- □ Identify treatments for Incontinence: physical therapy, behavioral, medications, pessary, surgery
- □ UTI management- antibiotic choice, prophylaxis

13. Describe gynecologic malignancies including risk factors, signs and symptoms and initial evaluation.

- □ Abnormal Pap smear
- □ Postmenopausal bleeding
- □ Adnexal mass/cyst

Gynecology Surgery

1. Gynecology Perioperative Care-

- □ Perform pelvic exam and digital rectal exam. (may be under anesthesia)
- □ Insert Foley catheter
- □ Demonstrate ability to write the following notes-□
    i. GYN preoperative note, including appropriate studies and prophylaxis
    ii. GYN operative note□
    iii. GYN postoperative note
    iv. GYN postoperative progress note

2. Demonstrate familiarity with gynecologic procedures.

- □ Observe hysterectomy
- □ Observe laparoscopy
- □ Observe other gynecology procedure (enter below)□
    i. _____□
    ii. _____□
    iii. _____□

Obstetrics

1. Demonstrate knowledge of preconception care including the impact of genetics, medical conditions and environmental factors on maternal health and fetal development.
    - □ Preconception care
    - □ 1st trimester care
    - □ Prenatal diagnosis
2. Explain the normal physiologic changes of pregnancy including interpretation of common diagnostic studies.
    - □ New OB prenatal visit
    - □ Routine prenatal care follow-up visit
    - □ Conduct, record and present OB patient history
3. Describe common problems in obstetrics.
    - □ Diabetes in pregnancy
    - □ Preeclampsia/eclampsia
    - □ 3rd trimester bleeding
    - □ Peripartum infection
    - □ 1st trimester bleeding
4. Demonstrate knowledge of intrapartum care.
    - □ Clinical course of labor
    - □ Premature rupture of membranes (PROM)
    - □ Preterm labor (PTL)
    - □ Normal Spontaneous Vaginal Birth (NSVD), participate/observe
    - □ Observe perineal laceration repair
    - □ Write delivery note
5. Demonstrate knowledge of postpartum care
    - □ Postpartum discharge instructions
    - □ Current breastfeeding recommendations
    - □ Postpartum hemorrhage
    - □ Write postpartum note
    - □ Present postpartum patient

OBSTETRICS

Welcome to Labor and Delivery (L&D) at the University of Michigan. This portion of the guide is designed to give you an idea of how L&D works and what to expect.

For medical students, the goals are for you to become familiar with normal and high-risk pregnancies, to understand normal and abnormal labor courses, to understand and be able to recognize obstetric emergencies, to understand when and why cesarean sections are performed, and hopefully to deliver some babies!

GENERAL INFORMATION

Logistics of L&D
Labor and Delivery is located on the 9th floor of the CS Mott Children's and VonVoightlander Women's Hospital.

There are five services who admit patients to Labor and Delivery:
1.UMOG (University of Michigan Ob-Gyn)
2. MFM (Maternal Fetal Medicine)
3. WH (Women's Health),\
4. CNM (Certified Nurse Midwives)
5. FMB (Family/Mother/Baby)

As a student on Ob-Gyn, you will follow patients belonging to the UMOG, MFM, and WH services. Generally, students are not involved in caring for patients on the CNM or FMB services unless those patients require intervention from the obstetricians.

Team Members

- Students
- OB/GYN Residents
- Other Residents (Emergency Medicine, Family Medicine)
- Attendings
- Triage CNMs

Students:
The M3 Clerkship Director assigns students to the L&D service for blocks of time. During that time, you will be an integral part of the team. There are also occasionally M4 MFM sub-interns on Labor and Delivery. There is a floating pager number **35489** that should be signed out to one M3 per shift.

Ob-Gyn Residents:
There are generally six OB residents on the L&D team every month.

There is a day-chief (a 4th year resident) who is responsible for the entire unit. He or she runs the floor Monday through Friday during the day. There is also a night-chief (a 3rd year resident) who is responsible for the unit Sunday through Thursday at night. Over the weekend, (Friday night, Saturday for 24 hours, Sunday day), the chief position is shared by rotating 3rd and 4th year residents.

There is one junior resident who works Sunday through Thursday nights. There are three other junior residents who cover the floor as well as high risk obstetrical clinics Monday through Friday

during the days. On the weekends (Friday night, Saturday for 24 hours, and Sunday day) there is one junior resident on the floor.

Residents are responsible for all the UMOG, WH, and MFM patients on the floor. The chief resident also is responsible for knowing other patients on the floor (CNM and FMB). Residents will make every attempt to attend all deliveries on the UMOG, WH, and MFM services.

Other Residents:
There are occasionally Family Medicine or Emergency Medicine residents who rotate with the OB team on Labor and Delivery. They generally help manage the lower-risk laboring patients. Their goals are generally to gain experience with normal vaginal deliveries and lower-risk obstetrical issues.

Attendings:
There is always an attending in-house 24 hours per day, 7 days per week known as the “Supercall.” He or she staffs the UMOG and MFM services and serves as backup for any emergencies or other issues. There is also always a WH attending on-call who may or may not be in-house depending on the status of the WH service. There is always an MFM backup faculty who is available for back-up or for high-risk OB consults. Attendings are present at every delivery and every cesarean section .

Triage Certified Nurse Midwives (CNMs):
There is a CNM in triage 24 hours per day, 7 days per week who primarily evaluates any OB triage patient. They then discuss patients with either the chief resident on-call or with the WH attending as indicated. They are also available for back-up in the

event of multiple simultaneous deliveries or other emergencies requiring assistance.

L&D Flow

Each day (including weekends) starts with postpartum rounds, which are to be completed, including notes and orders, before board signout or any teaching. The residents generally gather in the boardroom at approximately 6:00 AM to divide the postpartum patients and begin pre-rounding.

Board sign-out occurs in the boardroom every day at 7:00 AM, except on Thursdays when it starts at 6:30AM (to accommodate grand-rounds). There is teaching at 6:50AM on Monday, Wednesday, and Friday in the boardroom. Sign-out will start with the night-chief and night-junior signing out the high risk patients, antepartum patients, and laboring patients. The OR schedule for the day is then discussed. Finally, each postpartum patient is discussed. The day-chief and the attending attempt to incorporate as much teaching as possible into board sign-out, however, the business-to-teaching ratio is heavily dependent on the volume of patients.

After board sign-out and any conferences (see below for conference schedule), some residents will leave the floor to attend clinics; however, at least one junior resident will stay on the floor. There is a schedule posted in the board room so you can see what resident is staying on the floor. On most days, there are scheduled cesarean sections or other scheduled procedures (postpartum tubal ligations, cerclage placements, etc.). These procedures will start as soon as possible after board sign-out or conferences.

Otherwise, the flow of the day will depend on the number of patients in labor or needing care. Some days, there is quite a bit of down time and many days you will run nonstop. The chief will always try and get everyone on the team a chance to get lunch, but you are most likely to be involved in the most action if you do not have to leave the floor, so it might be a smart idea to bring some food that you can eat between deliveries.

The board is signed out again every day at 6:00 PM. At evening rounds, we do not routinely discuss all the postpartum patients.

Conferences

Day	Conferences
Monday 8:00 AM Monday 5:00 PM	Pericu Conference (OB Board Room) M&M (MCHC Auditorium)
Wednesday 8:00 AM Wednesday 3:00 PM	Strip Rounds (OB Board Room) Resident CORE (MFM Conf. Room)
Thursday 7:30 AM Thursday 12:30 PM	Grand Rounds (MCHC Auditorium) Teratology Conference (MFM Conf. Room – clinic residents)
Friday 8:00 AM	High Risk Conference (VVL clinic Hall A)

STUDENT EXPECTATIONS

Pre-Rounds:
The residents will typically help the students determine which postpartum patients to see, however, each student typically sees 2-3 patients. You should preferentially see patients whose deliveries you participated in, however, if there are no postpartum patients in-house who you know, you may be asked to see other patients. These patients still present valuable learning

opportunities. Please see below for details on postpartum rounds and documentation, however, you should plan to have your patients seen and their notes written in TraceVue by 6:45 AM (or 6:35AM when teaching starts at 6:50AM), so that the resident can go through the note and the plan with you. You will not be able to write notes during board sign out.

Rounds:
You will be expected to present the patients on whom you rounded during morning board sign-out. Please see below for details on presenting postpartum patients. Sometimes the residents forget which patients have been seen by students, so feel free to interrupt – if you saw the patient, you should present her.

The Workday:
After board sign-out, you may participate in Cesarean sections, be involved in caring for laboring patients and participate in their deliveries. The floor can occasionally be quite slow, so if you are assigned to a place that does not have much going on, you should check with the residents about other opportunities. On the other hand, if there is a lot going on and there are clinical opportunities that are being missed because you are involved in something else, let the other students know.

When assigned to the low risk side, you should divide the laboring patients among the students and follow them closely throughout their labor and delivery course. You should divide the multiparous patients and nulliparous patients evenly, as the multiparous patients are much more likely to deliver during your shift. In general, you should see each laboring patient every two hours to

check on her progress. Sometimes you will do cervical exams (although you should never do a cervical exam without a resident or attending), and other times you will review the strip and check on the patient without doing a cervical exam. You should always send the junior resident a page when you have seen a patient if there are any pertinent updates. You should write a progress note in TraceVue whenever you see a patient with a resident or attending (see below for details on labor progress notes), although you do not need to write a note if you have stopped in to check on a patient alone.

It is highly recommended that you follow at least one patient from admission to delivery including assisting the patient in the second (pushing) stage of labor. You should not attend a delivery without having met the patient first. After each delivery, you should be able to completely describe the labor course and curve, interpret the fetal heart rate strip, explain the labor management plan, and write the delivery note.

If you are going to participate in scheduled cesarean sections, you should look the patient up in TraceVue, determine the reason she is having a cesarean section and review her history. Important things to know about a patient before a cesarean section (in addition to the indication for the surgery) are: her pre-operative hematocrit, the location of the placenta, if there were any complications in any prior cesarean sections, any other abdominal surgeries and the presentation of the fetus. You should meet the patient in the recovery area before she is taken back to the OR. During the cesarean section, you will be asked to assist with retraction, and may be invited to sew fascia or staple the skin if time permits. After the procedure, you should write an operative note in Tracevue and help move the patient out of the OR.

If you are assigned to triage, you should introduce yourself to the Certified Nurse Midwives, and they will direct you from there. Triage is a wonderful opportunity to learn about how women present in labor and about other pregnancy-related problems.

In general, the more time you spend out on the floor, the more you'll see and do. No active patient issues or deliveries occur in the boardroom. Follow the junior resident around as he or she is seeing patients, as you will have many more learning opportunities. Lots of teaching and clarification can happen in the halls, walking from one room to the next. Not only do the residents and faculty appreciate your evaluations, input and time, but the patients also value your efforts.

Lectures/Conferences:
It is mandatory that you attend all your scheduled student lectures, small groups, and conferences including all listed above except for resident core. These preclude any clinical responsibilities you have on the floor. You should notify the residents of the times you need to be leave each day to ensure that you are not held up and late for conferences.

We all work together as a team. Communication with attendings, residents, anesthesia and nurses is the key to a smoothly run unit. If you have questions about where to go or what to do, ask anyone; we're all happy to help.

DOCUMENTATION

All charting for inpatients goes in TraceVue under the "Progress Notes" Tab, in admission/labor section (i.e., the pregnant woman entering the hospital icon). Triage notes are written in the "Progress Notes" Tab in the prenatal section (i.e., the growing pregnant woman).

H&Ps

Any patient who is admitted needs an H&P in TraceVue. For uncomplicated patients admitted in labor, this tab, in addition to a brief summary in the "progress notes" tab, is sufficient. Patients admitted to the East side will require the "Admission" tab to be filled out, a more thorough note in TraceVue and an H&P in CareWeb. Any patient admitted to the East side should have an updated "Problem List," as this is our primary method for communicating with our colleagues who are taking over the service from us at the end of our shift.

FULL OB H&P

Introduction: Age, gravidity and parity (gravidity is the total number of pregnancies (twins count as one), parity is in the following format: T – term deliveries, P – preterm deliveries (20 to 37 weeks), A – abortions, spontaneous (< 20 weeks) or elective, including ectopic pregnancies, and L – living children), weeks of gestation, presenting problem.

HPI: What brought the patient into triage? Labor symptoms, bleeding, leakage of fluid, pre-eclamptic symptoms, reduced fetal movement. For contractions, ask about how long the contractions have been felt, how far apart they are, and how strong they are subjectively, eg could you sleep through the contractions? Are you 'breathing through' the contractions? Are they getting

stronger? For bleeding, assess onset, subjective amount, whether bright red or not, if there is any associated abdominal pain, cramping or contractions. For possible ruptured membranes, ask about the onset of leakage, the amount and color of the fluid, if there is ongoing drainage of fluid?
Current pregnancy: Try to obtain a history of important events in this pregnancy. Establish dating of the pregnancy (by last menstrual period, first or second trimester ultrasound), and ask if there have been any problems. Was the pregnancy planned, and did pre-conceptional care occur? Ask about ultrasounds and any abnormal tests. Ask about amniocentesis/chorionic villus sampling for mothers over 35, abnormal First Trimester Screen or Quad test, if there are fetal anomalies, or if baby is growth-restricted.
Prenatal Labs: Blood type / Antibody screen / Rubella immunity / VDRL / Hep B surface Ag / 1 hour glucose tolerance test / Pap / GC and Chlamydia / GBS screening / hemoglobin electrophoreses / amniocentesis / quad test / chorionic villous sampling (these can be obtained from TraceVue or CareWeb).
Past OB History: For each pregnancy, ask about the date of delivery, gestational age (express in weeks not months), type of delivery (spontaneous vaginal, vacuum, forceps or Cesarean section), sex, birth weight, and any complications in pregnancy or labor. For C-sections ask the patient what the reason for the C-section was, as well as if the patient was told she would need a repeat C-section (? classical C-section). Ask specifically about other pregnancies, such as miscarriages (spontaneous abortions), abortions (elective abortions), or ectopic pregnancies. Don't assume that the patient's partner or family members are aware of previous losses or elective abortions. Some patients will specifically ask you not to mention these.

Past Gyn History: Ask about abnormal Pap smears, sexually transmitted infections, GYN surgeries. Ask myomectomy patients if they were told they needed a C-section in the future. Cone biopsy and LEEP procedures may cause cervical incompetence or cervical scarring, so don't forget to ask about these. Also ask about menarche and regularity of menses and a sexual history when appropriate (i.e., the patient's family is not in the room).
Past Medical History: Ask about diabetes, hypertension, seizure disorders, depression, etc. Include sickle cell disease/trait for African-American patients.
Past Surgical History: Especially abdominal surgery.
Drugs / Allergies
Family History: Ask about abnormal births, genetic disorders such as cystic fibrosis, and about hemoglobinopathies for non-caucasian patients.
Social History: Include smoking, alcohol and drug use pre-pregnancy and during the current pregnancy.
Physical Exam: Start with vitals (BP, pulse, temp, respiratory rate). Comment on fetal heart tones, and contraction pattern (e.g. FHT 130 reactive, toco – contractions q 3 – 5 minutes). Examine heart, lungs, breast exam (only for initial prenatal visit, or postpartum fever), abdomen, extremities (edema, calf tenderness, reflexes). Always do Leopold's maneuvers for fetal lie and presentation, as well as an estimate of fetal weight – try to estimate to the nearest 500g (roughly 1 pound). Speculum exam, if appropriate, eg for Pap smear, GC and chlamydia in the prenatal clinic, or in triage to confirm rupture of membranes, or obtain cultures and fetal fibronectin assay in preterm labor. Vaginal exam, if appropriate (always with a resident or staff present) consists of cervical dilatation and effacement, and station of the presenting part, written 4cm / 50% / -1 station. Note if clear fluid, bleeding, or meconium if the membranes are ruptured.

Presentation may be confirmed on vaginal exam and/or ultrasound.
It is very good practice to perform a brief ultrasound to assess presentation unless you are very certain on exam.
Assessment: A one or two sentence summary of the patient, eg "25 year old G2 P1001 at 33 weeks 6 days by 1st trimester ultrasound, in preterm labor following preterm premature rupture of membranes yesterday at 6pm.
Plan: Depends on the patient, but you should always formulate a plan on your own before presenting. This is the best way to learn management of obstetrical issues.

Labor Progress Note:
Subjective: Pain? Bleeding? Other issues?
Objective: Vitals (although "afeb/VSS" is a convenient shorthand, in general, the actual vitals should be written), FHTs: comment on baseline, variability, presence of accelerations or decelerations, Toco: contraction frequency, rate of pitocin (if used); if IUPC in place, include montevideo units , SVE (sterile vaginal exam): dilation, effacement, station. If medication was placed, amniotomy performed (comment on fluid color), or fetal position is checked, theses can also be noted here.
Assessment: X year old G#P# at X weeks, admitted for (SOL, SROM, IOL, etc). Fetal status reassuring (if it is).
Plan: Type of action taken while assessing patient (AROM, IUPC, FSE, type of anesthesia given, etc), start or stop pitocin, patient to begin pushing, taking patient for operative delivery (cesarean section, forceps, vacuum), etc.

Delivery Note:

Stage I: (Beginning of labor through pushing stage)
X year old G#P# at X weeks, admitted for (SOL, SROM, IOL, etc). Pitocin was/was not used for augmentation. The patient received (morphine, spinal, epidural, etc.) for analgesia. AROM/SROM was performed/occurred at X time. Amniotic fluid was (clear, meconium-stained, bloody, etc). Antibiotics were/were not required (due to chorio, for GBS prophylaxis, etc). Include any other significant events during labor.

Stage II: (Pushing through delivery)
-Patient progressed to complete at < > time and pushed for < > hours, to deliver from a < > position (e.g. ROA, OP)
-If an episiotomy was cut, state what type and the indication.
- If a vacuum or forceps were used, state what type and the indication. Also describe the number of pulls required (e.g. pulls with 3 contractions), and fetal station and position.
- Mouth and nose were/were not bulb suctioned at the perineum.
- Note presence of nuchal/body cords and maneuvers needed to resolve them (e.g. easily reduced or clamped and cut at the perineum)
- Body delivered without difficulty (or, if there was a shoulder dystocia, describe the maneuvers performed to relieve the dystocia and the length of time to deliver the baby)
-Note if the baby was given directly to the mom or to the pediatricians. If pediatricians were present, explain why they were called (e.g. for mec, for maternal chorio, etc.)
-Note the baby's weight, apgars and umbilical cord gases

Stage III: (Delivery of baby through delivery of placenta/repair)
-Describe how the placenta delivered (spontaneously or requiring manual removal), how the placenta looked, including whether or not it was intact, insertion of cord, number of vessels, and any other notations made at the time of delivery.
-Describe any perineal lacerations (location, degree)
-Describe the type of repair performed including the type of suture (e.g. 3-0 vicryl) and any extra analgesia provided (e.g. 1% lidocaine for local anesthesia).
Results of rectal exam, if performed.
Estimated blood loss
Physicians present, Rubella status and Rh type.

C-Section Note:
Preop Diagnosis:
Postop Diagnosis:
Procedure:
Surgeon:
Residents:
Medical Students:
Type of Anesthesia (e.g. spinal, epidural, GA):
IVF:
UO:
EBL:
Indication:
Findings:
- A __gm male/female infant was delivered from a __ position (e.g. ROA, OP, etc.) with Apgars of __/__.
- Umbilical cord gases were:
- Comment on appearance of uterus, ovaries, fallopian tubes.

- Comment on placenta (intact, insertion of cord, number of vessels, and any other notations made at the time of delivery).
- Any other interesting findings.

Complications:
Specimens:
Disposition: To recovery room in stable condition.

Postpartum Note:

Subjective: Include pain control, ambulation, voiding, PO intake, lochia (postpartum vaginal bleeding) (ie. is she having normal bleeding, or problems with heavy bleeding?), passing flatus, breast or bottle feeding (and if breast breastfeeding, is it going well?), contraception plans.

Objective: Vital signs, including I/O for postop patients (although some may write "afeb, VSS" it is good practice to get in the habit of writing out the vital signs)

Physical exam including: general appearance, heart/lungs, abdominal exam (soft, NT, ND, +BS), fundal position/tone (eg. fundus firm below umbilicus), inspect abdominal incision if patient has had c-section (dressing clean/dry/intact, or incision intact, no exudates or erythema), perineum, if indicated (sometimes done by resident if problems/pain or with large lacerations, sulcal tears, forceps or vacuum delivery – students do not need to do this part of the exam), extremities (lack of calf tenderness)

Labs when appropriate: (C-section patients have a CBC drawn on POD#1)

Assessment: X year old G#P# -> # + 1 (e.g. if pt just had her second baby, you would write G2P1->2), post-partum/post-operative day #X from a NSVD/FAVD/VAVD/C-section, (and if operative delivery: performed due to X) who is recovering appropriately or with X problem.

Plan: Depends on the patient and situation. Generally, you may include:
-Breast/bottle feeding going well/poorly
-Contraception plan (eg. Deferred, Micronor, IUD at postpartum visit, etc.)
-Rh status and rubella; comment if given RhoGAM and/or Rubella vaccination (if appropriate)
-Anticipated date for discharge
-Anticipated discharge medications (generally iron, motrin, colace, +/- narcotic, +/- contraception)
-Follow up with VNA, follow up with OB in 6 weeks postpartum

FETAL HEART TRACINGS

Internal versus external monitoring:
External monitors are most commonly used to monitor both the mother's contraction pattern and the fetal heart rate (FHR) pattern. External fetal heart rate monitors use doppler technology to monitor fetal heart rate. This is sufficient in most cases. However, sometimes you want a more direct assessment of the fetal heart rate. You may consider placing an FSE (fetal scalp electrode) for internal monitoring when: the patient is obese and external monitoring difficult, the patient is tachycardic and it is difficult to differentiate between maternal and fetal pulse, when the fetal heart rate tracing is non-reassuring and you need a more direct and constant assessment to help with your management decisions, or when you are having trouble keeping the fetal tracing continuous for any reason. A maternal pulse-oximeter, which can be continuously recorded, can also be helpful in differentiating between maternal and fetal pulses.

The external contraction monitor (tocodynamometer or toco for short) measures changes in the shape of the mother's abdomen to identify when contractions occur. As you can imagine, anything that causes a change in the mother's abdomen will also cause the toco to register. Therefore, normal breathing, movement in bed, vomiting, walking, external compression of the abdomen, etc. may all cause changes in an external monitor. Usually, external toco is sufficient. However, you may consider placement of an intrauterine pressure catheter (IUPC) when the patient is in the active phase of labor but is not progressing or when the FHR tracing is non-reassuring and you want to know the exact relationship between decelerations and contractions. An IUPC is also necessary if you wish to perform an amnioinfusion for any reason. IUPCs are long, thin plastic tubes with a pressure sensor at their tip that are placed into the uterus. Care should be taken during placement to avoid the placenta, as placental abruption may be a complication of IUPC placement. Amniotomy (or previously ruptured membranes) is necessary for IUPC placement. IUPCs are convenient because, in contrast to an external toco, they allow one to assess the strength of a uterine contraction. To determine if contraction strength is adequate to cause cervical dilation, the patient must first be in the active phase of labor (prior to the active phase, contraction strength does not have a direct correlation with cervical change). After the IUPC is in place and functioning well, isolate a ten-minute timeframe on the tracing and count and sum the number of boxes beneath each contraction above the baseline. Each box represents 10 montevideo units. A value of >180-200mVU indicates adequate contraction strength to create cervical change.

Contraction Pattern:
When assessing the contraction pattern, know that contractions are recorded on the lower half of the monitoring strip. Notice that the strip has light and dark red lines. From one dark red line to the next represents a one-minute interval. Thus, count the number of dark red lines to determine how far apart the contractions are. In a normal labor pattern, a patient typically has regular contractions every ~ 2-5 minutes.

Abnormal contraction patterns include:
Coupling: 2 contractions coming very close together (e.g. 30 seconds) with a long space between the next set of 2 contractions. Triplets, quadruplets, etc. are also sometimes seen during labor.
Uterine tachysystole: 5+ contractions in 10 minutes (< 1.5 minutes between contractions) with regularity, but without changes in the fetal heart rate tracing.
Uterine hyperstimulation: 5+ contractions in 10 minutes (< 1.5 minutes between contractions) with regularity and with associated non-reassuring fetal heart rate tracing.

Fetal Heart Rate Pattern:
To describe a fetal heart rate tracing, discuss each of the following components:
Baseline: normal is 110-160s
Variability: refers to variability in the heart rate. Note that the distance between two small, horizontal lines on the monitoring strip is equivalent to 10.
Absent: refers to a flat tracing
Minimal: 0-5 beats per minute
Moderate: 5-25 beats per minute
Marked: >25 beats per minute

Accelerations: rises above baseline in the FHR
Decelerations: dips below baseline in the FHR
Variable decelerations: Variable decelerations are characterized by sharp decline below baseline with rapid return to baseline. They are classically "V" shaped. These can occur before, after, or with a contraction. These are due to umbilical cord compression and usually are not associated with fetal hypoxemia.

Early decelerations: Early decelerations by definition occur with contractions and the slope mirrors the contraction. There is a slow decline below the baseline with slow return to baseline with the nadir occurring at the exact same time as the peak of the contraction. The fetal heart rate returns to baseline at the same time as the contraction ends. These are due to head compression and are not associated with fetal hypoxemia.
Late decelerations: Late decelerations are decelerations in the fetal heart rate that occur after the start of a contraction and do not return to baseline until after a contraction has ended. These are usually due to utero-placental insufficiency. In contrast to variable or early decelerations, recurrent and persistent late-decelerations can be associated with fetal hypoxemia and warrant intervention.
Bradycardia: Bradycardia is defined as a deceleration in the fetal heart rate for greater than 10 minutes.
If a prolonged or sudden deceleration occurs, stop. Think logically about what could be the cause: hypotension from a recent epidural placement, uterine hyperstimulation, fetal manipulation, umbilical cord prolapse, etc. The following should all be done together in order to attempt intrauterine resuscitation of the fetus: turn off pitocin infusion if one has been running, reposition the patient to her left side or knee-chest position, which maximizes cardiac output, add supplemental oxygen by face

mask, give a fluid bolus if hypotension is a possible etiology, consider ephedrine administration if hypotension is still suspected, do a vaginal exam to rule out cord prolapse or rapid fetal head descent and to assess progress in labor. Consider terbutaline 0.25 mg subcutaneously for tetanic contractions. Always remember, call for help and do it early. Consider activating the birth center pager and moving to the OR if a fetal heart rate deceleration does not appear to resolve with the above interventions in 2-3 minutes.

OB PATIENT PRESENTATIONS

Below are example patient presentations for various types of situations. All the information to be included should be available in the patient's delivery note or other TraceVue notes.

Postpartum Vaginal Delivery:
"Ms. Smith is a 27yo Gravida 2 Para 1 now 2 who is postpartum day number one after a normal spontaneous vaginal delivery. (If there were any complications in her pregnancy, put them here... e.g., her pregnancy was complicated by insulin-requiring gestational diabetes, which was well-controlled.) Her labor course and delivery were uncomplicated (or if they were complicated, explain how, e.g., her delivery was complicated by postpartum hemorrhage requiring methergine and hemabate). She is feeling well this morning. She has minimal pain, minimal lochia and is voiding and ambulating. She is breastfeeding without difficulty. She has been afebrile. BP range, pulse range, urine output. Her physical exam was unremarkable. Her fundus was firm and 2 finger breadths below the umbilicus. She plans to use Micronor

for contraception. We will plan to discharge her when she is 24 hours postpartum. She will follow-up in 6 weeks for a postpartum visit."

Postpartum Operative Vaginal Delivery:

"Ms. Smith is a 27yo Gravida 2 Para 1 now 2 who is postpartum day number one status post forceps (or vacuum) assisted vaginal delivery secondary to arrest of descent. A mediolateral episiotomy was/was not cut. A < > degree perineal laceration was sustained and repaired. She is doing well this morning. Her pain is well controlled, she is having minimal lochia and she is voiding without difficulty. On exam, she has been afebrile, BPs, Pulse, Urine output. Her fundus is firm and below the umbilicus. There is no evidence of hematoma on vaginal exam. (This exam would need to have been performed with a physician.) She plans to use condoms for contraception. She was advised of the need to keep her stools soft and we discussed using miralax and mineral oil as needed. We plan to discharge her when she is 24 hours postpartum. She will follow-up in 6 weeks for a postpartum visit."

Postpartum Cesarean Delivery:

"Ms. Smith is a 27yo Gravida 2 Para 1 now 2 who is postoperative day number one status post a low transverse cesarean section secondary to arrest of dilation. She is doing well this morning and is breastfeeding, ambulating, and urinating without difficulty (alternately, the patient's Foley catheter may still be in place – watch for that). Her pain is well-controlled on PO pain medication. She is afebrile, BP, Pulse, urine output. Her incision is clean, dry, and intact. Her fundus is firm and below the umbilicus. Her post-operative hematocrit is < >. She plans to use the mini-pill for birth control. We plan to discharge her when she is 48 hours postpartum."

High Risk Patients:
Presentation of high risk patients will vary considerably depending on the patient. Each patient's presentation should begin with the patient's age, g's and p's, gestational age, mechanism for dating (e.g. LMP and first trimester ultrasound), and why she was admitted. Important things to include are: if/when betamethasone was administered, recent EFW/AFI, fetal presentation, prior OB history, consents obtained, results of cultures (GBS, GC/Chl, urine, etc.). Otherwise, the presentation will depend on the clinical situation.

Laboring Patients:
Include: patient's age, g's and p's, gestational age, mechanism for dating, reason for admission (labor, PROM). Also include fetal status, most recent cervical exam with the time, progress in labor, augmentation, presence of epidural, GBS/rubella/Rh status

OB PAPERWORK

Labor and Delivery is almost paperless. Our charting system is TraceVue, and we do all our orders in CareLink. However, the various "administrative" tasks are outlined below.

Orders:
Our orders are all done in CareLink

There are order sets available for most clinical scenarios. These order sets are located by opening CareLink, selecting the patient who needs orders and clicking on the "clipboard" icon at the top left of the screen next to the patient's name. From that screen,

click on “Order Sets, Adult,” in the left hand column, then “OB-GYN or Women’s” (this changes periodically). You may then select the given scenario and select your orders.

Remember that in CareLink, every patient needs to have their allergies verified before any order may be placed and all orders need to be submitted before they will be processed.

Typical Admission Orders:
Admit Reason
Patient Condition
Vital Sign frequency
Activity (usually Up Ad Lib or Bedrest with Bathroom Privileges)
Continuous external fetal and uterine monitoring
Diet (clear liquid for laboring patients, NPO for anyone with a high likelihood of going to the OR)
Lactated Ringers @ 125 cc/hr
Type and Screen and CBCP
GBS Prophylaxis if needed

Postpartum Orders:
All admit orders must be discontinued in CareLink before entering postpartum orders.

Typical Postpartum Orders:
Admit Reason
Procedure
Patient Condition
Vital Signs Progression (depends on delivery method)
Activity (usually ambulate as tolerated)
Perineal Care
Foley (if cesarean section or other indication)

Diet (usually adult regular)
Lactated Ringers @ 125 cc/hr, saline lock when tolerating PO
PRN's: usually milk of magnesia, Maalox, simethicone, docusate, diphenhydramine, and lanolin
MMR and RhoGAM if indicated
Pain Medication: acetaminophen, ibuprofen.
If cesarean section: toradol (if clinically acceptable), and a narcotic
AM lab (if cesarean section): CBCP

Every patient gets a home-care agency (VNA) visit

Other orders can be placed by typing an order in the box that appears at the top of the screen after clicking on the "clipboard" icon.

Discharge Prescriptions:
After a normal spontaneous vaginal delivery, patients should receive these prescriptions:
Ibuprofen 600mg PO Q 6-8 hours PRN pain (usually # 90 with 1 refill)
Colace 100mg PO BID PRN constipation (usually # 60 with 2 refills)
FeSo4 325mg PO BID (usually # 60 with 2 refills) – ONLY IF CONSIDERABLY ANEMIC

Patients who have had cesarean sections, postpartum tubal ligations, or a complicated delivery may also get narcotic pain medications. Options include:
Percocet 5/325mg: 1-2 tabs PO Q4-6hours PRN for pain
Norco 5/325 mg: 1-2 tabs PO Q4-6hours PRN for pain

The number of tabs administered depends on the situation and by physician preference, however, in general, cesarean sections should get at least # 90 with 0 refills, postpartum tubals or complicated vaginal deliveries may get # 40 with 0 refills.

Patients may also request refills on a prenatal vitamin or contraception.

Prescriptions are written in CareWeb, printed, and placed in the front of the patient's chart at the clerk's station. They are usually most conveniently done immediately upon admission. It is very time-consuming to have to print all the discharge prescriptions for the postpartum patients you see during rounds before board sign-out.

DISCHARGE ISSUES

As a general rule, most patients are discharged home 24 hours after a vaginal delivery and 48 hours after a cesarean section. If a patient delivers after 8 pm, they may stay the following night if they choose. Patients who are otherwise ready for discharge but who have a baby in the NICU may also be candidates for nesting, if available. **The charge nurse determines which patients will go to which nesting rooms**. Never promise a patient a nesting room as there are elaborate protocols for distributing these limited rooms. Tell the patient her nurse will help her coordinate this and she may stay in her room if there are no nesting rooms available.

Discharge instructions:
After any delivery, we recommend pelvic rest for six weeks, which means no heavy lifting, no sexual intercourse, and no tampons/

douching or other objects in the vagina. If patients are on a narcotic pain medication, they should not drive while continuing to take them as they can cause impaired function. If a patient underwent a cesarean section, she should not drive for a minimum of two weeks post-operatively, or until she no longer requires narcotic pain medication.

On the day of discharge, patients should be counseled that triage is available for any issues until they are 6 weeks postpartum. They should contact their doctor or triage with any heavy vaginal, bleeding, excessive or worsening pain, fevers > 100.5, breast pain or redness, incisional redness/irritation/opening if applicable, or with other issues.

Most patients can follow-up with a postpartum visit in 6 weeks, although if you are concerned about postpartum depression, the patient had a particularly complicated course, or with other issues, patients may be seen by their primary OB earlier.

POSTPARTUM CONTRACEPTION

We like to ensure that any patient who would like a prescription for contraception postpartum has one before she is discharged, but not every patient has to go home with a definitive plan for birth control. It is important to remind patients that they may conceive while breastfeeding if they are not utilizing an alternate form of contraception. It is also a common misperception that a woman cannot conceive before she has a period following a delivery and it is important that patients understand that they could become pregnant before having a period. In general, if a patient prefers to not be discharged with a prescription this is ok, as contraception can be discussed more in-depth at the postpartum visit. If there is a particularly complicated patient, or someone in whom another

pregnancy in the near future would be contraindicated, we may be more aggressive in our discussions about contraception.

It is sometimes helpful to simply ask: “Would you like to discuss options for birth control when you are discharged?” or “Would you like any prescriptions for contraception to go home with?”

Common Postpartum Contraceptive Options:

1. Abstinence
2. Condoms
3. Micronor (a progesterone-only pill, AKA the “mini-pill”) - Safe for women who are breast-feeding (should not reduce milk supply). Patients should start taking the pill two weeks after delivery. The most important thing to discuss is that it has to be taken at the ***same time*** every day (i.e., within the same hour).
4. Combination OCPs/OrthoEvra Patch/NuvaRing - A *relative* contraindication in early breast feeding (may decrease milk supply). If patient is not breastfeeding or decides this is her best option, she should wait until at least 4 weeks, preferably 6 weeks, after delivery to start it due to the potentially increased risk of blood clots.
5. Depo Provera - an IM progesterone shot every 3 months – Patient may receive prior to discharge. Average weight gain is 10 lbs.
5. IUDs – Either Mirena IUD or ParaGard - Can be placed at the postpartum visit, and are the most effective form of contraception we have to offer (even more effective than tubal ligation, with the additional benefit that they are not permanent, in case the patient changes her mind).
7. Implanon - a subcutaneously inserted progesterone-only implant that is good for 3 years. This should not affect milk supply

and can be placed at a postpartum visit or potentially prior to discharge if indicated.
8. Permanent sterilization (bilateral tubal ligation, Essure procedure)
9. Vasectomy
10. Natural family planning" or "rhythm method"- we don't usually bring this method up, as it has a very high typical use failure rate (up to 25%). If the patient mentions it, they should be informed about the potential failure rate, as well as told that in order to use the method, they need very regular and predictable periods (which is not always the case right after delivery/breastfeeding).

BREASTFEEDING BASICS

Breastfeeding is considered the optimal form of nutrition for a neonate according to pediatricians. There are many neonatal benefits. Breast milk provides an excellent source of nutrition and maternal antibodies that cannot be duplicated by formula. Breastfed children have a lower incidence of asthma and allergies, and fewer childhood illnesses in general.

There are also many maternal benefits to breastfeeding. It stimulates oxytocin release, which increases uterine contractions and decreases postpartum bleeding. Hormones released during lactation are also believed to contribute to feeling of relaxation and attachment. Furthermore, breastfeeding is associated with a decreased risk of breast cancer. The incidence of pregnancy induced long-term obesity is also reduced.

Women who may have difficulty with breastfeeding include younger moms (<18), those with poor nutrition status, women with flat nipples, those with hypoplastic or tubular breasts, and women

who have had breast surgery in which complete severing of the lactiferous ducts has occurred. Women who should not breastfeed are those who take street drugs or are alcohol abusers, have infant with galactosemia, have HIV (in developed countries), have active/untreated TB, take certain medications (bromocriptine, cocaine, cyclosporin, doxorubicin, ergotamine, lithium, methotrexate, radioactive iodine or other radio-labeled elements), are being treated for breast or certain other cancers, and have certain infections (e.g., varicella). Hepatitis B , hepatitis C, and chronic CMV (in an immunocompetent mother) do not preclude breastfeeding.
Colostrum is the fluid secreted immediately following delivery. It usually comes in within the first 24 hours. It has a high level of IgA and other proteins. During the 4-7 days following delivery, protein and mineral concentration decrease and water, fat and lactose increase. Women need an additional 500kcal per day while breastfeeding and should maintain a calcium intake of 1000mg per day.

Feeding problems are common in preterm infants and in babies born with anomalies.

TRIAGE

Triage is essentially an ER for pregnant women. Pregnant women with any issue may be seen in triage. Any acutely life-threatening issue or clearly non-pregnancy related issue that requires immediate attention (e.g. shortness of breath, chest pain, trauma, broken bones, etc.) will be evaluated first in the ED, then sent to triage for evaluation of any pregnancy-related issues.

Certified Nurse Midwives staff triage 24 hours a day, 7 days a week. The midwife will notify the chief-resident of any UMOG patients. The midwife may ask the residents to evaluate a patient for any number of reasons. Typically, the midwife will call the chief resident; however, the chief may ask the junior to see a patient if and when it is appropriate and especially when it poses a valuable learning opportunity. Students may be assigned to triage for two-week blocks. They should plan to work closely with the midwives.

Conditions frequently seen in triage include rupture of membranes, labor, vaginal bleeding, decreased fetal movement, premature labor, pyelonephritis, gastroenteritis, preeclampsia, first trimester bleeding and hyperemesis gravidarum.

SELECTED TOPICS:

CHORIOAMNIONITIS

Criteria: Temperature of ≥ 38 degrees Celsius, no other obvious source of fever, AND one or more of the following signs or symptoms:
-maternal baseline heart rate > 110 beats per minute (lasting at least 10 minutes)
-uterine tenderness
-foul smelling amniotic fluid
-fetal baseline heart rate of > 160 beats per minute (lasting at least 10 minutes)
-fever of > 38.4 degrees Celsius

If the patient has an isolated elevated temperature of ≥ 38.0 but ≤ 38.4 degrees Celsius, without any of the above listed signs or symptoms, then the diagnostic criteria are not met and antibiotics do not need to be initiated. In this scenario, a 36-hour postpartum neonatal observation period is not indicated.

When diagnostic criteria for chorioamnionitis are met, the attending should be notified and antibiotic treatment initiated. First-line treatment is with Ampicillin and Gentamicin. Treat with Ampicillin 2gm IV q 6 hours (NOTE: this means increasing the dose for patients previously receiving amp for GBS prophylaxis) and Gentamicin 5mg/kg IV q24 hours. If the patient is allergic to penicillins, you may treat with Clindamicin 900mg IV q 8 hours with Gentamicin at the above dose.

If the patient delivers vaginally, discontinue antibiotics after delivery. If the patient delivers by cesarean section, treat with prophylactic endometritis antibiotics (Gentamicin/Clindamycin as dosed above) for 24 hours after surgery. If a patient has a fever after delivery (NSVD or C/S), you should treat for endometritis (see below).

ENDOMETRITIS

Defined as a post-partum temperature greater then 38.0, persistently elevated temperature, uterine tenderness, or an elevated white count. Treat with Clindamycin 900 mg IV q 8 hours and Gentamicin 5mg/kg IV q 24hrs until 24 hours afebrile if the patient had a vaginal delivery, and 48 hours afebrile if the patient had a Cesarean delivery. If a patient continues to be febrile after receiving 24-48 hours of antibiotics, consider adding Ampicillin (2g IV q6h) to cover enterococcus and clinda-resistant

GBS (not covered by Clindamycin/Gentamicin) and switching to metronidazole (500mg IV q8h) from clinda for better anaerobic coverage. Penicillin allergic patients may be treated with Cephalosporins or Vancomycin if needed. Other causes of postpartum fever include wound infection, mastitis, septic pelvic thrombophlebitis, and non-obstetrical causes (e.g. URI, UTI, pyelonephritis, etc).

PPROM PROTOCOL

Erythromycin 250 mg IV q6 hr x 2 days, then 250 mg PO TID x 5 days
Ampicillin 2g IV q6 hr x 2 days, then Amoxicillin 250 mg PO TID x 5 days
Total treatment time is seven days to increase the latency from PPROM to labor

POSTPARTUM HEMORRHAGE

If you get called regarding a patient with postpartum bleeding, this is a potential obstetrical emergency – the patient must be assessed immediately. Consider: uterine atony (assess for uterine tone, check for and evacuate any clots in the lower uterine segment which may prevent the uterus from clamping down), undiagnosed or unrepaired lacerations (especially cervical lacerations which may be very difficult to visualize in an uncomfortable postpartum patient); retained products of conception; a full bladder preventing the uterus from clamping down.

Risk factors for uterine atony include: multiple gestation, rapid delivery, very prolonged labor, polyhydramnios, prolonged use of pitocin, chorioamnionitis, and general anesthesia.

Treatments for postpartum hemorrhage include:
Draining the bladder (this can really help)
Uterine massage/evacuating uterus of clots
Pitocin 20-30U in 1L NS or LR
Cytotec 800 mcg rectally
Methergine 0.2mg IM. Contraindications: hypertension, preeclampsia, eclampsia.
Hemabate 0.25mg IM. Contraindications: asthma.
D&C
Bakri Balloon
O'Leary uterine artery ligation
B-Lynch suture
Uterine artery embolization
Hysterectomy

Basic Prenatal Care

Initial Visit:
Labs: T&S, CBCP, RPR, HepBsAg, Rubella
Offer mv testing
Pap, if no pap in the last 2 years, see ACOG pap guidelines
GC and Chlamydia if age < 26 yr, or history of STD's
Urine culture
Off genetics screening (CF, Hgb electroph, Tay-Sachs, Canavans, AFD)
Depression Screen

11-14 weeks:
Offer First Trimester screening or
Offer CVS testing

15-20 weeks:
Offer second trimester screening if first trimester screening was not done, or
Offer amniocentesis

18-20 weeks:
Fetal Survey

24-28 weeks:
CBCP
1 hour Glucola
Antibody screen ifRH negative
RhoGAM ifRh neg and ABS is negative @28 weeks

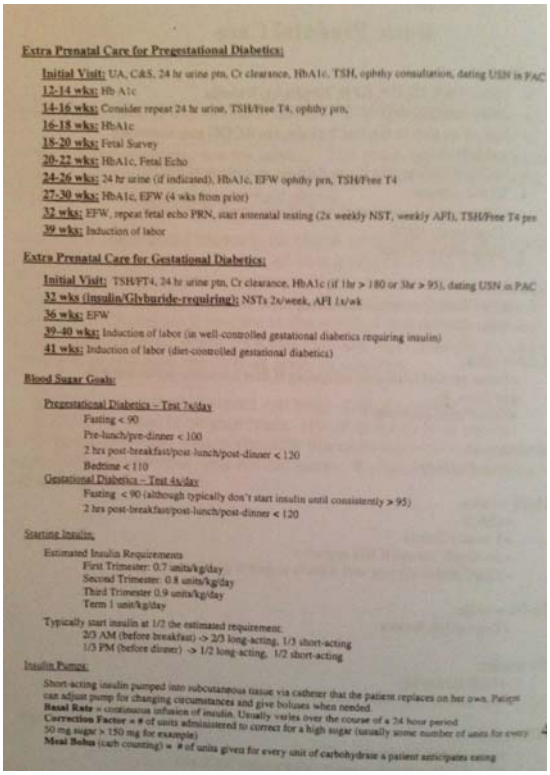
26-30 weeks:
Depression Screen

36 weeks:
GBS screening
(Not needed if patient has GBS-bacteriuria)

41 weeks:
Recommend induction of labor
If expectant management; twice weekly NST/AFI

Prenatal Care for Patients with BMI>40

Add to routine prenatal labs:
Liver panel
Renal panel
PR/Cr ration
TSH
HgbA1C
25□Hydro Vitamin D
B12, for patients who had bariatric surgery
Nutrition counseling, please check whether insurance will cover
EKG and maternal cardiac ECHO
First trimester ultrasound to assess gestational age
Glucola at 12 weeks, repeat at 24 weeks
Transvaginal survey at 14□15 weeks
Fetal survey at 20 weeks
Ultrasound for fetal growth at 26 and 32 weeks
Anesthesia consult Weekly NST/AFI starting at 36 weeks
Delivery recommendations:
If no co□morbidities present, await spontaneous labor
If co□morbidities present, consider induction at 39 weeks



Extra Prenatal Care for Pregestational Diabetics:

Initial Visit: UA, C&S, 24 hr urine ptn, Cr clearance, HbA1c, TSH, ophthy consultation, dating USN in PAC
12-14 wks: Hb A1c
14-16 wks: Consider repeat 24 hr urine, TSH/Free T4, ophthy prn,
16-18 wks: HbA1c
18-20 wks: Fetal Survey
20-22 wks: HbA1c, Fetal Echo
24-26 wks: 24 hr urine (if indicated), HbA1c, EFW ophthy prn, TSH/Free T4
27-30 wks: HbA1c, EFW (4 wks from prior)
32 wks: EFW, repeat fetal echo PRN, start antenatal testing (2x weekly NST, weekly AFI), TSH/Free T4 prn
39 wks: Induction of labor

Extra Prenatal Care for Gestational Diabetics:

Initial Visit: TSH/FT4, 24 hr urine ptn, Cr clearance, HbA1c (if 1hr > 180 or 3hr > 95), dating USN in PAC
32 wks (insulin/Glyburide-requiring): NSTs 2x/week, AFI 1x/wk
36 wks: EFW
39-40 wks: Induction of labor (in well-controlled gestational diabetics requiring insulin)
41 wks: Induction of labor (diet-controlled gestational diabetics)

Blood Sugar Goals:

Pregestational Diabetics – Test 7x/day
- Fasting < 90
- Pre-lunch/pre-dinner < 100
- 2 hrs post-breakfast/post-lunch/post-dinner < 120
- Bedtime < 110

Gestational Diabetics – Test 4x/day
- Fasting < 90 (although typically don't start insulin until consistently > 95)
- 2 hrs post-breakfast/post-lunch/post-dinner < 120

Starting Insulin:

Estimated Insulin Requirements
- First Trimester: 0.7 units/kg/day
- Second Trimester: 0.8 units/kg/day
- Third Trimester 0.9 units/kg/day
- Term 1 unit/kg/day

Typically start insulin at 1/2 the estimated requirement:
- 2/3 AM (before breakfast) -> 2/3 long-acting, 1/3 short-acting
- 1/3 PM (before dinner) -> 1/2 long-acting, 1/2 short-acting

Insulin Pumps:

Short-acting insulin pumped into subcutaneous tissue via catheter that the patient replaces on her own. Patient can adjust pump for changing circumstances and give boluses when needed.
Basal Rate = continuous infusion of insulin. Usually varies over the course of a 24 hour period
Correction Factor = # of units administered to correct for a high sugar (usually some number of units for every 50 mg sugar > 150 mg for example)
Meal Bolus (carb counting) = # of units given for every unit of carbohydrate a patient anticipates eating

DIABETICS IN LABOR

Insulin-requiring diabetics (IR-GDM, type I or Type 2) will need both insulin and D5LR in labor to prevent hyperglycemia in mom and hypoglycemia in the newborn. (see Appendix 5 for insulin drip protocol in labor). A recent EFW should be available in a term pregnancy to assess for macrosomia. If a patient has diabetes in pregnancy and an EFW > 4500 g, a primary elective cesarean section may be considered.

INSULIN DRIP (GTT) PROTOCOL

Run D5LR at 125cc/hr
Place 50 units of regular insulin in a glass bottle containing 500cc of normal saline
Check the blood sugar every 2 hours in early labor and every hour once in active labor.

You should run the insulin drip as follows if a Pregestational Type I Diabetic (insulin DEPENDENT):

Blood Sugar	GTT
<100	0.5 U/hr
101 – 140	1.0 U/hr
141 – 180	1.5 U/hr
181 – 220	2.0 u/hr
>221	2.5U/hr

You should run the insulin drip as follows is a Pregestational Type II, or Insulin-Requiring Gestational Diabetic (IRGDM):

Blood Sugar	GTT

<110	0.0 U/hr
110 – 140	1.0 U/hr
141 – 180	1.5 U/hr
181 – 220	2.0 u/hr
>221	2.5U/hr

GROUP B STREPTOCOCCUS PROTOCOL

Indications for GBS prophylaxis:
A patient with a positive GBS vaginal/perianal culture at 35-37 weeks in this pregnancy.
A patient with a GBS positive urine culture this pregnancy (anytime during the pregnancy)
A patient with a history of a GBS-affected infant in a previous pregnancy
GBS status unknown within 5 weeks of delivery, and: <37 wks GA (unless delivered by cesarean section with intact membranes and no labor) or prolonged ROM (>18 hours), or Maternal temperature ≥100.4 F (38.0° C) – use ampicillin **and** gentamicin if chorioamnionitis suspected as cause of fever

Antibiotic choices:
First line: Ampicillin 2 grams IV load then 1 gram IV q 4 hours until delivery.
If PCN allergic with low-risk for anaphylaxis allergy: cefazolin 2 grams IV x 1, then 1 gram IV q 8 hrs until delivery.
If PCN allergic and high-risk for anaphlaxis (previous anaphylaxis, urticaria, PCN allergy + h/o asthma): Clindamycin–sensitive GBS: Clindamycin 900mg IV q 8 hours until delivery Clindamycin–resistant GBS: Vancomycin 1 g IV q. 12 hours until delivery.

Antenatal Testing Guidelines

Diagnosis	Start at ... weeks	Frequency ... week
Advanced maternal age (age 36 at EDD)	36 weeks	1 x week
Amniotic Fluid Volume		
• Decreased amniotic fluid volume AFI < 8	Time of Diagnosis	2 x week
• Oligohydramnios (AFI ≤ 5)	Time of Diagnosis	Per consultation in PAC
Cholestasis	32 weeks	2 x week (AFI 1 x week)
Coagulopathies		
• Thrombophilia on Lovenox/heparin	32 weeks	1 x week
• Antiphospholipid Antibody Syndrome	32 weeks	1 x week
• Active SLE (patient on meds)	32 weeks	2 x week (AFI 1 x week)
Diabetes		
• Pregestational Diabetes	28 - 32 weeks	2 x week (AFI 1 x week)
• Gestational Diabetes		
o diet controlled	40 weeks	1 x week
o oral meds	32 weeks	2 x week (AFI 1 x week)
o insulin	32 weeks	2 x week (AFI 1 x week)
Gastroschisis	32 weeks	2 x week (AFI 1 x week)
Hypertension		
• Chronic Hypertension		
o not on meds	32 weeks	1 x week
o on medication	32 weeks	2 x week (AFI 1 x week)
• Gestational Hypertension	Time of Dx	2 x week (AFI 1 x week)
• Pre-eclampsia (mild), nl AFV	Time of Dx	2 x week (AFI 1 x week)
IUGR > 5th but < 10th percentile, nl dopplers	Time of Dx	1 x week
IUGR with abnormal dopplers or ≤ 5%	Time of Dx	2 x week
Maternal medical conditions requiring meds; or flare of conditions such as Grave's or Crohn's	Dependent on condition	1 x week
Obesity, BMI > 40	36 weeks	1 x week
Post dates	41 weeks	2 x week
	42 weeks	QOD
Previous IUFD	Begin testing 2 weeks prior to earliest IUFD	2 x week (AFI 1 x week)
PPROM, AFI < 8	Time of Diagnosis	Daily NST(AFI 2 x week)
Substance Abuse		
• Active substance use well controlled	32 weeks	1 x week
• Active substance use poor control	32 weeks	2 x week
Twins		
• Di – Di, concordant growth	36 weeks	1 x week
• Di – Di, discordant growth	32 weeks	2 x week
• Di - Mo, concordant growth	32 weeks	2 x week
• Di - Mo, discordant growth	30 weeks	Per consultation in PAC
• Mo – Mo	Viability if going to act on testing	3 x day

OB ACRONYMS

AFI:	Amniotic fluid index
BPP:	Biophysical Profile
BTL*:	Bilateral tubal ligation
BV:	Bacterial vaginosis
DCGDM*:	Diet Controlled Gestational Diabetes Mellitus
EDC*:	Estimated date of confinement (i.e. due date)
EFM*:	Electronic fetal monitoring
FAVD*:	Forceps assisted vaginal delivery
FHT(s)*:	Fetal heart tones or fetal heart tracing
FSE:	Fetal scalp electrode
GBS:	Group B Streptococcus
GTT:	Glucose tolerance test
IUPC:	Intrauterine Pressure catheter
IRGDM:	Insulin Requiring Gestational Diabetes Mellitus
LOF*:	Leakage of fluid
LTCS*:	Low transverse cesarean section
MFM:	Maternal Fetal Medicine
MVA:	Motor Vehicle Accident OR Manual vacuum aspiration
OCPs:	Oral contraceptive pills
NSVD:	Normal spontaneous vaginal delivery
NST:	Non-stress test
PLTCS*:	Primary low transverse cesarean section
POL*:	Premature Onset of Labor
PPD*:	Postpartum day
PPROM:	Preterm, premature rupture of membranes *(pronounced P-PROM)*
PPTL*:	Postpartum tubal ligation

Pre-E*:	Preeclampsia
PTL*:	Preterm labor
RLTCS*	Repeat low transverse cesarean section
SOL*:	Spontaneous onset of labor
SROM:	Spontaneous rupture of membranes
SVE:	Sterile vaginal exam
TOL*:	Trial Of Labor (After Cesarean Section)
TVCL:	Trans-vaginal Cervical Length
VAVD*:	Vacuum assisted vaginal delivery
VBAC:	Vaginal Birth After Cesarean section

RADIATION EXPOSURE IN PREGNANCY

According to ACOG guidelines, radiation exposure up to 5 rads has NOT been associated with increases in fetal anomalies or pregnancy loss.

Study	Radiation exposure
CXR (2views)	0.02-0.07 mrad
Abd XR (1 view)	100 mrad
IVP	<1 rad
Hip film (1view)	200 mrad
Mammogram	7-20 mrad
Barium enema/SBseries	2-4 rads
CT Head/Chest	<1 rad
CT Abd/Spine	3.5 rad
CT pelvimetry	250 mrad
USN/MRI	NONE

* 2005 ACOG Compendium of Selected Publications

SUMMARY/WAYS TO HAVE A GREAT EXPERIENCE

If you have a question, ask for advice. The chief, attendings, residents and nurses are all available and very happy to help. We work as a team, and no one should ever feel alone.

Any call or page about bleeding (in triage, post-partum or antepartum patients) takes precedence over all else going on at the moment. Other potential emergent situations include pages for bradycardia, and if you get any page for help for a potential shoulder dystocia, run to that room. Of course, if you are in the midst of something else that is critical, call for help. Make sure you mobilize help (attendings, chief resident, anesthesia, the OR) as soon as possible.

If you are feeling overwhelmed, get help. Call your chief and let her/him know what is on your plate. Her or she can help you to prioritize and should help to shoulder the work-load when things get very busy. Remember, you are not alone. If your chief is busy, call the attending.

GYNECOLOGY

The goals of the gynecology portion of your rotation are for you to become familiar with common (and sometimes some uncommon) gynecologic complaints, understand the pathology associated with those complaints, be exposed to common gynecologic procedures, and learn about the management of gynecologic problems.

To accomplish the goals of your rotation, you will be assigned by the Clerkship Director to various clinics, including specialist and generalist clinics (both attending clinics and resident clinics), and spend time on one or more of the inpatient teams described below.

GENERAL INFORMATION

Logistics
There are five inpatient gynecology services, each covered by different residents. These services are briefly described below.

Benign Gynecology Team
The benign gynecology team is typically covered by one fourth-year, one third-year, one second-year, and one first-year resident. The benign team takes care of the inpatient benign gynecology patients (both surgical and nonsurgical admits), covers OR cases, and sees inpatient and ER consults. Residents are also responsible for attending a number of clinics. Each day is a little different depending on the OR schedule, clinic schedules, and the number of consults requested. Students should prioritize OR cases first, then clinics, then seeing ER or inpatient consults,

unless something particularly unique or interesting is occurring in the ER or elsewhere.

Urogynecology Team

The urogynecology service is always covered by one fellow and is often, but not always covered by a separate third or fourth year resident. There may also be an intern on the team. These patients are cared for by Drs. Mitch Berger, John DeLancey, Dee Fenner, Megan Shimpf and Dan Morgan. You may be assigned to the urogynecology service, or you may simply cover some urogynecology cases while on the benign gynecology service. Your roles while on urogynecology are the same as your roles on the benign gynecology service. You can ask any member of the benign service for help if you are uncertain about what to do. There is also always a fellow covering the urogynecology service who you can ask for direction. Each week there is an Educational Conference from 1-3 pm in room L4053. One hour is dedicated to the next week's pre-operative review. You will be expected to present a patient each week using the UROGYN-TEMPLATE. The fellow will assign the case the week before you present. In addition, you will be given a schedule for the following week that will inform you of your clinic and OR responsibilities. You are expected to read about the patients before coming to the OR or clinic. You should select three clinic patients per half day session and read about them before coming to clinic. You are expected to work with attending in developing a treatment plan for those patients. The students will meet with an attending every Wednesday from 3:00-3:30 for a Urogyn Review.

MIS (Minimally Invasive Surgery) Team

The MIS service is always covered by one fellow and is often, but not always covered by a separate third or fourth year resident.

These patients are cared for by Drs. Suzie As-Sani and Bethany Skinner. You may be assigned to the MIS service, or you may simply cover some MIS cases while on the benign gynecology service. Your roles while on MIS are the same as your roles on the benign gynecology service. You can ask any member of the benign service for help if you are uncertain about what to do. There is also always a fellow covering the MIS service who you can ask for direction.

Reproductive Endocrinology and Infertility Team

The REI service is always covered by one fellow and often by one resident (of various levels). There is not always a resident on REI. REI attendings are Drs. John Randolph, Yolanda Smith, Gregory Chrisman, and Senait Fisseha. Much of the REI service is based in outpatient clinics; however, you may cover REI cases while on the benign gynecology service. Otherwise, you may be assigned to clinics. You can ask any member of the benign gynecology service for help with REI patients. There is also always a fellow covering the REI service who you can ask for direction.

Gynecological Oncology Team

The oncology service is labeled as GYO in CareWeb. This service is always covered by one fellow, one third-year resident (the chief), one second-year resident, and one first-year resident. There is a rotating pager which will help you get in touch with the GYN-onc team: # 33189. Our gynecologic oncology attendings are Drs. R. Kevin Reynolds, J. Rebecca Liu, Carolyn Johnston, and Karen Mclean. The Onc team is entirely separate from the benign services. You will cover gynecologic oncology clinics and OR cases depending on the day. The gynecologic oncology senior resident will give you more information about what to do and where to go; however, briefly, Mondays are typically spent in

Dr. Johnston's clinic, Tuesdays and Wednesdays are in the OR, and Dr. Mclean has clinic on Tuesday afternoon. Thursdays are either in Dr. Liu's clinic or in the OR, and Fridays are in Dr. Reynolds' clinic. Remember, you can page # 33189 with questions or to identify the onc team at any given time.

STUDENT EXPECTATIONS

When you are assigned to your continuity clinic, being in clinic is your priority. If you have an off-site clinic in the AM, you may or may not come in to round before clinic, but discuss this with your chief.

In general, the team will tell you where to go and what to do. Although most days you will wear scrubs, if you are uncertain, it is always best to err on the side of wearing "professional" attire and changing into scrubs if you will be in the OR.

You can get in touch with a member of the gynecology team 24/7 by paging 0005. This pager is rotated amongst the residents and will always be held by an in-house gynecology resident.

For students, ***lectures and assigned continuity clinics take priority over the OR***. You should then try to cover all OR cases, with extra students attending general or specialty clinics, seeing patients in the ER, reading, or taking part in small-group teaching organized by the residents. Check with your team to determine what to do each day.

Rounds

After the residents get sign-out from the night team, every day starts with rounds. Morning rounds for each of the gynecology

services are teaching and working rounds every day**.** In order to give you the opportunity to be more involved in caring for your patients, you will be asked to pre-round on certain patients. The team will then round together and see each patient. There is sometimes an attending who rounds with the teams and sometimes it is just residents. It is a bit unpredictable when to expect an attending and your team will be able to tell you what to expect.

The timing of morning rounds varies each day according to the number of patients and when the day starts. The senior resident or fellow will decide the prior afternoon what time the team will round. You should try to find out what time rounds will occur before going home for the day, but if it's a weekend or holiday or you just didn't hear, you can page 0005 (with a call back number) and they can either point you in the right direction or tell you what time rounds will occur. You should always know what time rounds will occur before 8:00 pm (i.e. don't page the chief at 10:00 pm to find out what time rounds will be in the morning – he or she will probably be asleep.).

Each team also rounds sometime in the afternoon, but this is much less formal and often includes only certain members of the team (i.e. those not in the OR or clinic). You will not be expected to pre-round for afternoon rounds and we do not typically write notes in the afternoon.

ORs

The OR schedule can be found by going to the clinical home page, "connect to other systems," "OR schedule." You may contact the administrator at: CAS-Help@med.umich.edu to request a login. This can be very helpful to do in advance. You

can also look in CareWeb under the attendings for your service to determine the OR schedule for the day. Your residents will help you, however, the students on a team should divide the OR cases evenly to optimize exposure to various cases. It is very difficult for the residents to keep track of what cases each medical student has seen, and they may ask you to divide yourselves fairly.

Prior to a case, students should look up the patient on CareWeb. The more you know about the patient and the case, the more you will get out of being in the OR and the more opportunities you will have to participate. Reading a little about the clinical scenario, the procedure, and especially the anatomy is highly recommended. We meet patients in the pre-op holding area. You should introduce yourself to any patient whose procedure you will observe. Patients who are being admitted postop need an op note and postop orders (described below). Outpatient surgery has more associated paperwork, including an op note, postop orders, prescriptions, and postop instructions. You should help with as much of this as you feel comfortable.

Students are encouraged to scrub in on as many cases as possible. Exceptions include some minor cases and cases where there may be three surgeons and a scrub nurse involved. For many operative laparoscopic procedures, limited room around the table means that students can see better unscrubbed. Check with the attending and/or resident if in doubt. Where time allows, students may help to close rectus fascia and subcuticular skin closures at the discretion of the surgical team.

Before entering the OR, be sure you have the following:
☐ Scrubs

- ☐ Hair-cover
- ☐ Mask
- ☐ Shoe Covers

Before Scrubbing-In, be sure you have done the following:

- ☐ Checked with the attendings/residents that it's time to scrub
- ☐ Pulled your gloves for the scrub nurse
- ☐ Removed any watches/rings/bracelets, etc from your hands and wrists
- ☐ Covered your eyes with goggles or a mask with built-in face shield

Consults

Members of the benign gynecology team respond to inpatient or ED consults that come in during the day. The consulting resident obtains an H&P and students can participate by doing an H&P in advance and presenting the patient to the residents. Consults give you a great opportunity to perform H&Ps, physical exams, and to review imaging studies with the residents and occasionally, a radiologist.

PAPERWORK

The GYN side is essentially paperless; however, there are a number of administrative type tasks described below.

PRE-OP RESIDENT AND STUDENT FORM

NAME
REG NUMBER
DAGE OF SURGERY
ROOM
ATTENDING

PROCEDURE
HPI:
SA: SUI: DD: BB: N
Height: Weight: 142 BMI: BP:
POP-Q:
Aa | Ba | C
GH | PB | TVL
Ap | Bp | D
Demonstrable SUI: (Method)
PVR: UA: neg
OTHER TESTS:
PMH:
PSH:
Meds:
Allergies:
PREOP ISSUES:
( ) H&P ( ) Consent
( ) Labs:
PREOP ORDERS:
(x) EKG:
(x) CXR
(x) DVT
(x) Abx:
(x) Bowel prep:
() Clearance: anesthesia cleared
ISSUES:
INDICATION FOR SURGERY:
WHY PARTICULAR PROCEDURE CHOSEN:
SUCCESS/RISKS OF PROCEDURE:
REFERENCES:

Admit H&P's

Patients having scheduled OR cases have the H&P done at their pre-op visit, which is usually dictated on CareWeb.

For ER and clinic admits, the resident will complete the H&P, but if it will be a learning opportunity, the student may be asked to start it.

Even as we move toward fully electronic medical records, students should take every opportunity to hone their history-taking skills in clinic and in the ER. The residents may ask you to type an H&P and email it to them. When you write these, do your best to commit yourself to a plan.

GYN History and Physical:

Chief Complaint: A one-line summary of the patient's problem. (e.g. 32 year old g3p3 with menorrhagia and symptomatic anemia)

HPI: Gyn patients usually have symptoms such as heavy or irregular menses, pelvic pain, infertility, discharge, dyspareunia, postmenopausal bleeding, etc. The HPI follows the conventional format of onset, nature, duration, location of symptoms, exacerbating and relieving factors, associated symptoms, treatments and their effectiveness, etc. In chronic disease, such as chronic pelvic pain, try to assess the impact on the patient's life, including work, emotions and relationships.

Review of systems: As a minimum, ask relevant direct questions such as urinary or bowel symptoms.

Past Gyn History: Ask about menses – menarche, cycle duration, length, heaviness, intermenstrual bleeding, dysmenorrhea, and menopause (if relevant). If heavy menses, ask about passage of clots, and attempt to quantify pad or tampon use. Enquire about abnormal Pap tests including date of last Pap, other sexually transmitted infections such as chlamydia/gonorrhea, PID, herpes, genital warts, and other Gyn problems such as fibroids. The extent of the sexual history needed varies depending on the presenting problem, but as a *minimum* should include whether the patient is currently sexually active, and for women of reproductive age what kind of birth control method they are using, if any, and how reliably they are using it. For postmenopausal women, ask about hypoestrogenic symptoms such as hot flashes or night sweats, vaginal dryness, and about current and past use of hormone/estrogen replacement therapy.

Past OB History: For each pregnancy beyond the first trimester, ask about the date of delivery, gestational age, type of delivery, sex, birthweight, and any complications. Ask specifically about other pregnancies, including spontaneous abortions, elective interruptions of pregnancy, ectopics, etc. For ectopic pregnancies, try to determine whether they were ruptured or unruptured, medically or surgically treated, and whether the tube was conserved or removed if laparoscopy or laparotomy was performed.

Past Medical History / Past Surgical History: Ask about any chronic/ongoing medical problems including, diabetes, cardiovascular disease, pulmonary disease, neurologic problems, GI issues, etc.

Health Maintenance: Ask about mammograms, colonoscopies, bone scans, etc.

Drugs / Allergies

Family History: Especially cervical, endometrial, ovarian, breast and colon cancers.

Social History: Relationship status, work, tobacco / alcohol / drug use.

Physical Exam: Start with vitals (BP, pulse, temp, respiratory rate, O2 sat). Look for other general signs, eg hirsuitism, acne, or virilization as directed by the history. Examine thyroid, lymph nodes, heart, lungs, breasts, abdomen, extremities. Look for surgical scars on the abdomen, evidence of distension or ascites, and palpate for masses, organomegaly, or herniation. Inspect the vulva, urethra, and perineum. Speculum exam as needed. Vaginal exam and bimanual palpation of the cervix, uterus, and adnexa. Rectovaginal examination is performed for most patients with known or suspected Gyn malignancies, as well as for endometriosis, pelvic pain, or adnexal masses. Stool hemoccult for Oncology patients.

Assessment: A one or two sentence summary of the patient, eg "65-year-old G4 P4 with a one-year history of postmenopausal bleeding, and a past medical history significant for Stage 1 breast carcinoma. She has been taking tamoxifen for the last 3 years".

Plan: Commit to your best plan. This is the area of your H&P that truly shows your knowledge. Think in systems (neuro, cardiovascular, respiratory, GU, GI, musculoskeletal, ID,

hematologic, etc.). When able, try to include some literature to back up your plan.

Progress Notes

These are written before morning rounds, and later on in the day only if significant events occur. We utilize the CareWeb "signout" function to generate notes each AM. Your team can show you how to do this if it's new to you. In general, your note should follow a SOAP format and include the following:

S: Does the patient have good pain control? Any nausea or vomiting? Is she tolerating clears or regular diet as appropriate; does the patient feel thirsty/hungry? Any flatus? Any difficulty voiding? Any other problems?

O: Vitals – include T current and T max with time. For postop patients, write I/O over last 8 hr shift as well as over the previous 24 hrs. Physical exam – general, cardiovascular, respiratory, abdomen including tenderness, distension, bowel sounds and state of incision (?erythema, serous or purulent discharge). Extremities, including calf tenderness & presence of SCDs.

A: eg. 44 yo P3 POD #1 s/p VH for complex endometrial hyperplasia, doing well

P: Number if you like – 1. D/C Foley and ambulate. 2. clear liquids as tolerated. 3. check CBCp, basic. For complex patients with significant comorbidity, and all ICU patients, divide your plan into systems such as FEN, Heme, CVS, RS, Renal, Endo, Pain, Dispo.

Short OR Note Template:
Pre-op Dx: e.g. symptomatic uterine fibroids/abnormal uterine bleeding/adnexal mass, etc.
Postop Dx:
Procedure:
Surgeon: Attending
Residents:
Students:
Anesthesia: GET/LMA/spinal/sedation/local, etc
Complications: none
EBL:
UO:
Fluids:
Findings: EUA and operative - generally, leave more than one line for this section
Specimens: all specimens sent to pathology (don't forget things like pelvic washings)
Drains: e.g JP (location of JP drain), Foley
Dispo: PACU, extubated, in stable condition

Post-Op Check: Basically a SOAP note as above, paying extra attention to pain control, nausea, vitals (hypotension, tachycardia, and/or low urine output are red flags), and physical exam. Include a calculation of total ins and outs.

Admit Orders:
Orders vary a little from case to case, but the following are fairly general. A mnemonic to remember the orders is "ADC VAN DISMAL."
Admit: To 8B
Service: GY2 (GY1 for REI or GYO for Gyn Onc)

Diagnosis: either s/p (name of operation) or reason for surgery such as symptomatic fibroids
Condition: fair (guarded for ICU admits)
Vitals: q. 1' x 1, q 2' x 2, q 4' x 4, q shift
Activity: dangle legs tonight, OOB on day #1
Nursing: Foley to DD (dependent drainage), strict I/O's q 4'

DVT Prophy: SCDs at all times when not ambulating OR Heparin 5000U SQ BID-TID
Incentive Spirometer: to bedside, use 10/hr while awake
Notify MD: T >100.4 (38 C), BP >160/90 < 90/50 P > 110 < 60, U.O. < 120 cc/4 hrs
Diet: sips and chips for abdominal surgery, clear liquids as tolerated for vaginal surgery and laparoscopy
IV: typically D5 1/2 NS + 20 mEq KCl at 125 cc/hr, calculate maintenance fluids by weight for patients with major comorbidity eg. CHF
Special: eg. strip J-P drain q shift
Meds: Pain meds, typically PCA per Anesthesiology, APS to follow. Unless contraindicated, add toradol 30 mg IVPB q 6' ATC x 4 doses (15 mg for older patients, eg. over 65).
Prophylactic orders – anzemet 12.5-25 mg IV q 6 hrs PRN, benadryl 25-50 mg iv/po q 6' PRN
Home Meds: Continue patient's typical home-meds, although typically hold ACE-inhibitors, NSAIDs, some BP meds in the immediate post-operative period
Labs: Typically a CBCP next am, add basic if on diuretics/excessive EBL/chronic disease, etc.

Calculating Total OR "Ins and Outs" (I/O)
To determine total "outs" intraoperatively, add:
EBL x 3 (because of increased oncotic pressure of blood) + UOP + hrs open x 1000 (e.g. total insensible losses are 1000cc/hr open) + ascites

To determine total "ins" intraoperatively, add:
IVF + blood transfusions (# units x 350 cc/unit x 3)
Hespan, albumin and other colloid fluids do not use a multiplier

Some like the following table:

	OR	PACU	Floor
EBL	EBL x 3 =	--	--
UOP			
Open Time	# of hrs (1L/hr)	--	--
IVF			
Other Ins	e.g. PRBCs # units x 350 x 3	--	--

Discharge summaries and prescriptions: You can help the team quite a bit by working on the Discharge Navigator. This will ultimately be the DC Summary for this patient. You may add information about the patient's history, medical course and anything else you feel comfortable with.

Discharge Prescriptions
Varies greatly depending on the reason for admission, surgery etc.
Most surgical patients get discharged with:
Norco 5/325, 1 - 2 tabs po q 4-6' PRN #60 with 0 refills
Ibuprofen 600 mg po q 6' PRN #60 with 1-2 refills
Colace 100 mg po bid #60 with 1-2 refills

INPATIENT PRESENTATIONS

Individual presentation styles vary. This is a guideline for an initial full presentation on the first postop day.

"Ms ___ is a 41-year-old, gravida 3 para 2, who is postop day #1 status post total abdominal hysterectomy/bilateral salpingo-oophorectomy for chronic pelvic pain. Her past medical history is non-significant. Her past surgical history is significant for three laparoscopies for pelvic pain with lysis of adhesions and ablation of endometriosis. Intraoperatively she was found to have stage IV endometriosis and extensive adhesions. EBL was 300 cc. Subjectively, she is doing well with her morphine PCA for pain control, had mild nausea last night, but feels thirsty this morning. Objectively, her vitals are ___, she is alert and oriented. Heart and lungs are clear. Her abdomen is soft, appropriately tender, and non-distended, with normoactive bowel sounds. Her incision is clean, dry, and intact with steristrips in place. Her calves are non-tender and she is wearing SCDs. In summary she is doing well. The plan is to D/C her Foley, start clear liquids as tolerated, and check a CBC today".

On subsequent days assume we already know the patient, so you can skip the past history and intraoperative findings. You can also present only pertinent positives and negatives in the physical exam for speed.

SELECTED GYN TEACHING OUTLINES:

These are intended as frameworks for discussing some common Gyn topics when the opportunity presents itself.

Ectopic pregnancy

Epidemiology (rates)
Risk factors
Anatomy, i.e. common locations
Diagnostic tests – beta-HCG, ultrasound
Differential diagnosis
    Presentation / exam findings
    Fluids / resuscitation
Medical treatment – indications and contraindications
Surgical options – laparoscopy, laparotomy, D&C
    Recurrence rate and implications for future fertility
Spontaneous abortion
    Incidence
    Types – threatened, inevitable, incomplete, complete, missed
    Diagnostic tests – ultrasound, beta-HCG
    Differential diagnosis
    Presentation / exam findings
    Use of anti-D immunoglobulin
    Expectant management
    Surgical options – manual vacuum aspiration, D&C
    Complications / septic abortion
    Recurrent pregnancy loss – diagnosis, treatment, prognosis

PID
Epidemiology
Risk factors
Organisms
Diagnostic criteria – how accurate are they?
Differential diagnosis
Presentation / exam findings
Medical treatment - outpatient and inpatient
Reasons for hospitalization
Surgical treatment
Complications and implications for future fertility

Uterine fibroids
Epidemiology
Risk factors
Pathology
Location – submucosal, intramural, subserosal
Diagnostic tests
Differential diagnosis
    Clinical presentation / exam findings
    Medical treatments
    Uterine artery embolization
Surgical options – abdominal myomectomy vs. hysterectomy
    Hysteroscopic and laparoscopic myomectomy
    Implications for fertility

Hysteroscopy/D&C

Diagnostic vs. operative
Office alternatives – endometrial biopsy, H/S, SHG
Dilators
Distension fluids vs. CO2
Perforation / complications
Asherman's syndrome

Tubal ligation
Social considerations
Alternatives – vasectomy, Mirena, copper IUD, Depo-Provera
Anatomy
Methods
Failure rate
Risks / complications
Reversibility, risk factors for requesting reversal

Hysterectomy
Indications
Alternatives, i.e. UA embolization, endometrial ablation
Route – abdominal, vaginal, laparoscopic
Supracervical or total, oophorectomy decision-making
Anatomy – uterus, ovaries, tubes, round ligaments
Supporting ligaments
Blood supply to the uterus / ovaries
Relations of the ureter
Sites of ureteral injury
Risks / complications
Post-op care

Saint Joseph Mercy Ob/Gyn Clerkship Survival Guide

Welcome to Ob/Gyn at St. Joseph Mercy! This student-to-student guide is meant to provide you with some essential information about the Ob-Gyn clerkship so that you can hit the ground running. Have fun!

General Information

Schedule:

Your time will be divided as follows:

Ambulatory: 7-8 days

Gyn: 4-5 days

Onc: 2-3 days

Ob (L&D): 5-6 days

Night float: 3 nights 6p - 8a

Weekend call: 1 day 8a - 8p

NICU: 1 day

MFM: 1 afternoon

There are usually two students per service (can range from zero to four). In addition to the five UM students, there are usually two students from Wayne State, and one student from University of Toledo. It is possible to make small changes to your schedule if necessary (see "Can I change my schedule?").

Contacts:

- Clerkship Directors
    - Anne Frantz, MD (pager 670 3697) -- oversees UM students
    - Joanne Vicari-Block (pager 651 4138) -- oversees Wayne and UT students
- Ob-Gyn Coordinator
    - Emily Lawrence -- (phone 712 5171) -- contact for all administrative questions

Employee Health Response Line: For immediate care of body fluid exposures, notify your resident and dial 23297 or 734 712 3297; listen to instructions; leave your name, what happened, and call back number; a nurse in employee health services will be paged automatically and will call you back.

Parking: Park in the patient lot on the day of orientation. You will receive a parking pass on the first day of orientation that will allow you to park in lot D. The hospital can also be reached in 20-25 minutes by bicycle starting from the University Hospital. Take the B2B path along the river until Dixboro Rd, head south on the path next to Dixboro Rd for ½ mile. A bike rack is conveniently available in front of the family birthing center, downstairs from the medical student call room.

Food: Your St. Joe's ID card comes charged with $100. On the 1st of the month the card will be reset to a balance of $100. In the main hospital: the cafeteria is surprisingly good; Joe's Java also has bagels, coffee, and sandwiches. In Reichert: another Joe's Java has a small selection of pastries, sushi, and coffee. Nick's cafe *does not* accept card swipes. Bring food for night float.

Medical Records System: St. Joe's uses PowerChart for inpatients, paper charts for AOGP clinic patients, and OB TraceVue for obstetric patients. There is a two hour training session on PowerChart during orientation. See "Notes" section for some tips on note writing at SJM. IMPORTANT: medical students DO NOT have off-site access to the record system, so it is important to check patient lists and schedules before leaving the hospital to prepare for the following day.

Paging**:** Bring your UM pager, there is a link to UM paging on the St. Joe's clinical homepage and the residents know how to page your UM pager. From within the hospital use the paging link (WebXchange) on the clinical home page for SJM pagers. Off-site use www.myairmail.com (sign in: obgynres, password: baby).

Lectures & Conferences

Grand Rounds are Thursday 8a-10a in the Education Center Auditorium. The department meeting is held on the fourth Thursday of every month from 8a-9a in the Michigan Heart & Vascular Institute Auditorium. In addition to your UM lectures, you will have lectures given by the St. Joe's attendings and residents every Thursday from 10a-1p following Grand Rounds. If on the Ob service during the 2nd Thursday of the month you will attend the high risk lunch at noon in the Education Center.

Obstetrics

General: Labor and Delivery is located on the third floor of the main hospital. Taking the central elevators to the third floor puts you directly onto the unit. The medical student and resident call rooms are also located here. There are lockers where you may store your belongings (bring your own padlock).

Pre-rounding: Arrive by 6a to pre-round on Mother-Baby (3 North). Pick up a patient list from the clerk on L&D. You should see AOGP patients first (they will be circled on the patient list), and then see cesarean section patients if time permits. Medical students should *not* pre-round on vaginal deliveries unless doing so on an AOGP patient. Write a "medical student progress note" similar to a surgical progress note except add: 1) whether patient is breast or bottle feeding 2) comment on lochia 3) palpate uterus 4) Rh type and 5) rubella status. On cesarean patients, the

bandage should be removed on POD#1 so that you can inspect the incision, and staples should be removed on POD#3. Discuss contraception with AOGP patients, but do *not* discuss contraception with non-AOGP patients. Pre-round and have at least two notes completed by 6:45a so the resident can sign your note before table rounds.

Table Rounds: Attend table rounds in the L&D conference room from 7a-8a. If a medical student has seen one or more AOGP patients during pre-rounds, that student is expected to present those patients to the team. Medical students do *not*, however, present non-AOGP cesarean patients (even if a medical student has pre-rounded on these patients, they will be presented by the resident). Students will be assigned one 5-10 min education talk to be presented during table rounds (you may pick the topic).

During the day: From 8a-5p round on labor patients and scrub cesarean sections, using the boardroom as your home base.

Progress notes must be written on every laboring patient every two hours (see UM section on progress notes). Check the board for patients on magnesium sulfate, these patients will need a "mag check" every two hours. A "mag check" consists of the following:

S: HA, changes to vision, N/V, URQ abd pain, dizziness

O: heart/lungs/abd exams, check extremities for edema, clonus, and reflexes. Note UOP for last 1-2 hrs. (what the nurse has noted plus volume in the bag).

A/P: __yo G_ now P_ s/p ____ for _____ etc.

-continue mag checks q 2 hr.

-continue to monitor blood pressures

It is polite to introduce yourself to the nurse and ask permission to enter a particular patient's room. The nurse's name will be written in that patient's box on the board. Once you have met a patient

you should also write “your name MS” on that patient’s box. Try to coordinate your visits with the nurse whenever possible.

Gynecology

Rounds start at 7:30a in the Physician Zone (contact resident the day before starting). The chief will assign patients, though he or she will often allow you to pick cases that you are interested in. Whenever possible, introduce yourself to the patient and attending in pre-op prior to scrubbing. Cases preceded by an “M” occur in the main OR on the second floor, cases preceded by an “A” are minor outpatient surgeries performed in Reichert. If you scrub a major case (an “M”), you are expected to pre-round on that patient the following morning and write a progress note (standard surgical note).

Occasionally there may be slow days. You are expected to stay until 5p to see consults that may be called in, feel free to sit on the medical student call room and read. Occasionally you may be allowed to attend a different service for the day, see “Can I change my schedule?” for more information.

Students will be assigned one 5-10 min educational talk during this service (you may pick the topic). Handouts are encouraged, but not required. Primary literature is appreciated.

Oncology

Schedule varies, check with your resident, but in general:

Monday: oncology clinic

Tuesday: surgery

Wednesday: morning in AOGP clinic, afternoon in oncology clinic

Thursday: oncology clinic

Friday: surgery

Important: Because of the variable schedule and because there is only one student on service at once, a proper handoff to the next student is important! On your last day, find out what time the next student should arrive in the morning and get a patient list for him/her. If for some reason this is not possible you may page the resident, but they prefer that the students handoff to one another. If you happen to be on Oncology on a "slow" day your resident may send you to another service. See "Can I change my schedule?" for more information.

Night Float & Weekend Call

Night Float: The expectation for Night Float is that you will be awake and alert all night. Arrive by 6p and expect to stay until 8a. Nights are covered by one attending, a senior resident, a junior

resident, an off-service resident (FP or ER), and one medical student. Nights often present the best opportunity for medical students to participate in vaginal deliveries! Just like L&D, you will be writing progress notes, mag checks, and scrub cesarean deliveries. Medical students may see consults with the senior resident. You are expected to pre-round at 6a and attend table rounds at 7a.

Weekend Call: Students are assigned one day of weekend call, 8a-8p. Similar to night float.

Ambulatory (AOGP Clinic)

General: Clinic starts at 8a every day, arrive 5-10 minutes early. The clinic is located on the second floor of the Reichert Research Center, adjacent to the residency and clerkship directors' offices and the conference room where lectures and orientation are held.

Because paper charts are used, you are not expected (or able) to read up on patients the day before. The nurse will distribute a printed patient list as soon as the residents and attending arrive and the attending will assign patients for you to see. Patients in clinic are commonly there for: annual exams, urogyn complaints, prenatal care, postpartum visits, and post-op visits. Consider reading on these topics prior to arriving in clinic on the first day. Always wear professional attire to clinic. Ask where to sit, residents and attendings have preferred computers!

Maternal Fetal Medicine: One afternoon (Tuesday or Thursday) while you are on Ambulatory. The office is located at the SW corner of Clark and Golfside, just outside the SJM campus, walk SW from Reichert. Page the attending the day before to confirm (she may have you come in the morning if there are only a few patients scheduled for the afternoon).

NICU: One full day on a Wednesday while you are on Ambulatory. The NICU is down the hall from L&D, toward the Mother-Baby unit. Arrive at the NICU no later than 8a and tell the nurse at the front desk that you are scheduled to work with the pediatricians. You will attend all cesarean sections and vacuum-assisted deliveries that occur during your shift to evaluate the neonate. Wear scrubs.

Can I Change My Schedule?

Early in the rotation make copy of the student schedule to post in call room, it will make life easier for everyone. You may swap shifts with another student if need be, but be sure to ask permission from the chief residents involved and e-mail Emily so she is aware of the change.

From time to time you there will not be many (or any) patients to care for on a particular service. If this is the case you may be

sent to another service for the day. If this happens, tread carefully, use good judgment, and follow these rules:

- Take care that you are not encroaching on other students' experiences. It polite to ask the students on the service what activities you can participate in.
- There may never be more than one student on Onc at a time.
- Do not go to any service where there are already three students.
- Always communicate with the chiefs involved.
- If assigned to Onc and there are no patients, your resident may send you to Gyn, in which case you may scrub cases not already selected by medical students on that service (check with the other students!).
- If assigned to Gyn and there are no patients, your resident may send you to Ob, in which case you may

scrub cesarean sections not attended by students on that service (check with the students!). You may also assist in triage if there is no student there.

- If assigned to L&D and there are few patients you may help the midwives in triage.
- If assigned to Ambulatory, you will likely be sent home early.

Writing Notes at St. Joe's

Per SJM policy, medical students must always write notes using the medical student templates (found in a drop down menu when creating a new note). All of the templates will have "Medical Student Note" in large red font at the top. Officially, you are only allowed to write admission H&P and progress notes. If you ask nicely you may be allowed to write a post-op note or delivery note under the supervision of a resident. Avoid copying previously

written notes; it is better to create a new note and write from scratch, though you may use the previous note as a reference. When writing notes you may refer to the documentation sections of the UM survival guide.

End of Clerkship

Check-out with Dr. Frantz at any point during the last day. Bring your “student vote” sheet with the names of the resident and attending that most contributed to your education. If you lost your sheet you may write the names on a blank piece of paper. Also print a copy of your CLTP patient list for Dr. Frantz. At the end of the day, turn in your ID badge and parking pass to Emily, or at security, located on the main corridor (1st floor). The security office will likely be closed, but if you pick up the phone outside the door someone will be there to assist you shortly.

USEFUL NUMBERS

OB Numbers

Anesthesia Pager 9016
Charge Nurse Pager 2777
BOARD ROOM 232-7994, 232-7993, 232-7993
WEST CLERK DESK: 232-7999
CENTRAL CLERK DESK: 232-7986
EAST CLERK DESK: 232-7900
OR 1: 232-8921
OR 2: 232-8919
OR 3: 232-8914
OR 4: 232-8915
Triage Phone 764-8134

GYN Numbers

GYN Junior Pager: 0005
ONC Pager: 33189
OB chief 35555
OB juniors 33333/34444
8B Clean Room Code: 1-3-5
8C Clean Room Code: 2&4 together, then 3
8B Conference Room 5-8524
8B Call Room 6-4743
8B Desk 6-4674
8B Fax 3-4076
8C Desk 6-4660
Surgical Observation Unit 6-1153
Main OR Desk 6-8470
Phase II (pre-op) 6-4282
Main OR Anesthesia Pager 8003
Recovery 6-4281
Radiology resident on call (nights and weekends)
1700 plain films, 1800 CT/USN/MRI

Directions to Frequently Used Locations

Dr. Maya Hammoud's Office

3rd Floor, Women's Hospital. L3616

F4834 Mott Hospital (MFM Conference Room)

4th Floor, Mott Hospital. Take the West Elevators to the 4th Floor. Turn right off the elevators and make an immediate right. Proceed towards the doors and they will open automatically. Continue down the ramp. Turn left when you reach a door marked: Once inside, turn right and the F4834 conference room is on your left. This is also called the MFM conference room.

L4503 Women's Hospital (Admin Conference Room)

4th Floor, Women's Hospital. Take the East Elevators to the 4th Floor. At the main hallway off the elevator, turn left. The first doorway on the right is the hallway to the OBGYN/Admin offices. You will need to swipe your UMID to gain access before entering. At the first junction, turn right. Proceed ¾ of the way down this

hallway. Just before the copy machine on the left is the L4503 conference room. It is the last door on your left.

MCHC Auditorium (F2304 Mott Hospital)

The MCHC Auditorium is on the 2nd Floor in the Towsley Triangle. This is where Towsley, Mott, and Women's Hospital Meet.

L3113 Women's Hospital

3rd Floor, Women's Hospital.

L2020 Women's Hospital

2nd Floor, Women's Hospital.

Sheldon Dining Room (Room#G1320)

The Sheldon Dining Room is in the basement of Towsley Center. If you go to the basement, it is around the corner from the Sheldon Auditorium entrance.

Med Sci I Auditorium MSI-5330

This auditorium is on the 5th floor of Med Sci I Building. Take the elevators to the 5th Floor.

2C224-UH (University Hospital)

2C224 is in University Hospital. Take the East Entrance to the Cafeteria. Turn Right just after the newspaper stand. The Room will be the second on the right.

CVC 2314 (Danto Auditorium)

This is located on the 2nd Floor of the new CVC Cardio Vascular Center. It is located near the Atrium, so follow the signs.

2C108-UH (University Hospital)

2C108 is in University Hospital. If you are at the East Entrance to the Cafeteria, follow the hallway towards Ford Auditorium. The Room will be just past the gift shop on the right hand side of the hallway. This is before you get to Ford Auditorium.

UHB1-H102 (University Hospital)

UHB1-H102 is in University Hospital. Take the UH West elevator to B1. Exit the elevator area to the left, H102 is on your left just beyond the new hallway to CVC.