UC/TCH Family Medicine

OB Survival Guide

2021

The Christ Hospital/University of Cincinnati Family Residency Training Program

Editors for 2021 Edition

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Introduction

This OB Survival Guide is intended for use by Family Medicine Residents of our TCH/UC FMRP, and their precepting attending physicians for immediate care in the hospital and office. It is a basic resource, and recommendations change, over time. Please seek out further information as needed to further refine the care of your patient.

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*Link to Canvas Learning Site

https://canvas.instructure.com/courses/765338/modules

*Ask for log in from Dr. Lazaron

OUTPATIENT MANAGEMENT

Useful apps for OB

Free Downloads

- ACOG – EDD calculator, vaccine info, some resources do not require membership.
- Bishop scores (Steinberg), useful in planning labor inductions
- Prevent GBS (CDC), 2010 CDC GBS guidelines
- GBS guide (Steinberg), quick walk through of antibiotic choices in GBS
- ILITHYIA, Evidence Based Prenatal Care (San Jose FM residency), anticipatory guidance for antepartum care
- EFM guide (Steinberg), free app walks you through NICHD guidelines for FHR interpretation. Also on ACOG App
- OB Wheels (Steinberg), assigning due date based on LMP or sono finding
- CDC Vaccine Schedules (CDC), useful for subsection: Adult Conditions, Pregnancy, with do's and don'ts for vaccination in pregnancy
- LactMed from NIH, for drug suitability for breast-feeding moms
- Pap Guide (Steinberg), Pap frequency with 2012 ASCCP guideline & 2012-13 update
- GlobalPap App, pap frequency based on 2012 ASCCP guidelines
- STD Tx Guide (CDC)
- Pregnancy + as well as Baby Tracker and Bump : have good pictures to show pts and info on common discomforts.

Paid Downloads

- FHR 5-Tier, $2.99 app, analyzing fetal heart rate tracings with advice on management of category 2 or 3 tracings, useful in labor management
- BiliCalc, $1.99, good for calculating bili risk level based on age, useful if do not want to access the online site each time

Prenatal Care Basics

V**isits**: (q 4 weeks until 28 weeks, then q 2 weeks until 36 weeks, q 1 week 36-40, twice weekly 40-42)
** Visits may be MORE frequent, esp. if pt is high risk earlier in pregnancy.

1) Typically, pt's are seen very quickly after their first missed period, the " Amenorrhea" visit. The goals of this visit are to DATE the pregnancy and REDUCE obvious risk factors (i.e., stopping any Cat X meds.) If pt at least 6-7 weeks gestation, an ultrasound can be obtained to help date a pregnancy with uncertain LMP.

2) After you see the pt for Amenorrhea visit **route chart to the nurse** for scheduling the OB Nurse Visit (counseling, ordering NOB labs, etc.).

3) Schedule the NOB Provider visit for 3-4 weeks away BEFORE the patient leaves the amenorrhea visit.

First visit:

- **History**
  - Complete medical history
  - Thorough OB history for assessment of risks (get prior operative reports if h/o C/S), PTL, etc.
  - General medical history
  - Infection history – varicella, HSV, STIs
    If uncertain re: varicella, add Antibody to NOB labs
  - Family history – genetic disorders, DM, HTN, etc.
  - Social history –Family situation, domestic violence, substance abuse, smoking, faith / beliefs/culture
  - Medications – OTC/prescription/herbals/vitamins
  - Depression screening-PHQ9 and Perceived Stress Scale
  - Dental history – last cleaning, implants, etc.
  - Employment and occupational/hobby history
    *Assess occupational exposures and need for MSDS sheet review.

- Encourage **MyChart** sign up

- If prior spontaneous Preterm Birth, **Precertify** for 17-OH progesterone to begin by 16-20 weeks
- **Labs**: (use preference list)
    - CBC – complete
    - ABO blood type, Rh type, Screen for antibodies
    - Syphilis cascade test (FTA reflex to RPR titer),
    - Rubella titer (immune or non-immune)
    - HbsAg (Hepatitis B)
    - HIV
    - Hep C antibody
    - Vitamin D 25 OH
    - HbA1c
    - GC/chlamydia testing
    - Pap if >21, and due
    - Hemoglobin electrophoresis - insurance coverage is variable. **Recommended once**. Check prior preg labs.)
    - Urinalysis, Urine culture & sensitivity
    - Urine drug screen (if + repeat in each trimester)
    - CF genetic screening (offer to all- insurance coverage is variable. $175 if self-pay).

    *CONFIRM PT HAS NOT HAD THIS TEST IN PRIOR PREG.
    - **Other or Optional tests** for specific groups
        - Specific genetic tests for certain risk groups
            - CF genetic screening (offer to all)
            - Tay-Sachs disease
            - Sickle cell disease-- Hemoglobin electrophoresis (partner testing)
        - PPD if high risk population (health care worker, prisoner, institutional living)
        - GCT- if high risk for GDM can do early
        - TSH if obese or score high on depression scores

First visit physical exam (MD/DO/CNM):

- Height, weight (BMI) and Blood pressure
- Physical exam including pap (unless performed in past year or under age 21), with GC, Chlamydia
- Ultrasound – consider for viability, no FHT, & unsure dates.
- Doppler FHT – can hear with Doppler between 10-12

10-16 weeks:

- **Physical exam**
  - Weight, Blood Pressure, EGA/EDD
  - Fetal heart rate (by 10- 12 wks. or U/S confirm)
  - Fundal height measurement (after 20 wks.)
- **Labs (optional):**
  - Early screen – (offer to all) refer to perinatology if desired by pt., after counseling, **(**PAPP-A + free bHCG) and nuchal translucency U/S;(can be done 11-13 6/7). Insurance coverage is variable.
  - CVS or amniocentesis—offer to all patients >34 yo, or with abnormal genetic screen; document if patient declines either test (form done at OB Nurse Visit).
  - Free fetal DNA (MaterniT21 or Harmony screen)- optional test for genetic screen for AMA, or abnormal quad (10 0/7 weeks or after)
  - Complete the Genetic Screening Form and sign (pt is given this with NOB folder at OB Nurse visit). They need to opt in or opt out and sign it as well.
- **Counseling**
  - substance use
  - nutrition/appropriate weight gain for BMI
  - exercise/appropriate physical activity
  - domestic violence
  - safe medications, herbals, supplements, vitamins
  - Encourage breastfeeding
  - Infant's physician - Insurance
  - Physiologic changes – nausea/vomiting, GERD, constipation
  - Warning signs – bleeding/cramping/ fever, pelvic pain
  - Flu shot during flu season
  - TdaP in each pregnancy (after 28 weeks)
  - Covid 19 vaccine info / Use (dot)Covid phrase in AVS
  - Referral to Every Child Succeeds, all teen or vulnerable primips
  - Referral to Pregnancy Pathways (HCAN) all vulnerable or high risk multips
  - Any prenatal patient w/ h/o pre-eclampsia/eclampsia, chronic HTN, Type 1 or 2 DM, renal disease, multiple gestation pregnancy, anticardiolipin antibody, or SLE should be started on

81 mg of aspirin a day from 12 weeks through 28 weeks' gestation.
    - Any prenatal patient w/ h/o pre-eclampsia/eclampsia should also be put on calcium carbonate 500 mg a day through her pregnancy.

16-20 weeks

- **Physical exam:**
    - Weight, Blood Pressure, EGA/EDD, Fetal heart rate, Fundal height (accurate after 20 wks.)
    - Ask about quickening
- **Labs:** Quad screen – draw if desired by pt. after counseling
    - Document if patient declines (16-21 6/7 wks.)
    - Obtain anatomy ultrasound, AND cervical length (best time to view approx. 18-20 weeks)
    - Repeat UDS if prior positive (needs 1 each trimester)
- **Counseling**:
    - warning signs – bleeding, cramping
    - Flu shot during flu season
    - Seat belt use, Work modification
    - Sexual activity
    - Appropriate weight gain

20-24 weeks:

- **Physical Exam**
    - Weight, Blood Pressure, EGA/EDD, Fetal heart rate, Ask about quickening, Fundal height
- **Counseling**
    - Seat belt use, Work modification
    - Monitor weight gain/nutrition
    - Sexual activity
    - Any prenatal patient w/ h/o pre-eclampsia/eclampsia, chronic HTN, Type 1 or 2 DM, renal disease, multiple gestation pregnancy, anticardiolipin antibody, or SLE should be started on 81 mg of aspirin a day from 12 weeks through 28 weeks' gestation until delivery.
    - Any prenatal patient w/ h/o pre-eclampsia/eclampsia should also be put on calcium carbonate 500 mg a day through her pregnancy.

24-28 weeks

- **Physical Exam:**
    - Weight, Blood Pressure, EGA/EDD, Fetal heart rate, Fundal height

- **Labs:**
  - 1 hr. Glucose Challenge Test (GCT- 50 gm glucola drink – alternative 19 Brach's jellybeans). If GCT over 140, abnormal, 3 hr. Glucose Tolerance Test (GTT – 100 gm glucola drink).
  - CBC
  - repeat Syphilis cascade test (FTA reflex to RPR titer)
  - If UDS positive on earlier test; repeat UDS (needs 1 each trimester)
  - If Rh negative - recheck antibody screen and if not sensitized, order RhoGAM for 26-28 wks.
  - RhoGAM 300 mcg should be administered at **26-28** weeks, to reduce risk of antepartum Rh iso-immunization from 1-2% to <0.2
- **Counseling Second Trimester:**
  - Seat belt use, Work modification
  - Monitor weight gain/nutrition
  - Sexual activity
  - Recommend birthing/parenting/breastfeeding classes
  - Encourage breastfeeding
  - Review infant's physician
  - Birth control: tubal consent paperwork if needed (must be completed 30 days before delivery for Medicaid and valid for 6 months). Scan to EPIC under media.
  - Document prior scar if desires VBAC. Consent form signed. Scan to EPIC chart under Media tab. If desires VBAC, call consultant to discuss. Use (dot)phrase for TOLAC.
  - If desires repeat C/S, document prior scar. Call consultant and schedule. This can be scheduled months in advance so call OB/GYN early in pregnancy.
  - Any prenatal patient w/ h/o pre-eclampsia/eclampsia, chronic HTN, Type 1 or 2 DM, renal disease, multiple gestation pregnancy, anticardiolipin antibody, or SLE should be started on 81 mg of aspirin a day from 12 weeks through 28 weeks' gestation.
  - Any prenatal patient w/ h/o pre-eclampsia/eclampsia should also be put on calcium carbonate 500 mg a day

28-36 weeks:

- **Physical Exam:**
  - Weight, Blood Pressure, EGA/EDD, Edema, Fetal heart rate, Fundal height
  - TdaP in pregnancy (patient and partner)
  - Consider starting weekly antenatal testing at 32 weeks if indicated for high-risk condition. See separate page.
- **Counseling**:
  - Labor signs/expectations – what to do when your water breaks, when to come to L&D (2 fluids & 2 5's)
  - Awareness of fetal movement
  - Pain control in labor, postpartum care
  - infant care/circumcision – confirm the infant physician
  - birth control, sexuality; tubal consent paperwork if needed and not already completed (must be completed 30 days before delivery for Medicaid)
  - work, support network
  - postpartum depression
  - Discuss ARRIVE TRIAL and option for IOL at or after 39 weeks vs expected management. We don't necessarily recommend IOL at 39 weeks, but it is a reasonable option that should be a shared decision between the pt. and provider. ARRIVE Trial decreases risk of hypertensive disorders, decreases neonatal respiratory distress and decreases C/S rate but does increase the length of labor and overall length of stay in the hospital

36 weeks:

- **Physical exam:**
  - Weight, Blood Pressure, EGA/EDD, Edema, Fetal heart rate, Fundal height measurement
  - CONFIRM FETAL PRESENTATION by with Leopold's maneuvers; confirm by pelvic exam or U/S if uncertain
  - start HSV prophylaxis (if indicated)
  - Sign Delivery Consent form

Labs:

- Repeat CBC or GC/CT/Trich screen if applicable
- Group B strep Recto-Vaginal culture for ALL patients (ask for sensitivities if PCN allergic)
- repeat HIV testing (if high risk)

- repeat Syphilis test (if high risk)
- repeat UDS (if any prior positive test; needs 1 each trimester)

- **Counseling**:
  - Labor signs/expectations – what to do when your water breaks, when to come to L and D (5-1-1)
  - Awareness of fetal movement
  - Pain control in labor
  - postpartum care
  - infant care/circumcision – confirm the infant physician
  - birth control, sexuality
  - work
  - postpartum depression
  - TCH labor consent forms signed at 36 weeks (Scan to EPIC chart under Media Tab)
  - Patient birth plans (optional) signed (Scan to EPIC chart under Media Tab)

37-40 weeks:

- **Physical Exam:**
  - Weight, Blood Pressure, Edema, Fetal Heart Rate, EGD/EDD, Fundal Height
  - Fetal position by abd exam with Leopold maneuvers; confirm by pelvic exam or U/S if uncertain
  - Offer cervical exam after 36 wks.; perform cervical exam at 40 wks.
  - Begin delivery planning: Can schedule elective IOL for 39 weeks, call 1 week prior to schedule. Medical induction – can call 2 weeks ahead to schedule.
  - Offer membrane sweeping beginning at 39 wks.
    ***if patient is a VBAC or GBS+, membrane sweeping is controversial. Discuss with OB MD prior to offering to patient
    At 38 weeks, if Rh neg and received RhoGAM at 26 to 28 weeks, consider repeating the dose of RhoGAM at 300 µg at 38 to 40 weeks. Remember RhoGAM only lasts for 12 weeks in terms of protection

- **Counseling**:
  - Labor signs/expectations – what to do when your water breaks, when to come to L and D (5-1-1)

- Awareness of fetal movement
- Pain control in labor
- postpartum care
- infant care/circumcision – confirm the infant physician
- birth control, sexuality
- work, support network
- postpartum depression

40+ weeks: see patients semi-weekly

- **Physical exam:**
  - Weight, Blood Pressure, EGA/EDD, Fetal heart rate, Fundal height measurement, Fetal position by abdominal exam with Leopold maneuvers, Offer sweeping of membranes

    ***if patient is a VBAC or GBS+, membrane sweeping is controversial. Discuss with OB MD prior to offering to patient.
- **Labs and tests:**
  - Repeat GBS if > 5 wks. since previous GBS
  - Begin antenatal testing with weekly NST and AFI by 40 0/7 weeks or sooner if high risk conditions (see separate section on ANFS).
- **Counseling:**
  - Offer induction starting at 41 weeks and before 42 weeks
  - Plan induction (IOL) by 41 6/7 at absolute latest

  - Consider performing a urine drug screen at any visit where you think it is appropriate – due to suspicions about drug use, h/o drug use, etc. Also, order UDS and syphilis screen at delivery in patients on ALL patients – not just those with PTL, PPROM, h/o STDs, placental abruption or any prior drug use in pregnancy. Group B strep Recto-Vaginal culture for ALL patients (ask for sensitivities if PCN allergic)

Vaginitis in pregnancy

* Rule out vaginitis if spotting in pregnancy
* Consider AFFIRM swab if unclear, complex, or recurrent vaginitis
* For STI- encouraged abstaining from intercourse X 7 days
* Consider STI serum screen

- **Trichomonas**; frothy discharge, friable cervix, Wet prep with motile trichomonads.
    - Treat with Metronidazole 2gm x1 and treat partner
- **Bacterial vaginosis**: Fishy odor, wet prep with clue cells, + whiff test with KOH
    - RX: Metronidazole 500 mg bid x 7d (po); Metronidazole vaginal 1 appl. bid x 5 days; Clindamycin 2% cream pv 5g = 1 appl. hs x 7 days
- **Yeast**: itching, cottage cheese discharge, Wet prep (+KOH) with budding yeast
    -NO DIFLUCAN (Fluconazole)
    -Treat with Monistat 7 days
    - Miconazole 1200 mg x 1 per vagina; 200 mg tab or 4% cream x 3 d at night; 100 mg or 2% cream x 7 d at night
    - Terconazole 80 mg or 0.8% 1 appl x 3 day or 0.4% 1 appl x 7 days (pv)
- **Gonorrhea**: Rocephin 250 mg IM (or Cefixime 400 mg PO) PLUS Azithromycin 1 gm single dose; treat partner; test of cure needed at least 4weeks after according to CDC.
- **Chlamydia**: treat with Azithromycin 1 gm x1; treat partner, test of cure needed at least 4weeks after according to CDC

Vitamin D in pregnancy

- Why we check?
    - ACOG does not recommend testing (insufficient evidence)
    - Our Cincinnati African American population has a much higher incidence of deficiency
    - Severe deficiency in mom can lead to problems with bone development in baby, congenital rickets, fractures in newborn
    - if low, associated with increased risk of recurrent bacterial vaginosis, preterm labor for mom (literature still a work in process)
- When to check? initial labs
- Treat: If low, then treat with PO D3. Choose a daily dose to reach a goal of 40-60. For every 1000 units of D3 given, this will increase

level by ~ 10. Do not use long-acting weekly doses in pregnancy. Up to 5000 daily is believed to be safe in pregnancy.

- After starting treatment, re check lab level in 8-12 weeks. Coordinate with other lab draws when possible.

UTI and Asymptomatic Bacteriuria in Pregnancy

-Anatomical changes at about 6 weeks include dilated ureters and estrogen/progesterone cause relaxed ureter and bladder tone. Peeks at 22-26 weeks at persists until delivery. "physiologic hydronephrosis of pregnancy."

-Asymptomatic bacteriuria occurs in 2-7% of pregnancies.

- Without treatment, 30-40% will develop UTI or pyelonephritis
- If untreated, Increased risk of preterm birth, low birth weight, perinatal mortality
- Case control associated preeclampsia with untreated asymptomatic bacteriuria or UTI

Pyelonephritis- associated with untreated asymptomatic bacteriuria, age <20, nulliparity, smoking, late care, sickle trait, DM

- Increased risk for preterm birth, sepsis, stillbirth

Screening

- All women once at initial visit (UA and urine cx)
    - If UTI, add to problem list of UTI during current pregnancy
- Rescreen with each trimester if high risk (i.e., DM, hx UTI, sickle trait or disease, preterm labor hx)
- If GBS isolated from urine culture ALWAYS treat in labor.

Diagnostic criteria

- If asymptomatic→ 2 consecutive voids with the same bacteria with counts >10 (5)cfu (or 1 catheter specimen of >100 cfu)
    - In practice, we typically just use 1 specimen for diagnosis
    - Consider treatment if UA has (+) Leukocyte esterase

Management of asymptomatic bacteriuria

- Beta lactams or Nitrofurantoin usually for 7 days

- nitrofurantoin use in the first trim should be limited to situations where no alternative therapies are available and not used after 36 weeks due to possibility of hemolytic anemia in neonate
- NO Bactrim (Trimethoprim/Sulfamethoxazole) in 1st (also prefer. None in 3rd) trimester. It is a folic acid antagonist.
- Follow up culture (test of cure) needed 1-2 week after treatment
- Repeat Urine cx monthly or at each trimester until delivery
- Recurrent bacteriuria with same organism- repeat treatment x 1, if still persists, consider suppressive Nitrofurantoin (50-100mg daily), Cephalexin or Trimethoprim/Sulfamethoxazole (depending on weeks' gestation)

Management of acute cystitis

- >1000 cfu on culture to confirm UTI
- if lactobacillus (or other typical uropathogen) treat as UTI only if >100,00 cfu
- empiric with Beta lactams (Cephalexin, Amoxicillin w/ Clavulanate, Amoxicillin) or Nitrofurantoin usually for 7 days
- TOC 1 week after treatment, repeat monthly or each trimester, be sure to add to problem list

Acute pyelonephritis

- Fever, flank pain, vomiting, CVA tenderness
- Hospital admission for IV antibiotics until afebrile x 24-48 hours
- Antibiotics: Cefazolin or Ceftriaxone, or IV Amp+Gent (if ESBL- Meropenem or Ertapenem preferred)
- Once afebrile x 24-48 hrs, transition to po regimen (beta lactam, or if in second trimester Trimethoprim/Sulfamethoxazole ok)
- Usually, will use suppressive therapy with Nitrofurantoin for remainder of pregnancy

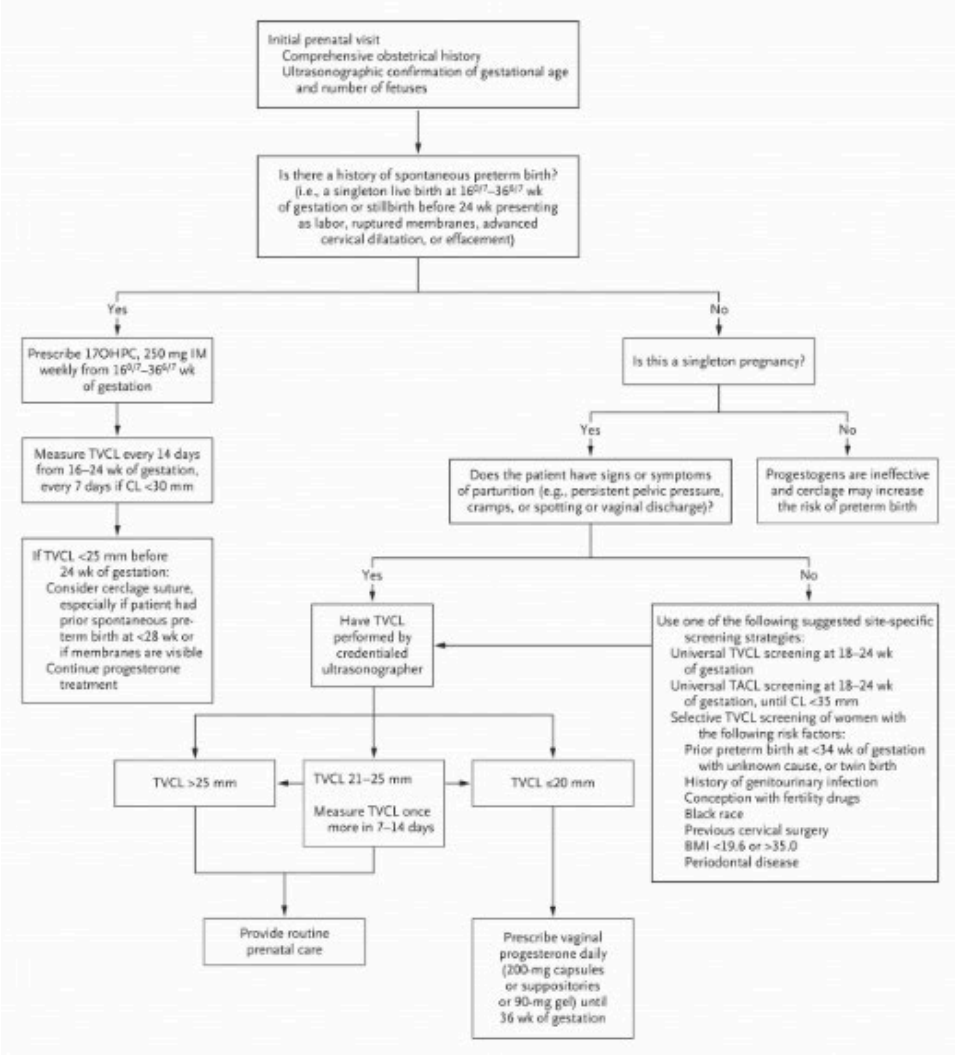
Preventing preterm labor

DEFINITIONS:

Preterm Birth: Any delivery prior to between 20.0-36.6 wga.

Spontaneous preterm birth: Birth that occurred spontaneously (i.e., secondary to preterm labor) rather than indicated (i.e., induced for preeclampsia with severe features)

The ***Prolong Trial*** demonstrated that this algorithm is not universally applicable across all populations, and may be best used for populations at high risk for PTL due to ethnicity or SES. **Shared decision making** is recommended before prescribing progesterone.



In FMC: getting Progesterone

Jamie Wyatt, RN or any of the MA's have the forms for home health and can help arrange; forms are on the CITRIX OneDrive (U Drive), Depts (J), TCHMA, TCHMA_FM_5100, Maternity Services, and then under Progesterone Order Form

First Trimester Bleeding (<20weeks)

- Bleeding: 25-30% in first trimester; 1/2 have complication
- History: How long, how much, LMP, tissue, fevers, n/v, Pregnancy history

Definitions
- Threatened ab – +VB, viable IUP on US, - cervical dilation
- Inevitable ab – +VB, viable IUP on US, + cervical dilation
- Incomplete ab – +VB, non-viable IUP or retained POC on US
- Missed ab – +/-VB, non-viable IUP on US, cramping likely
- Complete ab – +VB, no IUP on US, pt. may report passing POC
- Septic ab – incomplete abortion + sx's of ascending infection

Exam:VS, Abd/Pelvic exam- SPECULUM EXAM FIRST
Speculum - os open?, bleeding? Tissue at os?
-Are symptoms of pregnancy still present? (N/V, mastalgia)

Work-up:
-FHT ~~is~~ if possible
-Quantitative BHCG Doubles approx. q48h in 80% of pregnancies (One value is not helpful. Be sure to order follow up BHCG to trend)
*Note : You do NOT need to get a Quant HCG if IUP already seen on prior U/S.
-Consider progesterone level if IUP established as intrauterine, pt had REI to conceive and was on Prog, or has hx of miscarriage / used progesterone in prior pregnancy.(controversial but common clinical practice).
-U/S – bHCG > 2000 to see transvaginally (>3500 transabd)
- If gestational sac >10mm in diameter, yolk sac must be present
- Crown-rump sac >5mm - ~~must~~ should have cardiac activity
-CBC, Coags, Type and Screen

Management of spontaneous and threatened abortion

- Transvaginal US now, repeat in 1 week

Findings diagnostic of IUP miscarriage :

*CRL > 7 mm, no FHB
*Mean sac diameter > 25 mm or more
*No embryo with FHB 2 weeks or more after a scan that showed a gest. sac without yolk sac
*Absence of embryo with a FHB 11 or more days after a scan that showed a gest. Sac and a yolk sac.
* Enlarged yolk sac > 7 mm without viable preg.is suspicious.

- ABO and RH, CBC and Quantitative hcg (serum) now and again in 48 hours (should double)
- Trend beta hcg until <10 if decreasing to ensure no retained tissue
- If bleeding continues, repeat US in ~~one week~~ 7-10 days to assess viability and passage of POC
- If VB stops w/ passing of POC, trend hcg weekly to zero

Management options of missed and incomplete abortion

- "Gentle" Sterile speculum exam to establish source of bleeding
- Expectant management → trend hcg and US as above
- Medical Management (Motrin first to decrease cramping)
- * Consult OB/GYN back up
    - Cytotec per dosing table on next page
    - Uterine aspiration/offer D&C/D&E
    - Clindamycin and Gentamycin + D&C, if septic abortion
    - Consider Rhogam within 72 hours of miscarriage
    - *Some only give micro dose of 150 mcg if < 8 weeks. We use full dose of 300 mcg Rhogam.

Indication	Dosage	Notes
Missed abortion (0-12 weeks)	800 µg, PV, q3h **OR** 600 µg, SL, q3h	x2 doses, leave to work for 1-2 wks. unless heavy

		bleeding or infection
Incomplete abortion (0-12 weeks)	600 µg, PO, STAT	Leave to work for 2 weeks unless heavy bleeding or infection
Intrauterine fetal death (>24 weeks)	13-17 wks.: 200 µg q6h 18-26 wks.: 100 µg q6h 27-43 wks.: 25-50 µg q4h	Reduce doses in women with previous C-section
Cervical ripening prior to instrumentation	400 µg PV 3 hours before procedure	Use for insertion of intrauterine device, surgical termination of pregnancy, D&C, hysteroscopy

Vaginal Bleeding after 20 weeks' Gestation

If patient >20 weeks, may present to triage or clinic

- DO NOT perform STERILE VAGINAL EXAM!!
- Review US if possible, to determine if placenta previa
- Ask about amount of pain, bleeding, and precipitating factors (intercourse, infections, etc.)
- SSE to establish source of bleeding
    - If bleeding from cervical os → order US
    - FHR monitor
    - Collect GC/Chlam swab, wet prep, rule out ROM
- If large amount of bleeding
    - ASK FOR HELP!
    - Establish IV access → IVFs
    - Start O2
    - CBC, Type and screen / cross match, Coags
        - Don't forget about DIC (order fibrinogen level)
        - Rhogam if Rh negative
    - UDS
    - Consider STAT C-section if worrisome FHR tracing, notify on-call ob
        - THINK PLACENTAL ABRUPTION AND UTERINE RUPTURE!!
- If small amount of bleeding
    - If no previa on US → perform sterile vaginal exam, bleeding may be caused by cervical change

DDx

- Placenta previa – non-painful vaginal bleeding
- Placental abruption – painful vaginal bleeding, firm, tender uterus
- Vasa previa – blood vessels crossing over internal cervical os
- Uterine scar disruption / uterine rupture

Nausea and Vomiting in Pregnancy

Table 1. **Pharmacologic Treatment of Nausea and Vomiting in Pregnancy.***

Agent	Oral Dose	Side Effects	FDA Category†	Comments
Vitamin B_6 (pyridoxine)	10–25 mg every 8 hr		A	Vitamin B_6 or vitamin B_6–antihistamine combination recommended as first-line treatment
Vitamin B_6–doxylamine combination	Pyridoxine, 10–25 mg every 8 hr; doxylamine, 25 mg at bedtime, 12.5 mg in the morning as needed plus 12.5 mg in the afternoon as needed	Sedation	A	
Vitamin B_6–doxylamine combination, delayed-release formulation (Diclectin, Canada)	10 mg pyridoxine and 10 mg doxylamine, extended release; 2 tablets at bedtime, 1 tablet in the morning as needed plus 1 tablet in the afternoon as needed			
Antihistamines		Sedation		
Doxylamine (Unisom SleepTabs)	12.5–25 mg every 8 hr		A	
Diphenhydramine (Benadryl)	25–50 mg every 8 hr		B	
Meclizine (Bonine)	25 mg every 6 hr		B	
Hydroxyzine (Atarax, Vistaril)	50 mg every 4–6 hr		C	
Dimenhydrinate (Dramamine)	50–100 mg every 4–6 hr		B	
Phenothiazines		Extrapyramidal symptoms, sedation		
Promethazine (Phenergan)	25 mg every 4–6 hr		C	Severe tissue injuries with intravenous use (black-box warning); oral, rectal, or intramuscular administration preferred
Prochlorperazine (Compazine)	5–10 mg every 6 hr		C	Also available as buccal tablet
Dopamine antagonists		Sedation, anticholinergic effects		
Trimethobenzamide (Tigan)	300 mg every 6–8 hr		C	
Metoclopramide (Reglan)	10 mg every 6 hr	Tardive dyskinesia (black-box warning)	B	Treatment for more than 12 wk increases risk of tardive dyskinesia
Droperidol (Inapsine)	1.25 mg to 2.5 mg intramuscularly or intravenously only		C	Black-box warning regarding torsades de pointes
5-hydroxytryptamine$_3$–receptor antagonist		Constipation, diarrhea, headache, fatigue		
Ondansetron (Zofran)	4–8 mg every 6 hr		B	Also available as oral disintegrating tablet; more costly than oral ondansetron tablets
Glucocorticoid				
Methylprednisolone (Medrol)	16 mg every 8 hr for 3 days, then taper over 2 wk	Small increased risk of cleft lip if used before 10 wk of gestation	C	Avoid use before 10 wk of gestation; maximum duration of therapy 6 wk to limit serious maternal side effects
Ginger extract	125–250 mg every 6 hr	Reflux, heartburn	C	Available over the counter as food supplement

* This list of agents is not exhaustive. FDA denotes Food and Drug Administration.
† FDA categories are as follows: A, controlled studies show no risk; B, no evidence of risk in humans; C, risk cannot be ruled out; D, positive evidence of risk; and X, contraindicated in pregnancy.

*Bonjesta is new, fewer doses of Diclegis (Doxylamine and Pyridoxine).

*Alternative therapies include: Acupuncture, Ginger, diet changes, Sea bands

Hyperemesis Gravidarum

Definition: persistent vomiting, weight loss of more than 5%, ketonuria, electrolyte abnormalities (hypokalemia), and dehydration
- onset of nausea is usually ~ 4 wks. after LMP and peaks at ~ 9 wks.
- 60% resolve by the end of the 1st trimester, and 91% resolve by 20 weeks of gestation.
- Nausea and vomiting are associated with a decreased risk of miscarriage.
**Preventable rare maternal complications of hyperemesis gravidarum: peripheral neuropathies due to vitamin B6 and B12 deficiencies and, most serious, Wernicke's encephalopathy due to thiamine (vitamin B1) deficiency- replace this in IVF PRIOR to glucose administration.

Work up: (Rare to start 8 weeks or later)
- Labs: Urine culture, urinary ketones, BUN/Cr, AST/ALT, electrolytes, amylase, and TSH (as well as free T4).
- Consider RUQ US if suspect cholelithiasis or stasis.

    * chg. cross-reacts with TSH and stimulates the thyroid gland, so it is typically suppressed. This apparent hyperthyroidism usually resolves spontaneously, & treatment with PTU does not alleviate the N/V, this test should be repeated later in gestation, at ~ 20 weeks, since the level usually normalizes by then

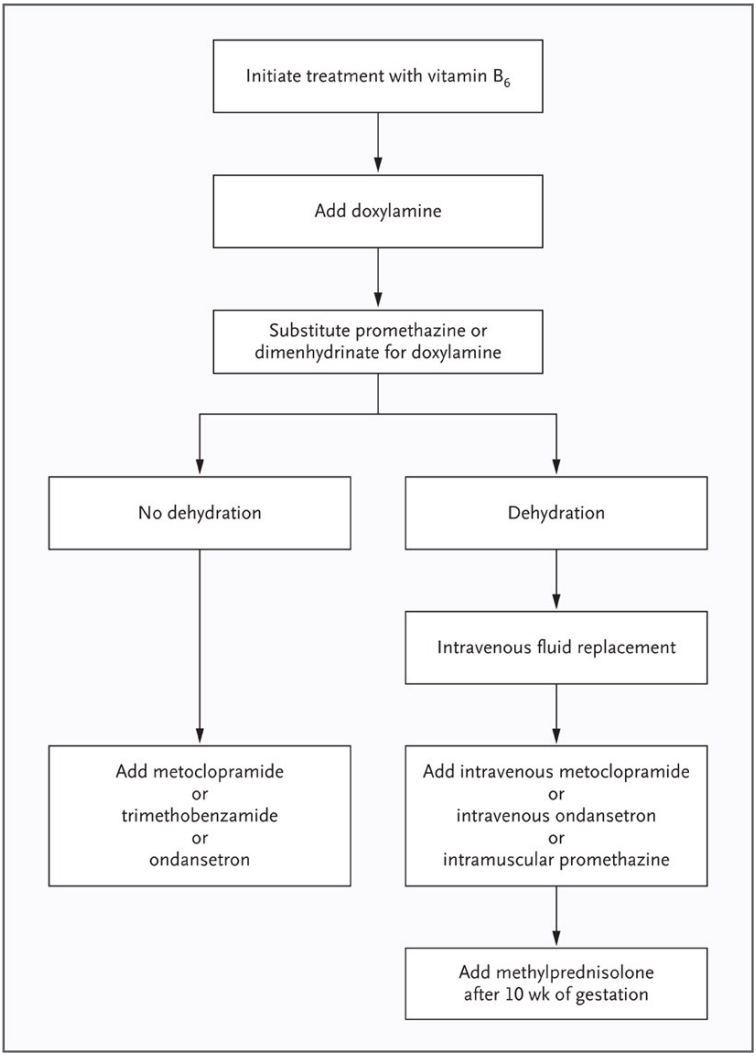
- imaging: u/s to detect multiple gestation or hydatidiform mole

Management
- persistent N/V and high concentrations of ketones —> IVF with MVI, including thiamine, with follow-up measurement of urinary ketones and electrolytes
- Antiemetic agents should be prescribed in these pts (see next page); can also use Reglan or Zofran pump. * Cautions with Reglan make is less favorable. This can be coordinated with the help of the

MA's with Optum Home Health. Order forms need filled out and faxed and are available in the FMC.

-AVOID PICC lines if at all possible.

- IVF and enteral tube feeding may be effective, although some patients continue to have persistent emesis. TPN riskier so used only if severe weight loss (>5% of body weight) and who aren't controlled with enteral feeds and antiemetics



HTN in Pregnancy

With all initial elevated BPs make sure of right size cuff, right position:

- For an arm circumference of 22 – 26 cm, the cuff should be small adult size: 12 X 22 cm.
- For an arm circumference of 27 – 34 cm, the cuff should be adult size: 16 x 30 cm.
- For an arm circumference of 35 – 44 cm, the cuff should be large adult size: 16 x 36 cm.
- For an arm circumference of 45 – 52 cm, the cuff should be adult thigh size: 16 x 42 cm.

Ref.: ACOG Bull #203; Jan. 2019

- Repeat BP within 15 min, if does not remain elevated 1st measurement can be discarded (make sure to delete first BP, as Epic keeps the first value in the vitals flowsheet).

Chronic HTN in pregnancy

- Elevated BP > 140 SBP or >90 DBP on at least two occasions 4 hrs. apart prior to 20 wks. gestation or known hx of chronic HTN

Ref.: ACOG Bull #203; Jan. 2019

Obtain early in prenatal care a *baseline of PIH labs* (CBC, CMP, Uric Acid) *and* spot urine protein/creatinine ratio or *24-hour urine total protein* so later can determine if superimposed preeclampsia or pre-existing proteinuria is the concern when urine protein is high.

- Start ASA 81 mg.
- Provide home BP Cuff and MyChart BP flowsheet.
- Do growth Ultrasounds every 4 weeks after 28 weeks
- ANFS after 32 weeks.
- Delivery planning at 37-38 weeks.
- *Consider* Calcium carbonate 1000-1200 mg

- *Consider* obtain baseline EKG or Echocardiogram
-

Gestational HTN

- Onset of elevated BP > 140 SBP or >90 DBP on at least two occasions 4 hrs. apart after 20 weeks in absence of proteinuria

- Helpful to get baseline PIH labs (same as Chronic HTN) so later can determine if with superimposed preeclampsia
- IOL at 37 weeks or later with perinatal or OB consultation

Pre-Eclampsia (mild)
- Onset of elevated BP > 140 SBP or >90 DBP on at least two occasions 4 hours apart after 20 weeks' gestation
  AND
- Greater than or equal to 300mg or protein per 24-hr urine collection

OR protein -to-creatinine ratio of >/= 0.30

- In the absence of proteinuria, w/ new onset of HTN, any of the following (**signs of HELLP syndrome**)
  - Thrombocytopenia (<100,000/microliter)
  - Impaired LFTs to > twice normal concentration
  - Hemolysis noted on peripheral blood smear or elevated LDH

- If hx of preeclampsia in a prior pregnancy, there is benefit from starting ASA and
  calcium supplementation to prevent this

Pre-Eclampsia (Severe)
- Criteria of Pre-Eclampsia and BPs >
- Cerebral or visual symptoms (flashes of light/dark spots) 160 SBP or DBP >110 on 2 occasions at least 4 hours apart.
- Renal insufficiency (Cr >1.1 or doubling of serum Cr)
- Pulmonary edema
- Severe headache ("worst ever")

Eclampsia
- Development of maternal seizures with above criteria

Care in the Hospital: Many patients are sent from clinic due to elevated BP, so the following should be done to evaluate for signs of pre-eclampsia. **Please also perform NST**
- 24-hour total protein and creatinine (if possible)
- Spot protein: creatinine ratio
- LFTs
- CBC (platelets)
- LDH
- Uric Acid

IOL for cHTN, gHTN or Pre-eclampsia in Pregnancy (with perinatal consultation usually)

Chronic HTN – controlled on no medications
- IOL at 38.0 – 39.6 weeks

Chronic HTN – controlled on medications
- IOL at 37.0 – 39.6 weeks

Chronic HTN – Difficult to control
- IOL at 36.0 – 37.6 weeks

Gestational HTN
- IOL at 37.0 – 38.6 weeks

Preeclampsia, mild
- IOL at diagnosis after 37.0 weeks

Preeclampsia, severe
- IOL at diagnosis after 34.0 weeks after steroids given to accelerate fetal lung maturity if time allows; if <34 weeks and severe preeclampsia, should be transferred to GSH or UH for high-risk management and delivery

Aspirin Dosing for Women at Risk for Pre-Eclampsia (Ref. ACOG Bull #743, July 2018)

Risk Level	Risk Factors	Recommendation
High	• History of pre-E, • Sickle disease • Renal disease • HIV • Multifetal gestation • Chronic HTN* • Type 1 or 2 diabetes	Recommend low-dose aspirin (81 mg/day) if the patient has **one or more** of these high-risk factors

	• Autoimmune disease (SLE & APLS)	
Moderate	• Nulliparity • Obesity (BMI greater than 30) • OSA • Uncontrolled asthma • BW <5# 8 oz • Family history of preeclampsia (mother or sister) • Vascular disease • Elevated lead • h/o PTSD • Sociodemographic characteristics (African American race, low socioeconomic status, Medicaid) • Age >35 or <18 • Personal history factors (adverse pregnancy outcome. HX IUGR or abruption, GDM, IVF, new male partner, > 10-year pregnancy interval)	Consider low-dose aspirin if the patient has more than one of these moderate-risk factors

*Pregnant patients with stage 1 chronic HTN had a higher risk of preeclampsia, gestational DM, and indicated preterm birth. However, aspirin, compared with placebo, did not appear to lower the risk of preeclampsia among patients in the stage 1 HTN group (Sutton, et al Obstet Gynecol 2018).

Follow-up Care for Women who have had Toxemia

Women should be advised at their post-partum visit (do this in the hospital as well as in the office), that for the rest of their lifetime they should have an annual cardiovascular exam, screening Hgb A1C, and retinal exam. Women with pre-eclampsia prior to 34 weeks should be screened for chronic renal disease for first five years after delivery.

Gestational Diabetes

a. GCT (50-gram oral GCT) is abnormal if >140
- literature proven alternative is to eat 19 Brach's jellybeans

b. GTT (100-gram oral GTT) is abnormal if 2 or more abnormal values (Carpenter/Coustan Criteria); if >95 (fasting), > 180 (1 hr.), > 155 (2 hr.), > 140 (3 hr.)

Maternal/Fetal Complications

- gestational HTN, pre-eclampsia, C-section, operative vaginal delivery
- increases risk of developing DM later in life (up to 50% risk)
- Babies- at risk of macrosomia, neonatal hypoglycemia, operative delivery, shoulder dystocia, hyperbili

Screening

- 24-28 weeks or earlier if concern for risk factors (ex. Prior hx gest DM, BMI>30, hx macrosomic infant, known impaired glucose tolerance), and need to repeat at 24-28 wks.—>1hr GCT & if abnormal, 3 hr. GTT

White Classification: ***Gestational Diabetes***

- A1 -diet controlled
- A2 -more than 2 abnormal readings in a week after diabetic diet and teaching initiated, requires medication for management

Pregestational Diabetes

- A – Abnormal GTT before pregnancy and treated successfully with diet alone

- B -pre-existing diabetes onset > 20 yrs. old, duration <10 yrs.
- C -juvenile onset diabetes onset age 10-19 or duration 10-19 years
- D -onset <10 years, or duration > 20 years, benign retinopathy or HTN
- F –nephropathy w/ > 500 mg/d proteinuria
- R -proliferative retinopathy
- RF – criteria for both R&F
- G – many pregnancy failures
- T – Prior renal transplant

Treatment of gestational DM

- recommend blood sugar testing 4 times daily (fasting in am and 1-2 hours postprandial)—> need to keep log to bring to visits

→ post prandial elevations may be more indicative of increased risk for fetal complications

→Treatment Goals for Blood sugar control

1-FSBS goals; fasting 60-95; one-hour postprandial <140; 2 hours postprandial <120; patient to bring in glucose log for EACH office visit to be reviewed and logged into the EMR

2-consider addition of metformin, insulin and (maybe) glyburide if not at goal

- nutrition!!! — referral to DM education
  —> rec diet of 33-40% carbs, 20% protein, 40% fat
  —> high fiber diet
- moderate exercise plan
- Rx for glucose monitor, testing solution, lancets, and glucose strips
- Rx for BP cuff & provide MyChart BP flowsheet
- obtain baseline pre-E labs & TSH (same as Chronic HTN)
- Medications: insulin vs oral are equal in efficacy so either first line ok

- Insulin- does not cross to placenta
- start if fasting >95 or 1hr postprandial >140 or 2hr >120
- start with 0.7-1.0 units/kg/day divided

- Oral- glyburide and metformin
- Glyburide- 2.5-20mg daily in divided doses
  ? cross placenta and unknown effects long term on baby
- Metformin- uses in pts with preexisting DM or PCOS or infertility; ACOG recommended over Glyburide as

first choice for oral agent in Gest DM due to slightly lower mean birth weight, neonatal morbidity and neonatal mortality

- Remember ASA 81 mg daily from 12 (ideally by 16 weeks) thru delivery for all moms with White Class B or more severe pre-existing diabetes

Antenatal testing

- no consensus guidelines on timing but with inc risk of fetal demise
- ultrasound and quad screen at 16-20 weeks for defects
- fetal echocardiogram at 20-22 wks. for Pre-gestational diabetes class B or higher
- weekly BPP or weekly NST with weekly AFI starting at 32 weeks, for A2 and above
- u/s q4-6 wks. starting at 28 wks.; consider u/s at 39-40 wks. for delivery management risk stratification (growth mostly)

Timing of Induction for diabetes indications

- GDM A1-delivery by 41 6/7 weeks
- GDM A2-delivery by 39 6/7 weeks if good control (increased incidence of shoulder dystocia beyond 40 weeks

Postpartum Management

- 70% risk of diabetes within 5 years and 65% risk of GDM in future pregnancies
- screen for diabetes at 6-week postpartum check with HbA1c or 2-hour GTT with 75 g Glucola
- annual screening for life

Asthma in pregnancy

- 1/3 of asthma gets worse with pregnancy, 1/3 gets better, 1/3 stays the same (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3617219/#pone.0060247-Juniper1)
- treat just as you would a non-pregnant patient (poor oxygenation in asthma attacks leads to poor oxygenation of the baby and placenta)
- Growth scans and antenatal fetal testing for moderate or severe asthma

Guidelines: Level B evidence (http://www.guideline.gov/content.aspx?id=12630)

- Inh steroids are 1st-line controller for persistent asthma
- *Budesonide* is preferred inh corticosteroid
- *Albuterol* is recommended rescue therapy
- Identifying and controlling or avoiding factors such as allergens and irritants, can lead to less need for meds
- Continuation of immunotherapy is rec in patients who are at or near a maintenance dose, not experiencing adverse reactions to injections, and apparently getting benefit
- Use of prednisone, theophylline, antihistamines, inh corticosteroids, beta2-agonists, & cromolyn is not contraindicated for breastfeeding

Guideline: Level C

- U/s and ANFS should be considered for women who have moderate or severe asthma

Oral steroids for exacerbation- slight inc in PTL and low birth weight as well as cleft palate risk in 1st trimester, pre-E, gest DM

- If needed for exacerbation, benefit outweigh risk

Step Therapy Medical Management of Asthma During Pregnancy

Mild Intermittent Asthma

- No daily medications, albuterol as needed

Mild Persistent Asthma

- Preferred – Low-dose inhaled corticosteroid
- Alternative – Cromolyn, leukotriene receptor antagonist, or theophylline (serum level 5 to 12 mcg/mL)

Moderate Persistent Asthma

- Preferred – Low-dose inhaled corticosteroid and salmeterol or medium-dose inhaled corticosteroid or (if needed) medium-dose inhaled corticosteroid and salmeterol
- Alternative – Low-dose or (if needed) medium-dose inhaled corticosteroid and either leukotriene receptor antagonist or theophylline (serum level 5 to 12 mcg/mL)

Severe Persistent Asthma

- Preferred – High-dose inhaled corticosteroid and salmeterol and (if needed) oral corticosteroid
- Alternative – High-dose inhaled corticosteroid and theophylline (serum level 5 to 12 mcg/mL) and oral corticosteroid if needed

Depression in Pregnancy

- PHQ9, follow through pregnancy (have been validated in pregnancy). Cut off is 10, sense 85%, 84% spec
- Edinburgh- we give at visit 1, postpartum and any time clinically indicated for depressive Sx monitoring

Depression during pregnancy:

Antenatal depression is associated with an increased risk of multiple neonatal and obstetric outcomes including pregnancy loss, operative deliveries, preterm birth, and difficulty breastfeeding.
It may also be associated with abnormal infant and child development, as well as cognitive problems and psychopathology in the offspring

Treatment: The risk of untreated mod to severe maternal major depression, to both the mother and fetus, often outweigh the risks associated with antidepressants.

Psychotherapy should be recommended to all patients suffering with antenatal depression whether or not they are treated with pharmacotherapy

SSRI use:

-Observational studies of pregnant women have consistently found that exposure leads to preterm birth with possible association of lower Apgar scores and low birth weight although the evidence is not clear

- paroxetine - risk of cardiovascular malformations, especially in 1st trimester (Category D - would switch to another SSRI)
-All anti-depressants have the potential to lead to withdrawal syndrome (paroxetine, TCA's)

Which med to choose?

- If a pt has been on an SSRI in the past and done well it is best to keep the patient on the same med.
- No good medication algorithms
- Sertraline: good choice due to less withdrawal and lower amounts in breastmilk and less effect on production ("with clinical considerations")

- fluoxetine: also good
- bupropion
- amitriptyline ok to continue; watch out for withdrawal

Monitoring:

- In 3rd trimester you need to watch depressive symptoms closely and may need to INCREASE doses (due to increased vascular space)

Approaching counseling: discuss the postpartum time period - importance of bonding and effect of depression on that. Overall risks of not treating outweigh risks of most meds.

- Counseling remains important, same resources as usual
  - Resident psychotherapy clinic at UH's Central Clinic
  - Mental Health Access Point, Greater Cincinnati Behavioral Health Services
  - Every Child Succeeds for first pregnancy (only post-partum depression in home therapy) or any mom living in 45229, 45203, 45204, or 45205 Zip Codes.

Postpartum Visit

Post-Partum 4-6 weeks after delivery; (also 1 week after C/S for incision check)

- Delivery history
  - Gestational age
  - Type of delivery
  - Complications
  - Infant care / Breastfeeding
- Exam; remember to include breast exam, thyroid & pelvic exam with Pap if over 21 and > 3year since last PAP at 4-6 week check. Check for diastasis recti and healing of laceration.
- **Labs:**
  - GC/chlamydia and uterine position if planning IUD at 6-8
  - GC and Chlamydia testing for other patients depending on assessment of their potential risk
  - Hgb/Hct if anemic
  - 2-hour GTT if gestational DM
- Schedule repeat Colposcopy **with ECC** if colposcopy done antepartum
- Edinburgh Post-Natal Depression Scale

- CONTRACEPTION
    - Pre-authorize Nexplanon (etonogestrel subdermal) or IUD insertion, if so desired
- Risk review and future plans/modification
    - Gestational diabetes
    - Hypertension
    - Substance abuse/tobacco – reinforce importance of cessation
    - Depression
    - Domestic violence
    - Healthy weight
    - Safer spacing of pregnancies is > 18 months from birth of recent baby till next conception
    - Establish ongoing medical care with Family Physician or other PCP

Indications for Antenatal Testing

1-insulin or medication dependent diabetes (GDMa2 or greater)
2-chronic hypertension or any hypertensive disorders of pregnancy
3-fetal growth restriction
4-late term pregnancy 41 0/7 weeks &beyond
5-maternal substance abuse including greater than one pack per day smoking, cocaine, amphetamines, opioids
6-third trimester bleeding
7-history of previous stillbirth or fetal demise
8-unexplained elevated quad screen
9-decreased fetal movement
10-maternal chronic disease (cardiac, pulmonary, renal, collagen vascular)
11-multiple gestation - MONOCHORIONIC TWINS WITH SIGNIFICANT GROWTH DISCREPANCY
12-isoimmunization
13-known fetal anomaly
14-AMA age 40 at time of delivery
15-morbid obesity BMI = 40
16-oligohydramnios
17-moderate to severe asthma
18- cyanotic heart disease
19- SLE
20- Antiphospholipid Syndrome
21-thyroid disease
22-hemoglobinopathies

Table 1 Factors Associated With an Increased Risk of Stillbirth and Suggested Strategies for Antenatal Fetal Surveillance After Viability

The guidance offered in this table should be construed only as suggestions, not mandates. Ultimately, individualization about if and when to offer antenatal fetal surveillance is advised.

Factor	Suggested Gestational Age to Begin Antenatal Fetal Surveillance	Suggested Frequency of Antenatal Fetal Surveillance
Fetal		
Growth restriction[1]		
UAD: normal or with elevated impedance to flow in umbilical artery with diastolic flow present; with normal AFI and no other concurrent maternal or fetal conditions	At diagnosis[2]	Once or twice weekly
UAD: AEDV or concurrent conditions (oligohydramnios, maternal comorbidity [eg, preeclampsia, chronic hypertension])	At diagnosis[2]	Twice weekly[3] or consider inpatient management
UAD: REDV	At diagnosis[2]	Inpatient management[3]
Multiple gestation		
Twins, uncomplicated dichorionic	36 0/7 weeks	Weekly
Twins, dichorionic, complicated by maternal or fetal disorders, such as fetal growth restriction	At diagnosis[2]	Individualized
Twins, uncomplicated monochorionic-diamniotic	32 0/7 weeks[4]	Weekly
Twins, complicated monochorionic-diamniotic (ie, TTTS)	Individualized	Individualized
Twins, monoamniotic	Individualized	Individualized
Triplets and higher order multiples	Individualized	Individualized
Decreased fetal movement	At diagnosis[5]	Once[5]
Fetal anomalies and aneuploidy	Individualized	Individualized
Maternal		
Hypertension, chronic		
Controlled with medications	32 0/7 weeks	Weekly
Poorly controlled or with associated medical conditions	At diagnosis[2]	Individualized
Gestational hypertension/preeclampsia		
Without severe features	At diagnosis[2,3]	Twice weekly
With severe features	At diagnosis[2,3]	Daily
Diabetes		
Gestational, controlled on medications without other comorbidities	32 0/7 weeks	Once or twice weekly
Gestational, poorly controlled	32 0/7 weeks	Twice weekly
Pregestational	32 0/7 weeks[6]	Twice weekly
Systemic lupus erythematosus		
Uncomplicated	By 32 0/7 weeks	Weekly
Complicated[7]	At diagnosis[2]	Individualized
Antiphospholipid syndrome	By 32 0/7 weeks[8]	Twice weekly
Sickle cell disease		
Uncomplicated	32 0/7 weeks	Once or twice weekly
Complicated[9]	At diagnosis[2]	Individualized
Hemoglobinopathies other than Hb SS disease	Individualized	Individualized
Renal disease (Cr greater than 1.4 mg/dL)	32 0/7 weeks	Once or twice weekly
Thyroid disorders, poorly controlled	Individualized	Individualized
In vitro fertilization	36 0/7 weeks	Weekly
Substance use		
Alcohol, 5 or more drinks per week	36 0/7 weeks	Weekly
Polysubstance use	Individualize	Individualized
Prepregnancy BMI		
Prepregnancy BMI 35.0–39.9 kg/m2	37 0/7 weeks	Weekly
Prepregnancy BMI 40 kg/m2 or above	34 0/7 weeks	Weekly
Maternal age older than 35 years	Individualized[10]	Individualized
Obstetric		
Previous stillbirth		
At or after 32 0/7 weeks	32 0/7 weeks[11]	Once or twice weekly
Before 32 0/7 weeks of gestation	Individualized	Individualized
History of other adverse pregnancy outcomes in immediately preceding pregnancy		
Previous fetal growth restriction requiring preterm delivery	32 0/7 weeks	Weekly
Previous preeclampsia requiring preterm delivery	32 0/7 weeks	Weekly
Cholestasis	At diagnosis[2]	Once or twice weekly
Late term	41 0/7 weeks	Once or twice weekly
Abnormal serum markers[12]		
PAPP-A less than or equal to the fifth percentile (0.4 MoM)	36 0/7 weeks	Weekly
Second-trimester Inhibin A equal to or greater than 2.0 MoM	36 0/7 weeks	Weekly
Placental		
Chronic placental abruption[13]	At diagnosis[2]	Once or twice weekly
Vasa previa	Individualized	Individualized
Velamentous cord insertion	36 0/7 weeks	Weekly
Single umbilical artery	36 0/7 weeks	Weekly
Isolated Oligohydramnios (single deepest vertical pocket less than 2 cm)	At diagnosis[2,3]	Once or twice weekly
Polyhydramnios, moderate to severe (deepest vertical pocket equal to or greater than 12 cm or AFI equal to or greater than 30 cm)	32 0/7–34 0/7 weeks[14]	Once or twice weekly

Abbreviations: AEDV, absent end-diastolic velocity; AFI, amniotic fluid index; BMI, body mass index; Cr, creatinine; MoM, multiples of the median; PAPP-A, pregnancy-associated plasma protein A; REDV, reversed end-diastolic flow; TTTS, twin to twin transfusion syndrome; UAD, umbilical artery Doppler.

The guidance offered in this table should be construed only as suggestions, not mandates. Ultimately, individualization about if and when to offer antenatal fetal surveillance is advised.

[1]Estimated fetal weight or abdominal circumference less than the 10th percentile.

[2]Or at a gestational age when delivery would be considered because of abnormal test results.

[3]If not delivered.

[4]In addition to routine surveillance for twin–twin transfusion syndrome and other monochorionic twin complications.

[5]Repeat if decreased fetal movement recurs.

[6]Or earlier for poor glycemic control or end organ damage.

[7]Such as active lupus nephritis, recent lupus flare, antiphospholipid antibodies with prior fetal loss, anti-RO/SSA or anti-La/SSB antibodies, or thrombosis.

[8]Individualize, take into consideration obstetric history, number of positive antibodies, and current pregnancy complications.

[9]Such as maternal hypertension, vaso-occlusive crisis, placental insufficiency, fetal growth restriction.

[10]Based on cumulative risk when present with other factors.

[11]Or starting 1–2 weeks before the gestational age of the previous stillbirth.

[12]If serum screening for aneuploidy is performed, the results may be considered in determining whether antenatal fetal surveillance should be performed.

[13]In individuals who are candidates for outpatient management.

[14]Or at diagnosis if diagnosed after 32 0/7–34 0/7 weeks.

Number 8 **AFI**

Ultrasound in all 4 abdominal quadrants. Hold the probe parallel to the floor and perpendicular to the spine. Freeze the image when you see the largest pocket of fluid in each quadrant (must not contain cord or extremities!). Measure the pocket vertically (straight up and down). Add the values up when completed.

- Total ≤ 5cm= Oligohydramnios
- Total >5cm and <20 cm = Normal
- Total ≥ 20 cm = Polyhydramnios
-
- ** USE OF DEEP VERTICAL POCKET (<2CM) AS OPPOSED TO AFI TO DX OLIGO IS ASSOCIATED WITH A REFUCTION IN UNNCESSARY INTERVENTIONS WITHOUT AN INCREASE IN ADVSERSE PERITNATAL OUTCOMES

Modified BPP= AFI +NST

BPP

8 points possible each test gets a score of 2 or zero

1. amniotic fluid single pocket 2 cm x 2 cm gets a score of 2
2. fetal breathing one event lasting 30 secs and a period of 30 min
3. fetal tone one active extension & return to flexion
4. gross motion 3 discrete movements in 30 minutes

General Interventions:

- BPP > 8 → home
- BPP = 6 → in hospital monitoring and reevaluate
- BPP < or = 4 → delivery

PEARLS:

-
- USE OF DEEP VERTICAL POCKET (< 2 CM) AS OPPOSED TO AFI IS ASSOCIATED WITH REDUCTION IN UNNECESSARY INTERVENTINOS WITHOUT INCREASE IN ADVERSE PERINATAL OUTCOMES.
- PERSISTENT / ISOLATED OLIGO PROMPTS DELIVERY AT 36-37 WEEKS. IF LESS THAN 36 WEKS- INDIVIDUALIZED MANAGEMENT.
- IN GROWTH RESTRICTED BABIES- USE OF DOPPLER FLOWS IN ADDITION TO OTHER STANDARD TESTS IS ASSOCIATED WITH IMPROVED OUTCOMES
- ABNORMAL NST / MODIFIED BPP SHOULD BE FOLLOWED BY CST OR BPP

- TYPICAL CONDITIONS REQUIRE WEEKLY TESTING BEGINNING AT 32-34 WEEKS. MULTIPLE HIGH-RISK CONDITIONS OR UNSTABLE MATERNAL CONDITION PROMPTS EARLI/ MORE FREQ. TESTING

- **UMBILICAL ARTERY DOPPLER VELOCIMETRY USED WITH NSTS, ETC MAY IMPROVE OUTCOMES IN GROWTH RESTRICTED FETUSES. NOT PROVEN BENEFIT IN LOW RISK. OTHER FETAL VESSELS (MIDCEREBRAL ARTERY, ETC 0 NOT PROVEN USEFUL IN LITERATURE**

- **Stress importance of DAILY FETAL MOVEMENT COUNTS. May result in more visits but not necessarily more interventions. It has been shown to improve pregnancy outcomes. Patients should be encouraged to report decreased fetal mov't to us. Greater than 5 kick counts in an hour is not appropriate until >32 weeks**

Induction of Labor

Indications
- Abruptio placentae
- Chorioamnionitis
- Fetal demise
- Gestational HTN, Preeclampsia, eclampsia
- PROM
- Post-term pregnancy
- Maternal medical conditions
    - Diabetes mellitus, renal disease, chronic pulmonary disease, chronic HTN, antiphospholipid syndrome
- Fetal compromise
    - Severe fetal growth restriction, isoimmunization, oligohydramnios

DATING Criteria that must be met prior to IOL (not necessary for emergent reasons, e.g., eclampsia, severe preeclampsia, etc.)
- US measurement at less than 20 weeks of gestation supports gestational age of 39 weeks or greater
- FHTs have been documented as present for 30 weeks by Doppler ultrasonography
- If it has been 36 weeks since a positive serum or urine hcg

Cervical Ripening if Bishop Score is <6 may be considered but certainly necessary if score is <3
- Cervidil (dinoprostone)
    - 10mg, PV➔Remove at 12h, at onset of active labor or if uterine hyperstimulation (> 5 contractions in 10 min

averaged over 30 min period. Always be sure a fluid bolus has been given prior to pulling the Cervidil (as long as baby is tolerating the pattern) as this will likely space out the contractions.

- Cytotec 50 mg Q 6 is an option – limitations include it is NOT retrievable, associated with maternal fever, and causes GI distress in some pts. May be more acceptable to pts declining Pitocin. This is now preferred over Cervidil by TCH for all IOL requiring cervical ripening who do not have a contraindication or condition that may make the infant less tolerant of tachysystole (Oligo, IUGR, placental abnormality)
- Foley Bulb→Mechanical dilation → puts pressure on cervix to cause dilation. Catheter is placed manually or with ring forceps through the cx, inflated with about 4-5cc fluid, then tugged on and tethered to pt.'s leg. It typically falls out when pt. is about 3-4 cm.
- Can be used in conjunction with Pitocin
- Can be left in as long as necessary, usually no longer than 24 hours is necessary

- Sweeping membranes – increases prostaglandins, counsel pt. re: bleeding/cramping. Works in 24-48 hours. No literature on GBS +. Be sure they hydrate afterwards to flush out uterine irritability
- Amniotomy – Use if cervix is favorable. Works best with Pitocin infusing at same time. TIME IT TO ALLOW FOR ADEQUATE GBS PROPHYLAXIS IF POSSIBLE
  - Nipple Stimulation – Works best if cervix already favorable. Unilateral, 5 minutes alternating breasts. Literature showed no uterine tachysystole, meconium, or increase c/s or abnormal FHRs. Only studied in low-risk patients. Was associated with less postpartum hemorrhage.

  - ** CONSIDER Ambien or Vistaril PRN at HS when pt. is being induced overnight. Encourage one support person overnight until Pitocin is started the following day so patient can rest.

If the patient's cervix is ripened and Bishop score is appropriate >4 or 5 then cervical ripening is not necessary and pt may be scheduled in the morning for Pitocin induction:

- Pitocin
  - 2 x 2 x 15

- Start at 2 units, increase by 2 units every 30 minutes

- Place internal monitors if necessary, to monitor contraction pattern and MVUs

Steps to Schedule an Induction

* Confirm dates!!!! Must be 39 for elective deliveries.
* Confirm fetal position is cephalic!
* Estimate the fetal weight – it won't matter if you were wrong, just that it guided your management plan.

Consider pelvimetry – is THAT baby going to fit through THAT pelvis.

Phone Calls:

1 Call L&D desk to ask for availability

2 FM faculty should ALWAYS consult the FM faculty for intended induction date and confirm approval (also notify FM OB on next day)

3 FM faculty or the resident may consult OB backups for intended induction date and confirm their approval (also consult OB backup on the next day)

Short presentation: Pt's name, age, G's and P's, EGA by ___ method (6 week us, lmp, etc.), any pregnancy complications & indications for induction (post-dates, size, gest DM, MFM consult recs, etc.) along with date & time of induction.

**Must call (not text) OB faculty and OB backups→ sample script below: ** OK TO TEXT FIRST TO ASSESS AVAILABILITY TO TALK.

I would like to talk with you about an induction I'd like to schedule for _____. Do you have a minute to hear about that now? This is a G_P_ at _weeks confirmed by (LMP/__weeks US) who will be __weeks on this date of induction. We would like to induce her for (indication- late term, past 41, HTN, etc.). She has a Bishops score of __. We will do (cervical ripening/pit). Are you OK with us proceeding?

4 Confirm date with L&D front desk- they will need patient's demographic data (MRN and phone number), type of induction (i.e., Pitocin vs Cervidil), and any unique info (GBS, etc.)

5 Call patient their arrival time and date for induction

- make sure time and date are ok
-Have patient get their pre-procedure Covid test 3-6 days prior to schedule date
- inform them to present to L&D front desk at time of induction and review process with patient
- also review the potential that the **pt. may be called by L&D to move time to later or reschedule for next day if staffing issues/busy floor**

6 Call patient's primary MD/DO/CNM if they are not the one on call so they can be a part of it if they would like
7 notify resident on OB & continuity resident if applies

To do:

- Go to future encounter in EPIC under the 9 west context or go to Chart Review and click on the future encounter.
- Complete the tab that says "scheduled delivery"— patient info (GsPs, etc., weeks determined by LMP vs US at **weeks, etc.), EFW by Leopold's, bishop score info (WILL NEED CERVICAL EXAM— position, consistency, effacement, dilation, station), rationale for induction
  ** if not done, they will not start the induction or order meds from pharmacy, and it will significantly delay the process (SEE BELOW)
- Pend orders for induction in the future encounter (order sets for Pitocin and Cervidil inductions to walk you through), reason is "preprocedure"
- You can start and pend the H&P (inpatient environment) if seen within 3 days.

Scheduling tips:

- Do not schedule elective inductions on weekends OR HOLIDAYS including Friday night if can be avoided. This is a staffing issue on the floor.
- Cervidil and Cytotec are scheduled for night slot. Pitocin is an am slot. If unsure, go with night slot (can always be pushed forward) Foley bulb induction can be either am or pm time

Bishop Score

****must do prior to setting up induction to determine type of induction**

Bishop Score					
Score	Dilation	Cervical position	Effacement	Station	Cervical consistency
0	Closed	Posterior	0-30%	-3	Firm
1	1-2cm	Midposition	40-50%	-2	Medium
2	3-4cm	Anterior	60-70%	-1,0	Soft
3	5-6cm	--	80%+	+1,+2	--

Steps to arrange for a tubal ligation

1. If patient has a commercial carrier, no further steps need to be done. Due diligence should be taken to complete the counseling as per usual routine. If patient has Medicaid or Medicare or any of the versions of these, then Patient needs to complete **Medicaid sterilization form called the "30 Day Letter"** (attached below and on J-drive under TCHMA, pregnancy, forms). It is CRITICAL to use the most current version of the form, so note the current year. It can change monthly at times.

The signed for is valid for 6 months in advance, so try to do this by 24-28 weeks. This should be scanned into chart under Media, once completed and document in the Problem List under her principal pregnancy diagnosis and in one of your notes that you reviewed the letter with the patient and that it was scanned into chart so that if the patient needs an unscheduled C-section this can be accessed on L&D. The last section, the left lower area of the form, will be completed by the surgeon performing the procedure. HOWEVER, the 30-day countdown begins when the patient signs the form with us!

FYI – the address should be the HOSPITAL, NOT THE MOB. Also, the

procedure is “Bilateral Salpingectomy. “

2. Complete a referral for one of the OB's. See below for more information regarding coverage. Then call the OB directly to present the patient.

***Must be completed at least 30 days before procedure & only valid for 6 months. Don’t do until at least 20 wks.

5/2021 Survey Done of OB Back-up’s Regarding Sterilization (BTL’s):

The following docs are credentialed with these (Medicaid type) insurances

OHIO - Medicaid Ohio - BA, DB, IW, AL, RR; CareSource - BA, DB, IW, AL, RR; Buckeye – BA, DB, AL, RR; Molina - BA, DB, IW, AL, RR; UHC Community Plan - AL, DB, IW, RR; Paramount Advantage – AL, DB, IW, RR

KENTUCKY - KY Medicaid - BA, DB, IW, AL, RR; Well Care KY – AL, DB, RR; Humana Medicaid KY – DB, RR; Aetna Better Health of KY – DB, RR; Note, IW’s office can pre-authorize any of the KY Medicaids with advance notice

Each Doctor has preferences for pre-procedure consultation and referral for patients with VALID, SIGNED MEDICAID BTL CONSENT FORMS. Please see below for which works best for your patient:

- Prefers Pre-BTL Counseling in Their Own Office BEFORE delivery: DB, IW, BA, AL
- OK For Referral for Pre-BTL Counseling in Post-partum @ TCH: BA, IW
- RR will offer PP tubals after discharge at UH
- Will perform tubals the next day post-partum for patients whom they have spoken with earlier – IW, RR, AL

Setting Up a Repeat or Primary C-Section

Confirm dating first! In general, they must be 39 weeks, unless a condition such as oligohydramnios or HTN exists.

People to talk to regarding scheduled C-section: OB, FM OB on the day it is scheduled, resident on FM OB the day it is scheduled, L&D front desk, and any resident for whom the pt. is continuity… recommended call order:

- Call OB who did her last C-section or choose your OB of choice about the need for her C-section and for intended date. The choice of OB is based on previous C-section or your preference. You can discuss with FM attending if you have questions
    - Short presentation: Patient's name, age, Gs and Ps, EGA by _____ (method for dating), indication for C-section, previous indication (failure to progress, CPD, etc.), type of incision. Offer to fax a copy of pt.'s records to OB.
    - if patient wants a tubal make sure to let the OB know!
- Call L&D front desk to inquire about the date based on the OB's preference
- Once date is set by the OB and relayed to you, call the FM faculty on that day, as they will need to enter delivery data and round on mom (socially) and baby if coming to family doc. Let them know who will be primary on baby.
- Call any residents who may be involved so there are no surprises when triage calls 😃
    - some OBs allow 2 residents to scrub and others only 1
- Call the L&D front desk (513-585-3238)back to confirm date.

Complete C-section teaching with pt. (do NOT assume this is done by OB, these are our patients…)

- npo 8 hours before scheduled time (including water, gum, candy, food, etc.)
- when to arrive at L&D—> 2 hours prior to scheduled time
- it helps to explain why: need IV and labs back beforehand, H&P, anesthesia...
- risk/benefit discussion
- explain that c/s may be postponed if L&D is too busy to safely start her c/s
- confirm who will be baby's doctor
- during the COVID Pandemic, she will need pre-procedure COVID testing completed 2-6 days before her surgery; this will be ordered by the OB and they are to communicate

with her when to get that completed; late incomplete or ignored COVID testing will result in C/S needing to be rescheduled

If pt. also wants tubal, make sure papers are completed and scanned into chart (see separate Evernote for tips), give pt. a copy to keep with her, and fax a copy to the OB.

For efficiency: once C-section is scheduled, you can open the future encounter through EPIC, initiate and pend the H&P (must be within 1 week of the C-section)

*** if you are going to be the doc in the C-section, arrive 2 hours prior to scheduled time to complete H&P (or plan ahead, days before do this 1-6 and then update her vitals in L&D – this can be a timesaver for you)

FETAL HEART RATE MONITORS

FHR Tracing Interpretation

Category I FHR tracing

- Strongly predictive of normal acid-base status
- FHR tracing shows ALL of the following
    - Baseline FHR 110-160 bpm
    - Moderate variability (6-25 bpm above baseline)
    - Accelerations may be present or absent
    - Must not have late or variable decelerations, may have early decelerations

Category II FHR tracing

- Not predictive of abnormal fetal acid-base status, but requires continued surveillance and reevaluation
- FHR tracing shows ANY of the following
    - Tachycardia
    - Bradycardia without absent variability
    - Minimal variability
    - Absent variability without recurrent decelerations
    - Marked variability
    - Absence of accelerations after stimulation
    - Recurrent variable decelerations with minimal or moderate variability
    - Prolonged deceleration >2 min but less than 10 min
    - Recurrent late decelerations with moderate variability
    - Variable decelerations with other characteristics such as slow return to baseline and “overshoot”

Category III FHR tracing

- Predictive of abnormal fetal acid-base status at time of observation. Depending on clinical situation, efforts to expeditiously resolve the underlying cause of the abnormal FHR pattern should be made.
- FHR tracing shows EITHER of the following
    - Sinusoidal pattern OR
    - Absent variability with recurrent late decelerations, recurrent variable decelerations or bradycardia.

Abnormal FHR Tracing Interventions

- Maternal positional changes (i.e., Left lateral, hands and knees, etc.)
- Oxygen
- Fluid bolus
- Amnioinfusion, if ruptured (mainly for recurrent variable decelerations)
- If unable to obtain FHTs with external monitor, consider internal FSE
-

NST Criteria

≥ 32 weeks gestational age

- Moderate variability
- At least two accelerations in a 20-minute period at least 15 beats above baseline for 15 seconds
- No variable or late decelerations

28-32 weeks gestational age

- Moderate variability
- At least two accelerations in a 20-minute period at least 10 beats above baseline for 10 minutes
- No variable or late decelerations

< 28 weeks gestational age

- Verify presence of FHR and no prolonged or late decelerations
-
- If reactive, repeat in 7 days

-variable decelerations are common, but if repetitive or lasting > 60 sec, obtain BPP

-if nonreactive: options for further testing include BPP, CST or admit patient for extended monitoring

TRIAGE

Phone Call Triage Guide

Problem	1st trimester	2nd trimester	3rd trimester
Vaginal bleeding- heavy bleeding like a period	needs eval- goes to ED	Needs eval- goes to ED or OB triage	Needs eval- goes to triage
Vaginal spotting- small amt seen on tissue or in underwear	If no assoc'd symptoms (dizziness, cramping), monitor and see in AM, esp. if assoc'd with sex	Same, eval for PTL symptoms. Needs eval if has placenta previa.	Same, eval for labor sx and fetal movement, if both normal can be seen in AM. Needs eval if has placenta previa.
Vaginal discharge	Unless assoc'd with dysuria or sig cramping/ctx can be seen next day	Same	Same
Contractions	Needs eval if not related to other possible etiology, i.e., diarrhea, constipation, vomiting, etc. Definite eval if associated with heavy bleeding and being worked up for Ab. Call maternity faculty if unsure.	Eval for B-H ctx. If not B-H, needs eval (B-H contractions usually more of a tightening, <60sec, do not have to stop activity, irregular, goes away with fluids or change in activity/position)	Eval for B-H ctx. If <37 wks., needs eval for reg ctx (PTL). If >37 weeks, send in if ctx every 5 min or less for an hour or more, can't breathe through them, last 60-90 sec. Ask how far away pt lives. Come in sooner if lives far away or h/o fast labors.

Decreased fetal movement	Usually quickening 19 weeks, not reliable in 1st trimester	Not reliable movement less than 28 weeks. Ok to send in for eval if mom concerned or prolonged time without movement	If >28 weeks, kick counts (>10 in 1 hour). If less than 10, drink juice and do again. If still < 10, come to triage). If no movement or prolonged time, needs eval
Loss of Fluid	Needs eval	Needs eval	Needs eval
URI symptoms	Eval for COVID- if mild Sx, arrange for testing. If mod to severe possible COVID Sx or if flu sx, needs eval. If no concern for flu or high fevers, supportive care. No pseudoephedrine in 1st trimester. Afrin ok if bp nml. Breath right strips, nasal saline, nasal sprays ok. Honey, lemon, peppermint tea, humidifier, fluids.	Same. Ok to use pseudoephedrine with caution, as can elevate BP Benadryl ok	Same as 2nd trimester
Cramping	Isolated without fever, vomiting, vaginal bleeding can be seen in clinic next AM. Tylenol prn, warm bath. Hydration is necessary. Push oral fluids, water specifically. Severe	Same. r/o PTL Consider cervical length if < 24 weeks.	Same. R/o PTL

	or with bleeding needs eval.		
Vomiting	If intractable, sudden onset or with associated sx, needs eval. If intermittent ok to eval in AM. Supportive care: peppermint, sea bands, crackers, small freq meals, lemon/sour candies, b6, ginger	Same	same

If sending in…now what?

1. Direct pt. to ED (<20wks) or triage on 9th floor (if >20wks)
2. Call maternity faculty on call. If unsure, can call L&D front desk (585-2336) and they can direct you.
3. Determine who will call L&D charge RN and FM resident on call. If cannot reach maternity faculty, still call L&D to let them know pt. coming (585-2336).

If unsure what to do, call Maternity Faculty on call.

Labor Rule Out

DO NOT: Perform cervical check prior to STERILE SPECULUM EXAM unless instructed to do so by maternal care faculty. If patient appears to be in active labor, it may be appropriate to perform a SVE first.

TO DO:

- FHR monitor
  - Category of FHR tracing
  - Contraction pattern
- Sterile speculum exam
  - Rule out ROM (see section on r/o ROM)
  - Wet prep and Gonorrhea/Chlamydia if abnormal discharge
- Sterile vaginal exam (cervical check)
  - Dilatation
  - Effacement
  - Station
  - Cervical consistency (soft, medium, firm)
  - Cervical position (posterior, mid-plane, anterior)
  - Fetal position (cephalic versus other, if unable to determine by SVE and/or Leopolds, use ultrasound)
- Rule out other causes that may precipitate contractions
  - UA – look for UTI and dehydration (specific gravity)
    - IVFs with high sp. Gravity
    - Abx for UTI
  - Intercourse

If STERILE VAGINAL EXAM is 0-4cm, allow patient to remain/labor in triage for 1-2 hours and recheck sterile vaginal exam, if actively changing, may admit for labor or continue to monitor in triage if <4cm.

Patient may desire to get up and walk or utilize the Jacuzzi tub if they choose.

If latent labor (not dilating), may continue to monitor in triage or consider discharge to home with:

- Tylenol 1g, PO
- Vistaril 25-50mg, PO
- Ambien 5-10mg, PO (if not driving self)
- Flexeril 5-10mg, PO (if not driving self)

Rule out Rupture of Membranes

DO NOT: Perform cervical check prior to STERILE SPECULUM EXAM

TO DO:

- Verify time of perceived ROM by patient
- Ask about intercourse (semen can cause false + nitrazine and ferning)
- Sterile speculum exam without gel
    - Wet prep
    - Gonorrhea/Chlamydia swab?
    - Is there pooling in the posterior vaginal vault?
    - Ferning slide- by taking sterile Q-tip, obtain fluid and spread onto slide. Allow this to dry completely (usually 2 minutes) then examine under microscope to look for ferning. Look at entire slide - not just one section.
    - ROM+ if other tests inconclusive
- If positive ROM, is it premature ROM (PROM)? Did contractions start prior to ROM?

Explanations:

- PROM – Premature rupture of membranes
    - ROM prior to onset of contractions
- PPROM – Preterm, premature rupture of membranes
    - ROM prior to onset of contractions <37 weeks
- Risks
    - increased risk of infection (chorioamnionitis) → limit sterile vaginal exams
    - increased risk of cord prolapse if head not engaged
- See management of PROM

Trauma

- Place on monitor, at least 4 hrs from the time of injury/trauma, depending on type of injury. Make sure tracing is reactive and no contractions.
- History: Get specifics of injury. For example, with MVA, how fast were they going? Head on vs side swiped, wearing seatbelt and where seatbelt was placed. Any LOC? Any contractions, LOF, VB?

- Exam: look for bruising, petechiae especially in abdominal history
- Work-up: Depending on mechanism of injury, may obtain Keilhauer–Betke test to look for maternal fetal hemorrhage. Send this as STAT. Then based on mom's blood type, need for Rhogam will be determined.
- Reassurance goes a long way, as well as return precautions!!!

Rule out Preterm Labor (PTL)

DO NOT: Delay treatment if there is evidence that the pt. is truly in labor

TO DO:

- Examine the patient ASAP!!
- FHR monitor and tocometer
- STERILE SPECULUM EXAM first. Be careful placing speculum, not to traumatize the cervix creating any bloody discharge that could affect possible further testing.
    - Collect GBS swab if contracting or concern for PTL.
    - Check for infections
        - UTI, GC/CT, CBC, uterine tenderness, wet prep
    - Rule out ROM
        - If ruptured, DO NOT perform STERILE VAGINAL EXAM
    - Fetal fibronectin (22.0-34.6 wks.)
        - Not valid if ROM, intercourse in past 24 hr., recent cervical exam, or bleeding
        - No lube, use a DRY SPECULUM. Rotate swab in posterior fornix for 10 seconds.
        - It has a good NPV and a mediocre PPV.
        - You can use it in combination with a transvaginal cervical length measurement (see below) or by itself.
        - A negative fFN is highly predictive of no preterm birth within the next week. A positive fFN can be followed with 23-hour observation, a cervical length and/or serial fFNs.
    - Visualize if cervix dilating (unable to tell actual dilation on spec exam as you cannot visualize the

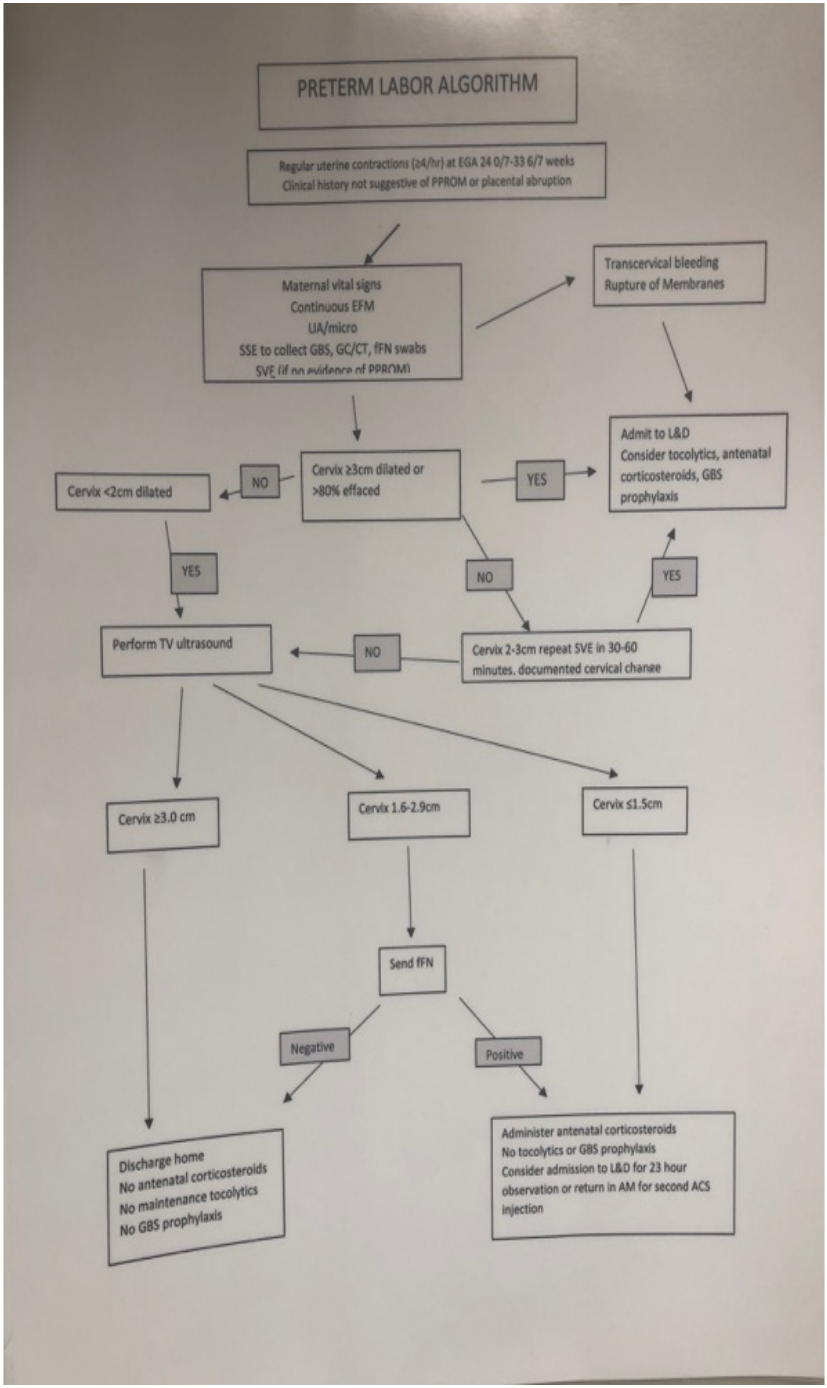
internal os, do not be falsely reassured by a closed external os!)
    - If no ROM → perform STERILE VAGINAL EXAM
- SVE- If the patient is >= 3cm dilated and/or > 80% effaced, admit to L&D (>32 wga) versus transfer to UC (<32 wga.) See below.
- Determine fetal position
- Consider US for cervical length in patients that are <34 wga and <2cm dilated and contracting. Transvaginal cervical lengths can be performed in the Perinatal Center but are not available on evenings and weekends. Consider including it in your work up if it is during the weekday or you admit a patient for preterm labor r/o observation and can get it the following day.
    - If cervical length ≤ 2cm, plan for stabilization. Can admit for observation at TCH if >32 wga. Transfer to UC for observation if <32 wga.
- Other causes of preterm contractions
    - UDS Legal for illicit drug use
    - UA for eval of sp. gravity if dry → IVFs

If cervical length ≤ 2cm or STERILE VAGINAL EXAM >= 3cm dilated and/or > 80% effaced OR dilating/effacing on subsequent SVE → Consult OB/Gyn

- KNOW THE PATIENT!!
    - Review medical records and dating
- If < 32 weeks,
    - Prepare for transfer to UC.
    - Give betamethasone 12mg, IM, q24h x 2 doses
    - Start GBS prophylaxis.
    - Check STERILE VAGINAL EXAM immediately prior to transfer if not ROM.
    - Consider tocolysis to allow time to administer antenatal corticosteroids.
        - **Terbutaline** – 0.25mg SQ, q20min, hold for HR>120

        - **Procardia** 30mg loading dose, then 10-20mg, q4-6hr
        - **Mg sulfate** – 4-6gm for 20min, 2-3 g/hr.
        - **Indomethacin** – 50mg PR or 100mg PO then 25-50mg PO q6hr
    - Consider Magnesium sulfate for fetal neuroprotection if concern delivery within the next 24 hours and < 32 wga.
- If 32.0-33.6 wga
    - Admit to L&D
    - Give betamethasone 12mg, IM, q24h x 2 doses
    - Start GBS prophylaxis.
    - Check STERILE VAGINAL EXAM immediately prior to transfer if not ROM.
    - Consider tocolysis to allow time to administer antenatal corticosteroids.
        - **Terbutaline** – 0.25mg SQ, q20min, hold for HR>120
        - **Procardia** 30mg loading dose, then 10-20mg, q4-6hr
        - **Mg sulfate** – 4-6gm for 20min, 2-3 g/hr.
        - **Indomethacin** – 50mg PR or 100mg PO then 25-50mg PO q6hr
- If 34.1-36.6 wga,

    - Admit to L&D
    - Consider antenatal corticosteroids for fetal lung maturation.
    - Start GBS prophylaxis if positive or unknown.
    - No tocolysis or magnesium sulfate for neuroprotection.


PRETERM LABOR ALGORITHM
Regular uterine contractions (≥4/hr) at EGA 24 0/7-33 6/7 weeks
Clinical history not suggestive of PPROM or placental abruption
Maternal vital signs
Continuous EFM
UA/micro
SSE to collect GBS, GC/CT, fFN swabs
SVE (if no evidence of PPROM)
Transcervical bleeding
Rupture of Membranes
Admit to L&D
Consider tocolytics, antenatal corticosteroids, GBS prophylaxis
Cervix ≥3cm dilated or >80% effaced
YES
NO
Cervix <2cm dilated
YES
NO
YES
Perform TV ultrasound
NO
Cervix 2-3cm repeat SVE in 30-60 minutes. documented cervical change
Cervix ≥3.0 cm
Cervix 1.6-2.9cm
Cervix ≤1.5cm
Send fFN
Negative
Positive
Discharge home
No antenatal corticosteroids
No maintenance tocolytics
No GBS prophylaxis
Administer antenatal corticosteroids
No tocolytics or GBS prophylaxis
Consider admission to L&D for 23 hour observation or return in AM for second ACS injection

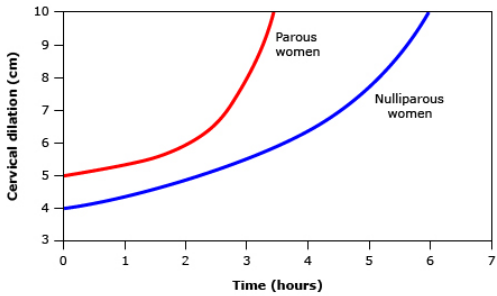
LABOR

Normal Labor Management

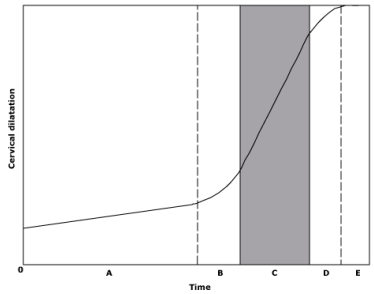
Be active, not reactive!

TO DO:

- Use labor curve (partogram) on all labors
  - The contemporary labor curve is now more widely used than Friedman. It takes into consideration patient's higher BMI and anesthesia practices in the 21st century.
  - Contemporary Curve
    Defines active labor as 5-6 cm dilated. Women may dilate <1 cm/hr prior to being in active labor.



Friedman Curve- suggests women should dilate >1 cm per hour

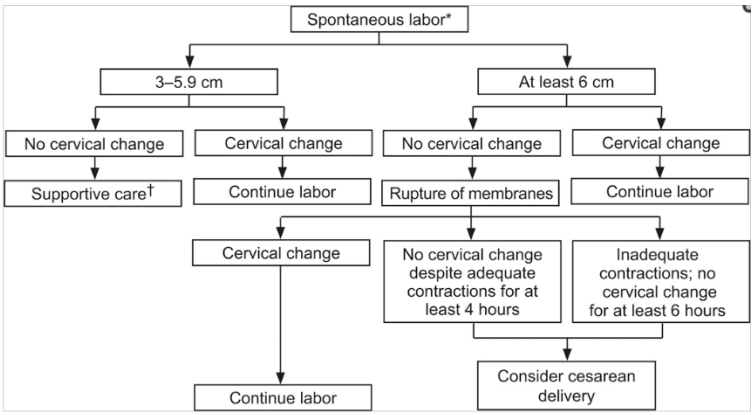


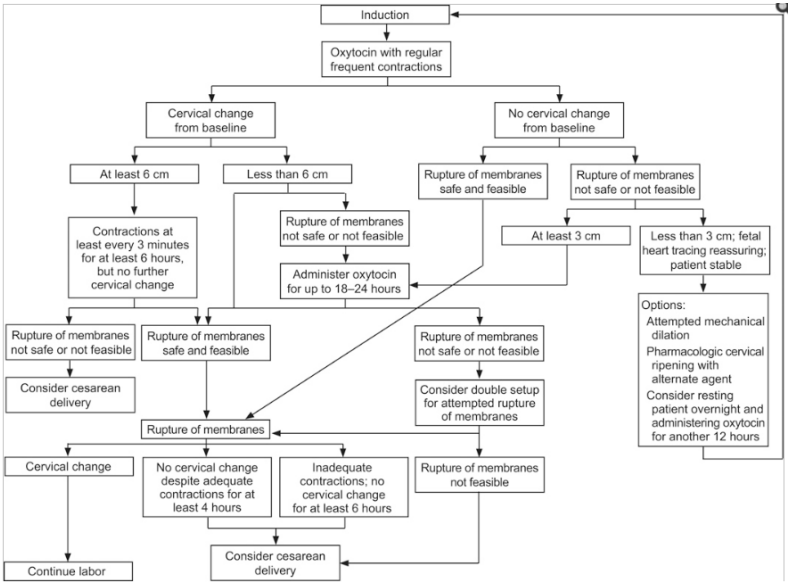
- STERILE VAGINAL EXAM q2-4 hours in the latent stage and every 2 hours in the active stage, or more often as clinically indicated (i.e., abnormal FHR tracing, maternal symptoms, SROM, etc.)

Interventions:

- Take interventions if patient falls off labor curve
    - AROM (amnio hook) if fetal head is well applied to the cervix
    - Pitocin
        - Use order set (***Typically increase by 2 units every 30 minutes until adequate response)***
        - Can be on Pitocin without IUPC up to 20 units
    - Indications for internal monitors (FSE and IUPC)
        - Difficulty monitoring FHR
        - Difficulty monitoring contraction pattern
        - Pitocin rate 20 units/min or more (L&D policy is no greater than 20 mu on Pitocin)
        - Difficulty correlating FHR abnormalities with contractions

Preventing the first Cesarean Delivery by Spong et al. Obstet Gynecol. 2012 Nov; 120(5): 1181–1193.





Failure to progress/descend

Prolonged latent phase- >20hrs in nulliparous or >14 h in multip
A prolonged latent phase (without signs of fetal distress or maternal complications) can be treated with therapeutic rest, Morphine for pain and therapeutic rest, Pitocin, amniotomy, or foley bulb induction but cesarean delivery for failure to progress should not be performed during the latent phase of spontaneous labor as most women will go on to enter the active phase with expectant management.

Failure to progress (arrest of active phase) – absence of cervical change for 4 hours or more in the presence of adequate uterine contractions and cervical dilation of at least 6 cm or no cervical change for 6 hours in the presence of inadequate contractions once pt is 6 cm dilated.

- Try all labor interventions including position changes, AROM, manual rotation if appropriate, Pitocin administration, potentially an epidural if pt has been un-medicated and monitor MVUs with IUPC
    - Want MVUs >200 over 10-minute period
- Treatment

    - Stop Pitocin
    - Cesarean delivery

Failure to descend (arrest of second stage) – lack of fetal vertex descent through the birth canal
*second stage starts when completely dilated
*Average is 50min in nullip and 20 min in multip

- At least 2 hours of pushing in multiparous women
- At least 3 hours of pushing in nulliparous women
- May allow for longer durations on case-by-case basis as along as progress is being made
    - Use of epidural analgesia
    - Fetal malposition (OP presentation)
- Treatment
    - Consider operative vaginal delivery if appropriate (see operative vaginal delivery on next page)
    - If operative vaginal delivery not appropriate
        - Consult OB back up
        - Stop Pitocin
        - Cesarean delivery

Prolonged 3rd stage- if placenta is retained > 30 min

Abnormal FHR Tracing

TO DO:

- Know what pattern you are looking at!
- Interpret FHR tracing quickly – baseline, variability, type of decels

Interventions

- IVF bolus
- Check maternal BP and consider ephedrine if hypotensive after epidural placement
- Oxygen
- Maternal position changes
- STOP Pitocin or remove Cervidil
- Perform STERILE VAGINAL EXAM → don't forget scalp stimulation!! Acidotic babies are not able to have accelerations!
    - If variable decels → make sure there is not a cord prolapse!!
        - If there is a cord prolapse, PUSH FETAL HEAD UP AND DON'T MOVE, YOU'RE GOING FOR A RIDE WITH THE PATIENT TO THE OR!!!

** Abnormal FHR or low Apgars, send placenta to pathology!!

** Abnormal FHR send cord blood gases!!

GBS

TABLE 3. Indications and nonindications for intrapartum antibiotic prophylaxis to prevent early-onset group B streptococcal (GBS) disease

Intrapartum GBS prophylaxis indicated	Intrapartum GBS prophylaxis not indicated
• Previous infant with invasive GBS disease	• Colonization with GBS during a previous pregnancy (unless an indication for GBS prophylaxis is present for current pregnancy)
• GBS bacteriuria during any trimester of the current pregnancy*	• GBS bacteriuria during previous pregnancy (unless an indication for GBS prophylaxis is present for current pregnancy)
• Positive GBS vaginal-rectal screening culture in late gestation† during current pregnancy*	• Negative vaginal and rectal GBS screening culture in late gestation† during the current pregnancy, regardless of intrapartum risk factors
• Unknown GBS status at the onset of labor (culture not done, incomplete, or results unknown) and any of the following: – Delivery at <37 weeks' gestation§ – Amniotic membrane rupture ≥18 hours – Intrapartum temperature ≥100.4°F (≥38.0°C)¶ – Intrapartum NAAT** positive for GBS	• Cesarean delivery performed before onset of labor on a woman with intact amniotic membranes, regardless of GBS colonization status or gestational age

Abbreviation: NAAT = Nucleic acid amplification tests

* Intrapartum antibiotic prophylaxis is not indicated in this circumstance if a cesarean delivery is performed before onset of labor on a woman with intact amniotic membranes.

† Optimal timing for prenatal GBS screening is at 35–37 weeks' gestation.

§ Recommendations for the use of intrapartum antibiotics for prevention of early-onset GBS disease in the setting of threatened preterm delivery are presented in Figures 5 and 6.

¶ If amnionitis is suspected, broad-spectrum antibiotic therapy that includes an agent known to be active against GBS should replace GBS prophylaxis.

** NAAT testing for GBS is optional and might not be available in all settings. If intrapartum NAAT is negative for GBS but any other intrapartum risk factor (delivery at <37 weeks' gestation, amniotic membrane rupture at ≥18 hours, or temperature ≥100.4°F [≥38.0°C]) is present, then intrapartum antibiotic prophylaxis is indicated.

-GBS app is very helpful! ***(Either Steinberg or CDC app)***

Shoulder Dystocia

REMEMBER YOUR ALSO TRAINING!!!

Recognize risk factors and warning signs for shoulder dystocia BEFORE it happens and be prepared!!

- Have step stool ready for nurse to provide suprapubic pressure
- Perform Leopold's maneuvers on EVERY patient on admission, try to guestimate EFW based on exam, this will improve with experience
- Offer primary C-section with EFW of at least 5,000 gm in women without diabetes and at least 4,500 gm in women with diabetes (by US)

HELPERR (from ALSO)

1. Call for HELP!!
2. Evaluate for episiotomy
3. Legs and McRoberts Maneuver
4. Suprapubic Pressure (not fundal)
5. Enter internal maneuvers
    a. Rubin's (rotate anterior shoulder)
    b. Woods Screw (Rubin's + posterior shoulder)
    c. Reverse Woods Screw (opposite rotation)
6. Remove posterior arm
7. Roll the patient onto all fours, deliver posterior shoulder first
8. Last Resort
    a. Clavicle fracture
    b. Zavanelli (C-section after pushing head back in)
    c. Symphysiotomy
    d. Abdominal surgery/hysterotomy assisted vaginal delivery

**send cord blood gases!

Keep a mental note of time!! Let your nurses help by telling them you have a dystocia and to mark the time

Management of HTN/Preeclampsia

Monitor VS continuously (Q 20 min in active labor)
Repeat pre-eclampsia labs at least every 24 hours, more often if indicated by patient condition

If BP > 160 SBP or > 110 DBP, check cuff and patient position, and recheck, if still elevated by 15 minutes DO NOT WAIT TO TREAT (w/i 30-60 minutes)!!!

Can treat with Hydralazine, Nifedipine, or Labetalol

- Hydralazine
    - Start with 5mg IV over 2 min and recheck BP in 20 min
    - If still elevated, double dose to 5-10mg IV over 2 min and recheck in 20 min
    - If still elevated double dose to 20mg IV over 2 min and recheck in 20 min
    - If still elevated give Nifedipine 10 mg or Labetalol 40mg IV over 2 min and consult MFM

  -Nifedipine (Immediate Release, not Sublingual)
    - 10 mg po and recheck BP in 20 min
    - 10 – 20 mg po and recheck BP in 20 min
    - If after 40 min, BP remains above target, 10 – 20 mg po and recheck BP in 20 min
    - If BP still > 160 Sys or 110 Dias, change to another HTN agent
- Labetalol (note TCH Pharmacy will not allow administration unless patient is on telemetry)
    - First dose 20mg IV over 2 minutes
    - Repeat BP 10 min after each dose, and double the dose each time
        - E.g., if still elevated 10 min after first dose give 40mg IV over 2 minutes
    - If still elevated after 10 min, give 80mg IV over 2 min (max dose)
    - If still elevated 10 min after the 80mg dose, give **hydralazine** 10mg IV over 2 min
    - If still elevated → consult maternal-fetal medicine (High Risk OB)

If BP becomes within range monitor closely

- Repeat BP q10min for 1 hr., then q15min for 1 hr., then q30min for 1 hr. then hourly for 4 hours.

Should also start Magnesium Sulfate as soon as possible for neuroprophylaxis!!!

Magnesium Sulfate

Used for neuroprophylaxis ***to prevent Eclampsia*** if BP in severe range (>160 SBP or >110 DBP) (***Not for BP management! This is why you also use Hydralazine, Nifedipine, or Labetalol)***

Dosing
- 6g loading dose over 20 min, then drip rate of 2 g/hr. (the bigger the patient the higher the drip rate)

Monitoring (signs of mag toxicity)
- Mag levels not necessary unless develops signs of toxicity
- Signs of toxicity (get a Mg level if develops any of the following, then decrease rate to stay below this level)
    - Pulmonary edema (get CXR if lungs sound wet or pt. complaining of SOA)
    - Decreased UOP to < 30 ml/hr.
    - Hyporeflexia (baseline DTRs prior to starting Mg)
    - ***Abnormal renal profile***

Continue Magnesium until 24 hours postpartum.

Eclampsia

DON'T PANIC!! Call for help!
- Oxygen
- Initiate and maintain magnesium therapy- see dosing above
- If second convulsion occurs after initiating mag give another 2g IV bolus of mag
- If seizures persistent
    - Lorazepam 0.02-0.03 mg/kg IV per occurrence up to a cumulative dose of 0.1 mg/kg at a max rate of 2mg/min
- If seizures still continue despite mag and lorazepam
    - ICU STAT Consult, Paralyze and intubate

- Once mom is stabilized, get the baby out!!

Gestational Diabetes Intrapartum

Test BS q2hr while not in active labor, then q1hr when active

If BS 101-140, normal IVFs → LR at 125 ml/hr.

If BS <100, start D5LR at 125 ml/hr.

If BS >140, start insulin drip 100 units/100 mL per "OB Insulin Drip for Laboring Patients" protocol in addition to D5LR at 125 ml/hr.

Chorioamnionitis

Clinical Findings
- Fever >100.4
- Uterine tenderness
- Maternal tachycardia (>100bpm)
- Fetal tachycardia (>160/min)
- Purulent or foul amniotic fluid
- Maternal leukocytosis >15,000

Standard Treatment ***(use smartset in EPIC)***
- Ampicillin 2g, IV, q6h
  AND
- Gentamicin 5mg/kg, IV, q24h
- Add Metronidazole 500 mg IV or Clindamycin 900 mg IV, IF going to C/S
- ** Send placenta to pathology!

Alternative treatments
- Ampicillin-sulbactam 3g, IV, q6h
- Ticarcillin-clavulanate 3.1g, IV, q4h
- Cefoxitin 2g, IV, q8h

Penicillin Allergic Patients
- Substitute Ertapenem 1g, IV, q24h

Postpartum hemorrhage

Causes	Risk Factors
Uterine atony (70%) Retained placenta (10%) Vaginal/Cervical/Uterine Trauma Defects in coagulation Uterine inversion Subinvolution of placental site Infection	Prolonged labor Induced/Augmented labor Rapid labor h/o PP hemorrhage Preeclampsia Over-distended uterus (macrosomia, multiples, polyhydramnios) Operative delivery Asian or Hispanic ethnicity Chorioamnionitis

START Bimanual compression while second provider performs the following:

EXAMINE THE PLACENTA!!

- If obvious piece missing → manual extraction with proper pain control (morphine if no epidural) may be necessary, consider performing bedside transabdominal U/S if not sure

**send placenta to pathology!!

Medical Management

- Oxytocin (Pitocin)
  - 30 units in 1L LR IV or 10 units IM
- Methergine **(avoid in in HTN, h/o cerebrovascular disease or Raynaud's Dz)**
  - 0.2mg IM, q2-4h
  - **OB CONSULT – "never worry alone"**
  - **Consider PPH Transfusion Protocol**
- Hemabate **(avoid in asthma)**
  - 0.25mg IM, q15-90min, 8 dose max
- Cytotec
  - 400 mcg– [800 mcg – off label dose], SL best to avoid first pass hepatic metabolism with PO [600 -1000 mcg] (both have peak levels by 30 min and lasting 3 hours and WHO recommends 800 mcg SL dosing); PR also can be used at 800 -1000 mcg but peak levels up to an hour after dosing and lasting up to 4 hours
  - Tranexamic acid (off – label) 1000mg IV over 10 - 20 min, then repeat in 30 min prn

Uterine Tamponade

- Bimanual compression
- Bakri Balloon Tamponade
- Packing – 4-inch gauze, can soak with 5,000 units of thrombin in 5mL of sterile saline

POSTPARTUM

Rounding Tips

1) Jot down or print out a list of patients that need to be seen and room numbers. Make sure to note maternal age, G? P????, blood type, what postpartum day # each mom is, whether or not they were had a SVD or C/S, and if they are breast and/or bottle feeding.

2) While seeing each mom, note the following

- How is their baby doing (especially if we are not providing newborn care)?
- Any bleeding and if so, how much? What color and consistency are the lochia?
- Bowel mvmt? Flatus? (esp. important for C-sections)
- Tolerating PO?
- Ambulating?
- Breast tenderness?
- Family Planning? If planning on inpatient tubal ligation, coordinate this with the appropriate OB/Gyn (usually Dr. Washington, Dr. Lane or Dr. Rossi)
- "B's" of Postpartum Rounding- Baby, Blue, Breasts, Bleeding, Bowels, Birth Control

3) Physical exam: pay attention to breast, heart, lungs, abdomen, legs & incision/perineum site, if applicable.

4) Write progress note:

Note: Michelle likes to see the following on her PN's & D/C summaries: Mother comfortable with care of self and baby. Uterus size * cm below the umbilicus. Perineum without edema or hematoma, intact, episiotomy well-approximated (if applicable).

5) Sample orders for postpartum day #1 (C-section)—> order set:

- Discontinue Foley if not already done
- Hep lock IV

- Advance diet as tolerated
- Ambulate TID
- Percocet 5/325 1-2 mg PO Q6H PRN pain
- Motrin 800 mg PO Q8H scheduled for pain
- Colace 100 mg PO BID PRN constipation
- Simethicone 80 mg PO TID PRN gas
- FeSO4 325 mg PO daily (if anemic, Hb <10.5)

6) Discharging a patient:

- SVD can be discharged on PPD #1 90% of the time
- normal SVD patients must be discharged by PP day #2
- C-section usually discharged no sooner than PPD #2-3
- all C-Sectioned patients are seen by us within a week after their surgery, for a post-op wound check; call the OB who did the C/S if there are concerns related to the surgery
- Discharge summary: Include summary of labor, delivery and postpartum course including infant's birth weight.
- For Crossroad moms, call Linda Mack, RN with information about each delivery including the birth weight. Her work cell phone is 513-498-1263.
- Prescriptions to consider at discharge: PNV's, FeSO4, Motrin, Colace, Percocet if C/S

-***use (dot)FMOB Maternity Discharge Instructions in patient instruction section***

-Medications for discharge can be ordered "Meds to Beds"

-Be sure to sign paper order for Breast Pump if requested by Lactation. TCH has breast pumps that patients with most insurances, including Medicaid, can take home from hospital with them. No need to order antepartum.

- Follow-up: 4-6 week postpartum check for Mom
- Patients with preeclampsia, gestational hypertension, history of preeclampsia or anyone who is at high risk of developing PIH should be seen at the FMC within 7-10 days of discharge.

--follow-up within 1 week ***need to send as telephone note to "Jamie Wyatt" prior to discharge to let her know to call the patient and schedule. Use the (dot)FMOB Appointment After Discharge***

BABY BASICS

General: You will round on Term Babies we deliver who desire to follow up in the FMC, any baby going to the Crossroad Health Center, or any baby for whom a Family Physician has asked us to provide inpatient newborn care at TCH (this list is housed on the Residency Website under Rotations/Maternity Care).

Jaundice: Online bili tool→ bilitool.org – ***In Epic, while in a patient's chart, use chart search too to look up "Bilirubin" and add it to your frequently used tabs.***
- Input hours of life and bili level to obtain risk level

Physiologic: T bili peaks at 3-5 days in term, 5-7 days in preterm, resolves by 2 wks. in breastfed, 1 week in formula-fed
- no direct bilirubinemia
- T. bili increases < 5 mg/dl/day
- Lactation at TCH can do f/u bili the next day after discharge for breastfed babies.

Pathologic:
- Onset < 24 HOL
- T. bili increases > 5 mg/dl/day
- T. bili > 15 in term, >12 in preterm
- Workup: Fractionated bili, CBC, Type and DAT; in anemic retic count and PBS
- Management: Feeds regularly at q 2-3 hr. intervals. Continue breastfeeding, supplement if needed. Lights as indicated by phototherapy chart

Weight gain:

-20 to 30 g (0.07 to 1.05 oz) per day, 150 to 200 g (5.3 to 7.0 oz) per week.

-Term neonates may lose up to 10 percent of their birth weight in the first few days of life and typically regain their birth weight by 10 to 14 days.

-Use the NEWT Calculator to determine percentile for weight loss. Takes into account SVD vs LTCS, breast vs formula feeding and age.

-In general, newborns need approximately 2.5 oz per pound of body weight per day.

-Newborns gain approximately 30 g/day (1 oz/day) until three months of age
-Infants gain approximately 20 g/day (0.67 oz/day) between three and six months of age and approximately 10 g/day between 6 and 12 months.
-Infants double their birth weight by four months of age and triple their birth weight by one year
-Children gain 2 kg/year (4.4 lbs./year) between two years and puberty

Discharge Guidelines for Newborns
Note: Routine hospital stay for a normal newborn is 36 to 48 hours. Newborns exceeding expectations can be discharged at 24 hours.

Newborns who will not be discharged at 24 hours
Most newborns of G1 mothers, particularly those breastfeeding or teenage mothers
35 to 36-week infants and most 37-week infants
Newborns with bilirubins in high risk or high intermediate risk zone
Newborns with positive coombs tests
Newborns whose mothers were GBS positive or unknown status, not treated adequately; these newborns require 36-48 hours observations
Prolonged rupture of membranes (>24 hours)
Newborns delivered of mothers with intraamniotic infection
Newborns without adequate urine output or stools
Newborns who have not established feeding, breast or bottle
Newborns without medical follow up
Newborns that are Small for Gestational Age (SGA)

** Newborns of mothers with opiate use in pregnancy need to stay for a minimum of 5 days.

Discharge counseling for Parents: ("Mom talk")
-use (dot)FMOB Newborn Education smart-phrase at bottom of each daily progress note

- Sleeping: ABCs. Alone, on Back, in own Crib (or bassinet/ Pack n' Play.) One layer more than what parents are comfortable with, no stuffed animals/pillows/extra blankets
- Eating:

- Instruction on proper breastfeeding position, attachment, and adequacy of swallowing; offer outpatient lactation follow-up
- Breastfeeding mothers should consult their physicians before taking any new medications.
- Parents should not give their infant supplemental water or honey.
- Breastfed and bottle-fed infants receiving less than 1000 mL (32 oz) of formula per day should receive 400 IU of a vitamin D supplement per day. ***Print or send Rx to outside pharmacy, can NOT be sent Meds to Beds.***

- Peeing and pooping: 6 or more wet diapers per day for breast and bottle fed
    - More than 3 BM's per day for breastfed, bottle- fed 1-2 BM's
    - Evaluate for meconium ileus if no stool within 24 hours of birth, consider transfer to CCHMC for barium enema
- Umbilical cord care
- Signs of illness
- Car seat use up ***(rear facing up to manufacturer limit, suggest 4 years AND 40#) new AAP guideline 2018***
- Avoiding smoking exposure
- Follow-up appt ***Use (dot)FMOB Appointment After Hospital***

Breastfeeding contraindications:

- classic galactosemia (galactose 1-phosphate uridyl transferase deficiency)
- mothers with active untreated TB disease or are human T-cell lymphotropic virus type I–or II, or HIV–pos
- mothers receiving diagnostic or therapeutic radioactive isotopes or have had exposure to radioactive materials (for as long as there is radioactivity in the milk)
- mothers who are receiving antimetabolites or chemotherapeutic agents
- mothers who are using drugs of abuse
- mothers who have HSV lesions on a breast (infant may feed from other breast if no lesion)
- Moms on antibiotics not compatible/advisable with breastfeeding (have mom pump and dump till antibiotic/metabolite is cleared then may resume breastfeeding)

IMPORTANT SMART-PHRASES AND ORDER SETS

When a new problem is identified in the course of prenatal care, these are smart phrases that have treatment algorithms that are designed to be added to the "overview" section of that problem. They contain checkboxes that help you keep track of which tasks are completed. These smart phrases have been shared with all providers & preceptors in the TCHMA FMC

#1—FMOB Hypothyroid Hypothyroidism and pregnancy ICD: O99.280, E03.9

#2—FMOB HSV HSV in pregnancy ICD: O98.519, B00.9

#3—FMOB AMA identified as being Advanced Maternal Age (over 35 yo at delivery)

#4—FMOB VBAC had a cesarean birth in the past. ICD 034.219

#5—FMOB Chronic HTN Hypertension prior to pregnancy or prior to 20 weeks GA ICD O10.919

#6—FMOB Depression Screening Screening & Treatment of Depression in Pregnancy ICD Z13.32 **

#7—FMOB ASA 81 Reasons to start ASA 81 at 12-16 weeks for pre-E prophylaxis **

#8—FMOB postdates Management of postdates pregnancy ICD: O48.0

#9—FMOB GDMa1 Management of Gestational Diabetes Mellitus A1 in pregnancy ICD: O24.410

#10—FMOB GDMa2 Management of Gestational Diabetes Mellitus A2 in pregnancy ICD: O24.414

#11—FMOB GDM, class B Management of pre-existing diabetes in Pregnancy ICD O24.319

#12—FMOB gestational HTN Gestational Hypertension (BP ≥ 140/90 in 2 settings) ICD O13.9

#13—FMOB Hx IUFD Management of pregnancy with a HX of IUFD ICD O09.299

#14—FMOB Hx Preterm delivery Hx spontaneous preterm delivery ICD O09.899

#15—FMOB Hx Pre-Eclampsia Hx of pre-Eclampsia in prior pregnancy ICD O09.299

#16—FMOB short cervical length Short cervical length without a history of preterm birth ICD O26.879

#17—FMOB BMI>40 Obesity with BMI ≥ 40 at start of pregnancy ICD O99.210

#18—FMOB IUGR IUGR in pregnancy ICD O36.5990 (EFW or AC < 10%ile)

#19—FMOB Hx IUGR Pregnancy complicated by prior pregnancy with SGA infant (<10%ile)

BONUS: Also, please note new**:**
(dot)PregProblemListCheckBox which references many of these smart phases

**** FMOB ASA** & **FMOB depression screening** can *also* be used in a progress note to assess for need for ASA, or for depression screening where depression is ruled out*, and does not have to have its own problem*

Smart phrases:
Inpatient: All begin with .fmob ***except .newbornHX***
.fmobnewborninitialhospital (baby H&P)

.fmobnewbornintervalhospital (baby progress note)
.fmobpostpartumintervalday (mom progress note)
.fmoblaboradmit (admission H&P)
.fmoblaborprogressnote (labor progress note)
.fmobnewborndischargehospital (baby d/c summary)
.fmobpostpartumdischargesummary (mom d/c summary)
.fmobtriagenote (triage note)
.fmobdeliverynote (delivery) — procedure note title
.fmobvacuumdelivery (vacuum delivery)
.NewbornHx in Birth History for baby

Discharge instructions (hospital)

.fmobinfantdischargeinstructions (baby d/c instruct)
.fmobmaternaldischargeinstructions (mom d/c instruct)
.fmobapptafterhospital (d/c instr for patient to schedule)
.fmobappointmentafterhospital (note to route to RN or PNC to help schedule patient)

Procedures:

.fmobrisksandbenefitsofinduction
.fmobcircumcisiongomco
.fmobcircumcisionmogen
.arom
.csectionrisksandbenefits - can put into progress note to document counseling

Clinic procedures:

.afi
.nst
.bpp
.fmobfrenulotomy

Problem List

.obproblist - use for all obs
.cradlecincitobaccoproblemlist - use in all smokers under separate problem of “tobacco abuse"
.cradleformersmoker- use in all former smokers under separate problems of “former smoker"

TCHMA patients:

all start with .fmcob… pick the right one based on the week’s gestation
.cradlecincitobaccoquestionaire- done at 1st ob visit by MA
.obsoap: Update the prob list during session, then use .obsoap. If the problem list wasn't completely update or changed, just hit "refresh" and it will bring those changes.

.cradlecinti28weekcounseling- document this counseling at 28 week visit if patient still using tobacco
.postpartumhistory, .ppexam: use both for HPI and exam, then you just need to do a free text a/p or you can use .problemlist or .assessplan

.fmobedinburghnewborn
.fmobedinburghpregnancy

Patient instructions (office visits):

.childbirthclasses: gives the 585-HUGS number to schedule childbirth classes and tours
.2fluids2fives
.cradlecincitobaccocessationsupport
.preginstr1- 1st trimester patient instructions
.preginstr2 - 2nd trimester patient instructions
.preginstr3- 3rd trimester patient instructions
.preginstreating
.preginstrexercise
.preginstrsleep
.dentistpregnancyletter

Result phone notes:

.pnclabinitialnormal
.pnclabanemia
.pnclabuti
.pnclabpap
.pnclab2ndtrimesteranemia
.pnclabgctfail
.gbsneg
.gbspenallergic
.gbspositive

Send completed result message to "P OPD TCH nurse "(PNC) or your MA (TCHMA) who will then call the patient for you

Order sets:

- Vaginal delivery intrapartum (admission orders)
- Cervidil induction
- Postpartum orders (complete after delivery, then "sign and hold" to release on transfer)
- Newborn admission orders
- C-section (offer to order these for the OB on call)

IMPORTANT PHONE NUMBERS AND CODES

Special Care Nursery 5-2321
Social Work 5-2983
Lactation: 5-0597, 5-2213, 5-2261
OB/GYN (UC at TCH) Resident Phone 5-2786
L&D Front Desk (for sch inductions) - 5-2336
Triage 5-1741
Charge RN 5-1740 (call when you send someone to L&D)

During the day, most attendings are best reached by cell and all text. In the evenings & nights check their preference with your attending, before the night.

Delivering Attendings:

Jessie Bertsch, CNM: p 513-343-0815, c 859-802-8174
Dr. Lazaron*: p 513-971-9041, c 513-460-4634
Dr. Rosenthal*: p 513-249-0679, c 513-218-0913
Michelle Zamudio, CNM: p 513-343-2235, c 513-225-1709
Dr. Zorko*: p 513-343-0053, c 513-349-1390

OB Back-ups: please use their office number on weekdays, if not emergent

Dr. Allen: c 310-1104, office 871-0290
Dr. Barrere: c 513-543-1483, office 513-784-1201
Dr. Lane : c 513-987-6251, office 513-242-0100
Dr. Heidi: c 513-325-3250, office 513-564-6644
Dr. Rossi: c 513-238-7202, p 513-343-1035
Dr. Washington: c 305-1741, office 699-2810
Dr. Weisberger: c 513-460-8359, office 859-341-5550

Newborn Attendings (also see * above):

Dr. Bernheisel: p 513-577-5183, c 513-377-7828
Dr. Hartmann: c 513-349-4205

Important Door Codes:

5-4-2 Triage
5-4-2-* 9th floor nurses' station by triage. Room 9009
5-3-4-2 Nurseries on 8S and 9S, and Special Care Nursery

5-4-2 Women's Locker Room
2&4 -3 Women Doctors' Locker Room
1-4-5 Male Locker Room
1-7-1 L&D Nurse's Break Room
2-4-6-8 L&D Delivery Carts
4-1-2 Scrubs Room (8th floor)