University of Ottawa Family Medicine
FMOB Handbook
A Resident’s Guide to Surviving Thriving the FMOB Rotation and Beyond

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## Table of Contents

Logistics .......................................................................................................................... 2  
  FMOB Rotation Structure: ......................................................................................... 2  
  FMOB Sample Schedule: ......................................................................................... 2  
  Teaching: ................................................................................................................ 3  
  Location: .............................................................................................................. 3  
  Handover: ................................................................................................................ 4  
  Contacting Staff: .................................................................................................... 4  
  Evaluation: ........................................................................................................... 5  
Triage and Assessment ................................................................................................. 5  
  Possible Spontaneous Rupture of Membranes (SROM): ........................................... 6  
  Abdominal/Pelvic/Back Pain or Possible Onset of Labour in 3rd trimester ............... 7  
  Decreased Fetal Movements .................................................................................. 7  
  Vaginal Bleeding: .................................................................................................... 8  
  Minor Trauma: ......................................................................................................... 8  
  Hypertension: ......................................................................................................... 9  
  Nausea and Vomiting .............................................................................................. 10  
Labour and Delivery ..................................................................................................... 13  
  Admitting Patients: ................................................................................................... 13  
  Birthing Unit ............................................................................................................ 13  
  GBS Prophylaxis: .................................................................................................... 13  
  Birth/SVD: ............................................................................................................. 13  
  Shoulder Dystocia .................................................................................................. 14  
  Laceration Repair: .................................................................................................. 16  
  After Delivery: ....................................................................................................... 18  
Induction .......................................................................................................................... 19  
  Logistics .................................................................................................................. 19  
  Cervidil (Prostaglandin) ......................................................................................... 19  
  Foley Catheter ......................................................................................................... 19  
Augmentation .................................................................................................................. 20  
  Artificial Rupture of Membranes (ARM) ................................................................. 20  
  Oxytocin ................................................................................................................... 20  
  Fetal Scalp Monitor ................................................................................................ 22  
Intrapartum and Post Partum: ...................................................................................... 22  
  Spontaneous Vaginal Delivery: .............................................................................. 22  
  C-Section: ............................................................................................................... 23  
  Sample Post Partum Note: ....................................................................................... 23  
Maternal ......................................................................................................................... 25  
  Post Partum Hemorrhage ....................................................................................... 25  
  Maternal Fever ....................................................................................................... 27  
  Venous Thromboembolic Events .......................................................................... 28  
  Lactation ............................................................................................................... 29  
Neonatal ......................................................................................................................... 30  
  Bilirubin: ................................................................................................................. 30  
  Hypoglycemia: ....................................................................................................... 33  
  Respiratory Distress ............................................................................................... 33  
  Scalp Swellings ...................................................................................................... 35  
  Sepsis ....................................................................................................................... 37
Antenatal Visits
Labour and Delivery
Neonatal Resuscitation Algorithm (2015)
Triage Assessment Flow Labour
Sample Admission Order Birthing Unit
Common Medications
Maps
References:

Disclaimer:
This handbook was designed to serve as a central reference for the Family Medicine Obstetrics Rotation with information on the structure of the rotation and information of common FMOB presentations. While every effort has been made to ensure this information is accurate and current, it is solely a guide and does not subvert clinical judgment. We plan to update this document following the implementation of Epic at TOH. Feedback is always appreciated and it can be directed to Amy Chung (amchung@toh.ca).

Please refer to ottawaresiliency.org for the most recent version of the handbook. This handbook is not to be distributed outside of the Ottawa Family Medicine Program.

Logistics

FMOB Rotation Structure:

The FMOB rotation is now such that residents spend a continuous 2 weeks on this service while on the FMOB block. Residents will also do “fly in” shifts to provide additional coverage.

FMOB Sample Schedule:

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<thead>
<tr>
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<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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<th>Saturday</th>
<th>Sunday</th>
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<tbody>
<tr>
<td>Week 1</td>
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Teaching:

Formal teaching on FMOB topics is provided in several ways. Early in year there is the PGY1 Skills Day that takes place at the SIM Centre. While on Family Blocks, OB topics are covered as part of the regular Family Medicine Teaching schedule. At the Civic while on Family Blocks, OB teaching is done Fridays at 09:00 and residents are routinely scheduled into the OB clinics.

Learning resources can be found in Bright Space Under:
1) FM Programme d'études | Curriculum → Rotations → FM Obstetrics
2) FM R1/2 | PGY 1/2 → Unit Homepages → (select your site) → Academic Teaching → OB Related Teaching or Pregnancy

Keep an eye out for courses hosted throughout the year such as NRP (Neonatal Resuscitation Program) and the SOGC ALARM course. Emails are regularly sent out with information on dates and how to sign up.

Location:

Civic:
**Birthing Unit:** Fourth Floor (assess via D elevators)
**Scrubs:** A scrub machine is located near the C4 elevators. There is another machine on B3 in the OR change rooms.
**Call Room:** The call room is located just before triage and requires badge access. In the call room area there is a bathroom/shower and a call room specifically for Family Medicine Residents (Code: 451).
**Food:**
There is a cafeteria on the first floor open from 07:30 to 18:00 weekdays.
Tim Horton's is open 24/7 and Second Cup is open 06:30 am to 20:00 daily.
There are vending machines throughout the hospital.

General:
**Birthing Unit:** 8th Floor
**Scrubs:** The scrub machines are on the 1st Floor underneath the ICU/just down the hall from the Tim Horton's, and inside the OB change rooms (for the latter, get the code from the OB triage clerk)
**Call Room:** The call room for FM OB is directly opposite the main elevators on the 3rd floor. You need your TOH ID badge to access the room, which is one of the marked rooms on the other side of the locked door. There's an en suite "jack and jill" washroom attached.
**Food:**
There is a cafeteria on the first floor open from 08:00 to 18:30 weekdays.
There is also a Tim Horton's on the ground floor under the ICU, which is open 24/7 but has limited food hours.
The Second Cup on the ground floor is open until 10:00 pm.
If you have some time on your hands, you can stroll over to CHEO (via the tunnel to the Medical School then to CHEO) for additional food options including Starbucks Coffee from 08:00 to 23:00.
**Handover:**

*Civic:*

**Day Shift:**  
Be sure to update the white board in triage and the nursing station with your name and pager number. Introduce yourself to the Nursing care facilitator.

Present to the birthing unit (D4) at **07:00** for handover from the Family Medicine Resident whom you are relieving. Meet with the Obstetrics Team immediately afterwards, who can be found near the computers at the nurse's station for OB resident handover. The OB team will usually assign you OB post-partum patients to round on. You can then start to round on a few post-partum patients on the Mother Baby Unit (A4) at the Civic before you meet the labouring patients.

At **07:45** return to the Birthing Unit Nurses Station to round with the OB Team and meet labouring mothers. Afterwards, you can continue to round on post-partum patients, assess patients in triage, reassess laboring mothers or deliver babies.

Review with the nursing staff if there are any out patient inductions scheduled for the day.

Round on your assigned patients when there is time during the day. For OB patients you round just on the mother. For FMOB patients you round on both the mother AND baby. For OB patients find the OB Senior during the day when there is time. Most are comfortable for you to discharge straightforward postpartum and then review. Find the OB Senior earlier in the day if there are concerns. Please see the reviewing with Staff Section for FMOB patients.

**Nightshift:**

Meet at triage for handover from the outgoing Family Resident at **19:00**. The OB team will have already rounded on the laboring patients but you should check-in with them. If you are on a 24 hour call, round with the OB team at 17:00h

**Weekend:**

Meet on the birthing unit (B4) at **08:00** on Saturdays and Sundays.

*General:*

Similarly, handover from FM resident to FM resident takes place in triage or at the Birth Unit desk at **07:00** weekdays and **08:00** on weekends. After rounding you can join the OB team.

**Contacting Staff:**

There are several call groups for FMOB practitioners. Reference the whiteboard in the Nurse’s Station to determine the physician on-call for each group. Their contact information can be found taped to the desk near the computer facing the nursing station in triage.

For patients that present to Triage, contact the staff on call for the group the patient belongs to. Assess the urgency to contact staff (Eg. ASAP for a Multip in active labor with significant cervical dilatation). If you are not sure who to call, ask the Nursing Care Facilitator.
**Evaluation:**

Resident evaluations are done as eField notes which can be done online via the DFM portal (https://femoral.med.uottawa.ca/Resident/). It is suggested that at least one eFeild Note be completed per Call by FMOB staff, OB Staff, OB residents or nurses. (But 2 are better than 1!) These can be done online or a paper version can be printed from Bright Space (FM Évaluations | Assessment --> Competencies and Assessment Forms --> Domains of Care --> Maternity and Newborn → eField Note).

You will have better success getting field notes from OB and nursing if you have a paper copy to hand give them.

**Triage and Assessment**

Women > 20 weeks gestation present to the Obstetrical Triage if they believe they are in labour or for emergencies.

A nurse will first take a brief history and will start to complete the triage assessment form. The antenatal forms are usually provided and should be reviewed.

See the patient in one of the three triage rooms and take a history. A nurse must be present for the physical exam. They can confirm the cervix check if applicable. After devising a plan contact the physician on call to review the case.

**Always review with staff before giving the final plan and sending the patient home.**

Note: OB consultations are done staff to staff.

**Common Triage Presentations:**

**Sample Triage Note:**
ID GTPAL @ __ + _ weeks for __________

**HPI:**

Always ask about:
- Fetal Movements (FM)
- Contractions (Ctx) (Frequency, Intensity)
- Rupture of Membranes (ROM)
- Bleeding

**Other Helpful Information:**
- How did they get to the hospital?
- How far away do they live from the hospital?
• When was last appointment, what did they do? i.e. stretch and sweep?
• When is her next appointment with her OB provider?
• When was her last US?

Blood Type? Rh? GBS? Sero-Protected?

**Past Obstetrical History**
- G1 SVD (2015), no complications
- G2 current
  - Blood work/Serology
  - Complications (GDM, HTN?)
  - Last U/S

**PMH:**
**Surgical History:**
**Meds:**
**Allergies:**

**PE:**
- Vitals
- FHR
- Cervix Exam (if applicable)
- Dilation/Station/Effacement

**Assessment:**
**Plan:**

**Possible Spontaneous Rupture of Membranes (SROM):**
- ask when it happened
- amount, colour, consistency and odour
- GBS status, contractions
- PE:
  - If woman is leaking, ask for a sample to place on a glass slide
  - Perform a sterile speculum exam, look for pooling of fluid. Take a sample of fluid with a long cotton swab. Wipe on glass slide, let dry for 10 min and examine under microscope. Dab onto a strip of Nitazine paper.
  - Amniotic Fluid:
    - Will show Ferning on slide
    - Will turn Nitazine paper blue (can be false positive if there is blood)

If term, GBS negative and not in labour – can offer expectant management (staff dependent) up to 24hr
Can either:
- Send home and book for outpatient induction in 24 hours.
- Or admit to labour unit for induction
- review with staff for management
Otherwise, admit and induce (if term)

If GBS + start prophylaxis (antibiotics on preprinted orders)
If preterm < 35 weeks, consult OB. They may start amp/erythro, if <32 weeks, Celestone,

- If you were planning on doing a sterile speculum and a cervical exam check, you must do the sterile speculum exam first so the cervical exam does not impact the sterile speculum exam.
- Do not do cervical exam on PPROM

**Abdominal/Pelvic/Back Pain or Possible Onset of Labour in 3rd trimester**
- When it started
- Where is the pain
- How long does it last
- Any radiation
- Any associations like: vaginal bleeding (worry about abruption), trauma (same), RUQ pain (pre-eclampsia), N+V (pre-eclampsia vs biliary disorder vs other cause of abdominal pain), CVA tenderness (pyelonephritis)
- How far apart are the contractions? How long do they last? Are they getting stronger?
- What do they feel like (strong period cramps)?
- ROM?
- Ask if they planning for an epidural
- PE:
  - EFM
  - Does the woman appear uncomfortable (unable to talk during a contraction)
  - Cervix: Dilation/Station/Effacement
- Plan:
  - If > 4 cm (Active Labour) admit to Labour unit
  - If < 4 cm
    - Irregular contractions: D/C home unless there is a history of precipitous labour or she is a grandmultip
    - Regular: consider walking for 2 hours then R/A
    - If requesting Analgesia (opioid)
      - Primip: observe 30 mins
      - Multip: observe 60 mins

**Decreased Fetal Movements**
- Definition of decreased fetal movements less than 6 movements in 2 hours
- When did the woman notice decrease movements
- What was she doing (i.e resting?)
- Did she try to drink or eat something the lie down to count movements

Risk Factors: last time baby moved, # kicks that day
- pregnancy risk factors: ie. GDM, HTN, previous OB Hx, hx VTE, AMA
  - PE: NST
  Plan: if baby starts moving in triage, NST is normal and pregnancy/patient has NO risk factors – may d/c home w/o U/S – discuss with staff
  Interpret FHR
    - If any of the above not met – organize OB U/S

**Vaginal Bleeding:**
- when did it start
- how much
- what colour (pink vs red)
- trauma? Intercourse?
- Vaginitis?
- Pain? Contractions? Fetal Movements?
- Rh status?
- Previous Ultrasounds? (where is the placenta?)
- PE:
  - Vitals, HR, orthostatic changes
  - DO NOT DO VAGINAL EXAM UNLESS US CONFIRMS NORMAL PLACENTAL LOCATION
  - speculum exam recommended prior to cervical exam.
  - NST/EFM
  - Ix: CBC, T+S
  - Is there an identifiable source of bleeding?
  - Plan:
    - Contact Staff immediately if significant blood loss/unstable
    - Distinguish between less serious causes of bleeding ("bloody show", Lacerations/trauma Cervical friability) vs serious (Placenta previa, vasa previa, placental abruption, uterine rupture, etc)

**Minor Trauma:**
- When did it occur?
- Mechanism of action.
- Did the woman land directly on her abdomen?
- discomfort/pain and location
- LOC
- consider abuse?
- motor vehicle accidents:
  - site of impact
  - was she wearing a seat belt
  - was the air bag deployed
  - was she driver or passenger
  - were the police notified/on scene
- Falls
  - distance of fall
  - where did patient land: abdomen, buttocks, side, back
  - why did she fall?
- Any blood per vagina? Any contractions?
- PE:
  - EFM will need to be done for a minimum of 4 hours
  - abrasions, lacerations, bruising
- Investigations:
  - CBC, Kleihauer testing, type and screen (if blood type unknown)
- Plan:
  - Determine if U/S or BPP is needed
  - Rh negative women need Rhogam

**Hypertension:**
- sBP > 140 or dBP > 90

<table>
<thead>
<tr>
<th>HTN in Pregnancy</th>
<th>Preeclampsia</th>
<th>Severe Preeclampsia</th>
<th>HELLP</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBP ≥ 90 or SBP ≥ 140mmHg</td>
<td>1) DBP ≥ 90 AND 2) proteinuria ≥ 300 mg/24 hrs (or PCR &gt; 30)</td>
<td>BP &gt; 160/110 Due to increase maternal CNS bleeds One or more adverse conditions... Heavy proteinuria (3-5 g/24 hr) Onset before 34 weeks</td>
<td>Hemolysis, Elevated Liver enzymes, Low Platelets. Severe form of preeclampsia morbidity and mortality Treatment: Prompt recognition Supportive Care</td>
</tr>
<tr>
<td>Mean of 2 measurements Preexisting: prior to 20 weeks Gestational: after 20 weeks</td>
<td>Prevalence: 2-10% of all pregnancies.</td>
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- will typically present after a high BP reading at an out patient appointment
- inquire about: headache, vision changes, RUQ/epigastric pain, chest pain, nausea/vomiting
- PE:
  - Hyperreflexia, Neuro exam looking for nystagmus, clonus, focal near signs, change in LOC, CV exam looking for any new murmurs, Resp for crackles/signs of pulmonary edema Abdo exam looking for RUQ tenderness, generalized tenderness (signs of early labor/contractions or abruption)
- PIH Workup
  - Urinalysis for protein, PCR (Protein to Creatine Ratio. Abnormal > 30)
  - CBC (for platelets)
  - Liver Enzymes (AST, ALT, ALP, GGT), LD
  - Creatine, Urea, Urate
- Management:
  Call the FMOB Staff on call to discuss the case
  Staff may Consult the OB Team to determine plan. This may include doing if they need to be started on oral or IV anti-hypertensives, if she needs to be admitted for observation, if an induction is indicated or a STAT C/S should be done
SOGC Medications:

**Nausea and Vomiting**

- Nausea and Vomiting of Pregnancy (NVP) affects 50-80% of pregnancies
- Hyperemesis (HG) affects 0.3 to 2% of pregnancies and is on the extreme end of the NVP spectrum
- HG: Persistent and excessive vomiting
  - Metabolic disturbances (e.g., carbohydrate depletion, dehydration, electrolyte imbalance, acid-base disturbances, nutritional deficiencies)
  - Can have:
    - Ketonuria
    - Weight loss > 5% pre-pregnancy weight
- Other Signs and Symptoms:
  - Ptyalism (excessive salivation), fatigue, weakness, and dizziness.
  - Hyperolfaction
- Rule Out other causes of N/V:
  - Gastrointestinal, GU, CNS, toxic/metabolic
- Signs of Dehydration:
  - (e.g., fatigue, postural dizziness, thirst, tachycardia, decreased urine volume and frequency)
  - Unable to keep food/fluids down for more than 12 hours
- Management:
  - Assess the need for IV fluid replacement
  - Consider measuring electrolytes
  - Correct abnormalities accordingly
    - Thiamine (vitamin B1) 100 mg IV then 100 mg daily for the next two or three days to prevent the rare maternal complication, Wernicke's encephalopathy
SOGC Treatment Algorithm:

Figure 2. Treatment algorithm for NVP.\textsuperscript{31}

\textbf{If no improvement, proceed to next step}

- Give 10 mg of Pyridoxine 4 x a day po
  - The schedule and dose can be adjusted according to severity of symptoms\textsuperscript{1}

\textbf{OR}

- Give 10 mg of dexamethasone combined with 10 mg of pyridoxine po
  - Typical starting dose: one in the morning, one in the afternoon and 2 at bedtime. Titrate dose up to 8 tablets a day as needed. Adjust schedule dose according to severity of symptoms.\textsuperscript{1}

\begin{itemize}
  \item Add dimenhydrinate 50 mg q4-6h orally or rectally
  \item No dehydration
  \item Dehydration
  \begin{itemize}
    \item Add any of the following:\textsuperscript{2,3}
      \begin{itemize}
        \item metoclopramide 5 to 10 mg q8h po or IM
        \item chlorpromazine 10 to 25 mg q4-6h po or 25 to 50 mg q4h IM
        \item prochlorperazine 5 to 10 mg q6-8h po or PR or IM
        \item promethazine 12.5 to 25 mg q4-6h po or IM
      \end{itemize}
    \item Start rehydration treatment:
      \begin{itemize}
        \item Intravenous (IV) fluid replacement\textsuperscript{4} (per local protocol)
        \item multivitamin IV supplementation
        \item dimenhydrinate 50 mg q4-6h PR or IV
      \end{itemize}
  \end{itemize}
\end{itemize}

**Notes:**
- The use of this algorithm assumes that other causes of nausea and vomiting have been ruled out.
- At any time you may add any or all:
  - pyridoxine 25 mg q8h
  - ginger\textsuperscript{5} 250 mg q8h
  - P\textsubscript{6} acupressure
  - Mindfulness based cognitive behavioural therapy
  - In 1st trimester: substitute iron containing PV with folate acid
  - At any step, when indicated, consider parenteral nutrition.

\textsuperscript{1}One study assessing the safety of higher-than-standard doses of pyridoxine in pregnancy reported no adverse events with a mean dose of 130 mg/d.\textsuperscript{2,3} No medication has been demonstrated to be superior at this time; metoclopramide is preferred based on additional mathematical data.\textsuperscript{3} All medications can be used PRN or regularly scheduled depending on symptom control.\textsuperscript{4} No study has compared different fluid replacements for NVP.\textsuperscript{5} Safety, particularly in the first trimester of pregnancy, is controversial. This medication has been associated with an increased risk of oral clefts and cardiac anomalies in some of the literature. In addition, maternal adverse effects such as bowel obstruction and corrected QT interval (QTc) prolongation need to be considered.\textsuperscript{6} Steroids may increase risk for oral clefts in the first 10 weeks of gestation.\textsuperscript{7} Safety of doses higher than 1000 mg/d is not yet determined in pregnancy. IM, Intramuscular; PO, by mouth; PR, per rectum; PRN, as needed.
## EFM Interpretation

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<th></th>
<th>Normal</th>
<th>Atypical</th>
<th>Abnormal</th>
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<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td>110 – 160 bpm</td>
<td>100 – 110</td>
<td>&lt; 100</td>
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<tr>
<td></td>
<td></td>
<td>&gt; 160 for 30 – 80 min Rising Baseline</td>
<td>&gt; 160 for 80 min Erratic Baseline</td>
</tr>
<tr>
<td><strong>Variability</strong></td>
<td>6-25 bpm</td>
<td>≤ 5 bpm for 40 – 80 min</td>
<td>&lt; 5 bpm for 80 min</td>
</tr>
<tr>
<td></td>
<td>≤ 5 bpm for &lt; 40 min</td>
<td></td>
<td>≥ 25 bpm for &gt; 10 min Sinusoidal</td>
</tr>
<tr>
<td><strong>Accelerations</strong></td>
<td>Spontaneous/with fetal scalp stimulation</td>
<td>No acceleration with fetal scalp stimulation</td>
<td>Usually absent (presence of acceleration does not change classification of tracing)</td>
</tr>
<tr>
<td><strong>Decelerations</strong></td>
<td>None or Early decal Occasional uncomplicated variable decel</td>
<td>Repetitive (≥ 3) uncomplicated variable deceler. Occasional late decel. Single prolonged decel &gt; 2 min but &lt; 3 min.</td>
<td>Repetitive (≥ 3) complicated. Variable deceleration. Late decel &gt; 3 min but &lt; 10 min.</td>
</tr>
<tr>
<td><strong>ACTION</strong></td>
<td>EFM may be interrupted for periods of up to 30 minutes if maternal-fetal condition stable and/or oxytocin infusion stable</td>
<td>VIGILENCE - institute intrauterine resuscitation - determine cause of atypical tracing - determine the duration of effect and reserve tolerance of the fetus - perform fetal scalp stimulation and consider fetal blood sampling (&gt;34 weeks) - evaluate total clinical picture: gestational age, estimated fetal weight, stage of labour - continue with close fetal surveillance - consider transfer/delivery if tracing persists or deteriorates</td>
<td>ACTION REQUIRED - institute intrauterine resuscitation - determine cause of abnormal tracing - If &gt; 34 weeks and clinically appropriate, obtain fetal scalp blood sampling - evaluate total clinical picture: gestational age, estimated fetal weight, stage of labour - undertake transfer/operative delivery UNLESS - fetal scalp pH ≥ 7.25 - spontaneous delivery is imminent</td>
</tr>
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Labour and Delivery

Admitting Patients:
To admit a patient, be sure to write an admission order on EPIC.

Birthing Unit
There are 12 birthing suits. Once a patient is admitted, complete an admission note and orders.

Rounding: If a women is in the early stages of active labour, it is reasonable to check her every 2-4 hours. Check in and see how she is doing q2h but she doesn’t necessarily need an exam.

When to Contact Staff: The staff should be contacted at the minimum when the patient is at 6 cm dilation, if there are any concerns in regards to her progress, FHR or any changes in the course of labor.

It is always better to call! And call early! The nurses can help you judge when to call staff as well.

GBS Prophylaxis:
IV antibiotic prophylaxis for group B streptococcus (GBS) at the onset of active labour or rupture of the membranes should be provided to any woman:

• positive for GBS by vaginal/rectal swab culture screening done at 35 to 37 weeks’ gestation
• with a previous infant infected with GBS
• with documented group B streptococcus bacteriuria (regardless of level of CFU) in the current pregnancy

Recommended Treatment Regimes:
1. Penicillin G 5 million units IV, then 2.5 to 3.0 million every 4 hours until delivery
   or
2. If the woman is allergic to penicillin but has a low risk of anaphylaxis: Cefazolin 2 g IV then 1 g every 8 hours until delivery
   or
3. If the woman is allergic to penicillin and at risk of anaphylaxis: Clindamycin 900 mg IV every 8 hours until delivery (if isolate is susceptible to clindamycin with no inducible resistance) or vancomycin 1 g IV every 12 hours until delivery

Birth/SVD:
Depending on how the woman is feeling, when she is 10 cm, she may either start pushing right away or wait 2 hours. See the TOH “Active Management of the Second Stage” Algorithm.

Pushing:
Most women will push in the semi-fowler’s position with the hip and knees flexed. The nurse will hold one leg while the partner will hold the other.
When the woman feels a contraction she should take a deep breath, and while holding for 10 seconds push directed towards the vagina/rectum. Repeat 2 more times during a contraction.

Once the fetal head can be visualized place one hand with a towel on their perineum and two fingers on the fetal head. The goal is to have a controlled descent.

When the head emerges. Quickly sweep a hand around the neck to check for a cord. (If there is a cord, pull it forward over the fetal head.)

Allow the head to restitute.

Deliver the anterior shoulder. Apply gentle downward pressure. Lift he baby upward toward the maternal abdomen when the shoulder is delivered.

Place the newborn on the mother’s chest. (This should be predetermined prior to this time. RN typically ask, and its on the whiteboard. Do they want skin to skin? Does Dad want to cut cord?)

*Delayed Cord Clamping:* allow for one minute to pass before clamping the cord. Place the yellow clip near the umbilicus. Place a hemostat distal to where the clip was placed. Either yourself or the partner can cut the cord.

*Sample for Cord Gas:* After 10 cm place another two hemostats. Cut in-between. This sample of cord will be sent for cord gases.

*Delivering the Placenta:* Place a green towel on the mother’s abdomen. Palpate the uterus to ensure that it is firm. While applying suprapubic pressure, apply steady but gentle downwards traction while holding the hemostat. A hand can be placed in the vagina to assess if the placenta can be palpated. Have the metal basin ready for when the placenta is delivered. (Mismanagement of this stage can lead to uterine inversion.)

Check for abnormal placenta, three vessel cord, missing pieces indicating some may be retained

**Shoulder Dystocia**

*Video Link*
- following delivery of the head, the baby’s anterior shoulder gets caught above the mother's pubic bone
- Turtle Sign: retraction of the baby’s head back into the vagina
- Think 3 Ps – Power, Passenger, Pelvis. (for dystocia)

**ALARMER**

Ask for help *Can call a Code 333 (Ob Emergency)*

Legs: hyperflex legs (McRoberts)

Anterior shoulder disimpaction (Suprapubic pressure/Rubin)

Release posterior arm

Manoeuvre of Woods

Episiotomy (usually for access to posterior arm)

Roll onto all 4s
<table>
<thead>
<tr>
<th>McRoberts maneuver: sharp flexion of the legs up onto the abdomen - causes straightening of the sacrum relative to the lumbar vertebrae, rotation of the symphysis pubis toward the maternal head and a decrease in the angle of pelvic inclination (does not increase pelvic dimensions, tends to free anterior shoulder)</th>
<th><img src="image1.png" alt="Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suprapubic pressure:</strong> along with downward traction</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>
| **Rubin Maneuvers**  
1. Rock shoulders side to side with force to the maternal abdomen  
2. Push most accessible fetal shoulder toward the anterior surface of the chest, often results in abduction of both shoulders (producing a smaller shoulder-to-shoulder diameter and freeing impacted shoulder) | ![Image](image3.png) |
| **Deliver Posterior Shoulder**  
Delivery of the posterior shoulder: carefully sweeping the posterior arm of the fetus across the chest, followed by delivery of the arm, shoulder girdle is then rotated into one of the oblique diameters of the pelvis with subsequent delivery of the anterior shoulder | ![Image](image4.png) |
| **Woods corkscrew maneuver:** progressively rotating the posterior shoulder 180 degrees in a corkscrew fashion, impacted anterior shoulder can be released | ![Image](image5.png) |
**Roll on All Fours**  
Attempt to deliver in this position

---

**Laceration Repair:**  
[Video Link Perineum Repair]  
[Video Link Knot Tying]  
Inspect the perineum for laceration and determine the degree if present.

**Type of Lacerations:**

<table>
<thead>
<tr>
<th>Type</th>
<th>1st Degree</th>
<th>2nd Degree</th>
<th>3rd Degree</th>
<th>4th Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mucosa</td>
<td>Mucosa (no facial or muscle involvement)</td>
<td>Fascia and Muscle</td>
<td>Partial Anal Involvement</td>
<td>Entire Anus</td>
</tr>
<tr>
<td>Usually no repair required</td>
<td>Repair</td>
<td></td>
<td>Repaired by OB</td>
<td>Always repaired by OB</td>
</tr>
</tbody>
</table>

**Technique:**

**Anesthesia:** Epidural (if already in place) or local anesthetic 1-2% lidocaine.

**Equipment:**
- Proper lighting
- Needle driver, scissors, forceps
- Sponges
- +/- Retractor
- Suture: Absorbable 2-0 or 3-0 suture, Polysorb (Vicryl)
1. **Identify the Landmarks.**  
Apex, hymenal ring, bulbocavernosus and superficial transverse perineal muscle

2. **Vaginal Repair**  
Place one stitch at the apex.  
Run a continuous locking running stitch to reapproximate the vagina laceration and hymenal ring.

3. **Crown Stich**  
Take your stitch deep and enter the wound.  
Place one deep suture on either side to approximate the bulbocavernosus muscle.  
Hand-tie the last stitch and use the scissors to open the ring at the knot (this leaves a string on which to tie off later).
### 4. Perineal body
Continue with deep sutures until reaching the most inferior aspect of the laceration.

<table>
<thead>
<tr>
<th>Image of Perineal Body</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Perineal Body Diagram" /></td>
</tr>
</tbody>
</table>

### 5. Perineal body
Bring the stich superficially through the apex of the laceration.
Continue toe stich upward as a subcuticular stitch
Hand-tie off using the tail left from the crown stich.

<table>
<thead>
<tr>
<th>Image of Perineal Body</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Perineal Body Diagram" /></td>
</tr>
</tbody>
</table>

### After Delivery:
- Count and Dispose of sharps
- Perform Instrument Count (There should be 11).
- Tidy up the delivery tray

### To Do:
- Admissions Orders Mother
- Medication Reconciliation Form
- Placenta Pathology Form
  (most of the time it’s for disposal except if there is an abnormality)
- Admission Orders Newborn
- Document Newborn Exam
- Complete Birth Record
Procedures and Skills

Induction

Logistics

Family Medicine Residents are now responsible for doing out patient inductions for both OB and Family patients on A4. The patient charts should be located in the Nursing Charting room (the room halfway down the hallway). The patients should be located in the room across the hall. The nurses on A4 are unable to verify cervical checks please get the FMOB or OB residents/staff to confirm if needed.

Residents are not expected to manage induction independently unless he or she has sufficient experience. The expectation is that the resident will initiate induction with supervision. For OB patients, the OB resident or OB staff can provide supervision. For FMOB patients, the FMOB staff can provide supervision unless the resident is confident and capable. Always contact the supervisor with the patient history prior to initiating induction. The RN can provide assistance during induction but they are not capable to verify cervix dilation.

Cervidil (Prostaglandin)

**Indication:** For labor induction to “ripen the cervix” to allow it to soften and thin.

**Risks:** Hyperstimulation, bronchospasm, uterine rupture, postpartum DIC, fever, nausea/vomiting.

**Contraindications:** Any contraindications for vaginal delivery, before 28 weeks, undiagnosed vaginal bleeding uterine, hypertonicity uterine, hyperactivity, fetal distress w/o imminent delivery, C/S or major uterine surgery

**Cautions:** asthma, glaucoma

**Tools:** Sterile Gloves, Cervidil Insert

**Procedure:**
- See product monograph inside box for details
- The Cervidil insert resembles a white shoelace
- Fold the insert back on to itself several times
- Put the insert between your index and middle finger and place into the posterior fornix, tucking it securely behind the cervix
- Tuck the remaining string into the vagina but ensure that a ~1cm tail sticks out
- Advise the mother that the tail looks like a tampon and recommend being careful with wiping after using the washroom
- The mother should be placed on a EFM for 1 hour
- If done as an outpatient, the woman will return in 24 hour or earlier if she goes into labour.
- If done in hospital, ensure that a cervix check is done in 24 hours

Foley Catheter

**Indication:** For labour induction.

**Risks:** Cervical laceration, inadvertent rupture of the membranes, and infection

**Contraindications:** Any contraindications for vaginal delivery
**Tools:** Sterile Gloves, foley catheter, sterile water (from infant formula bottle), 50 ml syringe, assistant, +/- speculum

**Procedure:**
- This procedure can either be done blindly or with a speculum
- The cervix must be dilated slightly ~0.5 cm in order for the head of the foley to pass through
- Test that the foley will hold 40 ml of water beforehand
- Clean with betadine.
- Feed the tip of the foley into the cervix. It needs to pass through both the internal and external os
- Have your assistant inflate the foley with 30-40 ml of sterile saline
- Pull on the foley to determine if it is place
- Secure the tip of the foley to the mother's leg with tape
- She should return in 24 hours or when the foley falls out (meaning she is a least 3 cm dilated)

**Augmentation**

**Artificial Rupture of Membranes (ARM)**

**Indication:** Augmentation of labor (bathing cervix in prostaglandins), allows for direct fetal monitoring, assess amniotic fluid for meconium

**Contraindications:** Any contraindications for vaginal delivery, head not engaged (if head is ballotable, then it is not engaged)

**Risks:** cord prolapse, infection (eg chorioamnionitis) if prolonged rupture, bleeding, fetal head trauma

**Tools:** Sterile Gloves, ARM hook

**Procedure**
- Discuss plan with FMOB staff or OB Resident/staff and patient
- First do a cervical exam to assess the cervical dilation, station and presenting part. Ensure the presenting part is A. A head, and B. Not ballotable. Not ballotable means that when you push on the head it does not 'float away' or move a significant amount away from your fingers. If the head is ballotable, the staff should present for the ARM.
- Have your assistant pass you a sterile ARM hook
- Place the hook between your index and middle finger, parallel to them
- Ensure that the hook is facing inwards.
- Slide your finger into the vagina
- Once at the membranes rotate the hook with your other hand so that the hook is exposed
- Attempt to grab the membranes with the hook. Then pull. This may require several tries
- keep your hand on the fetal head, palpate for a cord. If a cord is palpated DO NOT REMOVE YOUR HAND. Remove your hand when you are confident there is no cord
- note the amount and colour of the fluid
- Document the procedure noting FHR and tracing

**Oxytocin**

As part of the birthing unit admission orders, Oxytocin 20 Units/L NS infused per the Nursing protocol can be started. Call the FMOB Staff on call before starting oxytocin., confirm low dose vs high dose protocol.
Indication:
Prolonged latent phase.

Labour dystocia:
- In the active first stage: less than 2 cm dilatation in 4 hours.

In the active second stage: more than 1 hour with no descent.
Consider waiting 1-2 hours following rupture of membranes before initiating an oxytocin infusion if maternal/fetal status is WNL and stable.

Oxytocin should not be started until:
6 hours after last dose of Prostin Gel (PGE2)
4 hours after the last dose of Misoprostol.
30 minutes after removal of the Cervidil tampon.
24 hours after mifepristone administration.

A Bishop’s score > 6 indicates a favourable cervix.

Goal: Regular, moderate to strong contractions every 2-3 minutes lasting 50-60 sec with 30 sec or more resting tone or with 5 contractions in a 10 minute period.

**Low Dose**
Initiate infusion at 1-2 mU/min and increase 1-2 mU/min every 30 minutes providing FHR and contraction pattern are WNL.

**Accelerated Dose (use with caution especially in 2nd stage)**
Initiate infusion at 4 mU/min and increase infusion by 4 mU/min every 30 min providing FHR and contraction pattern are WNL.

MD will be notified for Uterine tachysystole and atypical/abnormal FHR
If Tachysystole and normal FHR: Decrease oxytocin by half, atypical FHR: decrease oxytocin by half abnormal FHR or uterine tachysystole: turn off oxytocin. Start resuscitation, have patient change positions, give fluid bolus, do vaginal exam to assess for bleeding, a cord and cervical dilation.
Call your staff!
Typically the nurses will already have turned down the oxytocin before they call you.

**Treatment of Tachysystole:**
Nitroglycerin (NTG)
NTG 0.4 mg SL (1-2 sprays) q5 min; Maximum 3 sprays.
NTG 50mcg IVq3-5 min to a maximum of 200mcg
**Fetal Scalp Monitor**

**Indication:** Whenever other monitoring modalities are unsatisfactory. Examples include when the loss of monitoring in high risk fetuses would be unacceptable or where patient factors (eg. obesity) makes conventional monitoring difficult.

**Contraindications:**
- Fetal membranes intact
- Not in labour
- Infectious Risk to fetus (eg. HIV, active herpes)
- Bleeding Risk to fetus (eg. inherited bleeding disorders)

**Risks:**
- Laceration Maternal Tissues, Laceration Fetus, Improper fetal placement (eg. eye), infection

**Tools:**
- Sterile Gloves
- Fetal Scalp Electrode in Introducer

**Procedure:**
- Discuss with staff
- Confirm the presentation of the fetus
- Place the introducer in between the index and middle finger.
- Insert into the vagina until the fetal head is reached.
- Select a location over the parietal or occipital bones, away from sutures and other fetal or maternal parts
- Put pressure at the base of the electrode and twist the electrode clock-wise slightly to place it
- Slide the introducer off.
- Attach the electrode to the monitor.

**Intrapartum and Post Partum:**

FMOB is responsible for both mother and baby post partum. If the baby is unwell, then the baby is admitted under pediatrics in the NICU. You should remain part of the care circle and round on the baby.

For OB patients, the mother is admitted under OB while the baby is admitted under pediatrics or the monarch. If the mother was originally an FMOB and transferred to OB, the baby is typically under FMOB.

**Spontaneous Vaginal Delivery:**

For an uncomplicated SVD, mother and baby can go home in 24 hours.

Some mothers will be able to go home 6 hours after delivery, with follow up at Monarch the next day. Staff will discuss with the family if they want this.

Ensure that there is a follow up appointment in 2 days with the FMOB provider, Monarch or another healthcare provider.
C-Section:
Most women are on a clinical pathway after C/S.

To Check:
POD 1: CBC
POD 2: D/C home
   • follow up 6 weeks OB or 2 days with baby to FMOB

Sample Post Partum Note:

Mother:
Age at ___ + ___ weeks SVD PPD 1 (Relevant PMH or complications in pregnancy/birth)

S/
   • Ask about:
   • Mood
   • Ambulating
   • Breast Feeding
   • CP, SOB or Calf pain
   • Headache
   • Nausea or Vomiting
   • Pain
   • Lochia (Minimum, Moderate, Heavy)
   • Bladder Function
   • Bowel Function. Flatulence? Constipation
   • Supports

O/ Vitals

Exam Abdomen: Uterus (firm, soft) at ___ below umbilicus . (If OB C/S check if incision is clean, dry and intact)
BREASTS: nipples and breasts, with permission/consent
Legs: check for unilateral leg swelling

AP / Readiness for Discharge and items to follow up
Newborn:
DOL __ born at __ + __ weeks (PMH or complications in pregnancy/birth)

S/
• how is baby doing?
• Feeding? (how often, is baby latching)
• wet diapers? Soiled diapers?

O/

General:
• tone
• activity
• cry (tone)

Derm:
• Rash
• Hematoma
• Birthmark/Mongolian Spot
• Jaundice

HEENT:
• anterior and posterior fontanelles?
• Cephalhematoma/Caput succaedanum?
• Eyes clear? Red Reflex?
• Lips/gums? Tongue Tie?
• Palate Intact?
• Suck Reflex

Heart:
• S1, S2?
• murmurs?
• Femoral pulses?

RESP
• Chest contour?
• GAEB, clear?

ABDO:
• Soft? Non-tender
• Hepatosplenomegaly?
• Umbilicus?

GU:
• Normal Anatomy?
  o Male: testis descended?
  o Female
  o Hernias?
• Anus patent?
• Diaper Rashes?

MSK:
• Hip: Ortolani, Barlow?
• Clavicles?

SPINE:
• Palpation of the spine
• Sacral dimple? Hair tuff?

NEURO
• Palmar/plantar grasp
• Suck
• Moro

AP/
• Assess any identified issues
• Assess readiness for discharge and make follow up plans

Newborn To Check:
• 24 hour Bilirubin
• Weight loss
• Newborns need to have a discharge exam documented
Maternal

Post Partum Hemorrhage

- Classically defined as blood loss over a 24 hr period of
  - Vaginal Birth: > 500 ml
  - C-Section > 1000 ml

Orthostatic hypotension can be a sign of impending PPH

Causes of PPH:

<table>
<thead>
<tr>
<th>Tone</th>
<th>Tissue</th>
<th>Trauma</th>
<th>Thrombin (cloT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placenta previa</td>
<td>Retained Placenta</td>
<td>C-Section</td>
<td>Pre-eclampsia</td>
</tr>
<tr>
<td>Over distension of uterus (multiple pregnancy, polyhydramnios, macrosomia)</td>
<td>Retained Products of Conception</td>
<td>Episiotomy</td>
<td>Placental Abruption</td>
</tr>
<tr>
<td>Oxytocin use</td>
<td>Placenta Acreta</td>
<td>Macrosomia (&gt;4 kg)</td>
<td>Pyrexia in labour</td>
</tr>
<tr>
<td>Induction of labor</td>
<td>Retained blood clots in uterus from lack of tone</td>
<td></td>
<td>Bleeding Disorders</td>
</tr>
<tr>
<td>Prolonged labor/prolonged rupture</td>
<td></td>
<td></td>
<td>(hemophilia, vonWilibrand)</td>
</tr>
</tbody>
</table>
Hemabate should be avoided in patients with asthma
Ergometrine contraindicated in HTN
Maternal Fever

- Intrapartum fever is defined as maternal temperature ≥38 °C orally

Management:
- General supportive measures for febrile patients: reduction in room temperature, reduction of clothing, and rehydration, +/- IV fluids, acetaminophen (for consideration after ruling out infection)
- Investigations:
  - WBC limited as values are normally high during labor. If the patient appears ill, T ≥39 °C, leukocytosis accompanied by a left shift or bandemia supports an infection
  - Consider blood cultures in ill patients

- Intrapartum fever is the key clinical sign of intraamniotic infection (IAI)
- Clinical or laboratory findings reliably distinguish between IAI and neuraxial anesthesia-related temperature elevation
- When maternal temperature is ≥38 °C orally and other infection-related sources of fever (respiratory, urinary tract, gastrointestinal, etc) have been reasonably excluded antibiotics for treatment of IAI are usually administered

UptoDate Algorithm:
Venous Thromboembolic Events

Managing VTE in Pregnancy:
- structured prediction rules and D-dimer cut off points have not been validated in pregnant women
- The first and second trimesters of pregnancy convey similar risks for DVT, with a higher risk in the third trimester and the first 3 weeks postpartum
- PE occurs more commonly postpartum, decreasing in incidence after the first 6 weeks
- Objective testing is needed to rule out VTE

<table>
<thead>
<tr>
<th>SOGC Algorithm for the diagnosis of deep venous thrombosis in pregnant patients</th>
<th>SOGC Algorithm for the diagnosis of pulmonary embolism in pregnant patients using the preferred VQ scan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suspected DVT</strong></td>
<td><strong>Suspected PE</strong></td>
</tr>
<tr>
<td>Compression ultrasound of entire proximal venous system from iliac to popliteal vein and Doppler examination of external iliac vein</td>
<td>Bilateral ultrasound examination of lower extremity*</td>
</tr>
<tr>
<td>DVT diagnosed</td>
<td>DVT diagnosed</td>
</tr>
<tr>
<td>DVT not diagnosed</td>
<td>Consider MRI if isolated iliac vein DVT is suspected based on symptoms and Doppler examination of external iliac vein</td>
</tr>
<tr>
<td>Repeat above ultrasound examination within 7 days</td>
<td>DVT not diagnosed</td>
</tr>
<tr>
<td></td>
<td>Start treatment</td>
</tr>
<tr>
<td></td>
<td>VQ scan</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Non-diagnostic</td>
</tr>
<tr>
<td></td>
<td>High probability</td>
</tr>
<tr>
<td></td>
<td>Low pretest†</td>
</tr>
<tr>
<td></td>
<td>High/moderate pretest†</td>
</tr>
<tr>
<td></td>
<td>Serial ultrasound exams of lower extremity*</td>
</tr>
<tr>
<td></td>
<td>Spiral CTA scan†</td>
</tr>
<tr>
<td></td>
<td>PE diagnosed</td>
</tr>
<tr>
<td></td>
<td>Clinical follow-up</td>
</tr>
</tbody>
</table>

*Bi-level US should include examination of the iliac veins with Doppler manoeuvres
†Pretest determined by clinician’s subjective assessment
‡Modification in spiral CT protocol should be considered for pregnant patients

Treatment:
- Admit patient, or close outpatient follow up
- Low molecular weight heparin (LMWH) is the preferred pharmacologic agent
  - Eg. Enoxaparin 1 mg/kg SC twice daily or 1.5 mg/kg SC daily. Dose at current weight
- Use Unfractionated Heparin if renal impairment (GFR < 30ml/min)
  - IV: 80 U/kg bolus (max 5000 U) followed by 18 U/kg and adjusted according to local nomogram
  - SC: 150 to 200 U/kg twice daily
A lower dose should be considered in women weighing less than 50 kg
- Target aPTT 1.5 to 2.5 × pregnancy baseline (measured mid-dosing interval i.e. 6 hours)

Lactation

The following is a brief FAQ to help answer common questions regarding breast feeding in the first few days of life.

**How do I know when a baby wants to feed?**
- Signs include smacking lips, sucking movements, bringing hand to the mouth and bobbing around with the face. Crying is a late hunger cue.

**How often should babies feed?**
- Babies breastfeed often ranging from every 1.5 hours to 3 hours. This should not exceed 3 hrs until baby has at least surpassed birth weight. Babies should feed at least 8 times in 24 hours.

**What is a normal feeding pattern?**
- There is no “normal” feeding patterns for babies.
- One common feeding pattern in the first 24 – 48 hours is "cluster feeding" when they with suckle in the first hour or two then have a period of sleeping. The baby may be sleepy in the first 24 hours then start cluster feeding very often.

**How do I ensure a good milk supply?**
- Many women worry that the volume of colostrum is not sufficient. It is as long as the baby does to the breast often and feeds well
- Regardless, it is important that the baby latches properly, often and long enough to stimulate a milk supply and increase volume produced

*Remember:* Breastfed babies require Vitamin D 400 IU which can be given as drops.
- Babies in northern communities (north of 55° latitude, approximately at Edmonton) or who have other risk factors (such as dark skin) should get 800 IU per day

**Lactation Consultation:** Lactation consultations are available for mothers on the unit. Residents are encouraged to spend some time with the LC, if not too busy, as they do an assessment on the Mother Baby Unit. This is a great opportunity to learn about breast feeding.

**Community Resources:**
- Ottawa Breastfeeds ([http://ottawabreastfeeds.ca](http://ottawabreastfeeds.ca)) offers a schedule of free drop in breast feeding clinics
**Neonatal**

**Bilirubin:**
As part of the newborn admission orders, the physician will indicate the treatment line threshold.

**Low Risk** = > 38 weeks and well
**Medium risk** = > 38 weeks and risk factors for bilirubin encephalopathy or 35 – 37+6 weeks and well
**High risk** = 35 - 37+6 and risk factors for bilirubin encephalopathy

Risk factors for bilirubin *encephalopathy*:
- isoimmune haemolytic disease, G6PD deficiency
- asphyxia
- current and significant lethargy
- unresolved temperature instability (requiring current, active treatment)
- sepsis currently being treated
- ongoing acidosis (not just low cord pH)
- albumin <30g/L (if measured)
- NB: exclusive breast feeding DOES NOT affect treatment line.

**Question One:** Does this newborn need *phototherapy*?

Select the appropriate treatment line based on gestational age and bilirubin *encephalopathy risk factors* (Low Risk, Medium Risk and High Risk). If the plotted bilirubin is above the treatment threshold line, the newborn needs phototherapy.

*Phototherapy Graph  Figure 9*
**Question Two:** Does this newborn need exchange transfusion?

In a similar manner, if the plotted bilirubin is above the treatment threshold line, the newborn need exchange transfusion.

![Image of Exchange Transfusion Graph](image.png)

**Question Three:** What follow up does this newborn need?

**Step One:** Determine the Algorithm to follow based on the gestational age and risk factors for severe hyperbilirubinemia (A, B or C).

Risk factors for severe hyperbilirubinemia:
- Gestational Age
- Positive DAT or other known haemolytic disease (eg. G6PD deficiency, hereditary spherocytosis)
- Cephalohematoma or significant bruising
- Exclusive breastfeeding if not well established or weight loss over 10%
- East Asian, Black race
**Step Two:** Plot the bilirubin on the hour specific nomogram. Determine what **Zone** the newborn falls into.

![Hour Specific Nomogram](image)

**Step Three:** Based on the zone, determine the appropriate follow up.
**Arranging Follow Up:** If a newborn requires outpatient follow up of bilirubin, the Monarch Centre is an excellent resource. Simply write an order for a Monarch Appointment. There are sites available, one at Bank and the other on Cleopatra. Only the Cleopatra location is open on Saturdays (and closed on Sundays).

**Resource:**
BiliTool (https://bilitool.org/)
Remember to change the units to SI umol/L

**Hypoglycemia:**
At TOH, hypoglycemia is defined as glucose < 2.5mmol/L.

Neonates with risk factors (eg) are routinely checked at 2 hours post partum. Any neonates showing symptoms is immediately checked. Depending on the value, the MD is notified +/- transfer to NICU or the neonates is re-fed and retested.

**Treatment:**
If increased feeds are not successful, IV dextrose is administered.
- Consults Pediatrics
- single mini bolus of 2 mL/kg of 10% dextrose at the start of an infusion
- infusion of 80 mL/kg/day of 10% dextrose
- re-check q30 mins
- transfer to NICU

**Respiratory Distress**

<table>
<thead>
<tr>
<th>Most common causes*</th>
<th>Less common but significant causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transient tachypnea of the newborn</td>
<td>Delayed transition</td>
</tr>
<tr>
<td>Respiratory distress syndrome (hyaline membrane disease)</td>
<td>Infection (e.g., pneumonia, sepsis)</td>
</tr>
<tr>
<td>Meconium aspiration syndrome</td>
<td>Nonpulmonary causes (e.g., anemia, congenital heart disease, congenital malformation, medications, neurologic or metabolic abnormalities, polycythemia, upper airway obstruction)</td>
</tr>
<tr>
<td></td>
<td>Persistent pulmonary hypertension of the newborn</td>
</tr>
<tr>
<td></td>
<td>Pneumothorax</td>
</tr>
</tbody>
</table>
Respiratory Distress Syndrome (RDS) | Transient Tachypnea of the Newborn (TTN) | Meconium Aspiration Syndrome (MAS) | Infection
---|---|---|---
Description | structural and functional lung immaturity | residual pulmonary fluid remains in lungs after delivery. | locally irritative, obstructive, and a medium for bacterial culture | Common pathogens include group B streptococci (GBS), Staphylococcus aureus, Streptococcus pneumoniae, and gram-negative enteric rods. distress as well as temperature instability
Age | Preterm | Any | Term or Post Term
Timing | immediately after birth | immediately after birth or within two hours | immediately after birth | hours to days after birth
Symptoms | Tachypnea | Tachypnea | Tachypnea
       | Hyoxia | Often no hypoxia or cyanosis | Hypoxia
       | Cyanosis | | |
Duration | few hours to two days | | |
Xray | Homogenous infiltrates | Parenchymal infiltrates | Patchy atelectasis
       | Air bronchograms | “Wet silhouette” around the heart | Consolidation
       | Decreased lung volumes | Intralobar fluid accumulation | |

Table 2. Laboratory Evaluation for Respiratory Distress in the Newborn

<table>
<thead>
<tr>
<th>Test</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood culture</td>
<td>May indicate bacteremia</td>
</tr>
<tr>
<td></td>
<td>Not helpful initially because results may take 48 hours</td>
</tr>
<tr>
<td>Blood gas</td>
<td>Used to assess degree of hypoxemia if arterial sampling, or acid/base status if capillary sampling (capillary sample usually used unless high oxygen requirement)</td>
</tr>
<tr>
<td>Blood glucose</td>
<td>Hypoglycemia can cause or aggravate tachypnea</td>
</tr>
<tr>
<td>Chest radiography</td>
<td>Used to differentiate various types of respiratory distress</td>
</tr>
<tr>
<td>Complete blood count with differential</td>
<td>Leukocytosis or bandemia indicates stress or infection</td>
</tr>
<tr>
<td></td>
<td>Neutropenia correlates with bacterial infection</td>
</tr>
<tr>
<td></td>
<td>Low hemoglobin level shows anemia</td>
</tr>
<tr>
<td></td>
<td>High hemoglobin level occurs in polycythemia</td>
</tr>
<tr>
<td></td>
<td>Low platelet level occurs in sepsis</td>
</tr>
<tr>
<td>Lumbar puncture</td>
<td>If meningitis is suspected</td>
</tr>
<tr>
<td>Pulse oximetry</td>
<td>Used to detect hypoxia and need for oxygen supplementation</td>
</tr>
</tbody>
</table>
Scalp Swellings

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
<th>Distribution</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caput Succedaneum</strong></td>
<td>Diffuse edematous swelling of the soft tissues of the scalp secondary to the pressure of the uterus or vaginal wall on areas of the fetal head boarding the caput</td>
<td>May cross suture lines Present at birth Results in discoloration of the overlying skin</td>
<td>Usually no treatment necessary Imaging should be considered with large caputs that do not diminish in 48-72 hrs or with enlargement of the swelling more than 24 hours after delivery especially with neurologic defects and hemodynamic instability Usually resolves within 4-6 days</td>
</tr>
<tr>
<td>Condition</td>
<td>Description</td>
<td>Diagnostic Considerations</td>
<td>Management</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cephalhematoma</td>
<td>Subperiosteal hemorrhage which can be secondary to traumatic delivery or forceps delivery.</td>
<td>NEVER extends across the suture line evolves over 24 hours or more. Xray films or CT scans of the head should be obtained if an underlying skull fracture is suspected (&lt;5% cephalhematomas). Hematocrit and bilirubin levels should be monitored in these patients. Aspiration of the hematoma is rarely necessary.</td>
<td>Most resolve in 2-3 weeks.</td>
</tr>
<tr>
<td>Subgaleal hematoma (SGH)</td>
<td>Hemorrhage bleeding occurs below the epicranial aponeurosis.</td>
<td>It can cross over the suture line and onto the neck or ear. Palpation reveals bogginess of the subcutaneous tissue during first 24-48 hours. Classic triad of clinical findings for SGH includes tachycardia, a falling hematocrit, and increasing OFC in the first 24 to 48 hours after birth.</td>
<td>Can readily result in sequestration of 40% or more of the newborn's blood volume and cause hemorrhagic shock. Consider head imaging and coagulation studies. It may be necessary to replace blood volume lost and correct coagulopathy if present.</td>
</tr>
<tr>
<td>Subdural Hemorrhage</td>
<td>Bleeding between the dura mater and the arachnoid layer of brain (rupture of bridging veins)</td>
<td>Usually symptomatic in the first 24 to 48 hours (respiratory depression, apnea, and/or seizures, neurologic dysfunction eg irritability and altered LOC).</td>
<td>Most infants can be closely observed. Surgical intervention needed for infants with increased ICP.</td>
</tr>
<tr>
<td>Epidural Hematoma</td>
<td>Very rare in neonates injury to the middle meningeal artery. Most cases also involve a corresponding linear skull fracture</td>
<td>Hypotonia, seizures, bulging fontanelles, and a change in the neonate’s level of consciousness. head CT scan</td>
<td>Usually close observation; specifically monitoring for signs of herniation (if found surgical intervention needed).</td>
</tr>
<tr>
<td>Subarachnoid Hemorrhage</td>
<td>Symptoms appear at 24 to 48 hours after birth and may include apnea or seizure</td>
<td>Consider a CT if cause of apnea or seizure cannot be found</td>
<td>Usually close observation; specifically monitoring for signs of herniation (if found surgical intervention needed).</td>
</tr>
</tbody>
</table>
Sepsis

Early-onset neonatal bacterial sepsis (EOS): sepsis occurring within the first 7 days of life

- usually presents within 24 hours of birth
- clinical signs include: respiratory distress, temperature instability, tachycardia, seizures, hypotonia, lethargy, poor peripheral perfusion, hypotension, acidosis
- require prompt investigation, including CBC, blood culture and LP
- initiation of empirical IV antibiotic therapy. Ampicillin and an aminoglycoside provide coverage for the most common pathogens
- in healthy term neonates following birth, the neutrophil count rises, peaking between 6 and 8 hours of age; higher counts are associated with labour and duration of labour
- A low total WBC count (<5 × 10⁹/L) or low ANC (<1.5 × 10⁹/L) is more likely to be associated with EOS than an increased l:T ratio (>0.2) or high total WBC (>30 × 10⁹/L)

CPS Management of Term infants >= 37 weeks’ gestational age at risk for early onset bacterial sepsis

CPS: Complete blood count; CXR: chest x-ray; GA: Gestational age; GBS: Group B streptococcus; IAP: Intrapartum antibiotic prophylaxis; LP: Lumbar puncture
Tips for Surviving Thriving during your FMOB rotation

Have a good attitude! Even if you aren’t keen on OB, try to be a member of the team and learn something, remember for your patients and their partners this is one of the most exciting times for them. You will learn things that are useful no matter what kind of family medicine you practice.

You are responsible for FMOB and OB patients. Embrace getting to be part of OB patients as well, as it gets you more exposure and practice.

If uncertain, or its been awhile since you have been in the BU, let the RNs/OB residents know, they are a great resource!

As with any busy service, it’s best to eat when you can, sleep when you can and pee when you can!

If you have a patient that does not speak English, consider using the phone translation service (speak to the Unit Coordinator).

Resources for Patients:
Division Website – Includes a Directory of all the FMOB at TOH  
http://www.ottawadocsdeliver.ca/

MOMMA – My Ottawa Maternity Medical Associates for information on the Civic Practice Group and patient resources  
https://mommadoctors.ca/

Millar Moores Mir Mother and Newborn Health  
http://www.millarmooresmir.ca/

The Monarch Centre – The Monarch Centre will see mother and baby up to 6 weeks post-partum patients. Doctors can make referrals for tongue tie assessment, lactation support and breast pump rentals.  
http://www.monarchcentre.ca/

Ottawa Public Health  
http://www.ottawapublichealth.ca

Ottawa Breast Feeds  

PregnancyInfo.ca – A patient information website created by the SOGC  
https://www.pregnancyinfo.ca/
Quick Reference Guide:

Antenatal Visits

<table>
<thead>
<tr>
<th>Visit 1</th>
<th>Visit 2</th>
<th>Visit 3</th>
<th>Visit 4</th>
<th>Visit 5</th>
<th>Visit 6</th>
<th>Visit 7</th>
<th>Visit 8</th>
<th>Visit 9</th>
<th>Visit 10</th>
<th>Visit 11</th>
<th>Visit 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Antenatal 1</td>
<td>Antenatal 2</td>
<td>Antenatal 3</td>
<td>Antenatal 4</td>
<td>Antenatal 5</td>
<td>Antenatal 6</td>
<td>Antenatal 7</td>
<td>Antenatal 8</td>
<td>Antenatal 9</td>
<td>Antenatal 10</td>
<td>Antenatal 11</td>
<td>Antenatal 12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-eclampsia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal Well-being</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional U/S if there are concerns for:
- Growth
- Diabetes
- Pre-eclampsia
- Anemia
- Fetal Well-being

**Urine O'S**
- BW 1
- U/S Date
- IPS U/S
- U/S T2

**Urine O'S**
- CBC
- P
- U/S Position

**Glucose Testing**
- Test 1: GDM Challenge Test (GCT)
  - Non-fasted, ingest 50g glucose
  - GW 1 hr later
  - Fail if > 7.6 mmol/L
- Test 2: Glucose Tolerance Test (GTT)
  - Fasted
  - GW 1 hr after ingestion
  - GTT if > 12.0 mmol/L
  - GTT value is abnormal if > 10 mmol/L

**Chest**
- Vaginal and Neonatal Swab
- 5 million units of Pen/G 4 hrs before birth (Glandular if allergic)

Summary by Amy Chung
Available at mednotable.com
Labour and Delivery

### Bishop Score

<table>
<thead>
<tr>
<th>Score</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station</td>
<td>-3</td>
<td>1-2</td>
<td>&gt;3</td>
</tr>
<tr>
<td>Consistency</td>
<td>Firm</td>
<td>Medium</td>
<td>Soft</td>
</tr>
<tr>
<td>Position</td>
<td>Posterior</td>
<td>Central</td>
<td>Anterior</td>
</tr>
</tbody>
</table>

#### Labour

- **Regular uterine contractions with cervical dilation and effacement**

#### 1st Stage

- Constrictions and cervical dilation

#### 2nd Stage

- Fetal Decent and Delivery

#### 3rd Stage

- Placenta Delivery

#### 4th Stage

- Post Delivery

#### Induction

- Start Labour

#### Augmentation

- Augments labour that has already begun

#### Indications

- Preterm pregnancy
- Breech or malpresentation
- Fetal distress
- Placental insufficiency
- Macrosomia
- Polyhydramnios
- Post-dates

#### Contraindications

- Pre-existing maternal hypertension
- Pre-existing maternal diabetes
- Pre-existing maternal cardiac disease
- Advanced maternal age
- Fetal distress

#### Cardinal Movements

- Artifical Rupture of Membranes (ARM) / induction of labour

#### Complications

- Dystocia ("difficult labour")
  - **3 Ps – Power, Passenger, Pelvis**

<table>
<thead>
<tr>
<th>Before</th>
<th>1st Stage</th>
<th>2nd Stage</th>
<th>3rd Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROM</td>
<td>Cephalopelvic disproportion: disparity between size of the fetal head and maternal pelvis</td>
<td>Nulliparas: limited to 2 hours (3 hours with regional analgesia)</td>
<td>Manage any PPH</td>
</tr>
<tr>
<td></td>
<td>Failure to progress: lack of progressive cervical dilation or lack of fetal descent</td>
<td>Multiparas: limited to 1 hour, (2 hours with regional analgesia)</td>
<td>Cord Clamping: 66 sec in pre-Term</td>
</tr>
<tr>
<td></td>
<td>Labour abnormalities (must be in active labour)</td>
<td>Fetofoetal Dysproportion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protraction disorder: slower than normal progress</td>
<td>Presentation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arrest disorder: complete cessation of progress - no dilatation for 2 hours or more (nulliparas), inadequate uterine contraction (&lt;380 Montevideo units) diagnosed in 80% of women with active phase arrest</td>
<td>Face</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uterine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hypotonic Uterine Dysfunction</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Problems with Coordination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summary by Amy Chung
Available at mednotable.com
Neonatal Resuscitation Algorithm (2015)

Neonatal Resuscitation Algorithm – 2015 Update

Antenatal counseling
Team briefing and equipment check

Birth

Term gestation?
Good tone?
Breathing or crying?

Yes

Infant stays with mother for routine care:
Warm and maintain normal temperature, position
airway, clear secretions if needed, dry,
Ongoing evaluation

No

Warm and maintain normal temperature,
position airway, clear secretions if needed,
dry, stimulate

Apnea or gasping?
HR below 100/min?

Yes

PPV
SpO₂, monitor
Consider ECG monitor

No

Labored breathing or persistent cyanosis?

Yes

Position and clear airway
SpO₂ monitor
Supplementary O₂ as needed
Consider CPAP

No

Postresuscitation care
Team debriefing

1 minute

HR below 100/min?

Yes

Check chest movement
Ventilation corrective steps if needed
ETT or laryngeal mask if needed

No

HR below 60/min?

Yes

Intubate if not already done
Chest compressions
Coordinate with PPV
100% O₂
ECG monitor
Consider emergency UVC

No

HR below 60/min?

Yes

IV epinephrine
If HR persistently below 60/min
Consider hypovolemia
Consider pneumothorax

Targeted Preductal SpO₂ After Birth

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>SpO₂ Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 min</td>
<td>60%-65%</td>
</tr>
<tr>
<td>2 min</td>
<td>65%-70%</td>
</tr>
<tr>
<td>3 min</td>
<td>70%-75%</td>
</tr>
<tr>
<td>4 min</td>
<td>75%-80%</td>
</tr>
<tr>
<td>5 min</td>
<td>80%-85%</td>
</tr>
<tr>
<td>10 min</td>
<td>85%-95%</td>
</tr>
</tbody>
</table>

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Appendix:

Triage Assessment Flow Labour

**Obstetrical Assessment Unit - Early Labour Low Risk Women < 4 cm with Intact Membranes Guideline**

- Term PROM
- Outpatient induction – admit to BU if contracting (+/- cx change)
- High risk patient

**Exclusions**

**MULTIP**
- Regular/irregular contractions
- FHR AUS normal
- Discuss with resident staff

- Opioid given
- No analgesia (NCB)

**PRIMP**
- Irregular contractions
- FHR AUS normal
- No analgesia requested

- Discuss with resident staff
- Give opioid as ordered
- Discharge orders written

**PRIMP**
- Irregular contractions
- FHR AUS normal
- Analgesia requested

- Discuss with resident staff
- Teaching done

**PRIMP**
- Regular contractions < 60/min
- FHR AUS normal

- Discuss with resident staff
- Teaching done

**WOMAN ARRIVES IN OAU**
- OAU RN prioritizes & completes assessment
- VE < 4 cm

**ALERTS**

- IF DISCHARGED:
  - All patients must be assessed by a resident at least once prior to discharge or by staff
  - Physician phone consult
  - If family medicine patient without resident coverage

- IF WALKING:
  - Obtain cell phone#
  - Provide OAU phone#
  - If patient is to return to OAU for reassessment, reasonable effort must be made to contact her
  - Document action steps.

**Review early labour strategies**
- Walking 2 hr or ELL (Gen)
- Reassess Ca & contractions

**If no/mag contr & FHR normal**
- Pt agrees with going home
- D/C home after teaching done

**If no contractions or < 5 min**
- Consider walking max 2 hr
- D/C home

**If contracting and/or pt requesting to stay**
- Consider walking max 2 hr
- Release Cx, FHR (A normal)

**Cx changes?**
- FHR concern?
- Contractions regular?

**Reassess Cx & contractions**
- D/C home after teaching done
- *If patient prefers, walking max 2 hr or ELL (Gen), then reassess by 2 hrs

**If no contractions or < 5 min**
- Consider walking max 2 hr
- Release Cx, FHR (A normal)

**If contracting and/or pt requesting to stay**
- Consider walking max 2 hr
- Release Cx, FHR (A normal)

**Cx changes?**
- FHR concern?
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Sample Admission Order Birthing Unit

Example of pre-Epic Order Sheet

<table>
<thead>
<tr>
<th>Non-Medication</th>
<th>IV and Medication (Medication, dose, route, frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Admit to Birthing Unit</strong></td>
<td><strong>IV Therapy:</strong></td>
</tr>
<tr>
<td><strong>Vitals:</strong></td>
<td>Use 18 ga IV catheter for all IV insertions</td>
</tr>
<tr>
<td><strong>Activity:</strong></td>
<td>Suffered lidocaine 1% 0.2 – 0.4 mL SC prior to IV starts and blood work, pm</td>
</tr>
<tr>
<td><strong>Diet:</strong></td>
<td>Prior to epidural: Administer 200 mL bolus NS IV, then decrease to TKVO or to IV rate as ordered below. Notify anesthesia prior to epidural if patient on anticoagulants during pregnancy.</td>
</tr>
<tr>
<td><strong>Pulse Oximetry:</strong></td>
<td>NS at _____ mL/h</td>
</tr>
<tr>
<td><strong>Fetal Health Surveillance (as per protocol):</strong></td>
<td><strong>Antiemetic:</strong></td>
</tr>
<tr>
<td><strong>Tests:</strong></td>
<td>Narbuphine (Nabain) 10 – 20 mg IM q4h for _____ dose(s) pm</td>
</tr>
<tr>
<td><strong>Consults:</strong></td>
<td>Narbuphine (Nabain) 10 – 15 mg IV pm. Wait 15 min: if inadequate analgesia and LOS less than 2, give 5 mg IV q15 min pm for max of 20 mg over 1 hour, then if inadequate analgesia and LOS less than 2, give 5 mg IV q15 min pm to max of 10 mg/h</td>
</tr>
<tr>
<td><strong>Additional orders:</strong></td>
<td>Hydrophilic (Diasoid) 2 – 4 mg PO q4h pm for _____ dose(s)</td>
</tr>
<tr>
<td><strong>Date (yyyy/mm/dd):</strong></td>
<td>Hydromorphone (Diasoid) 2 mg SC q4h pm × 2 doses</td>
</tr>
<tr>
<td><strong>Time:</strong></td>
<td>Fentanyl 50 mcg IV pm. Wait 5 min: if inadequate analgesia, RR greater than 8, and LOS less than 2, give 25 mcg IV q15 min pm to max of 200 mcg/h</td>
</tr>
<tr>
<td><strong>Physician (printed):</strong></td>
<td>Nitrous oxide 50% / Oxygen 50% (Etonaco) pm for maximum of 6 hours</td>
</tr>
<tr>
<td><strong>Signature (Physician):</strong></td>
<td>36 weeks and over, epidural pm in active labour</td>
</tr>
<tr>
<td><strong>Processed by:</strong></td>
<td>Under 36 weeks, epidural pm in active labour</td>
</tr>
<tr>
<td><strong>Signature (Nurse):</strong></td>
<td><strong>Pre-Pregnant BMI greater than or equal to 35:</strong></td>
</tr>
<tr>
<td><strong>Other:</strong></td>
<td><strong>Amalgam</strong> 50 – 60 ml/11/PO q4h pm</td>
</tr>
<tr>
<td><strong>Other:</strong></td>
<td><strong>Penicillin</strong> 40 mg PO daily when admitted for labour or induction</td>
</tr>
<tr>
<td><strong>Other:</strong></td>
<td><strong>NPO</strong> nasogastric tube started for plasma volume expansion</td>
</tr>
<tr>
<td><strong>Other:</strong></td>
<td><strong>Pre-op</strong> nasogastric tube used for plasma volume expansion</td>
</tr>
</tbody>
</table>

SPO 253 (REV 01/2018)
Common Medications

**Analgesics**
Acetaminophen 650mg PO/PR q4hr straight or prn
Ibuprofen 400mg PO q6hr straight or prn (NO NSAIDS TO PREGNANT PATIENTS!)
Nalbuphine (Nubain) 10-20 mg IM q4h
or Nalbuphine 10-15 mg IV prn. Wait 15 min. If inadequate analgesia give 5 mg IV q15 min for max 20 mg over 1 hour.
Hydromorphine 1-2mg or 2-4mg PO or 0.5-1mg SC q4hr prn
Tramacet 1-2 tabs PO q4hr prn (Caution! Contains Acetaminophen)

**Antiemetics**
Gravol 25-50mg PO/IV/IM/PR q4hr prn
Zofran (ondansetron) 2-4mg IV/PO q8hr prn
Maxeran (metoclopramide) 10mg PO/IV q6hr prn
Stemetil (prochlorperazine) 5-10mg PO/IV q8hr prn

**Antibiotics**
Ancef (cefazolin) 1-2g IV q8hr
Keflex (cephalexin) 500mg PO q6hr
Flagyl (metronidazole) 500mg PO/IV q8hr
Clindamycin 900mg IV q8hr
Gentamycin 2mg/kg IV loading dose, then 1.5mg/kg IV q8hr (pre and post levels with 3rd dose)
OR 3-5mg/kg IV q24hours
Pipercillin-Tazobactam 3.375g or 2.25g (renal dose) IV q6hr
Vancomycin 1g IV q12hr (q24hr renally dosed)

**Bowel:**
Lactulose 15-30cc PO OD-BID
Senokot 1-2 tabs PO qhs prn
PEG3350 17G PO Daily
Glycerin suppository PR OD

**Others**
Celestone 12mg IM q24hr x 2 doses (for lung maturity in patients with preterm labour at 24-34 weeks GA) –do not order this medication without reviewing with a senior!
Fragmin 5000units SC OD
References:

TOH Policies and Procedure Documents
Note to Access the TOH Policies and Procedure Documents log in myTOH using your TOH computer login (https://mytoh.ottawahospital.on.ca) then on the top bar go to Departments and Teams > Maternal and Newborn Care > Staff Resources > Policies & Procedure.


SOGC Clinical Practice Guidelines:


Canadian Pediatric Society (CPS) Position Statements


American Academy of Pediatrics:
http://pedsinreview.aappublications.org/content/37/11/451?sso=1&sso_redirect_count=1&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token

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