Intermittent Auscultation in Midwifery Practice: Research & Practice

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Objectives

1. Discuss the use of intermittent auscultation (IA) in midwifery practice.
2. Compare the different types of instruments that can be used for IA, and the interpretation of auditory vs. visual data.
3. Describe procedures for performing IA.
4. Discuss the information to be reviewed when performing IA in prenatal and intrapartum clients.
5. Review research evidence on IA.
6. Identify information to be included in the documentation of IA in the client’s record.
Definitions

• **Intermittent Auscultation (IA):** Dictionary
  – “Intermittent” → irregular, sporadic
  – “Auscultation” → examination with a stethoscope

• In midwifery practice, IA is a concept applied to
  – listening to the fetal heartbeat with an instrument (usually not a stethoscope) for several seconds to minutes, usually with no continuous record produced

• Auscultation is done
  – Prenatally
    • routine aspect of prenatal visits
    • ‘Auscultated Acceleration Test’ (AAT) - auscultated NST
  – Intrapartum – intensity depends on stage of labor
Why Auscultate?

• To assess fetal well-being

• What is ‘fetal well-being’?
  – alive & moving
  – sufficient oxygenation & nutrition (normal growth)
  – organs & biological systems functioning normally
    • adequate placenta function
    • no evidence of illness or disease
    • no cardiac or other organ defects
Indications for Auscultation

• Prenatal
  – Diagnose pregnancy, diagnose twins
  – Assist with dating pregnancy – doppler vs. fetoscope
  – Document fetal life vs. death
  – Assess parameters of normal vs. concerning or abnormal heart rate characteristics as a way of evaluating if anything excessively stressful is going on for the fetus

• Intrapartum
  – Document fetal life vs. death
  – Assess parameters of normal vs. concerning or abnormal heart rate characteristics as a way of evaluating the fetal response to the ‘stress’ of labor
Auscultation Instruments

*Low tech for hearing &/or bone conduction*

- **Human ear on maternal abdomen**
- **Tubular object**
  - Pinard
  - Other: toilet paper cardboard roll
- **Some type of stethoscope**
  - Allen +/- forehead
  - DeLee-Hillis
  - Leff
  - Stethoscope
Auscultation Instruments

High-tech (ultrasound) for hearing &/or viewing

- **Doppler**
  - auditory only
  - with visual readout

- **Electronic Fetal Monitor**
  US transducer for audio + digital visual &/or written tracing

- **Ultrasound**
  visualize fetal heart movement
Auscultation in Context

What other signs inform the midwife of fetal well-being?

**Fetal Movement** – a baby who is moving according to her/his usual pattern is possibly the most reassuring sign of fetal well-being (except seizure activity)

- No research evidence supports any particular fetal movement parameters or monitoring strategies
- No research offers reliable prediction of the time of decreased perception of fetal movement & eventual death

**Fetal Growth** – lagging growth & identifying which body areas are not growing provide clues to fetal well-being

**Amniotic Fluid** – accelerated decrease in volume of amniotic fluid provides clues to fetal well-being
Auscultation Procedures

• Maternal position
  – Supine (with hip wedge?) most common
  – Many other positions possible, but when in doubt, request supine position

• Fetal, cord, & placenta positions
  – Leopold’s maneuvers &/or US to confirm fetal position
  – Classically, easiest to hear FHR over the fetal back, but FHR is heard from many locations
  – Differentiate between cord pulse, placenta souffle, & fetal heartbeat
Auscultation Procedures (cont.)

• **Proper use of the instrument**
  
  – **Pinard & fetal stethoscopes**
    
    - no hands when possible  
    - quiet room  
    - short tubing  
    - press firmly  
  
  – **Doppler, EFM US transducer, Ultrasound**
    
    - need enough time for instrumentation to calibrate  
    - proper MHz (3-early, 2-later)  
    - adequate gel  

• **Confirmation that it is the FHR being counted**

  *What is this highly skilled midwife doing?*
Auscultation Procedures (cont.)

• Proper use of the instrument
  – Pinard & fetal stethoscopes
    - no hands when possible
  – Doppler, EFM US transducer, Ultrasound
    - need enough time for instrumentation to calibrate
    - proper MHz (3-early, 2-later)
    - adequate gel

• Confirmation that it is the FHR being counted
  It is wise to confirm & document that the maternal pulse is different from the fetal heartbeat

*The maternal pulse is clearly asynchronous from the FHR!*
Auscultation Procedures (cont.)

• **Counting & Interpretation – audio vs. visual**
  
  – **AUDIO**: Pinard, stethoscopes, nondigital-readout doppler
    - What type of second hand do you use?
    - How long do you count?*
    - How do you calculate the baseline* and interpret other FHR characteristics?
  
  – **VISUAL**: digital readout doppler, EFM US transducer with digital monitor, or ultrasound – see the heart & the autocalculation of the FHR on the screen
    - How reliable is the visual readout? Matches the audio?
    - How do you calculate the baseline* & interpret other FHR characteristics?

*Need > 2 minutes to establish a ‘baseline’.
Tips for Auscultation Challenges

• Maternal positioning
  – Midwife should work around needs & comfort of the woman, but if required info can’t be obtained to make a confident assessment, change position to confirm normalcy or not.
  – Auscultation cord pulse is a proxy for FHTs & if all is well and WNL, sometimes this can suffice (e.g., if woman in tub).

• Large amount of abdominal adipose tissue
  – Placing doppler under the pannus; may need assistance.
  – Sidelying position – place doppler on upper lateral abdomen
  – If unable to adequately monitor, might need to transport for EFM (hospital personnel might recommend internal monitoring, so be sure to discuss with woman before arrival).
Tips for Auscultation Challenges

• Previous CS – AP: same protocols. IP protocols?
  – Hospitals require continuous EFM during labor.
  – Evidence-base for intrapartum IA?
    • Madaan & Trivedi (2006). Indian hospital: RCT of 50 women w/ prior CS with EFM, 50 with IA. No significant differences in outcomes: CS (32%) or rupture rates (no ruptures). But study was underpowered.

• Previous stillbirth or neonatal death
  – Some women may find that the continuous EFM is reassuring, or may request more frequent IA. They may prefer a doppler to a fetoscope to hear the FHR for themselves.
  – Other women may find the continuous EFM is distracting & anxiety-producing. May prefer a fetoscope if the sound of the doppler fills them with dread. If continuous EFM is needed for medical indications, turn sound off & turn machine away.
FHR Evaluation by Auscultation

What do you do?

- **Routine Prenatal Visit** (varies by weeks’ gestation?)

  **Baseline* or simply “FHR”**
  - Listen for less than 1 minute?
  - Listen for more than 1 minute?
  - Listen for more than 2 minutes?*
  - Count for a series of 6 second intervals and multiply by 10? How many?
  - Count for 15 or 30 seconds and multiply?
  - Count for 60 seconds (once? twice? more?)

  **Variations from Baseline**
  - Note accelerations – quantify duration & height?
  - Note decelerations – quantify duration & nadir?
    - And relationship to contractions if present?

**Other Concurrent Information**
- Maternal BP, pulse?, temp?, position?
- Fetal movement
FHR Evaluation by Auscultation

What do you do?

• **Prenatal Visit** when an alteration in health has occurred
  
  *(ex: decreased FM, fever, vaginal bleeding, high BP, a fall or abdominal trauma)*
  
  **Baseline* or simply “FHR”**
  
  □ Listen for less than 1 minute? ☐ Listen for more than 1 minute?
  
  □ Listen for more than 2 minutes?* ☐ Listen for more than 5 minutes?

  **Variations from Baseline**
  
  □ Note accelerations – quantify duration & height?
  
  □ Note decelerations – quantify duration & nadir?

  And relationship to contractions if present?

  **Other Concurrent Information**
  
  □ Maternal pulse, BP, temp, position?
  
  □ Fetal movement
  
  □ Maternal reports of pain, anxiety, use of meds/herbs, ...
FHR Evaluation by AAT instead of NST

**Baseline – must be established**
- □ Listen for 5 or fewer minutes?
- □ Listen for 6 or more minutes?

**Variations from Baseline**
- □ Note accelerations – in 5 second increments?
  - □ Listen until 1 acceleration is heard?
  - □ Listen until >1 accelerations are heard?
  - □ Quantify duration & height of accels?
- □ Note decelerations – quantify duration & nadir?
- □ Noting alteration of FHR during or after contractions, if present?

**Contractions**
- □ Presence or absence of contractions while listening

**Other Concurrent Information**
- □ Maternal pulse, BP, temp, position
- □ Fetal movement
- □ Maternal reports of pain, anxiety, last meal, use of meds/herbs, …
Evidence-base for AAT

  Alabama, 149 hi-risk pts, 5 minutes, 1 accel 15 beats x 10 sec = reactive, confirmed with EFM in 148

• Lisa Paine et al. (1986). Auscultated fetal heart rate accelerations: Part II. An alternative to the nonstress test. JNM, 31(2), 73-77.
  ?location, 52 hi-risk women >34 wks, 75 tests, 3-6 minutes, 1 accel 24 beats x 5 sec, followed by NST, similar results. This study was preceded by an interobserver reliability study.

  Connecticut, ? risk status, 130 women >34 wks, 6 minutes, 1 accel 24 beats x 10 sec = reactive, followed by NST, similar results

  Baltimore, 205 hi-risk pts >34 wks, 6 minutes, 1 accel 24 beats x 5 sec = reactive, NST same day differences in sensitivity, specificity, & predicting outcomes were fairly similar

  Boston, 205 hi-risk pts >34 wks, compare 6-minute vs. 10-minute AAT, 1 accel 24 beats x 5 sec = reactive, NSTs simultaneous, no statistical differences in predicting outcomes
Evidence base for AATs

• *Can the research support use of the AAT as a screening test? Instead of or in addition to an NST?*

• **Generalizability:**
  – *Methodology* – number of subjects (power), consistency of protocols & findings
  – *Similarities:*
    • *Type of subjects & setting* – sufficiently similar to the population the research was conducted with?
    • *Provider* type, training, scope of practice, local standards of care, referral network, consequences of use
  – *Timing* – have there been changes in knowledge, technology, or client expectations that are significantly different?
  – *Implications* for Informed Decision-Making
Systematic Reviews of IP Research: IA vs. EFM

• Cochrane (Alfirevic et al. 2008)
  – **Monitoring during Labor**: continuous EFM vs. IA
  – 12 RCTs with 37,617 women; 25% received oxytocin (3 trials low risk women only)
  – CS increased by 66% & instrumental delivery by 16% in EFM group
  – Perinatal death rate & CP were the same
  – Neonatal seizure rate decreased by 50% in the EFM groups

• Cochrane (Devane et al. 2012)
  – **Admission to L&D**: 20 min EFM vs IA in low-risk term women
  – 4 RCTs with 13,296 women
  – CS increased by 20% for those with EFM admit strip
  – Data underpowered to detect differences in perinatal mortality (would need a sample size >100K)
Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour

Electronic Fetal Monitoring Revisited

Despite evidence demonstrating no neonatal benefit, the medical/legal climate in the United States requires obstetricians to integrate continuous intrapartum surveillance into their care of the pregnant laboring patient. The intent of this article is to familiarize the reader with the most recent, standardized, quantitative nomenclature recommended to describe intrapartum CTG in order to reduce miscommunication and for the laboring patient, propagate consistent, evidence-based CTG patterns, and systematize the terminology used investigating intrapartum CTG.


It has been difficult to demonstrate that EFM is superior to IA with RCTs. But EFM is ‘the standard of care’ in many situations and is based on a ‘level of evidence’ called ‘expert opinion’ in the U.S., so midwives must be familiar with the strengths & limitations of both IA & EFM.
FHR Evaluation by Auscultation

• **Intrapartum** - Initial Evaluation

**Baseline***
- □ Listen for <1 minute?  □ Listen for >1 minute?
- □ Listen for >2 minutes?* □ Listen for >5 minutes?

**Variations from Baseline**
- □ Note accelerations – quantify length & height?
- □ Note decelerations – quantify length & nadir?
  Relationship of decels to contractions?

**Contractions**
- □ Presence or absence of contractions while listening
- □ Listening before, during, after contractions?

**Other Concurrent Information**
- □ Maternal pulse, BP, temp, position
- □ Fetal movement
- □ Rupture of membranes, color of fluid
- □ Maternal reports of pain, anxiety, use of meds/herbs, ...
FHR Evaluation by Auscultation

- **Intrapartum** - Ongoing Evaluations

  **Re-evaluation of Baseline**
  - Listen for < 1 minute?
  - Listen for > 1 minute?
  - Listen for ≥ 2 minutes?*
  - Listen for > 5 minutes?

  **Association with Contractions**
  - Between?
  - During?
  - Immediately After?

  **Other Concurrent Information**
  - Maternal pulse, BP, temp, position
  - Fetal movement
  - Rupture of membranes, color of fluid
  - Maternal reports of pain, anxiety, use of meds/herbs, ...
Listening before, during, &/or after contractions

• What’s the standard?
• Is there a standard?
• What is the rationale for the standard?
Listening before, during, &/or after contractions

What is the most sensible approach?

Probably mixing it up

• *Sometimes listen between* – establish the baseline in late pregnancy & early labor, then keep an ear on the baseline

• *Sometimes listen during* – to detect significant decels

• *Sometimes listen during & through to the start of the next contraction* – to detect possible decels or other true variations from baseline that could indicate a threat to oxygenation
Listening before, during, &/or after contractions

What is the most sensible approach?

Probably mixing it up

- *Sometimes listen between* – establish the baseline in late pregnancy & early labor, then keep an ear on the baseline
- *Sometimes listen during* – to detect significant decels
- *Sometimes listen during & through to the start of the next contraction* – to detect possible decels or other true variations from baseline that could indicate a threat to oxygenation

- In terms of the big picture, keep assessing for a *rising baseline* as an indicator of progressive hypoxia (the Hon pattern – identified in 1963).
## IA Protocols

<table>
<thead>
<tr>
<th>Professional Organization</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Stage Active</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Stage</th>
<th>How to Listen</th>
<th>When to Switch to EFM</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACOG 2009 U.S. MDs</td>
<td>q 15 min</td>
<td>q 5 min</td>
<td></td>
<td>High risk conditions</td>
</tr>
<tr>
<td>SOGC 2007 Canadian MDs</td>
<td>at least q 15-30 min</td>
<td>at least q 5 min</td>
<td>Assess BL for 60 sec between ctxs, then listen for 30-60 sec after a ctx</td>
<td></td>
</tr>
<tr>
<td>RANZOCG 2006 Aust &amp; NZ MDs</td>
<td>at least q 15-30 min</td>
<td>at least q 5 min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCOG 2007 UK MDs</td>
<td>at least q 15 min</td>
<td>at least q 5 min</td>
<td>BL &lt;110 or &gt;160 Any decelerations Any IP risk factors</td>
<td></td>
</tr>
<tr>
<td>ACNM 2010 U.S. CNMs</td>
<td>q 15-30 min</td>
<td>q 5-15 min (more freq w/ active pushing)</td>
<td>Listen thru &amp; after a ctx</td>
<td>Maternal or fetal risk factors or acidemia</td>
</tr>
<tr>
<td>AWHONN 2008 U.S. RNs</td>
<td>q 15-30 min</td>
<td>q 5-15 min</td>
<td></td>
<td>When risk factors are present</td>
</tr>
<tr>
<td>Sholapurkar (2010) critique</td>
<td>q 30 min</td>
<td>q 5 min</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; stage: Listen continuously thru 3 ctxs 2&lt;sup&gt;nd&lt;/sup&gt; stage: Listen 30-60 sec before &amp; after q other ctx</td>
<td>IA analysis was for low-risk pregnancies only</td>
</tr>
</tbody>
</table>

• Maternal information
  – Gestational age
  – Anything relevant from maternal health history (e.g., anemia, GDM, history of stillbirth, etc.)
  – Maternal vital signs:
    BP & pulse; temp if fetal tachycardia
  – Maternal position if it is different from the norm or if position is affects the assessment & plan
  – Presence of contractions
Documentation for IA

• Instrumentation
  – Device used (most important if determining gestational age)
  – Length of time listening if different from protocols

• Fetal information
  – Location of FHTs if relevant to the assessment
  – Fetal movement (concurrent or most recent report)
  – Heart rate characteristics
    • FHR vs. Baseline (1 summary number? Or a 5-10 beat range?)
    • Regular or irregular
    • Accels – if present
    • Decels – if present, & relationship to ctxs, if present
Documentation for IA

• **Assessment** – *every* time the midwife listens to the FHTs (or in active labor every 2-4 hours), there should be a written diagnosis/evaluation of whether the FHR is normal, concerning, or abnormal (& if so, how urgent).

• *I do not recommend use of any “Category” language for IA interpretation.*
  
  – The NICHD Categories I, II, and III are based on electronic fetal monitoring and have not been validated for Intermittent Auscultation.
  
  – ACNM (2010) Clinical Bulletin offers an interpretation using the phrases ‘Category I’ or ‘Category II’, but these are not the same as the NICHD Categories and therefore present a giant opportunity for confusion.
Category 1—includes all of the following
- Normal FHR baseline between 110-160
- Regular rhythm
- Presence of FHR accelerations or increases from the BL
- Absence of decreases or decelerations from the BL

Category 2—includes any of the following
- Irregular rhythm
- Presence of decreases or decelerations from the BL
- Tachycardia > 160 for > 10 min
- Bradycardia < 110 for > 10 min
Note that the ACNM guidelines do not discuss ‘variability’, nor do they apply EFM decel terminology (‘early’, ‘late’, or ‘variable’) because these concepts and terms are based on a visual interpretation and have not been validated for auditory IA.

With IA, it’s best to document decel characteristics instead of trying to name them.

Category 1 – includes all of the following
- Normal FHR baseline between 110-160
- Regular rhythm
- Presence of FHR accelerations or increases from the BL
- Absence of decreases or decelerations from BL

Category 2 – includes any of the following
- Irregular rhythm
- Presence of decreases or decelerations from BL
- Tachycardia > 160 for > 10 min
- Bradycardia < 110 for > 10 min

Charting example:
O: BL 135-140, with decel starting at peak of ctx down to nadir of 110, return to baseline 30-40 sec after ctx ends. Has occurred during 3 of past 5 ctxs
A: FHR concerning – recurrent decels at end of ctxs, but stable BL.
Documentation for IA

• **Assessment & Action Plan** (unofficial terminology)
  
  **Antepartum**

• **Normal**
  (a.k.a. ‘reassuring’, AAT accel theoretically correlates with “Reactive NST”):
  Actions:
  » Fetal movement education in latter half of pregnancy
  » Inform when to return for next routine visit

• **Indeterminate** – need more info before deciding. 2 hour time limit.

• **Nonreassuring-Concerning** (fetus is compensating for something):
  Actions:
  » Position change +/- hydration?
  » Consult with physician. **NST with EFM +/- US (BPP).**

• **Nonreassuring-Abnormal** (fetus is possibly decompensating):
  Actions:
  » Immediate position change, hydration, O₂
  » Immediate referral to L&D hospital
Example of an AP Chart Note

9/12/11     Routine PNV at 36 wks

**S:** c/o decreased FM since last evening. No ctxs, LOF, bldg, injury, N/V, fever, or anything else unusual. Worried.

**O:** Wt 168 (up 1 lb)     BP 126/78     P 78     T 98.2     FH 36 (up 1 cm)

No evidence of ctxs. No visible or palpable FM with exam.
FHR doppler 140-150 x 4 min. 1 FHR decrease to 90s x 30 sec, turned from back to L side & FHR ausc’d x 5 min → stable in 140s.

**A:** IUP at 36 wks, S=D, maternal status stable, no evidence of labor.
FHR status indeterminate (or concerning?) with normal BL but 1 spont brief decel to 90.

**P:** 1. Reassurance offered, but rec’d NST to obtain more info. Client agrees. TC to Dr. Smith – she will call L&D to inform of arrival.
2. GBS vag/rectal culture done before d/c’d from clinic.
3. RTC schedule TBD based on results of fetal surveillance today.
Documentation for IA

• **Assessment & Action Plan** *(unofficial terminology)*

  **Intrapartum**

• **Normal** *(reassuring)*:
  Actions:
  » Usual protocol for timing of next FHR assessment

• **Indeterminate** – need more info before deciding. Time limit???

• **Nonreassuring-Concerning** *(fetus is compensating)*:
  Actions:
  » Immediate position change +/- hydration +/- O₂
  » Continuous or q5m FHR until return to normal and reassuring for a sufficient amount of time.
  » Consult with possible referral per clinical situation.

• **Nonreassuring-Abnormal** *(fetus is possibly decompensating)*:
  Actions:
  » Immediate position change, hydration, O₂
  » Immediate referral to L&D hospital
  » Terbutaline 0.25 mg SQ x 1?
9/30/11 @ 1530    Interim Labor Note:

S: Coping well w/ increasingly strong ctxs. Good support from partner & doula. In & out of tub, & walking. Bites of fruit.

O: BP 130/72   P 104    T 99.2
ctxs q 3-4 min, 60-90 sec, palpate firm.
Last VE @ 1300 = 6 cm / 100% / 0 St. Fluid clear, ROM x 13 hr
FHR 150s x 2 min between ctxs. Accel to 170 x 20 sec. No decels noted during & after ctx. BL at labor onset was 120.

A: Active labor, good progress. Afebrile.
FHR normal, but note BL increase.

P: 1. Re-eval FHR q 15 min to follow BL. Stay out of tub for now.
   2. Enc oral hydration w/ electrolyte drink; recheck temp in 1 hr.
   3. Reassurance & support.
   4. VE at 1700 if not indicated sooner.
Case presentation - Lahela

36 y.o.  G3P2  41^{4} weeks  Normal pregnancy

• Routine PN visit, NST reactive 3 days ago. Doesn’t “have time” for another NST today.

• Count the FHR as you normally would
  o Document your FHR ‘chart note’ on the Green index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal
  o No identifying info (who you are) on the card, please
  o Pass the finished card to the lovely assistants

Powerpoint audio file: FHR normal baseline with audible accel >15/15
Case presentation - Lahela

36 y.o.  G3P2  41\(^4\) weeks  Normal pregnancy

- Routine PN visit, NST reactive 3 days ago. Doesn’t “have time” for another NST today.

- Count the FHR as you normally would
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    1. FHR baseline + anything of interest
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What if Lahela had no perception of FM x 4 hours?
Case presentation - Lahela

36 y.o.  G3P2  41\(^4\) weeks  Normal pregnancy

• Routine PN visit, NST reactive 3 days ago. Doesn’t “have time” for another NST today.

• Count the FHR as you normally would
  o Document your FHR ‘chart note’ on the Green index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if Lahela had clear SROM & no labor?
Case presentation - Maria

28 y.o.  G1P0  38 weeks  Normal pregnancy
• Routine prenatal visit
• Count the FHR as you normally would
  o Document your FHR ‘chart note’ on the Yellow index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal
  o No identifying info (who you are) on the card, please
  o Pass the finished card to the lovely assistants

Powerpoint audio file with FHR normal baseline plus 1 decel down to 70-100 x 10 sec
Case presentation - Maria

28 y.o. G1P0  38 weeks  Normal pregnancy
• Routine prenatal visit
• Count the FHR as you normally would
  o Document your FHR ‘chart note’ on the Yellow index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if you heard this during early labor, at 2 cm dilation?
Case presentation - Maria

28 y.o.  G1P0  38 weeks  Normal pregnancy

• Routine prenatal visit

• Count the FHR as you normally would

  o Document your FHR ‘chart note’ on the Yellow index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if you heard this during 2nd stage labor, at +3 station?
Case presentation - Cheryl

30 y.o.  G2P0010  36\(^{1}\) weeks  Normal pregnancy

• Routine PN visit.

• Count the FHR as you normally would
  o Document your FHR ‘chart note’ on the Pink index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal
  o No identifying info on the card, please
  o Pass the finished card to the lovely assistants

Powerpoint audio file: normal baseline with irregular skipped beats
Case presentation - Cheryl

30 y.o.  G2P0010  36\frac{1}{2}  weeks  Normal pregnancy

• Routine PN visit.

• Count the FHR as you normally would
  o Document your FHR ‘chart note’ on the Pink index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if Cheryl was 40 weeks and in early labor?

photo removed
Case presentation - Cheryl

30 y.o.  G2P0010  36\textsuperscript{\frac{1}{2}}  weeks  Normal pregnancy

- Routine PN visit.
- Count the FHR as you normally would
  - Document your FHR ‘chart note’ on the Pink index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if Cheryl was 14 weeks at a routine prenatal visit?

[Photo removed]
Case presentation - Kim

34 y.o.  G1P0  39\textsuperscript{6} weeks  Normal pregnancy

- Active labor, 6 cm/100%/0 station. BOW intact. FHR 130s-140s with no decels since you arrived 3 hours ago (she was 4 cm/-1 st).
- Count the FHR as you normally would
  - Document your FHR ‘chart note’ on the Blue index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal
  - No identifying info (who you are) on the card, please
  - Pass the finished card to the lovely assistants

Powerpoint audio file
FHR normal baseline with 20 sec decel down to 80-100s during contraction; no decel with next contraction; brief (<10 sec) decel after 2\textsuperscript{nd} contraction
Case presentation - Kim

34 y.o.  G1P0  39\textsuperscript{6} weeks  Normal pregnancy

- Active labor, 6 cm/100%/0 station. BOW intact. FHR 130s-140s with no decels since you arrived 3 hours ago (she was 4 cm/-1 st).
- Count the FHR as you normally would
  - Document your FHR ‘chart note’ on the Blue index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if Kim had SROM?
(clear fluid)
Case presentation - Kim

34 y.o.  G1P0  39 weeks  Normal pregnancy

• Active labor, 6 cm/100%/0 station. BOW intact. FHR 130s-140s with no decels since you arrived 3 hours ago (she was 4 cm/-1 st).

• Count the FHR as you normally would
  o Document your FHR ‘chart note’ on the Blue index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if Kim were in latent labor, cervix 1 cm/long/posterior?
Case presentation - Kim

34 y.o.  G1P0  39\textsuperscript{6} weeks  Normal pregnancy

- Active labor, 6 cm/100%/0 station. BOW intact. FHR 130s-140s with no decels since you arrived 3 hours ago (she was 4 cm/-1 st).

- Count the FHR as you normally would
  
  - Document your FHR ‘chart note’ on the Blue index card
    
    1. FHR baseline + anything of interest
    
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if Kim was fully dilated, and actively pushing at +3 station?
Case presentation - Kim

34 y.o.  G1P0  39\(^6\) weeks  Normal pregnancy

- Active labor, 6 cm/100%/0 station. BOW intact. FHR 130s-140s with no decels since you arrived 3 hours ago (she was 4 cm/-1 st).
- Count the FHR as you normally would
  - Document your FHR ‘chart note’ on the Blue index card
    1. FHR baseline + anything of interest
    2. Assessment: Normal, Indeterminate, Concerning, or Abnormal

What if Kim was attempting a VBAC?
Ingredients for a Practice Guideline

• Criteria for indications, instrument(s) used, frequency of observation, & routine for listening
  o Prenatally: (1) routine PN visit auscultation, (2) AAT if you do them
  o Labor: IA in latent, active, and 2\textsuperscript{nd} stage

• Criteria for initiating additional fetal surveillance modalities for indeterminate, concerning, or abnormal nonreassuring assessments
  o If you do your own NSTs or USs, include criteria for training & maintaining competency

• Criteria for consultation, co-management, referral

• Documentation standards for your practice
  o Identify & define your terminology.
Questions? Comments?

- Check out BelieveMidwifery from Thornton, Indiana, on the Internet for a super cute photo of some kids doing a good job of using a fetoscope!