

# Working Together to Promote Physiologic Birth

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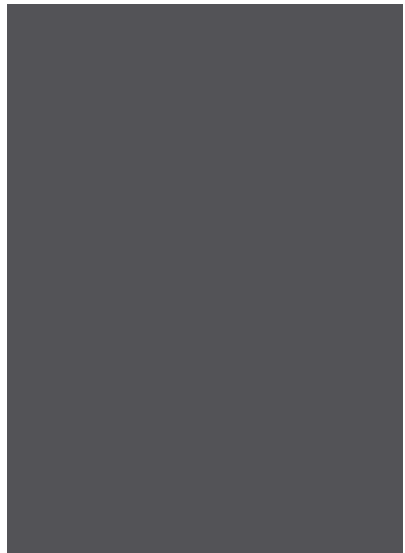
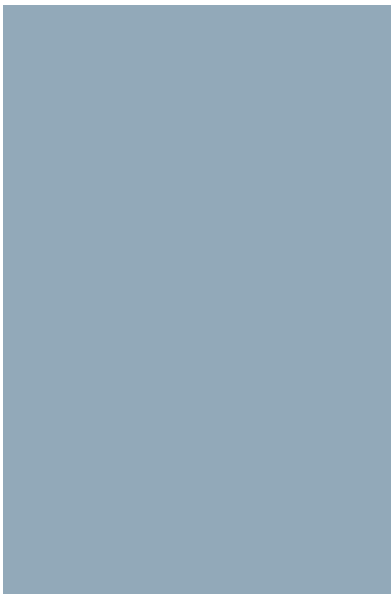
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# Learning Objectives

- Understand the benefits of an alternative triage space
- Understand the benefits and risks associated with intermittent auscultation and electronic fetal monitoring.
- Learn the importance of maternal positioning during labor, and the positive impacts it can have on birth outcomes.

# What Did We Do?

- Three DNP projects working together to promote physiologic birth and decrease rates of cesarean delivery
  - Labor Lounge
  - Intermittent Auscultation
  - Upright Positioning
- Part of Zero Birth Injury Initiative
- Implemented at high risk teaching hospital with CNM and MD patients



# Current Evidence

- Difficult to diagnose “**active labor**” (6 cm) (Neal et al., 2014)
- **Increased rate of interventions** when women admitted **before** active labor
  - **6.5 times** more likely to be **augmented** (Neal et al., 2014)
  - **2.6 times** more likely to have a **cesarean section**
- Confidence in ability to cope is the most important predictor of pain
- Low income women may not want to return home due to uncertainty, transportation, or home environment

# Women's Experience in Early Labor

## Criteria Affecting Early Labor:

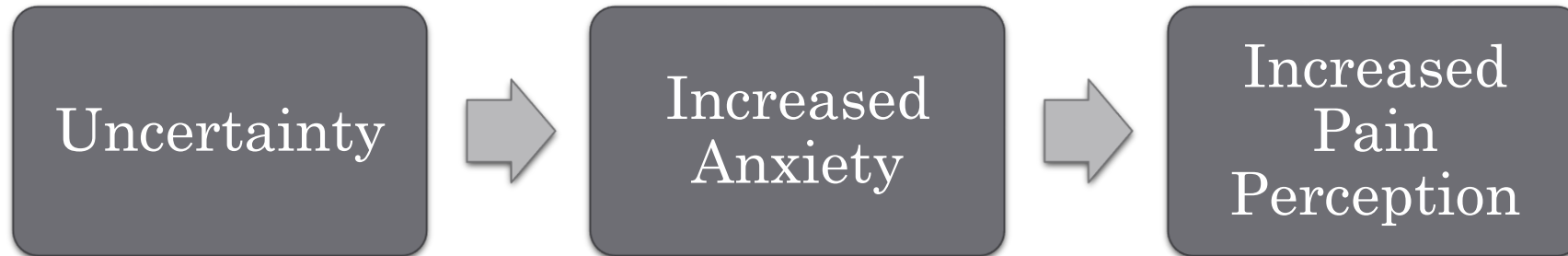
- Statements from family and friends
- Uncertainty
- Pain
- Fatigue
- Undervaluing latent phase

## Improving Early Labor Experience:

- Involve partner and family in education and teaching
- Reassurance from staff
- Teach coping skills to improve pain management
- Explain normalcy of the process

# What Do We Know?

- For some women, reassurance at the hospital was enough, but some felt more unsupported and anxious being sent home



# What Did We Do?

- **Normalize** environment and create a labor lounge for women who present in triage for rule out labor
- **Educate** patients about normalcy of early labor and how to cope
- **Teach coping skills** and set up a **labor lounge**

## STAY COMFORTABLE BY:



Resting  
and  
relaxing



Drinking plenty  
of fluids and  
eating what  
appeals to you



Going for  
a short  
walk



Moving around  
or changing  
positions



Focusing on  
slow, deep  
breathing



Using a warm  
pad or ice pack  
on your  
lower back



Reading a  
good book or  
watching TV



Asking your  
doula or partner  
for a gentle  
massage





## Why Create a Labor Lounge?

- Space to promote maternal **position changes** and **upright positioning**
- Privacy
- Away from medical equipment
- Allow for spontaneous self comforting behaviors

# Outcomes

- 9 women used the labor lounge during 3 month period
  - No statistically significant results
  - No adverse outcomes
- 6 women completed patient surveys
  - All women **satisfied** with space and reported feeling more **confident** laboring in the space than they did at home
  - All women reported they **would recommend** space to friend or use it again



# What Did We Learn?

- Further research needed to evaluate use of labor lounge
- Cost efficient intervention to promote physiologic birth
- Efforts should be made to improve documentation of space in order to capture use
- Safe intervention that promotes physiologic birth, no negative outcomes, and high patient satisfaction



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# Intermittent Auscultation



# Professional Organization Statements

**“In general, the least invasive method of monitoring is preferred in order to promote physiologic labor and birth”**

*AWHONN, 2015*

**“To facilitate the option of IA, healthcare providers should consider adopting protocols and training staff to use a hand-held Doppler for low-risk women who desire such monitoring during labor.”**

*ACOG, February 2017*

# Current Evidence

- **Research has found that consequences of continuous electronic fetal monitoring include, but are not limited to (ACNM,2015; ACOG, 2015; Cahill & Spain 2015; Riffle, 2014):**
  - ❖ **Increased cesarean section rates**
  - ❖ **Increased augmentation of labor rates**
  - ❖ **Decreased newborn Apgar scores**
  - ❖ **Increased maternal mortality**
- The U.S. is using more continuous fetal monitoring than other developed countries with no improvement in birth outcomes (ACNM, 2015; ACNM, 2015)
- Cesarean sections do not decrease rates of fetal mortality or cerebral palsy, and are directly related to increased rates of maternal mortality (ACNM, 2015; ACOG, 2015)

# Benefits of IA

- Allows freedom of movement throughout labor
- Reduced maternal request for epidural analgesia
- Reduced need for medicated augmentation
- Decreased rates of cesarean and vaginal assisted birth
- Increased care provider presence and support
- Increased patient satisfaction

**Current US Metric: Only 3% of low risk eligible women receive IA in labor**



# Project Site Metrics

- The IA protocol did not provide detailed information regarding successful utilization of IA
- The IA protocol was not readily accessible to the staff nurses or providers
- >80% of patients were monitored continuously
- Cesarean sections:
  - ❖ Overall rate: 33%
  - ❖ Nulliparous, Term, Singleton, Vertex (NTSV) rate: 27%

# Project Aim

- To implement an evidence-based IA protocol in order to:
  - ❖ Increase intermittent auscultation rates
  - ❖ Improve nurse IA knowledge
- Decrease utilization and rates of:
  - ❖ Continuous electronic fetal monitoring (C-EFM)
  - ❖ Epidural analgesia
  - ❖ Cesarean births
  - ❖ Medicated augmentation

# Project Methods

**Eligibility:** All nulliparous, term, singleton, vertex (NTSV) women

**Interventions:**

- Development of an evidence-based IA protocol:
  - ❖ IA eligibility criteria checklist
  - ❖ Step-by-step guide for using IA
  - ❖ Algorithm for indeterminate findings
- Required nursing education and competence validation
- Modifications to electronic documentation in medical records

# Checklist for Eligibility of Intermittent Auscultation (IA)

## Antepartum and Intrapartum Maternal Factors:

- ☐ Spontaneous labor and normal frequency of contractions (No Oxytocin)
- ☐ No serious maternal health conditions (e.g. diabetes, gestational HTN, preeclampsia or eclampsia)
  - ☐ Rupture of membranes <24 hours
  - ☐ Absence of antenatal vaginal hemorrhage
- ☐ No previous uterine scar (TOLAC)
- ☐ Afebrile (<38°C, absence of chorioamnionitis or intrauterine infection)
- ☐ Absence of regional analgesia (e.g. epidural, ITN)
- ☐ Absence of trauma
- ☐ Absence of morbid obesity (BMI >35)

## Antepartum and Intrapartum Fetal Factors:

- ☐ Singleton pregnancy
- ☐ Term pregnancy (≥37 weeks gestation)
- ☐ Category 1 tracing on initial monitoring with NICHD interpretation (*Normal baseline, moderate variability, accelerations present or absent, early decelerations present or absent, absence of variable, late or prolonged decelerations*)
- ☐ Vertex presentation
- ☐ Normal fetal growth and amniotic fluid index
- ☐ Normal fetal movements
- ☐ Clear amniotic fluid throughout labor (no meconium-stained fluid)

After initial admission monitoring that meets criteria for Category 1 per NICHD classification and presence of the above maternal and fetal factors, discontinue continuous fetal monitoring and perform intermittent fetal heart rate auscultation (IA) according to AWHONN guidelines. Acceptability for use of IA is an ongoing process, and it at any point the woman no longer meets low-risk criteria, obtain informed consent and then initiate continuous EFM. Additionally, if any member of the team deems IA is not sufficient, EFM can be utilized.

# IA Step-By-Step

## Step

1. Explain procedure to patient
2. Assist patient to comfortable sitting or lying position
3. Palpate patient's abdomen and perform Leopold's
4. Palpate uterine contractions for frequency, duration, intensity and resting tone and duration
5. Position device on fetal back
6. Palpate maternal pulse
7. Auscultate FHR during a contraction and for at least 60 seconds after. Auscultate through 2 contractions and 2 resting periods  
*\*If no uterine contractions, auscultate for a minimum of 30-60 seconds.*
8. Interpret FHR findings and document per protocol:  
*Latent labor (<4cm): Q60 mins*  
*Latent labor (4-5cm): Q15-30 mins*  
*Active labor: Q15-30 mins*  
*Second stage: Q5-15 mins*  
*-Laboring down: Q15 mins*  
*Pushing: Q5-15 mins*
9. Based on findings, determine if further interventions are needed (**See protocol for further interventions for abnormal findings**)
10. Share findings with patient; answer questions as needed

## Rationale

1. Relieve fears/anxiety; offers an opportunity for emotional support
2. Promotes patient comfort before auscultation
3. Locates fetal position to determine the best location for auscultation
4. Determines strength of contractions and resting tone
5. Obtains the strongest FHR signal to determine fetal response to labor
6. Differentiates maternal from fetal heart rate
7. Identifies FHR baseline, rhythm, and the presence of absence of increases or decreases in FHR
8. Provides record of maternal and fetal assessments
9. Promotes fetal wellbeing throughout the labor process
10. Provides informed support and knowledge

# IA Clinical Decision-Making Process

1. Auscultate FHR
2. Interpretation
3. Normal FHR?
  - Increases from baseline present
  - Baseline rate: 110-160bpm
  - Regular rhythm
  - Absence of decreases from baseline
4. Indeterminate FHR Characteristics:
  - Baseline <110bpm or >160bpm
  - Irregular rhythm
  - Questionable FHR during &/or 30 seconds after contractions
  - Gradual or abrupt decrease in FHR
  - No increases in FHR
5. Intervention/Management:
  - Extend IA interval through resting period after a contraction and/or through additional contractions to verify fetal characteristics
  - Assess and eliminate causes of indeterminate FHR characteristics
  - Maximize maternal and fetal oxygenation
6. Further intervention/management if problem is unresolved:
  - Continue above interventions
  - Apply EFM to further assess fetal status
  - Notify provider

# Data Collection

- Three month pre-implementation (January-March, 2016) and three month post-implementation (July-September, 2016) period:
  - ❖ IA rates
  - ❖ IM rates
  - ❖ C-EFM rates
  - ❖ Cesarean birth
  - ❖ Epidural analgesia
  - ❖ Medicated augmentation rates
  - ❖ Staff nurse IA knowledge

# Results

- Total number of eligible participants (N=89)
- \*Increase in IA (RD 32.7,  $p=0.0001$ )
  - 20% to 53% utilization
- \*Decrease in IM (RD -13.4,  $p=0.044$ )
  - 23% to 10% utilization
- Decreased rates of medicated augmentation
  - 43% to 29%
- Decreased rates of epidural analgesia
  - 63% to 50%
- No change in nurse IA knowledge
- 3% increase in cesarean births



# Discussion

- A longer data collection period could assist with increased statistically significant data and nurse participation
- Results are consistent with previous research findings
- Cesarean section rate increase likely due to increased acuity and census during implementation period
  - ❖ 10% reduction in NTSV cesarean birth rate in last year
- **All providers and nurses should offer IA to eligible women to promote normal physiologic birth**

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# Improving Birth Outcomes through Maternal Upright Positioning and Mobility During Labor

# Background

- Women in active labor spend much or all of their time lying down in bed<sup>1</sup>. Less than half (43%) of laboring moms walk around once they are admitted to a labor unit and only 40% change position during labor<sup>2</sup>.
- Most women do not use the bed when alternatives are offered<sup>3,4</sup>.
- #1 reason women give for staying in bed is “being connected to things”<sup>5</sup>.









Gustave Wilkowski, Pioneer Birth Scene, 1877



FIG. 10.— Pawnee Labor.











# What happens when a patient lies down during labor?<sup>1,6,7,8,9,10</sup>

- Inferior vena cava compression
- Persistent OP, or turn to OP
- Less effective uterine contractions
- Less perineal muscle relaxation
- Higher rate of analgesia request, *earlier* in labor
- Greater risk of abnormal FHT tracings
- Anxiety / fear cascade



# Literature

- Patients who are mobile or in upright positions during labor have decreased rates of augmentation, analgesia use, VE and cesarean births, and NICU admissions, along with shorter first stage labor<sup>2</sup>.

# What does the World Health Organization say?

The WHO states that a laboring woman “should not be restricted to bed, and certainly not to the supine position, but that she should have the freedom to adopt upright postures such as sitting, standing, or walking, without interference by caregivers, especially during the first stage of labor”<sup>3</sup>.

# Professional groups with published statements or guidelines recommending mobility during labor.

- WHO (World Health Organization)
- ACOG (American Congress of Obstetricians and Gynecologists)
- AWHONN (Association of Women's Health, Obstetric and Neonatal Nurses)
- ACNM (American College of Nurse Midwives)
- NAMA (Midwives Alliance of North America)
- NACPM (National Association of Certified and Professional Midwives)
- SMFM (Society for Maternal-Fetal Medicine)
- FIGO (International Federation of Gynecology and Obstetrics)

# Joint Statements

- ACNM, NAMA, and NACPM to support physiologic birth (2012)<sup>1</sup>
- ACOG and SMFM to decrease rates of cesarean births (2014)<sup>15</sup>



# What do women want?

- Most women do not use the bed when alternatives are offered<sup>9,10</sup>
- If options are available, women choose various positions, both supine and nonsupine, when laboring<sup>5</sup>
- 99% of women who were able walk around during their labor said they would do the same again (despite outcomes)<sup>11</sup>
- Women who have the opportunity to choose non-pharmacological pain relief techniques report higher satisfaction with the birth experience<sup>11</sup>



Purpose of QI Project: increase % of women who spent majority of labor in upright positions, and thus to decrease:

- length of first stage labor,
- augmentation rate,
- epidural use, and
- cesarean birth rate.

# Upright Positioning Interventions

- **Clinical Practice Guideline** – supports providers and nurses to encourage laboring women to assume upright positions when possible
- **Nurse and provider LMS** – provide information about evidence supporting upright positioning during labor, and how to use various birth tools
- **Prenatal and intrapartum** – discuss benefits of upright positioning and ambulation with women during prenatal visits and when admitted for labor

# Variables:

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>• Type of care provider (MD or CNM)</li><li>• Gravity and parity</li><li>• Labor type</li><li>• Method(s) of augmentation or induction</li><li>• % of time upright</li><li>• Mode of birth</li></ul> | <ul style="list-style-type: none"><li>• Indication for cesarean</li><li>• Instrumental birth</li><li>• Analgesia use and type</li><li>• Length of first stage</li><li>• Laceration degree</li><li>• Apgar score at 5 mins</li><li>• NICU admission &gt;24h</li></ul> |
|--|--|

# Methods (cont.)

## Inclusion criteria:

- Term gestation (37-42 weeks)
- Singleton
- Vertex

## Exclusion criteria:

- Uterine scar
- Needing insulin
- On anti-HTN meds or Mg2+
- BMI >50 at time of delivery

# Stats

- The % of women who spent the majority of labor walking around or in upright positions *doubled* from 13.8-29.7%. Among women who were upright >50% of labor:
- Average length of first stage labor was *shorter* (353.5 mins vs 222.1 mins)
- Epidural rates were *decreased* (78.3% vs 7.3%)
- Augmentation rates were *decreased* (54.4% vs 26.3%)
- Cesarean section rate was *lower* (18.6% vs 4.9%)

# Sustainability

- Labor position guide
- New L&D nurse training
- Education days for maternity care nurses

# Discussion

- Using these interventions in a supportive environment can lead to practice change
- There is a demonstrated association with improved birth outcomes when women are upright the majority of labor
- Women need to know they do not need to stay in bed during labor, and should be offered various “birth tools” for position changes

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## Conclusion:

- ❖ These three projects also assisted in decreasing the project site's total NTSV cesarean section rate by 10% in 2016.
- ❖ It is our mission and goal to assist in promoting normal physiologic birth for all eligible women.

