BELIEVE MIDWIFERY SERVICES

TITLE: INTERMITTENT AUSCULTATION OF FETAL HEART RATE

EFFECTIVE DATE: December 5th, 2015

POLICY STATEMENT:
The nurse-midwife and/or registered nurse are guided in how to monitor the fetal heart rate (FHR) by intermittent auscultation by the standards outlined by AWHONN and ACOG. “Professional organizations have stated that IA is an appropriate method for monitoring and is equivalent to EFM, particular for the low risk patient” (AWHONN, 2003, p 78).

BLOOD BORNE PATHOGEN EXPOSURE CATEGORY: II (Involves no exposure to blood, body fluids, or tissues)

FUNCTION: Care of Clients

POINTS OF EMPHASIS:
Although consistent results have not emerged from the studies that have assessed the reliability and validity of IA, it appears that IA, using a multiple-count strategy that assesses the fetal heart rate during and after a contraction, detects the fetal heart rate during and after a contraction detects the fetal heart rate, rhythm, accelerations and decelerations reliably, but does not differentiate types of decelerations or baseline variability and accuracy (ACNM, 2007). Despite these limitations, all of the randomized controlled trials conducted to date confirm the equivalence of IA and EFM with respect to neonatal outcomes. Therefore, the inability to consistently determine the fetal heart rate variability or type of deceleration in labor using IA does not appear to be clinically significant when monitoring women who are at low risk for utero-placental insufficiency and who have a normal baseline rate and accelerations (ACNM, 2007).

A meta-analysis of 9 randomized trials of EFM verses IA (n=18,561) published in 1995 concluded that there was a higher cesarean section and operative delivery rate in the EFM group with no significant difference in the number of perinatal deaths (Alfirevic, Devane & Gyte, 2006). The Cochrane Database has concluded the same.

Many hospitals require EFM for a specified time on the initial admission to the labor suites. However, some investigators have noted that this requirement has not improved outcome and may lead to increased intervention in labor.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Latent Phase</th>
<th>Active Phase</th>
<th>Second Stage</th>
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<tbody>
<tr>
<td>AWHONN</td>
<td>15 min</td>
<td>5 min</td>
<td></td>
</tr>
<tr>
<td>ACOG</td>
<td>15 min</td>
<td>5 min</td>
<td></td>
</tr>
<tr>
<td>SOGC</td>
<td>30 min</td>
<td>15-30 min</td>
<td>5 min</td>
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<tr>
<td>RCOG</td>
<td>15 min for a minimum of sixty seconds</td>
<td>5 min</td>
<td></td>
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<tr>
<td>NIHCD (NCC,2006)</td>
<td>30 min low risk</td>
<td>15 min low risk</td>
<td>5 high risk</td>
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One of the goals of listening throughout the contraction and for a brief time after the contraction resolves is to identify variable and late decelerations of the FHR. To date there are no studies that have determined the optimal frequency of IA during labor. Current recommendations are summarized in the table above.

Reassuring fetal heart rate characteristics detected via IA include baseline of 110-160 beats per minute, regular rhythm, presence of accelerations, and absence of decelerations. Non-reassuring fetal heart rate characteristics include: baseline <110 or >160 beats per minute, irregular rhythm, decelerations, and/or a baseline that steadily increases toward a tachycardic rate.

*NICHD consensus panel in 2008 prosed a uniform system of terminology*
These definitions should serve as an important first step in both the investigation of the significance of various FHR patterns, and the development of a uniform standard of care in the interpretation and management of such patterns. With this in mind, subsequent recommendations have been developed by the ACOG for the management of category I (normal) and category III (pathologically abnormal) FHR patterns. Although useful, these recommendations remain insufficient since ≥ 80% of fetuses in labor demonstrate FHR patterns that fall into category II, patterns for which no specific ACOG management recommendations exist (Clark, Nageotte, Garite, Freeman, Miller, Simpson, Belfort, Dildy, Parer, Berkowitz, D’Alton, Rouse, Gilstrap, Vintzileos, Dorsten, Boehm, Miller, & Hankins, 2013).

Algorithms have been designed to address category II patterns, wherein lies the challenge in determining fetal status through assessment of progressive intrapartum hypoxia/acidemia due to the effects of labor contractions on a susceptible fetus. No algorithm however, will ever predict, or prevent, unexpected sentinel events that may occur without warning and rapidly change a FHR pattern from category II to category III. In such situations, even the most expeditious response may be insufficient to avoid neonatal encephalopathy and its sequelae.

Women with progressive fetal patterns and vaginal bleeding sufficient to suggest possible placental abruption, or those women with prior cesarean delivery, the algorithms do no apply. Expeditious cesarean delivery is warranted.

**EQUIPMENT:**
- Doppler
- Fetoscope
- Pinard horn
- AAT graph paper
- Non-stress test monitor
- Ultrasound gel

**PROCEDURE:**
1. After performing Leopold’s maneuvers to identify the fetal presentation and position, assist the laboring woman into a position that maximizes audibility and preserves comfort. Rarely does this require a laboring woman to move from the position she finds most comfortable, including positioning within the birth spa.
2. Assess uterine contractions by palpation.
3. Place finger on woman’s radial pulse to verify auscultation is fetal heart rate.
4. Place the fetoscope or Doppler over the fetal thorax or back.
5. Determine the baseline fetal heart rate by listening between contractions and when the fetus is not moving. Verify maternal pulse rate if necessary.
6. Subsequently count the fetal heart rate after a uterine contraction for 30-60 seconds every 15 to 30 minutes in active labor and every 5 minutes in the second stage.
7. The frequency of auscultation should be individualized based upon the contraction pattern, level of maternal activity, and institution of hydrotherapy or interventions which may influence the fetal heart rate.
8. In addition to IA at regular intervals, it is recommended that the fetal heart rate be assessed before and after vaginal examinations and following spontaneous rupture of membranes.
9. Note accelerations or decelerations from the baseline rate by counting and recording the fetal heart rate using a five-second count method.
10. The nurse-midwife or registered nurse may then interpret FHT findings and document.
11. Promote maternal comfort and continued fetal oxygenation.
12. If a non-reassuring fetal heart rate characteristic is heard, increasing the frequency and duration of auscultation is continued for several contractions to confirm if it is transitory or persistent. Simultaneously, interventions to improve uterine blood flow and fetal oxygenation are instituted, such as maternal position changes and hydration. Fetal scalp or acoustic stimulation may be performed to elicit a reassuring acceleration of the fetal heart rate.
   a. Abdominal and/or vaginal exams may be indicated to diagnose abruption, cord prolapse, precipitous descent, or malpresentation.
   b. No evidence exists to support the efficacy of maternal oxygen administration in commonly achievable concentrations in increasing fetal tissue oxygenation, or in improving newborn outcomes regardless of oxygen concentration (Clarke, 2013).
13. Abnormal fetal heart rate patterns that do not resolve with increased hydration, a change in maternal position, and possibly a brief period of oxygen by mask indicate that the baby is at increased risk. Transfer to the hospital is indicated to allow access to the needed personnel and technology to manage the problem. Some variations and abnormalities in fetal heart rates and patterns may require emergency transport to the hospital.
14. If at any point during the labor the midwife feels a need to monitor the baby more closely than intermittent use of the fetoscope or doppler allows, beyond determining if transitory or persistent patterns, then the nurse-midwife should consider moving the mother to the hospital.
15. Consideration of stage of labor and imminence of delivery will influence the chosen course. If a persistent variant fetal heart rate pattern is identified in first-stage labor, transfer to hospital-based care may be the prudent plan. However, if delivery is imminent, preparing for possible neonatal resuscitation and encouraging delivery may be a better use of time and resources. An efficient resuscitation is best accomplished in a stable setting, not in a moving vehicle. The equipment and skill set that a homebirth midwife can provide for a term infant with a terminal bradycardia is identical to those available in most hospitals.

**Interpretation**

1. It is reasonable to initiate management of a category II FHR pattern with an assessment of variability and accelerations, thus allowing the clinician to immediately rule out the presence of clinically significantly metabolic acidemia. For nonacademic fetuses, the focus then shifts to assessing the likelihood of developing significant acidemia prior to delivery (Clark et al., 2013).
2. With category II FHR tracings that do not exhibit variability or accelerations, but do exhibit patterns of persistent late or significant variable decelerations, significant metabolic acidemia cannot be excluded. Further, these deceleration patterns signify the presence of physiologic stresses that increase the risk of developing such acidemia. In such cases, expeditious delivery is recommended (Clark et al, 2013).
3.

**Documentation**

1. The client’s name, and date and time of recording should be documented on each graph.
2. Characteristics of the auscultated fetal heart rate that should be documented include: the counted rate (not as a range), the rhythm, and the presence or absence of accelerations or decelerations.
3. Terms used for each characteristic should be consistent with the terminology defined by the National Institute of Child Health and Human Development Research Planning Group guidelines, where possible, which are recommended by all relevant professional associations.
4. If decelerations are detected, documentation should include the nadir rate, whether the decelerations are recurrent or non-recurrent, and any interventions instituted.
5. Any information about the labor course or maternal status which may assist in the interpretation of data by independent observers should be noted in the record. For example, the fetal heart rate response to rupture of membranes, maternal position changes, scalp stimulation, medication, or change in labor stage may indicate either a reassuring or non-reassuring fetal heart rate pattern.
6. Medical records should be kept for a minimum of twenty-six years.

**REFERENCES:**
INTERMITTENT AUSCULTATION OF FETAL HEART RATE


**Originated:** September, 2007

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<thead>
<tr>
<th>Penny Lane MSN, CNM</th>
<th>DATE: 7/9/2011</th>
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<tr>
<td>Holly Hopkins MSN, CNM</td>
<td>DATE: 7/12/2011</td>
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<tr>
<td>Kristen Kile RN</td>
<td>DATE: 10/16/2011</td>
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<tr>
<td>Anastasia Glassburn</td>
<td>DATE: 3/19/2012</td>
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<td>Gretchen Knight LPN</td>
<td>DATE: 6/6/2012</td>
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<td>Michelle Burton</td>
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