Fetal Health Surveillance (FHS) - Intrapartum

Site Applicability

Practice Level

Specialized: Physicians (with perinatal privileges), Registered Midwives, Perinatal Registered Nurses

Requirements

Fetal Health Surveillance (FHS) education is strongly recommended for all perinatal care providers (physicians, midwives and nurses) every 2 years. This includes:

1. Participation in online learning activities (e.g. Canadian Fetal Health Surveillance Steering Committee Courses – Fundamentals of FHS or FHS Refresher Program), and
2. Attending locally provided, institutional/health region based interdisciplinary workshops which review material pertaining to both intermittent auscultation and electronic fetal monitoring.

Need to Know

The goal of FHS is to detect potential fetal decompensation, and to allow timely and effective intervention to prevent perinatal/neonatal morbidity or mortality. This guideline outlines methods of fetal surveillance used during labour, the required observations, and classifications of fetal health surveillance.

Methods of FHS during the intrapartum period are: intermittent auscultation (IA), and electronic fetal monitoring (EFM) (external and internal modes). The method used is based on the presence or absence of identified risks for adverse perinatal outcome.

Collection of fetal scalp lactate and umbilical cord gases are additional methods of determining the state of fetal wellbeing (pre and post-delivery respectively). (See B-00-07-10055 and B-00-12-10174)

Acknowledgement

Content and tables contained herein have been adapted for use in this document from SOGC Clinical Practice Guideline No. 396 – Fetal Health Surveillance: intrapartum Consensus Guideline (2020).

PHC recognizes that pregnant persons may express and/or identify their gender in a number of ways. Use of traditional gendered nomenclature in relation to pregnancy and related gender specific terms is not intended to be exclusionary. Health Care Professionals are encouraged to engage in respectful conversations with their patient regarding their gender identity and preferred gender pronouns, and to apply these guidelines as appropriate to meet each individual's needs.

Equipment and Supplies

- Water soluble gel
- Doppler device
- Electronic Fetal Monitoring (EFM) monitor and all associated accessories
- EFM belts
- EFM paper and labels, and patient identification labels (for Off-Service or Code Grey)

Guideline

Table of Contents

A. Principles of Intrapartum Fetal Surveillance

One-to-one care of the labouring person is essential, recognizing that the professional caregiver (nurse, midwife, and/or physician) who is providing continuous close support is caring for more than one patient (the labouring person and the unborn fetus(es).)

Intrapartum FHS includes the assessment of:

- Birthing person and fetal risk factors
- Stages of labour and labour progress
- Uterine activity
- Maternal/Birthing person heart rate (MHR)
- Fetal heart rate (FHR) characteristics
- Changes/trends in FHR over time
- Classification of FHS assessment findings
- Interpretation of findings within the clinical context

An appropriate team response is initiated based on clear communication of the assessment of FHS using the following steps:

1. Obtain interpretable data
2. Classify IA/EFM tracing
    - Ensure the most appropriate method of surveillance has been selected based on absence or presence of birthing person and fetal risks for adverse perinatal outcomes
3. Interpret within the overall clinical context
4. Communicate effectively with the interdisciplinary team using established fetal health surveillance terminology
5. Respond appropriately
6. Document

B. Considerations for Timing and Type of Fetal Health Surveillance

- Admission Assessments –
  - IA is the recommended method of FHS for admission assessment of a low-risk birthing person; admission EFM Tracings are NOT recommended for healthy, term patients in labour in the absence of risk factors for adverse perinatal outcomes
  - Admission EFM tracings are recommended for patients with risk factors for adverse perinatal outcomes
- Administration of Analgesia –
  - **Epidural Analgesia** (see B-00-07-10045) – IA is appropriate for monitoring FHR post-initiation and with continued use of epidural analgesia provided that:
    1. There are no birthing person-fetal risk factors for adverse perinatal outcomes and/or obstetrical considerations
    2. FHS has been normal
    3. The frequency of assessment is increased following initial dose and subsequent boluses of epidural analgesia
    4. Birthing person's vital signs (including blood pressure) are stable post epidural.
  - **Spinal Analgesia** (pre Caesarean Section) – In the absence of risks for adverse perinatal outcome, IA may be used to monitor FHR.
    1. IA will be performed immediately post administration of the spinal analgesia for 60 seconds
    2. In the event of a delay in surgical preparation, IA should continue every 5 minutes for 60 seconds until the operative site (abdomen) is prepared.
  - **Combined Spinal Epidural Analgesia (CSE)** – in the event that CSE is used, EFM is the recommended method of FHS for the first hour post administration
    1. Surveillance method may revert to IA as per epidural recommendations outlined above
  - **Parenteral Opioids in Labour** – FHS will be assessed pre and post administration of opioids in labour (in addition to birthing person vital signs including oxygen saturation) (see B-00-13-10113)
    1. Method of FHS is based on presence of birthing person-fetal risk factors for adverse perinatal outcomes
    2. FHS must be normal prior to administration
- Cervical Ripening –
  - Sweeping of Membranes –
    - EFM not required
    - IA pre and post procedure is used to verify FHR
  - Rupture of Membranes –
    - EFM is not required

        - IA pre and post procedure is used to verify FHR
    - Balloon Devices (e.g. Intracervical Foley catheter)–
        - FHR is monitored for 30 minutes pre-procedure and 60 minutes post-procedure using EFM
    - With dinoprostone (see BD-00-07-40077) –
        - Continuous EFM for 30 minutes prior to the use of dinoprostone to verify normal FHS
        - Continuous EFM for 1 hour following use of dinoprostone to assess fetal wellbeing
        - In the event of atypical or abnormal FHS, continuous EFM is maintained
        - Method of on-going FHS assessments in labour is based on presence of risk for adverse perinatal outcomes
- Induction of Labour (IOL) (with oxytocin) (see B-00-07-10030) –
    - Continuous EFM is required for induction of labour with oxytocin, and is initiated 30 minutes prior to start of infusion
    - If FHS is normal and the infusion rate is stable, 30 minute periods without EFM may be permitted for ambulation, hydrotherapy, or personal care. During this 30-minute window, IA is done every 15 minutes.
- Trial of Labour after Caesarean delivery (TOLAC) (see B-00-07-10069) –
    - Continuous EFM is the recommended method of FHS once uterine contractions have started
- Preterm Labour (PTL) –
    - Continuous EFM is the recommended method of FHS for pregnancies of gestation less than 37^0 weeks
- Change in Birthing Person Condition or Untoward Labour Event–
    - FHS will be assessed and documented when a change in birthing person condition, or an untoward labour event has been noted (e.g. birthing person hypotension, birthing person seizure activity, tachysystole, intrapartum hemorrhage, etc.)
- Change in Patient Location –
    - FHS is assessed and documented prior to transfer or discharge of patient

C. Uterine Activity (UA)

- Uterine activity (UA) is monitored in order to identify abnormal contraction patterns which may adversely affect the fetal environment and therefore fetal oxygenation
- Evaluation of UA is the first step in assessing FHR and is used in order to correctly classify the assessed FHR patterns; it is essential in determining types of decelerations when using EFM
- Difficulties with assessing uterine activity may occur in situations of fetal malpresentation (e.g. occiput posterior positions), uterine anatomical abnormalities (e.g. fibroids), or certain birthing person dispositions (e.g. elevated BMI)

Assessment

- UA is monitored routinely as part of the FHR assessment and classification and is documented with each assessment of the FHR
- UA is assessed using birthing person's perception, along with:
    - Palpation, and
    - External electronic fetal tocodynamometer (toco), or internal uterine pressure catheter (IUPC) if EFM is being used to assess FHR (see B-00-13-10026)
        - A toco cannot assess strength of contraction
- When assessing UA, the following is monitored and documented:
    - **Frequency:** the number of contractions in a 10-minute window, averaged over 30 minutes; this may be documented as a range (e.g. 2 to 3 contractions/ 10 minutes)
    - **Duration:** the time from the beginning of the contraction to the end of the contraction in seconds; this may be documented as a range (e.g. 50-60 seconds)
    - **Intensity:** the strength of the contraction is described as mild, moderate, or strong as assessed by palpation when using IA or external EFM, or by mmHg when using an IUPC
    - **Resting tone:** the quality/presence of resting tone between contractions is described as soft or firm by palpation when using IA or external EFM, or by mmHg when using an IUPC
    - **Birthing Person Response**: Birthing person's coping and coping techniques used

Feature	Normal	Tachysystole
Frequency	Less than or equal to 5 contractions in 10 minutes, averaged over 30 minutes	Greater than 5 contractions in 10 minutes, averaged over 30 minutes
Duration	Less than or equal to 90 seconds	Greater than 90 seconds
Resting tone	Uterus palpates soft for greater than or equal to 30 seconds and/or an IUPC reading of less than or equal to 25 mmHg	Remains firm or resting tone between contractions is less than 30 seconds

Interventions

- Tachysystole is defined as any excessive uterine activity, and may be present with normal, atypical, or abnormal FHS EFM classifications (see 'Definitions')
    - When using IA, the presence of tachysystole is an abnormal IA finding that requires increased surveillance (EFM)
- If FHR is atypical or abnormal in the first 10 minutes of tachysystole, initiate intrauterine resuscitation measures without waiting to average over 30 minutes
- Notify the primary care provider (PCP) and/or most responsible provider (MRP) of any abnormal uterine activity
- Consult with PCP/MRP when having difficulty assessing UA by palpation and/or external EFM tocometer; use of an IUPC may be indicated
- Consider tocolysis

Response to Tachysystole:

When using IA	When using EFM *(**NORMAL** FHS)*	When using EFM *(**ATYPICAL** or **ABNORMAL** FHS)*
• Initiate EFM	• Continue EFM • Decrease or discontinue oxytocin as per protocol/orders • Remain with patient until normal UA is observed • Notify appropriate care provider • Consider tocolysis	• Continue EFM • Remove dinoprostone or decrease/discontinue oxytocin as per policy • Consider other possible causes (e.g. abruption) • Remain with patient until normal UA is observed • Notify appropriate care provider • Initiate intrauterine resuscitation measures as needed • Consider tocolysis

INTRAUTERINE RESUSCITATION	

PHYSIOLOGIC GOALS:
1. Improve birthing person status
2. Improve uterine blood flow
3. Improve umbilical cord circulation
4. Improve placental perfusion
	• **CALL FOR HELP**
	• Change birthing person position
	• Assess & document birthing person VS
	• Maintain optimal uterine blood flow
	  ○ Decrease or discontinue oxytocin
	  ○ Consider tocolysis
	  ○ Modify or pause pushing
	• Remove/alleviate pressure on the umbilical cord
	  ○ Vaginal exam to rule out cord prolapse
	  ○ Consider amnioinfusion
	• Administer IV fluids and/or oxygen by face mask if appropriate (i.e. birthing person hypotension, hypovolemia, or hypoxia)
	• Support the patient and family

D. Intermittent Auscultation (IA)

Assessment

- IA is the recommended method of fetal monitoring for healthy birthing persons meeting all the following criteria:
  - Gestational age (GA) between 37^0 and 41^3 weeks
  - In spontaneous labour
  - No recognized birthing person-fetal risk factors for adverse perinatal outcomes
- IA may be used for low-risk intrapartum birthing persons of GA 41^4 and 42^0 weeks provided there is a current normal non-stress test (NST) and normal amniotic fluid volume documented
  - Antepartum Surveillance recommendations for GA 41+0 to 42+0 weeks are for NST and amniotic fluid volume assessments twice weekly
- The practitioner must be able to listen and count the FHR using a handheld device (not an electronic fetal monitor (EFM) transducer), and be able to differentiate between MHR and fetal sounds that may be heard while using the device
  - The FHR is auscultated over the point of maximal intensity, usually over the fetal back or shoulder, which is determined by performing Leopold's maneuvers to determine fetal position

Techniques for Counting FHR:

Counting Baseline IA FHR Assessments	Counting On-Going FHR IA Assessments

• Count for 1 full minute (preferred method); or
• Count for 2 intervals of 30 seconds and add together; or
• Count for 4 intervals of 15 seconds and add together
  ○ Palpate MHR simultaneously to differentiate from FHR
	• Count for 1 full minute (preferred method); or
	• Count for 30 seconds and multiply by 2; or
	• Count for 6 second intervals (for a total or 30-60 seconds) and multiply each interval by 10
	  ○ This technique is helpful in detecting the presence of an acceleration or deceleration

- FHR features and associated actions that are assessed and documented with IA:
  1. UA – see section C above
  2. FHR Assessment –
     - MHR is assessed continuously (pulse oximetry) or intermittently (palpation) simultaneous to IA in order to differentiate it from the FHR
     - Baseline (BL) FHR – baseline FHR is assessed in the absence of fetal activity, accelerations, and decelerations by listening and counting the FHR for 60 seconds **BETWEEN** uterine contractions
     - On-going FHR assessments (once BL is determined) are performed **IMMEDIATELY AFTER** the end of a contraction for 30 to 60 seconds
       - On-going FHRs are compared to the established BL to detect the presence of accelerations and/or decelerations
     - Rhythm – defined as regular or irregular

- Accelerations and decelerations – determined as either present or absent, no amplitude or duration is defined or type of deceleration

Frequency of FHR Assessments and Documentation While Using IA:

First Stage: Latent Phase	First Stage: Active Phase/ Second Stage: Passive Phase	Second Stage: Active Phase
• Initial assessment • At least every 1 hour if admitted • On transfer or discharge • Individualized, based on birthing person-fetal status	• Every 15 to 30 minutes	• At least every 5 minutes or immediately following each contraction
• Before and after any procedure that could potentially affect fetal wellbeing		

3. Classification – Normal or Abnormal
   - There is no 'Atypical' category in the classification of IA
   - Classification occurs each time a time a FHR is documented

Classification Tool for IA:

Feature	NORMAL	ABNORMAL
Uterine Activity (UA)	Normal	Tachysystole
Baseline	110 to 160 bpm	Less than 110 bpm Greater than 160 bpm Rate changing over time
Rhythm	Regular	Irregular
Accelerations	May be present	Not applicable – absence of accelerations does not indicate abnormal
Decelerations	Not heard	Audible or counted

4. Interpretation
   - Interpretation of FHS should always take into consideration the whole clinical context in order to determined appropriate course of action and interventions
   - Normal classification may indicate there is no evidence of fetal compromise
   - Abnormal classification may indicate possible fetal compromise
5. Response
   - Birthing person and fetal responses to interventions are documented
   - Interventions or actions undertaken to address assessment finding and patient condition are documented

Interventions

- If Normal:
    - Continue to monitor by IA and provide supportive care
    - Promote comfort and fetal oxygenation
- If Abnormal:
    - Change patient position and repeat IA after next contraction or immediately initiate EFM if concerning feature and clinical context indicate
    - Assess birthing person VS – differentiate the MHR and the FHR
    - If deceleration persists after next contraction, initiate EFM if not already initiated to confirm FHR pattern
    - Intervene with intrauterine resuscitation measures to improve blood flow and oxygenation
    - Notify primary health care provider
    - If EFM is initiated for abnormal IA, IA can be resumed if the tracing is normal for a minimum of 20 minutes and no birthing person-fetal risk factors are identified based on review of the overall clinical picture; the indication for discontinuing EFM must be clearly documented
- The absence of accelerations is not an abnormal finding given the intermittent nature of auscultation, however, their presence is suggestive of fetal well-being. If accelerations are not heard, interpret the situation within the full clinical picture (fetal activity, stage of labour, risk factors, etc.), and consider actions that may optimize the likelihood of hearing an acceleration:
    - Birthing person position changes
    - Increased frequency and/or interval of auscultation when there is no UA
    - Auscultation when the labouring person indicates they feel fetal movement, or when the care provider palpates fetal movement

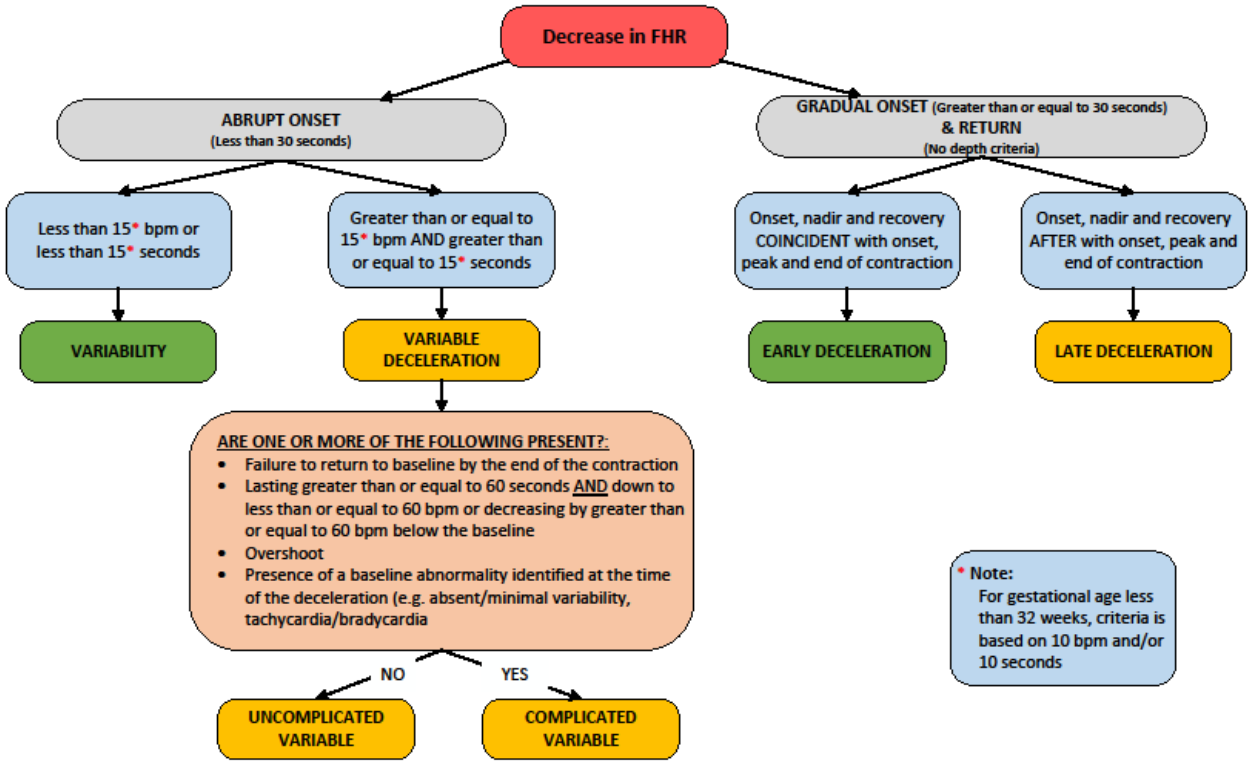
E. Electronic Fetal Monitoring (EFM)

Assessment

- EFM is the recommended method of fetal monitoring for birthing persons when there is a potential for adverse perinatal outcomes. This includes changes in the birthing person status or an untoward labour event. (see Appendix A)
- In the event that there are challenges in reliably determining either uterine activity and/or the FHR, internal monitoring should be considered with the use of an intrauterine pressure catheter (IUPC) and/or a fetal spiral electrode (FSE).
- Ambulation in labour remains an important aspect of care related to patient comfort and labour progression. The use of wireless and waterproof technology to facilitate repositioning (especially upright positions), movement, and hydrotherapy when using EFM is encouraged during active 1st and 2nd stages.
- FHR features and associated actions that are assessed and documented with EFM:
    1. UA – see section C above
    2. FHR Assessment
        - Ensure the quality of the tracing is appropriate for classification
        - Identify speed and graph range
        - Identify mode of monitoring (i.e. external vs internal)
        - MHR may be assessed continuously (pulse oximetry) or intermittently (palpation) in order to differentiate it from the FHR (see section F)
        - Baseline FHR – the mean (average) FHR rounded to 5 bpm during a 10 minute period; excludes accelerations , decelerations, and periods of marked variability
            - There must be 2 minutes of identifiable baseline in any 10 minute period; the 2 minutes do not have to be adjoining
            - If the baseline is not identifiable it is indeterminate
        - Baseline variability – the degree of fluctuation in the baseline (difference between the lowest and highest FHR measured in bpm) during a 10 minute period, excluding accelerations and decelerations
            - Normal characteristic of the FHR
            - Classified as: Absent, Minimal, Moderate or Marked
            - Moderate variability may indicate the absence of fetal metabolic academia
            - 1 minute of moderate variability within a 10 minute period is sufficient to classify the variability as moderate at that time
        - Accelerations – an abrupt increase of the FHR ABOVE the baseline (onset to peak in less than 30 seconds) with a defined minimum amplitude and duration:
            - The absence of spontaneous accelerations in labour is common and does not affect the overall classification of the FHS
            - An acceleration lasting 2 minutes or more is considered prolonged

- An acceleration lasting 10 minutes or more is considered a baseline change

- Decelerations – a decrease of the FHR BELOW the baseline
  - Type of deceleration is determined by factors such as depth, onset to nadir time interval, duration and coincidence with uterine activity (see below)
  - A deceleration lasting 2 minutes or more is considered prolonged
  - A deceleration lasting longer than 10 minutes is considered a baseline change



Adapted from SOGC Consensus Guideline, Credit to Dr W. Ehman

Frequency of FHR Assessments and Documentation While Using EFM:

First Stage: Latent Phase	First Stage: Active Phase/ Second Stage: Passive Phase	Second Stage: Active Phase
• Initial assessment • At least every 1 hour if admitted • On transfer or discharge • Individualized, based on birthing person-fetal status	• Every 15 minutes	• At least every 15 minutes if there is continuous presence of a caregiver at the bedside and the tracing is of adequate quality to classify • If tracing is not of adequate quality to classify, the FHR is documented every 5 minutes with classification occurring every 15 minutes
• Before and after any procedure that could potentially affect fetal wellbeing		

3. Classification of EFM – Normal, Atypical or Abnormal
   - Classification occurs each time the EFM is assessed

Feature	NORMAL	ATYPICAL	ABNORMAL
Uterine Activity (UA)	Normal contraction pattern	Tachysystole may be present with normal, atypical or abnormal tracings Monitor closely for concerning FHR characteristics	
Baseline	110-160 bpm	100 to 110 bpm Greater than 160 bpm for 30 to 80 minutes Rising baseline Arrhythmia	Less than 100 bpm Greater than 160 bpm for more than 80 minutes Erratic baseline
Variability	6-25 bpm Less than or equal to 5 bpm for less than 40 minutes	Less than or equal to 5 bpm for 40 to 80 minutes	Less than or equal to 5 bpm for more than 80 minutes Greater than or equal to 25 bpm for greater than 10 minutes Sinusoidal greater than or equal to 20 minutes
Accelerations	Spontaneous accelerations may be present, but are not required Accelerations with scalp stimulation	Absence of acceleration with scalp stimulation **Note:** *Scalp stimulation should not be administered duration a deceleration*	Usually absent **Note:** *Presence of accelerations does not change the classification of the tracing*
Decelerations	None Non-repetitive uncomplicated variable decelerations Early decelerations	Repetitive uncomplicated variables Non-repetitive complicated variable Intermittent late decelerations Single prolonged deceleration greater than or equal to 2 minutes but less than 3 minutes	Repetitive complicated variables Recurrent late decelerations Single prolonged deceleration greater than or equal to 3 minutes but less than 10 minutes

4. Interpretation
    - Interpretation of FHS should always take into consideration the whole clinical context in order to determined appropriate course of action and interventions
        - **Normal** classification may indicate there is no evidence of fetal compromise
        - **Atypical** classification may indicate physiologic responses to intrapartum events (e.g. contractions)
        - **Abnormal** classification may indicate possible fetal compromise
5. Response
    - Birthing person and fetal responses to interventions are documented
    - Interventions or actions undertaken to address assessment finding and patient condition are documented
    - An abnormal FHR tracing in the second stage of labour is an independent predictor of fetal acidosis. It is important not to attribute atypical or abnormal features solely to the fact that it is active second stage.

Interventions

- If Normal:
    - Continue to monitor the birthing person/fetal status and response to labour, and provide supportive care
    - Promote comfort and fetal oxygenation
    - EFM may be interrupted for up to 30 minutes if birthing person/fetal condition is stable
        - If oxytocin is being administered, the infusion must not have been titrated in the previous 30 minutes
        - IA should be performed every 15 minutes during interruption of EFM
- If Atypical:
    - Vigilant assessment is required, especially in the presence of combined features
        - Determine significance of atypical feature(s) in light of clinical context
    - Promote comfort and fetal oxygenation
        - Identify potential causes and correct those which are reversible
        - Initiate intrauterine resuscitation as appropriate
    - Determine duration of untoward effect and reserve tolerance of fetus
        - Consider further fetal evaluation and appropriate intervention (e.g. scalp stimulation and/or FSBS, amnioinfusion, etc.)
    - Consider transfer/delivery if atypical tracing persists or deteriorates
- If Abnormal:
    - Action is required
        - Determine significance of abnormal feature(s) in light of clinical context
    - Initiate intrauterine resuscitation
        - Identify potential causes and correct those which are reversible
        - Consider fetal scalp lactate sampling to determine fetal reserve
    - Prepare for and expedite delivery as appropriate

F. Maternal/Birthing Person Heart Rate (MHR)

Assessment

- It is essential that the MHR is assessed in order to differentiate it from the FHR regardless of the method of FHS (i.e. IA or EFM)
- MHR can be assessed by palpation of the radial pulse or by use of a pulse oximetry probe
    - Assessments can be intermittent or continuous depending on method of assessment and need relating to birthing person status and/or ruling out artifact to aid in the classification and interpretation of the FHR

Frequency of MHR Assessments:

First Stage: Latent Phase	First Stage: Active Phase/ Second Stage: Passive Phase	Second Stage: Active Phase

• Initial assessment
• When determining FHR baseline
• Individualized, based on birthing person-fetal status
	• Intact membranes
	  ○ Every 4 hours at a minimum
	• Ruptured membranes
	  ○ Every 2 hours at a minimum
	• PRN
		• Every 15 to 30 minutes
		• PRN

Interventions

- Assess birthing person status and identify potential causes of birthing person instability
- Call for help
- Intervene to correct those causes that can be reversed
- Communicate with care providers and support teams
- IV fluid bolus ONLY if indicated by birthing person hypovolemia and/or hypotension
- Oxygen administration ONLY if indicated by birthing person hypoxia or hypovolemia (to keep oxygen saturations greater than 94%)
- Call a Code Blue as per usual indicators
    - A Code Blue on a pregnant patient requires the additional and concurrent call of a Code Pink – Obstetrics
    - Identify the location as the patient's bedside

Documentation

- Documentation will follow PHC and Cerner guidelines
- All assessments and interventions should be documented in real time
- It is acceptable to document on the FHR tracing provided the features of the FHR are not obscured by the documentation
    - Documentation can be electronic when using FetaLink or on paper when performing FHS off-site of the Pregnancy, Birthing and Newborn Centre or during Downtimes
- Cerner PowerChart → Interactive View and I&O →

- Labour and Delivery Band
- OB Special Assessment Band

Patient and Family Education

- Ensure patient and family are aware of the recommendations for FHS including the methods, indications, risks and benefits, etc.
- Ensure that patient and family are aware of who the team members are who are involved in their care
- Ensure that patient and family are aware when concerning features are present and are involved in discussions about interventions and making plans of care

Pregnant patients and their support people should be offered information about the various methods of intrapartum fetal surveillance and be involved in decisions about their use during labour and birth. Pregnant persons have the right and responsibility to make informed decisions about their care in partnership with their health care providers, based on accurate information and consideration of their pre-existing or evolving risk factors, if any. In order to facilitate informed choice, patients should be provided with information and support that is evidence based, culturally appropriate, and tailored to their needs.

When members of the care team communicate with patients and their families, it is important to use terminology that everyone understands – plain language rather than medical jargon; repetition; slow, clear conversation; and use of interpreters as required. This is particularly important when there may be evidence of a compromised fetus and/or when immediate and urgent interventions need to be implemented. Patients must always be treated with respect and dignity, and a component of this is using appropriate language.

Some patients may decline the recommended intrapartum fetal surveillance. In this situation,

- Do not perform any care for which the pregnant person does not provide consent
- Facilitate or confirm the occurrence of a culturally safe conversation between the patient and their MRP that supports informed decision making, including the explanation of risks and consequences of declining recommended fetal surveillance and the reasoning behind their decision
- All involved health care providers document the conversation and the patient's choice in the patient's health record f
- Proceed with the agreed-upon plan of care

Related Documents

- B-00-13-10026 – Intrauterine Pressure Catheter
- BD-00-07-40077 - Induction of Labour: Management of the patient with dinoprostone (Cervidil) Vaginal Insert

- B-00-07-10030 - Induction/Augmentation of Labour: Oxytocin Administration
- B-00-12-10174 – Umbilical Cord Blood Specimen Collection: Clinical Indications
- B-00-07-10055 – Fetal Scalp Blood Lactate Sampling
- B-00-07-10045 – Patient Controlled Epidural Analgesia: Care and Assessments in Labour
- B-00-13-10113 – Pain Management (Opioid) in Labour
- B-00-07-10069 – Trial of Labour After a Caesarean Section

References

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PSBC. (2021). Decision Support Tool #2: Intrapartum Fetal Health Surveillance. Author.

Canadian Fetal Health Surveillance Steering Committee. (2020). Fundamentals of Fetal Health Surveillance. Online Manual (5th Edition). [Accessible via UBC CPD https://elearning.ubccpd.ca/]

Definitions

"Acceleration" means an abrupt increase of the FHR ABOVE the baseline (onset to peak in less than 30 seconds) with a defined minimum amplitude and duration:

- GA greater than or equal to 32 weeks:
  - Amplitude greater than or equal to 15 bpm;
  - Duration greater than or equal to 15 seconds
- GA less than 32 weeks:
  - Amplitude greater than or equal to 10 bpm;
  - Duration greater than or equal to 10 seconds
- Prolonged Acceleration = lasting 2 minutes or more

Baseline Changes

"Baseline Change" means the increase or decrease above or below the previously established baseline lasts greater than or equal to 10 minutes

"Erratic Baseline" means a FHR that is wandering for greater than 10 minutes, unrelated to fetal movements

"Indeterminate Baseline" means the FHR baseline is not visible for a minimum of 2 minutes (not necessarily contiguous) in any 10-minute segment due to signal loss or ongoing uterine contractions, accelerations, or decelerations

"Deceleration" means a decrease of the FHR BELOW the baseline and the type of deceleration is determined by factors such as depth, onset to nadir time interval, duration and coincidence with uterine activity

- Decelerations are classified as early, late, variable and prolonged

- Variable deceleration are further differentiated as uncomplicated and complicated, and have defined depth and duration criteria based on the gestational age of the fetus:
    - GA greater than or equal to 32 weeks:
        - Depth greater than or equal to 15 bpm;
        - Duration greater than or equal to 15 seconds
    - GA less than 32 weeks:
        - Amplitude greater than or equal to 10 bpm;
        - Duration greater than or equal to 10 seconds
- Complicated variable decelerations in addition to having the above characteristics have one or more of the following features:
        - Failure to return to baseline by the end of the contraction
        - Lasting greater than or equal to 60 seconds AND;
            i. Decreasing **BY** 60 BPM or more, OR
            ii. Decreasing **TO** 60 bpm or less
        - Overshoot (a gradual smooth FHR acceleration of greater than 20 bpm lasting at least 20 seconds immediately following a variable deceleration)
        - Association with a baseline abnormality present at the time of occurrence (i.e. absent or minimal variability and/or tachycardia/bradycardia)
- Deceleration lasting 2 minutes or more is considered prolonged

"Rising Baseline" means the FHR baseline progressively increases over time

"Risks for adverse perinatal outcome" means any antenatal or intrapartum, birthing person or fetal condition which increases the risk of adverse fetal outcomes (see Appendix A).

"Tachysystole" means any excessive uterine activity. This includes:

- More than 5 contractions in 10 minutes (averaged over 30 minutes),
- Contractions lasting longer than 90 seconds, or
- Resting tone between contractions of less than 30 seconds (or greater than 25 mmHg when using an IUPC)

"Variability" means the degree of fluctuation in the baseline (difference between the lowest and highest FHR measured in bpm) during a 10 minute period, excluding accelerations and decelerations

Absent – no discernable fluctuation in the FHR

Minimal – fluctuation of the FHR which is less than or equal to 5 bpm

Moderate – fluctuation of the FHR of 6 to 25 bpm

Marked – fluctuation of the FHR which is greater than or equal to 25 bpm

Sinusoidal - Smooth, repetitive sine wave−like pattern of FHR that persists for greater than or equal to 20 minutes with an amplitude of 5 to 15 bpm and a frequency of 3 to 5 cycles per minute. In a pathological sinusoidal FHR tracing, the FHR does not respond to uterine contractions, fetal movement, or fetal stimulation.

Appendices

- Appendix A: Risks for Adverse Perinatal Outcomes
- Appendix B: Conditions for Consideration of EFM
- Appendix C: Summary of Recommended Frequency of Assessments and Documentation

Appendix A: Risks for Adverse Perinatal Outcomes

Birthing Person	Fetus
• Hypertensive disorders of pregnancy • Diabetes: Pre-existing and gestational • Antepartum hemorrhage • Medical disease (e.g. cardiac, significant anemia, hyperthyroidism, vascular disease, renal disease) • Following Trauma/MVA (EFM recommended for a minimum of 4 to 6 hours) • Birthing person's perception of reduced or absent fetal movements • Pre-pregnancy BMI greater than 35 kg/m^2 • Vaginal bleeding in labour • Intrauterine infection/chorioamnionitis • Previous C/S or trial of labour after C/S • Prolonged rupture of membranes more than 24 hours • Combined spinal-epidural analgesia • Oxytocin induction or augmentation • Post-term pregnancy (greater than 42 weeks gestation) • Labour dystocia • Tachysystole • Difficulties in reliably determining UA and/or FHR with IA; or an abnormal IA • Other factors (e.g. smoking, substance use, limited prenatal care)	• Prematurity (less than 37 weeks gestation) • Intrauterine growth restriction • Single umbilical artery • Oligohydramnios • Polyhydramnios • Abnormal umbilical artery Doppler velocimetry • Abnormal BPP or NST • Significant fetal abnormality (compatible with life) • Isoimmunization • Multiple pregnancy • Velamentous cord insertion • Abnormal FHR on auscultation • Meconium stained amniotic fluid • Breech presentation • FHR arrhythmia • 3 or more nuchal loops

Appendix B: Conditions for Consideration of EFM

	Intrapartum Conditions	Antenatal Conditions	
	EFM is RECOMMENDED		EFM should be CONSIDERED
Birthing Person	• Vaginal bleeding in labour • Intrauterine infection/chorioamnionitis • Previous C/S or trial of labour after C/S • Prolonged ROM at term (greater than 24 hours) • Combined spinal−epidural analgesia (CSE) • Oxytocin induction or augmentation • Post term pregnancy (greater than 42 weeks gestation) • Labour dystocia • Tachysystole • Difficulties in reliably determining uterine activity and/or FHR with IA	• Hypertensive disorders of pregnancy • Diabetes: pre-existing and gestational *1 • Medical disease (e.g. cardiac, significant anemia, hyperthyroidism, vascular and/or renal disease) • Following trauma or motor vehicle collision (EFM recommended for a minimum of 4−6 hours) • Birthing person's perception of reduced or absent fetal movements • Antepartum hemorrhage	• Pre-pregnancy BMI greater than 35 kg/m2 *2 • Others factors (smoking, substance use, limited prenatal care)
Fetus	• Abnormal FHR on auscultation • Prematurity (less than 37 weeks) • Meconium staining of the amniotic fluid • Breech presentation • FHR arrhythmia	• Intrauterine growth restriction • Abnormal umbilical artery Doppler velocimetry • Single umbilical artery • Oligohydramnios • Polyhydramnios • Abnormal BPP or NST • Significant fetal abnormality (compatible with life) • Isoimmunization • Multiple pregnancy • Velamentous cord insertion	• 3 or more nuchal loops

*1 For diet/exercise controlled gestational diabetes, EFM is not required; EFM is recommended for gestational diabetes which is insulin dependent (Clarified with PSBC FHS Committee)

*2 Because of the adverse perinatal outcomes sometimes associated with pre-pregnancy BMI greater than 35 kg/m2, intrapartum EFM should be considered.

Appendix C: Summary of Recommended Frequency of Assessments and Documentation

NOTE: These recommendations are the MINIMAL requirements for assessment and documentation

	IA	EFM	MHR
LATENT PHASE (If admitted to birthing area or individualized based on mat/fetal status if in triage)	Q 1 hr And PRN	Q 1 hour And PRN	On admission & when determining baseline FHR Any time there is uncertainty about FHR and MHR As birthing person presentation would dictate (e.g. monitoring for gestational hypertension, prolonged rupture of membranes, underlying medical conditions, etc.) PRN
ACTIVE 1ST & PASSIVE 2ND STAGE	Q 15-30 min And PRN	Q 15 min And PRN	Q 4 hrs with intact membranes OR Q 2 hrs with ruptured membranes As birthing person presentation would dictate (e.g. monitoring for gestational hypertension, prolonged rupture of membranes, underlying medical conditions, administration/maintenance of epidural, etc.) PRN
ACTIVE 2ND STAGE	Q 5 min (or after each contraction) And PRN	Q 15 min (If continuous tracing & caregiver presence) If tracing is not of adequate quality to classify, the FHR is documented q 5 min with classification occurring q 15 min And PRN	Q 15 to 30 min As birthing person presentation would dictate (e.g. monitoring for gestational hypertension, prolonged rupture of membranes, underlying medical conditions, etc.) PRN

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