Shared health Soins communs Manitoba

Provincial Clinical Guideline

Fetal Health Surveillance (FHS) - Intrapartum	
Service Area: Women's Health	**Guideline Number:** XX-XXX-XXX V1
Approved By: Provincial Clinical Leadership Team (PCLT)	**Approved Date:** May 4, 2023

1.0 CLINICAL GUIDELINE STATEMENT

1.1 The purpose of this guideline is to ensure all women in labour receive appropriate, close monitoring and support from an appropriately trained person and to decrease the incidences of adverse fetal and maternal outcomes.

1.2 "Intra-professional and interprofessional respect and communication are essential for effective teamwork and patient safety". (Dore, S. & Ehman, W. 2020, 322)

The health care team should use terminology as identified in this guideline and endorsed by the Society of Obstetricians and Gynaecologists of Canada (SOGC). Each parameter should be discussed including relevant classification and overall clinical picture during handover, consultations, request for assistance and during general discussions of the maternal-fetal status.

1.3 This guideline is applicable to Obstetrical care providers (nurses, obstetricians, family practice physicians & midwives) in all SDOs where intrapartum care is provided.

2.0 GUIDELINE:

2.2 Guideline

2.2.1 Ensure that site escalation protocol is followed starting with escalation to CRN/Charge nurse through the senior resident/attending.

2.2.2 **Admission Assessments**

2.2.2.1 Admission Intermittent Auscultation (IA) assessments may be done for healthy term women presenting in labour, early labour, or query labour in the absence of risk factors for adverse perinatal outcomes. (Appendix A).

2.2.2.1 Admission Electronic Fetal Monitoring (EFM) assessments are recommended for women with risk factors for adverse perinatal outcomes (Appendix A).

2.2.3 IA is the recommended method of intrapartum surveillance for healthy women between 37+0- and 41+3-weeks gestation in spontaneous labour, in the absence of risk factors for adverse perinatal and neonatal outcomes.

2.2.4 IA may be used for women who are 41+4 weeks gestation to 42+0 weeks, provided there is documentation of a normal non-stress test and normal amniotic fluid volume.

2.2.5 EFM is used for pregnancies at risk for adverse perinatal outcomes (Appendix A). Ensure rationale is documented in the patients' health record.

2.2.5.1 If the tracing is identified as normal in the first stage of labour, the EFM may be interrupted for up to 30 minutes to allow for mobilization if the maternal-fetal condition is stable. If oxytocin is being administered, the infusion rate should be stable for the last hour.

2.2.6 **Frequency of Assessments and Documentation by IA**

2.2.6.1 First stage – latent phase
- Initial assessment
- At least every 1 hour if admitted
- If transferred or discharged

2.2.6.2 First stage – active phase
- Every 15 to 30 minutes

2.2.6.3 Passive second stage
- Every 15 to 30 minutes

2.2.6.4 Active second stage
- At least every 5 minutes or immediately following each contraction

2.2.7 **Frequency of Assessments and Documentation by EFM**

2.2.7.1 First stage – latent phase
- Initial assessment
- At least every 1 hour if admitted

2.2.7.2 First stage – active phase
- Every 15 minutes

2.2.7.3 Passive second stage
- Every 15 minutes

2.2.7.4 Active second stage
- At least every 15 minutes if there is a continuous presence of a healthcare provider and a continuous tracing.
- If the healthcare provider is not present OR there is an intermittent tracing OR tracing that makes it difficult to interpret the fetal heart rate then at least every 5 minutes.

2.2.8 EFM paper speed: 3 cm/minute.

2.2.9 Utilize site-specific escalation protocols as needed.

3.0 APPLICATION:

3.1 For Patients

Labouring patients and their families throughout Manitoba.
- Encourage patients to participate in their care.
- Assist patients to understand the risks and benefits of fetal monitoring and to make informed decisions during their care.

3.2 For Clinicians

Obstetrical care providers (nurses, obstetricians, family practice physicians and midwives).
- Manage fetal surveillance in labour (intrapartum) according to the standards set by the Society of Obstetricians and Gynaecologists of Canada and research evidenced-based practice.
- Support the use of Intermittent Auscultation (IA) for low-risk women.
- Recognition of when the use of Electronic Fetal Monitoring (EFM) is acceptable and reasonable.
- Standardized terminology and improved communication between caregivers.

3.3 For Health Service Organizations

All SDOs within Manitoba that provide intrapartum services.

- Provide access to approved assessment tools and equipment.
- Hyperlink directly to the intrapartum FHS guideline on the Shared Health: Health Providers Clinical Projects, Standards, and Guidelines webpage in replacement of conflicting local governance documents e.g. local policies and guidelines related to this subject matter.
- Identify physical and psychosocial barriers to clinical services that patients need.
- Ensure clinicians have accessible information, education and training.
- Indicators that assist in the monitoring of care recommended within the guideline.

4.0 DEFINITIONS:

4.1 **Active Phase:** Presence of a pattern of contractions leading to cervical effacement and dilatation at 4 cm or greater in a nulliparous woman/person or 4 to 5 dilatation in a parous woman/person. (L. Lee, J. Dy & H. Azzam 2016)

Intermittent Auscultation: A listening technique of counting fetal heart using a handheld doppler or fetoscope.

Electronic Fetal Monitoring: The use of an electronic ultrasound fetal heart rate monitor either externally or internally for the continuous evaluation of fetal heart rate in labour.

First Stage of Labour: Regular uterine contractions accompanied by cervical dilatation and/or effacement. The first stage of labour includes the latent and active phase. (Ibid)

Latent Phase: Presence of uterine activity resulting in progressive effacement and dilatation of the cervix proceeding to active phase. It is complete when a nulliparous women/person reaches 4 cm dilatation and a parous woman/person reaches 4 to 5 cm. Cervical length is generally less than 1 cm. (Ibid)

Second Stage of Labour: Full dilatation to delivery of the baby. (ibid)

Passive Second Stage: Full dilatation but without active pushing. (ibid)

Active Second Stage: Full dilatation with active pushing. (ibid)

Tachysystole: Uterine contraction pattern that is:

- more than 5 contractions in 10 minutes averaged over 30 minutes, OR
- contractions lasting greater than 90 seconds, OR
- resting period between contractions is less than 30 seconds, OR
- the uterus remains firm or > 25 mm Hg between contractions.

4.2 **Abbreviations**

BPP: Biophysical Profile

EFM: Electronic Fetal Monitoring

FHR: Fetal Heart Rate

FSBS: Fetal Scalp Blood Sampling

FSE: Fetal Scalp Electrode

GBS: Group B Streptococcus

IA: Intermittent Auscultation

MHR: Maternal Heart Rhythm

NST: Non-Stress Test

ROM: Rupture of Membranes

SOGC: Society of Obstetricians and Gynaecologists of Canada

5.0 CONTACT:

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Key Supporting Documents/Resources:

Appendix A - Conditions Associated with Adverse Fetal Outcomes Where EFM may be Beneficial

Appendix B - Classification of Intermittent Auscultation FHR

Appendix C – Classification of Intrapartum EFM Tracings

Appendix D - Intrauterine Resuscitation

Appendix E - Responses to Specific IA or EFM Findings

Appendix F - Fetal Heart Surveillance Decision-Making Support Tool

References:

Dore, S. & Ehman, W. 2020. "No. 396-Fetal Health Surveillance: Intrapartum Consensus Guideline". Society of Obstetricians and Gynaecologists of Canada (SOGC). 42(3): 316-348. doi: https://doi.org/10.1016/j.jogc.2019.05.007.

Lee, L., Dy, J., Azzam, H. 2016. "Management of Spontaneous Labour at Term in Healthy Women". Journal of Obstetrics and Gynaecology Canada.38(9): 843-865. doi:10.1016/j.jogc.2016.04.093.

Document Review History

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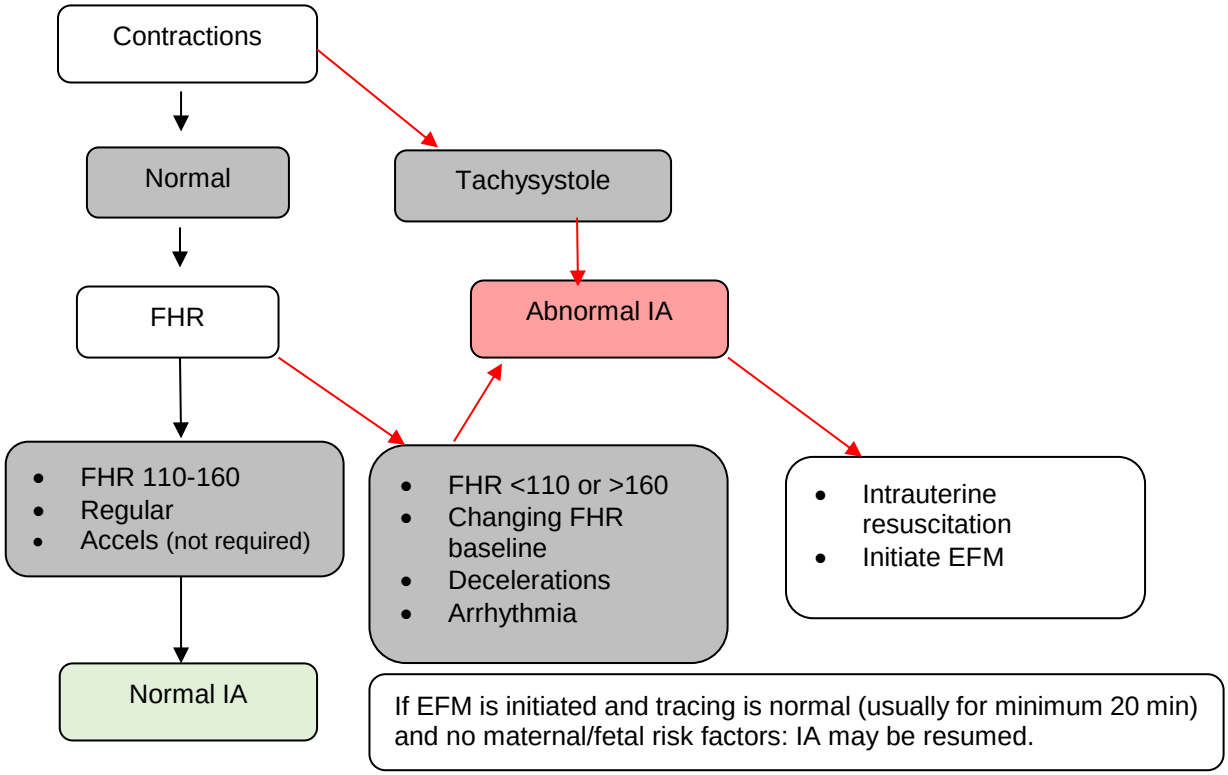
1.0	N/A	Christine Finnbogason, Clinical Nurse Specialist, HSC Shared Health	PRIMARY AUTHOR
1.0	Sep/02/2022	Maternal Newborn	APPROVED
1.0	Fall 2022	Women's Health Provincial Education Working Group	ENDORSED
1.0	2022/2023	Provincial Obstetrical Working Group	ENDORSED
1.0	Dec/20/2022	Women's Health Standards Committee	APPROVED
1.0	Mar/24/2023	Women's Health PCT	APPROVED
1.0	May/04/2023	Provincial Executive PCLT	APPROVED

Appendix A - Conditions Associated with Adverse Fetal Outcomes Where EFM may be Beneficial

		EFM is recommended	EFM should be considered
Antenatal	Maternal	• Hypertensive disorders of pregnancy • Diabetes: pre-existing and gestational • Maternal medical disease (e.g. cardiac, significant anemia, hyperthyroidism, vascular disease and/or renal disease • Following trauma or motor vehicle collision (EFM recommended for a minimum of 4 – 6 hours) • Maternal perception of reduced or absent fetal movements • Antepartum hemorrhage	• Pre-pregnancy BMI greater than 35 • Other factors (smoking, substance use, limited prenatal care)
	Fetal	• Intrauterine growth restriction • Abnormal umbilical artery Doppler velocimetry • Single umbilical artery • Oligohydramnios • Polyhydramnios • Abnormal BPP or NST • Significant fetal abnormalities (compatible with life) • Isoimmunization • Multiple pregnancy • Velamentous cord insertion	• 3 or more nuchal loops
Intrapartum	Maternal	• Vaginal bleeding in labour • Intrauterine infection/chorioamnionitis • Previous caesarean section/trial of labour • Prolonged rupture of membranes greater than 24 hours at term • Combined spinal-epidural analgesia • Oxytocin induction or augmentation • Post-term pregnancy (greater than 42 weeks gestation) • Labour dystocia • Tachysystole • Difficulties in reliability determining umbilical activity and/or FHR with IA	
	Fetal	• Abnormal fetal heart rate on auscultation • Prematurity (less than 37+0 weeks) • Meconium staining of amniotic fluid • Breech presentation • FHR arrhythmia	

(Dore, S. & Ehman, W. 2020)

Appendix B - Classification of Intermittent Auscultation FHR



(Dore, S. & Ehman, W. 2020)

Appendix C – Classification of Intrapartum EFM Tracings

Classification of Intrapartum EFM Tracings			
	Normal Tracing Previously "Reassuring"	**Atypical Tracing** Previously "Non-Reassuring"	**Abnormal Tracing** Previously "Non-Reassuring"
Uterine Activity	• Normal contraction	• Tachysystole may be present with normal, atypical or abnormal tracings; monitor closely for concerning FHR characteristics	
Baseline	• 110-160 bpm	• Bradycardia 100-110 bpm • Greater than160 bpm for 30 min to less than 80 min • Rising baseline • Arrhythmia (irregular rhythm)	• Less than 100 bpm • Greater than 160 for greater than 80 min • Erratic baseline
Variability	• 6-25 bpm • Less than or equal to 5 for less than 40 min	• Less than or equal to 5 bpm for 40-80 min	• Less than or equal to 5 for greater than 80 min. • Greater than or equal to 25 bpm greater than 10 min • Sinusoidal
Accelerations	• Spontaneous accelerations present but not required • Acceleration with scalp stimulation	• Absence of acceleration with scalp simulation	• usually absent (accelerations, if present, do not change classification of tracing)
Decelerations	• None • Non-repetitive uncomplicated variable decelerations • Early decelerations	• Repetitive uncomplicated variable • Non-repetitive complicated variables • Intermittent late decelerations • Single prolonged decelerations greater than 2 min but less than 3 min	• Repetitive complicated variables • Late decelerations • Single prolonged decelerations greater than 3 min but less than 10 minutes
Interpret Clinically (in light of the total situation)	• No evidence of fetal compromise	• Physiologic response	• Possible fetal compromise
Terminology	**Recurrent**: Decelerations occur with greater than or equal to 50% of uterine contractions in any 20-minute window. **Intermitte**nt: Decelerations occur with less than 50% of uterine contractions in any 20-minute segment. **Repetitive**: greater than or equal to 3 in a row **Non-repetitive**: 1 or maximally 2 in a row		

Dore, S. & Ehman, W. (2020)

Appendix D - Intrauterine Resuscitation

The goal of intrauterine resuscitation is to improve uterine blood flow, umbilical circulation and maternal-fetal oxygenation.

Actions may include the following:

- Remove vaginal prostaglandin (PGE_2)/stop or decrease oxytocin
- Change maternal/birthing person's position to left or right lateral
- Check maternal vital signs including differentiation of MHR to FHR
- Ask the woman/birthing person to modify or pause pushing efforts in the active second stage of labour
- Improve maternal/birthing person's hydration, with an intravenous fluid bolus of 500 mL Ringers Lactate
- Perform vaginal exam to rule out cord prolapse and assess progress
- Consider tocolysis in the presence of tachysystole with atypical or abnormal tracing
- Consider amnioinfusion in the presence of complicated variable decelerations
- Provide supportive care to reduce maternal/birthing persons' anxiety
- Consider oxygen by non-rebreathing face mask (NRB) only when maternal/birthing person's hypoxia and/or hypovolemia is suspected/confirmed. Oxygen is reserved for maternal/birthing person's resuscitation NOT for fetal resuscitation

Dore, S. & Ehman, W. (2020)

Appendix E - Responses to Specific IA or EFM Findings

FHR pattern	Associated/potential causes	Clinical action to consider if IA assessment	Clinical action to consider if EFM assessment
All atypical/abnormal FHR		Initiate EFM	
		Always consider intrauterine resuscitation	Always consider intrauterine resuscitation
Tachycardia greater than 30 minutes Rising baseline Erratic baseline	Maternal • Fever, infection • Dehydration • Hyperthyroidism • Endogenous adrenaline or anxiety • Drug response • Anemia Fetal • Infection • Prolonged activity or stimulation • Chronic hypoxemia • Cardiac abnormalities • Congenital abnormalities • Anemia	• Initiate intrauterine resuscitation • Assess maternal/birthing person temperature, pulse • Review duration of ROM, presence of positive vaginal cultures (e.g. GBS) • Consider ultrasound to assess for arrhythmia • Maternal/birthing person IV if indicated (e.g. dehydration) • If persists for greater than 30 minutes, initiate EFM	• Initiate intrauterine resuscitation • Assess maternal/birthing person temperature, pulse • Review duration of ROM, presence of positive vaginal cultures (e.g. GBS) • Consider ultrasound to assess for arrhythmia • Maternal/birthing person IV if indicated (e.g. dehydration) • If persisting greater than 80 minutes total: ○ FSBS if clinically feasible ○ If the clinical situation and other FHS elements are normal, may consider ongoing vigilant observation ○ Consider expeditious delivery if other elements of FHS are atypical or abnormal or as warranted by the clinical situation
Irregular FHR	• Possible fetal arrhythmia	• Initiate EFM	• Continue EFM and consider etiology and other investigations
Bradycardia	• Hypoxia	• Intrauterine resuscitation	• Always consider intrauterine resuscitation
		• Initiate EFM	• Expedite delivery
Minimal variability of less than or equal 5 bpm for greater than 40 minutes Absent variability for greater than 40 minutes	• Fetal sleep • Prematurity • Medications • Hypoxic acidemia		• Intrauterine resuscitation • Review history of predisposing factors • If possible: ○ Apply FSE ○ Perform FSBS • Prepare for delivery
Marked variability	• Hypoxia • Fetal gasping movements • Unknown		• Assess cause when greater than 10 minutes: ○ Intrauterine resuscitation ○ If possible FSE, perform FSBS ○ Prepare for delivery if persists
Sinusoidal	• Fetal anemia (Hb less than 70) • Hypoxia/acidosis • Transiently present with healthy fetus		• Consider clinical picture • Scalp stimulation • Intrauterine resuscitation • Attach FSE if possible • Consider Kleihauer Betke

			• Middle cerebral artery Doppler if available • Prepare for delivery
Accelerations	• Fetal activity • Direct fetal sympathetic stimulation • Occlusion of umbilical vein only • Fetal scalp stimulation • Sympathetic increase following deceleration	• No action	• No action
Absent acceleration with fetal scalp stimulation	• Hypoxic acidemia • Fetal abnormality	• Initiate EFM	• If possible: ○ Apply FSE ○ Perform FSBS • Prepare for delivery
Deceleration	• Autonomic response to factors including blood pressure changes, hypoxia and acidosis	• Reposition birthing person • Listen again or initiate EFM	• Intrauterine resuscitation • Check maternal vital signs • Further actions depending on classification and overall clinical picture
Intermittent late decelerations OR Single deceleration greater than 2 but less than 3 minutes duration	• Decreased uterine blood flow due to maternal position • Fetal vagal/chemoreceptor response • Transient fetal acidemia		• Intrauterine resuscitation • Check maternal/birthing person's vital signs • Continue to observe
Single prolonged deceleration greater than 3 minutes duration	• Fetal baroreceptor response may be related to: ○ Tachysystole ○ Severe cord compression ○ Maternal hypotension/seizure ○ Rapid fetal descent		• Vaginal exam to rule out cord prolapse • Intrauterine resuscitation • Prepare for delivery

EFM; electronic fetal monitoring; FSBS: fetal scalp blood sampling; FHR: fetal heart rate; FHS: fetal health surveillance; FSE: fetal scalp electrode; GBS: group B Streptococcus; Hb: hemoglobin; IA: intermittent auscultation; IV: intravenous [infusion]; ROM: rupture of membranes.

(Dore, S. & Ehman, W. 2020)

Appendix F - Fetal Heart Surveillance Decision-Making Support Tool