Lothian NHS Board

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Date 24/12/2025
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Dear

FREEDOM OF INFORMATION – ANTENATAL CTG GUIDANCE

I write in response to your request for information in relation to antenatal CTG guidance.

Question:

- The Guidelines provided are for foetal monitoring in labour and during childbirth (intrapartum). Could you please provide the antenatal CTG guidance in place currently, as well as in August 2022? The guidance should cover CTGs throughout pregnancy.

Answer:

Please see enclosed. It has been live since 28/06/21 and not yet reviewed.

I hope the information provided helps with your request.

If you are unhappy with our response to your request, \you do have the right to request us to review it. Your request should be made within 40 working days of receipt of this letter, and we will reply within 20 working days of receipt. If our decision is unchanged following a review and you remain dissatisfied with this, you then have the right to make a formal complaint to the Scottish Information Commissioner within 6 months of receipt of our review response. You can do this by using the Scottish Information Commissioner's Office online appeals service at www.itspublicknowledge.info/Appeal. If you remain dissatisfied with the Commissioner's response you then have the option to appeal to the Court of Session on a point of law.

If you require a review of our decision to be carried out, please write to the FOI Reviewer at the email address at the head of this letter. The review will be undertaken by a Reviewer who was not involved in the original decision-making process.

FOI responses (subject to redaction of personal information) may appear on NHS Lothian's Freedom of Information website at: https://org.nhslothian.scot/FOI/Pages/default.aspx

Yours sincerely

ALISON MACDONALD
Executive Director, Nursing
Cc: Chief Executive

Antenatal Fetal Monitoring
Maternity Services Lothian
Guidelines

1. INTRODUCTION:

The purpose of antenatal (CTG) fetal monitoring is to aim to increase identification of babies in utero at increased risk of developing hypoxia and acidaemia and to guide when intervention may be indicated. Human error in ante-partum cardiotocograph (CTG) interpretation has been identified as a significant root cause of stillbirth and serious brain injury.CTG is a screening tool to be used in conjunction with complete clinical picture.

There is currently a mixed picture of National guidance on antenatal fetal monitoring. Recommendations from this guideline have been agreed as from NICE 2019 guideline 'Antenatal care for uncomplicated pregnancies' and NHS England 'Saving Babies' Lives Care Bundle Version 2: a care bundle for reducing perinatal mortality and physiological CTG interpretation.

2. AIM:

The aim of this guideline is to decrease neonatal morbidity and mortality by correct use of antenatal fetal monitoring with reference to CTG interpretation only. This guideline will clarify when antenatal CTG monitoring may be appropriate and aids to interpret the CTG escalation of CTG concerns and actions

3. GUIDELINES:

Indications for antenatal CTG
Commencing an antenatal CTG
Interpreting an antenatal CTG
Suggested actions based on CTG findings

Indications for an antenatal CTG:

- Antenatal CTG monitoring is not routinely recommended unless a particular risk factor is identified (Table 1)
- It may be used to contribute to the assessment of fetal wellbeing from 26 weeks-
- Antenatal CTG monitoring is not indicated prior to 26 weeks gestation unless a consultant plan has been made.

Table 1. *Risk factors indications for antenatal CTG- for example*

Significant Medical Condition	***High risk pregnancy***	***High risk fetus***	***Other***
Diabetes	Multiple pregnancy	Reduced/absent fetal movements	Trauma to the abdomen
Hypertension	Oligo or Polyhydramnios	FGR/SGA	external cephalic version
Pulmonary disease	PIH/PET	Abnormal US/Doppler	Induction with prostaglandins
		Meconium stained liquor	
Cardiac disease	Post-dates >42 weeks	Prematurity	
Thyroid disease	PPROM		
Renal disease	APH		
Autoimmune disease	Suspected preterm labour		
Substance misuse	Abnormal maternal observations (i.e. pulse >110/120; severe Hypertension)		
	Infection/sepsis		

Commencing an antenatal CTG

- Discuss the rationale for commencing the CTG with the woman
- Prior to commencing the CTG, abdominal palpation should be performed and symphyseal fundal height (SFH) plotted on a growth chart when appropriate ie if not plotted within the last 2 weeks.
- Record maternal pulse and document this prior to commencing the CTG.
- Confirm monitor is set to run at 1cms/minute
- Ensure accurate date and time is recorded and a patient CHI sticker is placed in a visible location.
  Advise patients to record fetal movements during the CTG.

- If fetal heart cannot be detected, inform obstetric registrar urgently for review. If there is difficulty finding FH especially in women with pain, bleeding/ SRM/RFM then **emergency call** should be made. If in the community please arrange for urgent transfer to hospital.

Interpreting an antenatal CTG

- The antenatal CTG should be interpreted as part of the overall clinical picture
- An antenatal CTG is either **Normal or Abnormal.** Presence of signs of chronic hypoxia/ 1 non reassuring feature is abnormal.
- An antenatal CTG sticker (appendix 1) can if available be used to assess the CTG and should be placed on the CTG.
- Two qualified staff members should sign off the CTG
- Check if the baseline is appropriate for gestation (i.e. at 40+ weeks babies are more likely to have baseline towards lower end of normal and preterm babies are likely to have baseline ~ 150bpm.)
- Compare baseline from previous CTGs. Rising baseline by more than 10% signifies further attention needed to assess any concerns. Medical review to assess all risk factors and appropriate management plan.

A normal antenatal CTG will have good variability with evidence of sleep and wake patterns (Cycling signifies normal fetal physiology.)

Preterm fetal monitoring:
Understanding the physiology of fetal heart rate and the development of cardiovascular and neurological systems may help to understand the features observed on the CTG. It is important to realize that physiological reserves available to combat hypoxia are less than those available to a term fetus. Hence, a preterm fetus may suffer a hypoxic insult sooner than its term counterpart.
Medical staff should counsel women when instituting continuous electronic fetal monitoring.

- It is normal for baseline to be at the higher end of normal in preterm pregnancies. The baseline for each fetus should be compared with any previous documentations/ recording of fetal heart rates to individualize care. The baseline gradually lowers with advancing gestation as the parasympathetic nervous system develops increasing variability and cycling by 32- 34 weeks.
- Baseline variability is also more obvious as gestation advances.
- Small variable decelerations are commonly seen in gestations under 30 weeks. Accelerations tend to be smaller (10bpm, 10 sec duration) at earlier gestation gradually increasing in amplitude.

Suggested actions based on CTG findings
See Appendix 2 – “Escalation Plan for CTG Findings”
A CTG showing signs of chronic hypoxia should be reviewed urgently (high /normal baseline reduced variability and/ or shallow decelerations).

4. ASSOCIATED DOCUMENTS:

Appendix 1 – Antenatal CTG assessment tool
Appendix 2 – Escalation plan for CTG findings

Appendix 1a. – Antenatal CTG assessment tool

Antenatal CTGs			
Gestation: Look at baseline rate in line with gestation- a preterm fetus is likely to have a higher rate than that at term	**Maternal Pulse**: look for increase or signs of infection. Ensure different to FH	**Membranes ruptured?** Date of SRM- If Prolonged elevated level of concern if signs of infection	**Colour of liquor**: If meconium more at risk of chorioamnionitis particularly at < 34 weeks. Blood stained consider abruption
Uterine activity felt by woman: palpate any uterine activity and document	**Present**- If in active established labour analyse as intrapartum CTG with hourly buddy review	**Absent**- Analyse with antenatal CTG sticker	
	Reassuring features	**Non Reassuring features**	
Baseline rate- check all previous CTGs	110 160	<110 or>160	Appropriate for gestational age? a preterm fetus is likely to have a higher rate than that at term
Variability	Between 5 and 25	<5 for 50 minsor>25 for 30 mins or sinusoidal for >10 mins	
Accelerations	Present	Absent >50 mins	Fetal Movements felt?
Decelerations	Absent	Present	
Evidence of cycling? Above 32 weeks	Present	Absent	Cycling becomes more obvious with maturation of nervous system
Overall Impression	Normal CTG	Abnormal CTG (1x non reassuring feature/ chronic hypoxia/ other)	A fetus with Chronic Hypoxia will have reduced variability, raised baseline and possible shallow decelerations
Reason for CTG/ Plan of care	Women on normal pathway of care should not require CTG	Rationale for CTG should be clearly documented	Plan of ongoing care needs to be documented

Appendix 1a. – Antenatal CTG assessment tool stickers

Antenatal CTG

Normal

Abnormal

Signature 1

Signature 2

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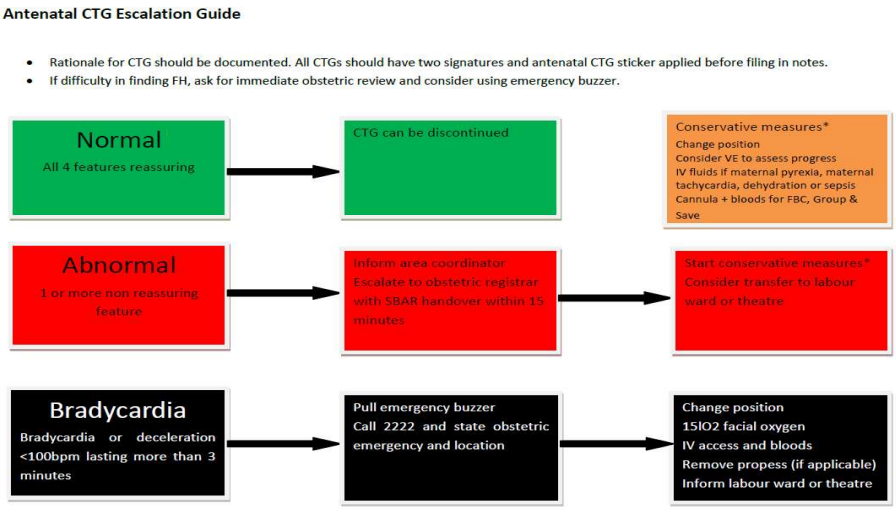
Appendix 2 – Antenatal CTG Escalation Guide



5. REFERENCES:

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NHS England (2019). Saving Babies' Lives Care Bundle Version 2: a care bundle for reducing perinatal mortality. Available from: https://www.england.nhs.uk/wp-content/uploads/2016/03/saving-babies-lives-car-bundle.pdf (Accessed January 2021) Physiological CTG

Karolina Afors, Edwin Chandraharan, "Use of Continuous Electronic Fetal Monitoring in a Preterm Fetus: Clinical Dilemmas and Recommendations for Practice", *Journal of Pregnancy*, vol. 2011, Article ID 848794, 7 pages, 2011

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