Statement

Swansea Bay University Health Board is currently implementing computerised CTGs as advised in the All Wales Altered Fetal Movements Guideline. From 1st August 2022 Swansea Bay University Health Board will be following the All Wales Guideline with the exception of computerised CTGs, and will undertake non-computerised CTGs instead. This has been added to the risk register and will be reviewed in 1 year.

June 2022

GIG CYMRU NHS WALES
Rhwydwaith Mamolaeth a Newyddenedigol Cymru
Wales Maternity and Neonatal Network

All Wales Maternity & Neonatal Network Guidelines

Altered Fetal Movements

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Original Publication Date:

Summary of reviews/amendments					
Version	**Date of Review**	**Reviewer name(s)**	**Completed action**	**Ratified on**	**New review date**
1.0	Replaces All Wales Reduced Fetal Movements 2016				September 2024

Documents to read alongside this guideline	

Contents:

1. Purpose and scope

This guideline is provided to advice clinicians on the management of women presenting with reduced fetal movements (RFM) during their pregnancy, both in the community and within secondary care settings, with the aim of standardising care across Wales. Whilst this guideline gives a generalised approach it is important to recognise that each woman's care should be individualised for her unique situation. This guideline replaces the All Wales Guideline Fetal Movements in Pregnancy 2016.

2. Background

- **Fetal movements should be felt by 24 weeks gestation**

Fetal movements are the parent's reassurance that all is well with their baby. They are first perceived between 16 and 24 weeks gestation, and can be described as kicks, rolls or flutters (1). The frequency of movements increases until approximately 32 weeks gestation, after which there is a plateau. Whilst movements are reduced during fetal sleep cycles, these rarely last more than 90 minutes (1). Maternal perception of fetal movements is subjective and affected by many factors including smoking, fetal position or maternal distraction. This makes robust trials difficult. Ultrasound suggests fetal movements are greatest in the evening, or when the mother is lying down, but correlation between maternal perception and ultrasound observation of movements vary greatly (1). However, data suggests that as much as 55% of women who experience a stillbirth describe a reduction in fetal movements prior to diagnosis of the stillbirth (1, 2), and thus is important in the endeavour to reduce stillbirth rates.
RFM will affect up to 15% of women during their pregnancy (3, 5). The majority (around 70%) will have normal pregnancy outcomes, but up to 30% of women will be identified with a small for gestational age baby and thus at higher risk of stillbirth (6).

The hypothesis is that hypoxia (acute or chronic) leads the fetus to conserve energy, with the subsequent reduction in movements being an adaptive mechanism to reduce oxygen requirements conserving oxygen for vital organs (4). The exception to this hypothesis is the rare situation of neuromuscular diseases, in which case the woman will never have felt fetal movements (1).

3. Information to women

- **Information about fetal movements should be given at booking and every subsequent visit. This should be written and verbal. Written in formation should be from a reputable source such as the Royal College of Obstetricians and Gynaecologists (RCOG)**
- **Women should be given information on when and how to report concerns Women should NOT use home Doppler's.**

Information to women about monitoring fetal movements has been demonstrated to reduce stillbirth rates (5). Whilst many things can affect fetal movements the maternal concern should always be investigated. Information given should include the following.

3.1 At booking

Fetal movements are most commonly first felt between 16 and 20 weeks, and should be felt before 24 weeks, depending on parity, Body Mass Index (BMI) and placental site, and increase in frequency until 32 weeks. The fetus will go through periods of activity and rest or sleep, with more active periods tending to be in the afternoon and evening (1, 5).

3.2 Beyond 24 weeks gestation at every visit

Page 30 in the All Wales Maternity records has information to use for discussions, and both verbal and written information should be given.

If no fetal movements have been felt by 24 weeks gestation consideration should be given to further investigations for neuromuscular conditions, and referral to fetal medicine should be advised.

Fetal movements increase in frequency up to 32 weeks and then plateau. The number of movements do not reduce near term. Any concerns about a reduction in fetal movements should be reported to maternity assessment services as soon as possible to allow timely assessment, and not to wait. Smoking can be associated with reduced fetal movements so should be abstained during this period (1, 5). Counting for a certain number of kicks is NOT advised, and indeed can be associated with increased maternal anxiety. Instead the woman should be looking for what is the normal pattern for this pregnancy (1). Women should NOT use home Doppler equipment to identify the fetal heart if they are concerned about a reduction fetal movements, but report to maternity assessment services where trained professionals can make an assessment.

4. Managing Reduced Fetal Movements

It is difficult to find high quality research into management of reduced fetal movements (1) and so this guideline is the consensus of the Wales Maternity Network team with representatives from all maternity units across Wales as well as reviewing practice across England (6). A summarising flow chart, and suggested preform for assessment of women presenting with reduced fetal movements is at the end of this guideline. As fetal movements are not reliable in earlier gestations, concerns about a reduction in fetal movement is only considered after the woman has had the routine fetal anomaly ultrasound scan.

4.1 Following Routine Fetal Anomaly ultrasound scan but under 24 weeks gestation

Following routine anomaly scan but under 24 weeks auscultation of fetal heart by community midwife (CMW) is recommended.

Community team should attend to the mother in order to auscultate the fetal heart. Assessment for risk factors for stillbirth as per table 1 below should take place to ensure appropriate follow up is in place, e.g. if serial growth scans are required. As the fetus is below the commonly accepted age of viability the aim should be to reassure the mother. An ultrasound scan should be requested for the same day if a fetal heart beat cannot be auscultated.

4.2 24 to 26 weeks gestation

- **24-26 weeks refer to maternity assessment unit**

The woman should be advised to attend the maternity assessment unit for an assessment. Auscultation of the fetal heart beat along with a full antenatal examination including maternal heart rate, blood pressure and temperature, and a review for any high risk factors should be considered the mainstay. If fetal movements have NEVER been felt by this stage then discuss with fetal medicine unit about scanning for possible neuromuscular problems in the baby (unless already under the care of fetal medicine). Again assessment for risk factors for still birth should take place to ensure appropriate follow up is arranged, and provide advice on lifestyle factors that reduce the risk of stillbirth.

4.3 26+1 to 28 weeks gestation

- **26-28 weeks refer to maternity assessment unit for antenatal check and CTG**

It becomes more imperative to do a full antenatal check as gestation increases (blood pressure, temperature, urinalysis, abdominal palpation and fundal height (as appropriate)). Risk factors for stillbirth should be elicited, and a thorough history taken from the mother. Maternal observations (including blood pressure, pulse, temperature and urinalysis) should be taken, and the standardised fundal height (SFH) measured and plotted on the customised growth chart (unless done within the last 2 weeks or not suitable for fundal height measurement e.g. twins, raised BMI). Manufactures advise that CardioTocoGraph (CTG) should not be carried out before 28 weeks. However most units consider it appropriate to undertake a computerised CTG from 26 weeks. Below 28 weeks interpretation of the CTG can be uncertain and outcomes for the fetus unpredictable for actions taken on the basis of a CTG, and this should be discussed with the woman. Where a CTG is not able to be performed to a satisfactory quality then a senior obstetric opinion should be sought, as other methods of fetal assessment may be inconclusive. Computerised CTG's should be the antenatal CTG of choice as it is associated with reduced perinatal mortality (7) compared to non-computerised.

4.4 28+1 to 37 weeks gestation

- **28-37 weeks refer to maternity assessment unit for antenatal check and CTG**

As in 4.3 a full antenatal check should be undertaken, and a thorough history including risk factors for stillbirth. Maternal observations should be documented including urinalysis. Fundal height should be measured and plotted on the customised growth chart unless done within the last 2 weeks, had a planned serial scan within last 2 weeks, or not suitable for fundal height (twins, raised BMI, large fibroids). A CTG should be undertaken, and so women should attend the local maternity assessment unit for assessment. Computerised CTG should be the antenatal CTG of choice as it is associated with reduced perinatal mortality (7) compared to non-computerised.

4.5 37+1 weeks gestation and beyond

- **37 weeks and beyond refer to maternity assessment unit for antenatal check and CTG.**
- **Consider cervical assessment and discuss Induction of labour beyond 39 weeks.**
- **Induction of labour under 39 weeks should only be undertaken in discussion with a consultant**

As in 4.3 and 4.4 women should be seen in the local maternity assessment centre, with a full antenatal check and assessment of risk factors for stillbirth. Maternal observations, fundal height and CTG should be undertaken (computerised CTG should be the antenatal CTG of choice as it is associated with reduced perinatal mortality (7) compared to noncomputerised). In addition it MAY be appropriate to consider a vaginal examination to assess favourability for induction of labour, and a membrane sweep following discussion with the woman. Induction of labour after 39 weeks has been associated with reduction in perinatal mortality without increases in instrumental delivery or caesarean section. Induction of labour is associated with increased likelihood of admission to neonatal units (odds ratio 1.2) and possibly an increase in shoulder dystocia (7, 8). There should also be a discussion about the potential psychological effects of induction of labour. These risks should be discussed with the woman and an individualised plan made. In the absence of any other indication, Induction of labour can be offered from 39 weeks. Any decision to offer induction of labour before 39 weeks should be a consultant decision based on individual risk factors and cervical assessment, and should include a discussion with the woman around the lack of evidence showing reduced mortality, and higher intervention rates as well as transient tachypnoea of the newborn and neonatal admission to special care / intensive care units.

Risk Factor	Odds Ratio of stillbirth
Previous Obstetric history – stillbirth>24/40, Previous SGA	2.1
Smoking	1.8

Medical Factors – diabetes, hypertension	3.0
Second presentation within 21 days of altered movements	5.7
Fundal height <10th centile, known slowing of growth velocity or drop in fundal height measurement	19.5
Unable to measure fundal height (twins, BMI >35, large fibroids)	n/a

Table 1: Significant risk factors for stillbirth and indicators for ultrasound assessment. (6)

5. Recurrent reduced fetal movements.

Recurrent reduced fetal movements is 2 or more presentations within 21 days.

There is much debate about the definition of recurrent reduced fetal movements, with conflicting evidence between studies showing more than one presentation of reduced fetal movements being associated with an increased risk of stillbirth, growth restriction and preterm birth compared to a single episode (1) and others showing no difference (9). Physiologically a baby with hypoxia will continue to conserve oxygen by ongoing reduction in fetal movements. Therefore it is appropriate to consider a recurrent episode of reduced fetal movements to only be of significance if occurring within a period of time, and areas of England have chosen a period of 21 days as a consensus (6). Management should follow guidance in sections 4 and 6, but there would be a stronger argument to consider induction of labour when presenting beyond 37 weeks in these women in discussion with a senior obstetrician.

6. Ultrasound assessment

- **Ultrasound should be undertaken for indications as per Table 1**

The AFFIRM trial assessed the use of ultrasound (in particular amniotic fluid volume and umbilical artery Doppler) when presenting with reduced fetal movements and showed no change in stillbirth rates, and indeed an increase in induction of labour, caesarean section, and time on neonatal unit (10). However around 30% of women presenting with reduced fetal movements have a small for gestational age baby, so there needs to be some further assessment, within the confines of limited sonography capacity. It is therefore advised that women with recurrent reduced fetal movements (as defined above as 2 episodes within 21 days) or significant risk factors (as listed in table 1) for stillbirth should have an ultrasound assessment for growth, liquor volume and Doppler (if not done in the preceding 2 weeks), within 24 hours (or next working day at weekends and bank holidays). Any concerns identified on ultrasound should be managed according to the issue identified. Whilst awaiting scan it is important to emphasise the need to report further concerns. For some very high risk women

it may be appropriate to consider daily (or more frequent) CTGs until the scan can be undertaken.

7. Intrapartum Management

- **If assessments are normal and movements return to normal the woman can deliver in the midwifery settings if otherwise appropriate to do so.**

Where women are otherwise suitable for midwifery led intrapartum care, attendance and investigation of reduced fetal movements would not prohibit this as long as the investigations are normal, fetal movements are normal in the 24 hours prior to labour and they fulfil the criteria for the All Wales Clinical Pathway for Normal Labour. Otherwise women should be advised to labour on the obstetric labour ward with continuous monitoring.

Management of Reduced Fetal Movements

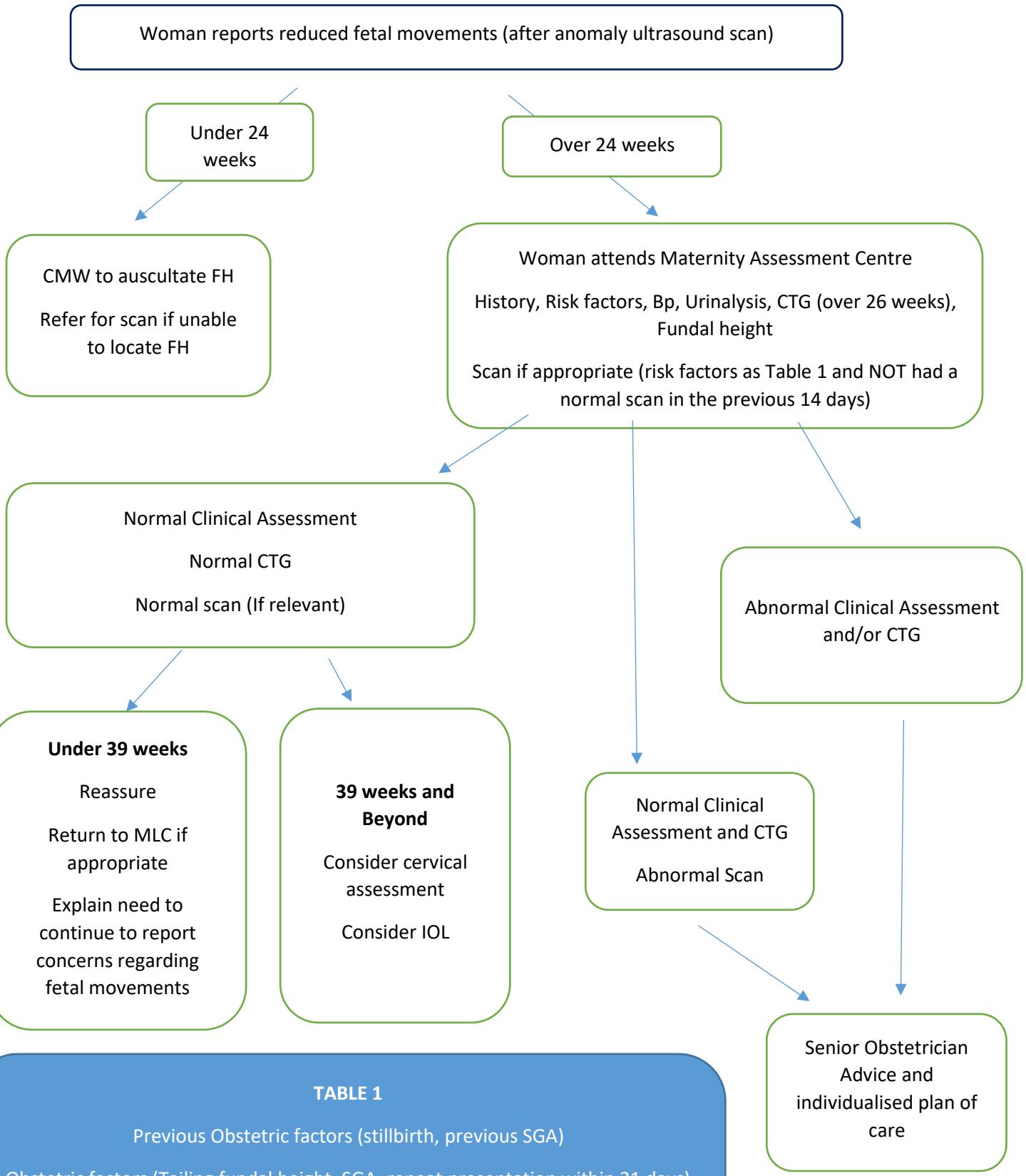

TABLE 1

Previous Obstetric factors (stillbirth, previous SGA)

Obstetric factors (Tailing fundal height, SGA, repeat presentation within 21 days)

Medical Factors (Diabetes, hypertension)

Social Factors (Smoking, drug use)

Technical factors (BMI>35, Fibroids >5cm, Twins)

Assessment of Reduced Fetal Movements

Date

Gestation Parity _____ _____	Episode of RFM _____	If < 26 weeks for auscultation Fetal Heart Rate_____ Maternal Heart Rate _____
History		
Assessment (measure SFH if no measurement of fetal growth in past 14 days and plot on GROW chart) SFH Lie Presentation Engagement CTG Classification Normal / Abnormal Reassured by fetal movements after assessment? Yes / No		
Risk Factors (Tick all that apply) Presented with reduced fetal movements within last 21 days Fundal height under 10th Centile Reduction in Fundal height trajectory Unable to measure SFH (BMI >35, multiple pregnancy, fibroids >5cm diameter) Previous SGA (under 10th centile for gestation) Previous stillbirth beyond 24 weeks gestation Smoker Hypertension (essential or pregnancy related) Diabetes (pre-existing or gestational) Other (please state)		
Management beyond 26 weeks		

Assessment of mother normal and CTG normal with NO risk Factors	**Assessment of mother normal and CTG normal with 1 or more risk factors**	**Assessment of mother AND/OR CTG abnormal (**other than SFH measurements**)**
Reassure mother Advise continue to monitor and report further concerns Consider IOL If beyond 39 weeks gestation in the absence of any other concerns.	Arrange ultrasound within 1 working day (unless had normal scan in last 14 days) Advise continue to monitor and report further concerns Consider IOL (timing dependent on risk factors and ultrasound result – seek senior opinion)	**URGENT REVIEW BY SENIOR OBSTETRICIAN** If no FM by 24 weeks refer to FMM unit

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