Worcestershire Acute Hospitals NHS Trust

Management of Reduced Fetal Movements (RFM)

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Key Amendments

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June 2021	Amendments to guidance to bring in line with SBLCBv2	

Contents

1.0 Introduction

Maternal perception of fetal movement is one of the first signs of fetal life and is regarded as a manifestation of fetal wellbeing. Perceived fetal movements are defined as the maternal sensation of any discrete kick, flutter, swish or roll. Such fetal activity provides an indication of the integrity of the central nervous and musculoskeletal systems.

The normal fetus is active and capable of physical movement, and goes through periods of both rest and sleep. A significant reduction or sudden alteration in fetal movement is a potentially important clinical sign. Studies of fetal physiology have demonstrated an association between RFM and poor perinatal outcome. The majority of women (55%) experiencing a stillbirth perceived a reduction in fetal movements prior to diagnosis.

This guideline concerns management of women who present with reduced fetal movements in both the community and hospital settings.

2.0 Definitions

RFM Reduced Fetal Movements - a significant reduction or sudden alteration in the normal pattern of fetal movements.

IOL	Induction of Labour
CTG	Cardiotocograph
Dawes Redman	Computerised CTG analysis
SBLCBv2	Saving Babies Lives Care Bundle version 2
SGA	Small for Gestational Age
FGR	Fetal Growth Restriction
SB	Stillbirth
MLU	Midwifery-Led Unit
SFH	Symphysis- Fundal Height
USS	Ultrasound Scan

3.0 Fetal Movements during Pregnancy

From 18–20 weeks of gestation, most pregnant women become aware of fetal activity, although some multiparous women may perceive fetal movements as early as 16 weeks gestation and some nulliparous women may perceive movement much later than 20 weeks gestation.

The pattern of spontaneous movements tends to increase until the 32nd week of pregnancy. From this stage of pregnancy, the frequency of fetal movements plateaus until the onset of labour, but does NOT reduce. However, the type of characteristic of fetal movement may change as pregnancy advances in the third trimester; women should be advised of this and be cautioned against advice found on the internet that suggests movements reduce at term.

From as early as 20 weeks of gestation, fetal movements show diurnal changes. The afternoon and evening periods are periods of peak activity. Fetal movements are commonly absent during fetal 'sleep' cycles, which occur regularly throughout the day and night, usually lasting for 20–40 minutes. These sleep cycles rarely exceed 90 minutes in the normal, healthy fetus.

4.0 Factors that may influence maternal perception of fetal movements

Maternal Factors:

- Raised BMI (Body Mass Index) >35
- Cigarette smoking
- Sedating drugs that cross placenta, e.g. alcohol, benzodiazepines, methadone and other opioids can have a transient effect on fetal movements
- Low glucose concentration in maternal blood
- Nulliparity

Fetal factors:

- Anterior placenta (It must be noted however that if there is a change in fetal movements after previous normal movements this should not be attributed to an anterior placenta)
- Fetal position with fetal spine laying anteriorly
- Chronic placental insufficiency
- The administration of corticosteroids to enhance fetal lung maturation has been reported to decrease fetal movements and fetal heart rate variability detected by CTG over the 2 days following administration.
- Major fetal malformations.
- Polyhydramnios
- Fetal sleep
- Acute or chronic fetomaternal haemorrhage

5.0 Risk factors for stillbirth/Fetal Growth Restriction (FGR)

Maternal:

- Previous SGA/FGR
- Poor obstetric history
- Multiple non-attendances for AN Care.
- Substance misuse
- Smoker at any gestation
- BMI >35
- Medical conditions: hypertension, diabetes, Cholestasis and chronic renal disease, SLE
- Advanced maternal age (<17 yrs or >40 yrs)
- Significant bleeding
- Recurrent reduced fetal movements – ≥2 episodes within 3 weeks

Fetal factors:

- FGR < 3rd centile or SGA(< 10th centile on customised growth chart)
- Fetal abnormality
- Low PAPP-A (< 0.415 MoM)
- Echogenic bowel identified by scan
  Raised uterine artery Doppler PI/notching (second trimester scan only)

During pregnancy the community midwife/hospital healthcare workers (midwives/ doctors/ HCAs etc) must advise women at all opportunities to be aware of their baby's individual pattern of movements and if they are concerned about a reduction or change in the pattern of fetal movements, they should contact their CMW, DAU or Triage at the maternity unit they are booked at to have their baby (acknowledging that some women cared for by WRH Community teams are intending to give birth elsewhere). **See 7.1 and 7.2 for further information.**

Women who are concerned about RFM must be advised not to wait until the next day for assessment of fetal wellbeing.

If a woman calls with ABSENT fetal movements, she should be advised to attend Maternity Triage immediately at WRH. She should not be advised to attend her local DAU.

6.0 Recurrent RFM

There is no nationally agreed definition of recurrent episodes of reduced fetal movements. For the purpose of this guideline, recurrent reduced fetal movements is considered to be 2 or more episodes of RFM occurring within a 21 day period after 28 weeks' .

7.0 Management of RFM

Women presenting with RFM will be cared for in accordance with the Saving Babies Lives Care Bundle v2. The assessment, advice and management plan should be documented using the BSOTS Triage system on Badgernet, and the reason for attendance should be entered as 'Reduced Fetal Movements'. This means that the RFM checklist will then be available for completion. The only exception for this is women who present under 24 weeks for whom it will not open, but the principles should still be followed.

All women regardless of gestation must have a thorough assessment and the following steps followed. The appropriate monitoring pathway should be followed after the initial assessment, based on their gestation.

7.1 Initial Advice to Women Reporting RFM (ASSESS)

The initial goal of antenatal fetal surveillance in cases of RFM is to exclude fetal death. After this, the aim is to exclude fetal compromise and to identify pregnancies at risk of adverse pregnancy outcome while avoiding unnecessary interventions.

Where a woman contacts her CMW or Triage reporting an altered perception of fetal movements she must be asked to attend either DAU local to her (in working hours) or Maternity Triage immediately without question.

For women less than 28 weeks gestation, if possible, the woman should have an appointment made to see her CMW within 2 hours. If this is not possible, she must be advised to either attend her local DAU or Maternity Triage.

Care should be taken to ensure that the woman does not feel dismissed, judged or made to feel a 'nuisance' when she calls with this concern. The giving of an appointment time for later in the day must not happen. She should NOT be advised to monitor the situation at home/drink cold water/lie down/eat something or any other advice.

7.2 Management of Women Presenting with RFM (ACT & ADVISE)

History taking is one of the most important factors to determine management of RFM:

- A history of the nature and duration of this episode of RFM should be taken
- A history of any previous episodes of RFM should be taken and noted (within 3 weeks counts as recurrent)
- A review of the presence of other risk factors associated with an increased risk of stillbirth/poor pregnancy outcome, as detailed in section 5.0 above.

Regardless of gestation and location of assessent, when a woman presents with reduced fetal movements a full clinical assessment must be undertaken:

- Blood pressure
- Temperature
- Maternal heart rate
- Urinalysis
- Abdominal palpation & SFH (if appropriate) – **CHECK growth chart on Badgernet even if not measuring SFH**
- Fetal heart rate auscultation appropriate to gestation

Less than 24 weeks gestation

- The woman should ideally be reviewed by CMW (within 2 hours) if possible/appropriate. If not, the woman must be referred to a DAU local to her or Maternity Triage
- If the woman attends DAU or Maternity Triage, she must be seen and a full initial assessment completed within 15mins as per BSOTS guideline, including auscultation of the fetal heart with a Pinard stethoscope or sonicaid for 1 min
- **If fetal movements have never been felt by 24 weeks of gestation**, please refer to Fetal Medicine department to investigate evidence of fetal neuromuscular conditions. If all well, reassure and resume normal AN care; in this instance the woman must still be advised to seek further assessment/advice if she has future concerns.

24 – 27+6 weeks gestation

- The woman can be reviewed by CMW (within 2 hours) if possible/appropriate. If not, the woman must be referred to a DAU local to her or Maternity Triage
- The woman must be seen and a full initial assessment should be completed within 15 minutes of arriving in Triage as per the BSOTS policy and auscultation of the fetal heart with either a Pinard stethoscope or sonicaid for 1 min
- If appropriate (based on SGA/FGR guideline), undertake SFH and enter value on growth chart on BadgerNet and review to assess ? FGR/SGA.
- If there is a clinical suspicion of SGA an ultrasound assessment should ideally be performed within 24 hours.

- **A CTG must not be performed unless on the specific instruction of a Consultant Obstetrician.**
- On discharge the woman must be advised to re-attend if she has any further concerns with reduced fetal movements.

28 – 38+6 weeks gestation

- The woman must be seen and a full initial assessment should be completed within 15 minutes of arriving in Triage as per the BSOTS policy and auscultation of the fetal heart with either a Pinnard or sonicaid for 1 min
- If appropriate (based on SGA/FGR guideline), perform SFH and enter value on growth chart on BadgerNet and review to assess ? FGR/SGA.
- If there is a clinical suspicion of SGA an ultrasound assessment should ideally be performed within 24 hours.
- Commence a computerised CTG using the Dawes Redman setting – **do not use this assessment if labour is suspected; perform a normal CTG and document CTG review as per normal practice.**
- If CTG is normal and Dawes Redman criteria have been met and there are no additional risk factors (see above) or evidence of SGA and it is **the first episode of RFM** then reassure the woman and give appropriate advice regarding monitoring fetal movements and to re-present if there are further concerns regarding RFM.
- **In the presence of additional risk factors, the absence of a computerised CTG OR if this is the 2nd or more episode of RFM (after 24 weeks gestation and within 3 weeks of a previous episode)** the woman MUST be reviewed by the on call team and an ultrasound assessment for fetal growth and liquor volume ideally performed within 24 hours.
- SBLCBv2 states there is no requirement to scan if one has been performed within the previous 2 weeks, however, each case should be assessed on an individual basis.
- All women with ongoing RFM, despite a normal CTG/normal investigations, MUST be reviewed by the on call team to include assessment of the ultrasound scan.
- If after assessment the woman remains unhappy with fetal movements she should either be offered admission for twice daily CTGs or given the option of daily review in her local Day Assessment Unit for daily CTG monitoring. For those women with no fetal movements admission MUST be offered as the preffered option.
- Women re-presenting with multiple episodes of RFM MUST have Consultant Obstetrician input, follow up in an antenatal clinic and an agreed plan of care put in place to advance the pregnancy to the point where an IOL can be safely offered after 39 weeks gestation**.** The risks and benefits of IOL, along with the process itself, including the possibility of delays, must be discussed in full with the woman by the medical team. An information leaflet should be provided for the woman to take away or added to her Badgernet app.

- On discharge the woman should be advised to re-attend if she has any further concerns with reduced fetal movements at any time; she must be informed our priority is her and her baby's wellbeing and she should be advised we are always willing to review and reassure.

8.0 Management Strategies and Delivery

There is a lack of Randomised Controlled Trials to guide practice regarding the management of RFM; therefore the majority of guidance is by consensus opinion.

The AFFIRM study found that standardised management for RFM including USS for fetal biometry, liquor volume and umbilical artery doppler and planned delivery (IOL or LSCS) for women with recurrent RFM after 37 weeks showed increased obstetric intervention and admission to neonatal unit, but did not reduce perinatal mortality (Norman JE et al. 2018).

8.1 Prior to 39 weeks gestation

- Induction of labour or operative delivery is associated with small increase in fetal morbidity. Therefore a decision for delivery needs to be based upon evidence of fetal compromise (eg below 10th centile, oligohydramnios) or other concerns (hypertension or diabetes).

- Therefore induction of labour for RFM alone is not recommended prior to 39 weeks as per SBLv2.

8.2 After 39 weeks gestation

- Induction of labour is NOT associated with increased risk of caesarean section, instrumental delivery, fetal morbidity or admission to the neonatal unit. If the mother has any episode of RFM (either first or subsequent) at or after 39 weeks, she should be assessesd as per the guidance above (7.0) and IOL offered if vaginal delivery is appropriate and if not a caesarean section planned.

- If the woman agrees to IOL at any point, this should be arranged **within 24 hours** according to the IOL guideline.

- If IOL is delayed over 24hours, refer to the pathway for managing delayed IOL. An individualised management plan must be made by a senior obstetrician in conjunction and agreement with the woman.
- The risks and benefits of IOL, along with the process itself including the possibility of delays, must be discussed in full with the woman by the medical team. An information leaflet should be provided for the woman to take away (or added to her Badgernet app).
- If a woman is booked for IOL and returns home she must be made aware of the importance of contacting Triage immediately if she has any further concerns and must be advised to attend Triage for immediate assessment.

- If the woman is undecided regarding IOL, arrangements must be made to review again at a later time after she has had the opportunity for discussion with her partner/family or friends. This further discussion should be arranged to take place with a senior member of the obstetric team at an agreed time, and it should be an opportunity for further discussion and to ask further questions. This must be documented in Badgernet in the management plan section, and the 223 bleep holder informed so they can ensure oversight from the senior midwifery team.

- If the woman chooses to decline IOL, refer to the IOL guideline for further details regarding ongoing management. This must be documented in Badgernet in the management plan section, and the 223 bleep holder informed so they can ensure oversight from the senior midwifery team.

N.B. If at any point during assessment for RFM (at any gestation), abnormal results are found, prompt action must be taken.

9.0 Management of RFM at the Onset of Labour

All women presenting to our maternity unit, or at home in labour, should be asked about their fetal movements **prior to labour** as part of the initial assessment of the fetus's wellbeing. If these are normal, she has no concerns and she is low risk then she is suitable for midwifery led care or a homebirth.

If a woman expresses concern about fetal movements prior to labour and **it is their first episode,** following a full clinical examination (full set of observations, urinalysis, abdominal palpation and auscultation of the fetal heart & SFH) the woman must be transferred to Triage for CTG and medical review.

If CTG is normal the woman can be transferred back to midwifery led care for delivery in the planned midwifery unit or homebirth unless other new concerns have been raised. However, it should be noted in the management plan that she had RFM to ensure appropriate risk assessments can be made as labour advances.

If in established labour, vaginal examination should always be performed prior to transfer to Triage to avoid delivery during transfer/in triage and if birth is imminent and FH is normal on auscultation the priority should be given to safely deliver the baby.

If the woman presents in labour for midwifery led care at home or in MLU, with their second or more episode of RFM, it should be discussed with the woman that it is advised they would be classed as high risk and should be transferred to Consultant led care and be advised continuous fetal monitoring is indicated in labour.

Women who are already high risk, and have been advised to give birth on Delivery Suite should also be asked about fetal movements prior to labour onset and the outcome documented. While these women will, in the main, be advised to have continuous monitoring in labour, the presence of RFM prior to labour is an additional risk factor to consider in labour and must be

documented on the management plan to ensure a comprehensive review in labour can be made.

Women who have been advised to give birth on Delivery Suite as they were classed as high risk but would otherwise be suitable for intermittent auscultation in labour (admittedly few, but possible), should be advised if they have RFM prior to labour, continuous monitoring is now advised as per guidance above.

10.0 Management of Labour in 'low risk women' seen antenatally with RFM

Where women under MLC have been reviewed with 1 episode of RFM during their pregnancy which has resolved, and they have no other concerns or risk factors, birth in a low risk setting should be supported.

For those women who have been seen with recurrent episodes of RFM during their pregnancy the rationale for hospital birth on Delivery Suite with continuous fetal monitoring must be discussed in clinic. However, if the woman decides to deliver at home or in a MLU this choice should be respected and a full and detailed discussion regarding risks and benefits, including a management plan, must be completed by the medical team in conjunction with the woman and documented on Badgernet.

11.0 Communication and Documentation

The information leaflet designed by NHS England should be discussed with the woman at her antenatal appointments, and the woman should be shown where this is on her BadgerNet app. The woman should be clear about what constitutes normal fetal movements and what to do if she has concerns. This advice must be reiterated at every additional contact, along with the contact numbers to call.

It is important that women who present with RFM are given the time to discuss their anxieties.

Our stance should be if the woman is concerned enough to call, she should be invited to attend for assessment and always reassured this is the right action to take.

If there is a high index of suspicion that the woman is presenting for reasons other than RFM; spurious conditions with no clinical confirmation she should be questioned about her safety at home. There is evidence to suggest that women who are living with domestic violence have these types of presentation patterns to maternity care.

When the consultation is complete a full account should be documented in the woman's Badgernet records. RFM must be documented under the 'Assessment Unit' section on BadgerNet as a reason for attending. This will then open the RFM checklist in line with SBLCBv2 This will create a key event which will enable clinicians to accurately assess risk at future appointments. Attendance with RFM must also be entered into the management plan.

The woman should be clear about what advice she is given for future management and asked to ensure she informs clinicians when asked about risk factors, if she has presented with RFM at any gestation in her pregnancy (and any additional risk factors).

References

NHS England (2016) Saving Babies Lives – a care bundle for reducing stillbirth. NHS England.

RCOG (2011) Green-top Guideline No. 57 Reduced Fetal Movements Royal College of Obstetricians and Gynaecologist

Obstetric Pathways
WAHT-TP-094

NHS Worcestershire Acute Hospitals

Quick reference sheet for Reduced Fetal Movements

Maternal Risk Factors (RF)

- Raised BMI
- Cigarette smoking
- Sedating drugs that cross placenta
- Low glucose concentration in maternal blood
- Anterior placenta
- Fetal position with fetal spine laying anteriorly might influence maternal perception
- Chronic placental insufficiency
- Administration of corticosteroids
- Major fetal malformations.
- Polyhydramnios
- Fetal sleep
- Acute or chronic fetomaternal haemorrhage

At presentation

- Take history/identify RF (Table 1)
- Maternal Obs
- Palpate, measure and plot SFH on customized growth chart (if ≥ 26w and not measured for 2 wks)

Risk Factors (RF) for FGR

- Previous SGA/FGR
- Multiple non-attendances for AN Care.
- Substance misuse
- Smoker at any gestation
- BMI >35
- Medical conditions: hypertension, diabetes, Cholestasis and chronic renal disease, SLE
- Advanced maternal age (<18 yrs or >40 yrs)
- Significant bleeding
- SGA(< 10th centile on customised growth chart)
- Fetal abnormality
- Low PAPP-A (< 0.415 MoM)
- Echogenic bowel identified by scan.

24 weeks - ≤ 27+6

- Review by CMW (within 2 hrs) if possible/appropriate. If not refer to DAU/Triage
- Auscultate with Doppler for 1 min
- If FM NEVER felt by 24 weeks refer to fetal medicine. If all well reassure and resume normal AN care

28+0 - 38+6

Perform Computerised CTG

1st episode of RFM

~ Normal CTG and no other RF (Table 1) - resume planned AN care
~ If abnormal CTG refer to senior obstetrician urgently
~ If RF for stillbirth or FGR present or no computerised CTG (unless in labour) perform USS*

2nd episode of RFM within 21 days

~ Arrange USS within 24hrs and review by senior obstetrician (If USS within 24 hrs not possible, arrange additional CTG's until USS performed)
~ Refer to cons led care for serial growth scans
~If abnormalities identified on investigations women should be reviewed and an individualised management plan made

For those with continued RFM after assessment please see guideline for recommendations on management

39+ weeks

- Full assessment of woman and offer stretch and sweep
- Perform CTG
- Offer IOL with a standardised discussion regarding risks and benefits and book within 24 hours
- If IOL delayed over 24hours, refer to pathway for managing delayed IOL
- If IOL delayed and no USS within last 2 weeks, offer scan.
- In the event of a delay, an individualised management plan must be made by a senior obstetrician in conjunction with the woman

Recurrent RFM (2 or more episodes in a 21 day period after 28/40)

~ Offer serial USS: 2 weekly Growth/LV and Doppler if ongoing RFM and ensure referred to consultant clinic
~ Offer IOL after 39 weeks (if no RF – Table 1) and after discussion with senior obstetrician
~ For those with risk factors consider IOL before 39 weeks after fully counselling the woman on the risks and benefits and after discussing with senior obstetrician

If patient prefers not to have IOL

~Offer cervical assessment +/- sweep
~Arrange USS * within 24hrs
~If scan normal offer - twice weekly CTG and weekly USS (LV and Doppler)
~ Offer IOL at any time if FM remains reduced

*For fetal biometry, LV and doppler (if not done within the preceding 14 days)