

Assessment of Fetal Growth

Unit / Trust: _____

1. INTRODUCTION

The aim of this guideline template is to outline the methods used to assess fetal growth and the referral pathways utilising customised antenatal growth charts.

2. SCOPE

This guideline is relevant to all healthcare professionals involved in the care of pregnant women including Midwives, General Practitioners, Obstetricians and Sonographers. This guideline addresses

- use and production of a customised growth chart
- when and how to measure fundal height
- when to refer to Ultrasound for a growth scan

3. DEFINITIONS

BMI	Body mass index
Centile lines	The lines of growth on the customised growth chart are estimated fetal weight centile lines, 10 th , 50 th and 90 th .
EDD	Estimated date of delivery
EFW	Estimated Fetal Weight
FH	Fundal Height
OGTT	Oral Glucose Tolerance Test
Sonographer	Practitioner qualified to perform growth scans

4. ROLES AND RESPONSIBILITIES

- To generate customised growth charts:

**Add here who will be responsible locally

- To undertake fundal height measurements and plot on customised charts:

All ante natal care providers (midwives, obstetricians, GP's)

- To measure fetal biometry, calculate EFW and plot on customised charts:

Sonographers

5. CLINICAL CONTENT

Customised growth charts

The charts are used to plot both FH measurements obtained during clinical examination and EFW following an ultrasound examination. They are customised to each individual taking into account the height, weight, ethnicity, parity of the woman. Birthweights of previous children can be inputted to identify previous problems with growth, but this does not affect the centiles produced.

Chart production

Each woman will have a customised growth chart printed following her dating scan. The EDD entered into the software will be the one calculated by the dating ultrasound scan. The chart will show the 10th, 50th and 90th centile lines. There is a box in the top left hand corner where her height, weight, ethnicity and parity are shown. A customised centile will be calculated for all previous children; if they were small for gestational age (SGA) or large for gestational age (LGA) this will also be highlighted. Mother's name, reference number and date of birth will appear above the chart.

The charts are very easy to produce and can be generated at any time during pregnancy. The software can be accessed in ****local department**** or via the Perinatal Institute website: www.gestation.net

Measuring fundal height (FH)

Women who are recognised as low risk and suitable for midwifery led care should have fundal height measurements undertaken as a primary screening test for fetal wellbeing. These should commence from 26- 28 weeks gestation.

The fundal height measurement should be performed with the mother in a semi-recumbent position, with an empty bladder and the uterus relaxed and non-contracting. It is recommended that the clinician uses both hands to perform an abdominal palpation, identifies the highest point of the uterine fundus then leaves one hand on the fundus. A non-elastic tape-measure, starting at zero, is placed on the uterine fundus – at the highest point (which may or may not be in the midline). The tape measure should then be drawn down to the top of the symphysis pubis (in the midline) and the number read in whole centimetres. To reduce the possibility of bias, the tape measure should be used with the cm side hidden, and the measurement should be taken once only. The result should be recorded in centimetres on the customised growth chart and the value plotted using a cross. The method for measuring FH is explained below the customised growth chart to support standardised practice.

The frequency of antenatal visits and FH measurements can be found in *****local Antenatal Care pathway*****.

Referral to Ultrasound

Indications for a growth scan are:

- First FH measurement below 10th centile at 26-28 weeks
- Static growth: no increase in sequential measurements
- Slow growth: curve not following slope of any curve on the chart
- Excessive growth: curve steeper than any curve on the chart

Note that a first measurement above the 90th centile is NOT an indication for a growth scan. A scan would however be indicated if there was clinical suspicion of polyhydramnios or there was excessive growth on subsequent measurements.

If the woman has a raised BMI (35+) then a referral should already have been made to a Consultant clinic. Serial scans would be indicated as degrees of error from fundal height measurements are increased with an increased BMI.

Requests for a growth scan should be made directly to the ****** department*** who will give an appointment within ****** days***. Arrangements for follow-up by the referrer should be made assuming the scan is normal. If there are concerns regarding the scan, the Sonographer will make the urgent referral to a consultant obstetrician. See Appendix 1

Serial growth scans for those at high risk of growth restriction

Some women will be at increased risk of developing fetal growth restriction because of risk factors in the current pregnancy, past medical history or past obstetric history. Women who fall into these categories will need referral to a Consultant. The Consultant-led team will arrange for serial scans every two –three weeks from 28 weeks until delivery. These women will **not** require fundal height measurements while such a serial scanning protocol is being followed.

Growth scan requests related to current pregnancy

- Concerns related to growth measurements, as listed above
- Clinical suspicion of oligohydramnios or polyhydramnios
- Known or suspected fetal anomaly
- Late booker (20+ weeks gestation)
- Substance misuse
- Maternal smoking ****any, or if > x No. per day**
- Multiple pregnancies:
 - ***In accordance with local multiple pregnancy protocol***

Growth scan requests related to obstetric history include:

- Previous birthweight(s) <10th customised centile
- Previous unexplained stillbirth

Growth scan requests related to maternal medical history include:

- Pre-existing Diabetes
- Chronic maternal disease
- Uterine fibroids 6+cm diameter
- BMI 35+
- ***Local variances***

Umbilical Artery Doppler to be performed if:

- EFW on or below 10th centile, or growth velocity has significantly reduced.
- Oligohydramnios i.e. AFI less than 5, single pocket less than 2cm.

Referral following a growth scan

These referrals will be made by the sonographer once the growth scan has been completed and the EFW plotted on the customised growth chart (with a circle).

If the EFW plots between the 10th and 90th centile and is following the centile curve, and the liquor volume is normal, the woman will be asked to attend her next antenatal appointment as planned (this should already have been confirmed with the woman by the referring carer).

If the EFW does not plot within the 10th and 90th centile or is not following a centile curve, or there are concerns regarding the liquor volume, then the following referrals should be made:

1. EFW above 90th centile (or significantly increased growth velocity)

- Refer to **** for OGTT within 1 week

*** will refer to either the Diabetic ANC or a Consultant clinic depending on result of OGTT.

2. EFW below 10th centile or reduced growth velocity, normal liquor volume, normal umbilical artery Doppler

- For obstetric review and repeat scan in 2 week

3. EFW below 10th centile or reduced growth velocity with oligohydramnios and/or abnormal umbilical artery Doppler (raised Resistance Index or absent or reversed end diastolic flow):

- For *immediate* obstetric review.

Following birth

Calculate birthweight centile using centile calculator software.
(The software can be downloaded from www.gestation.net)

- If <10th centile, for neonatologist review.

6. REFERENCES

Birthweight

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Fundal height

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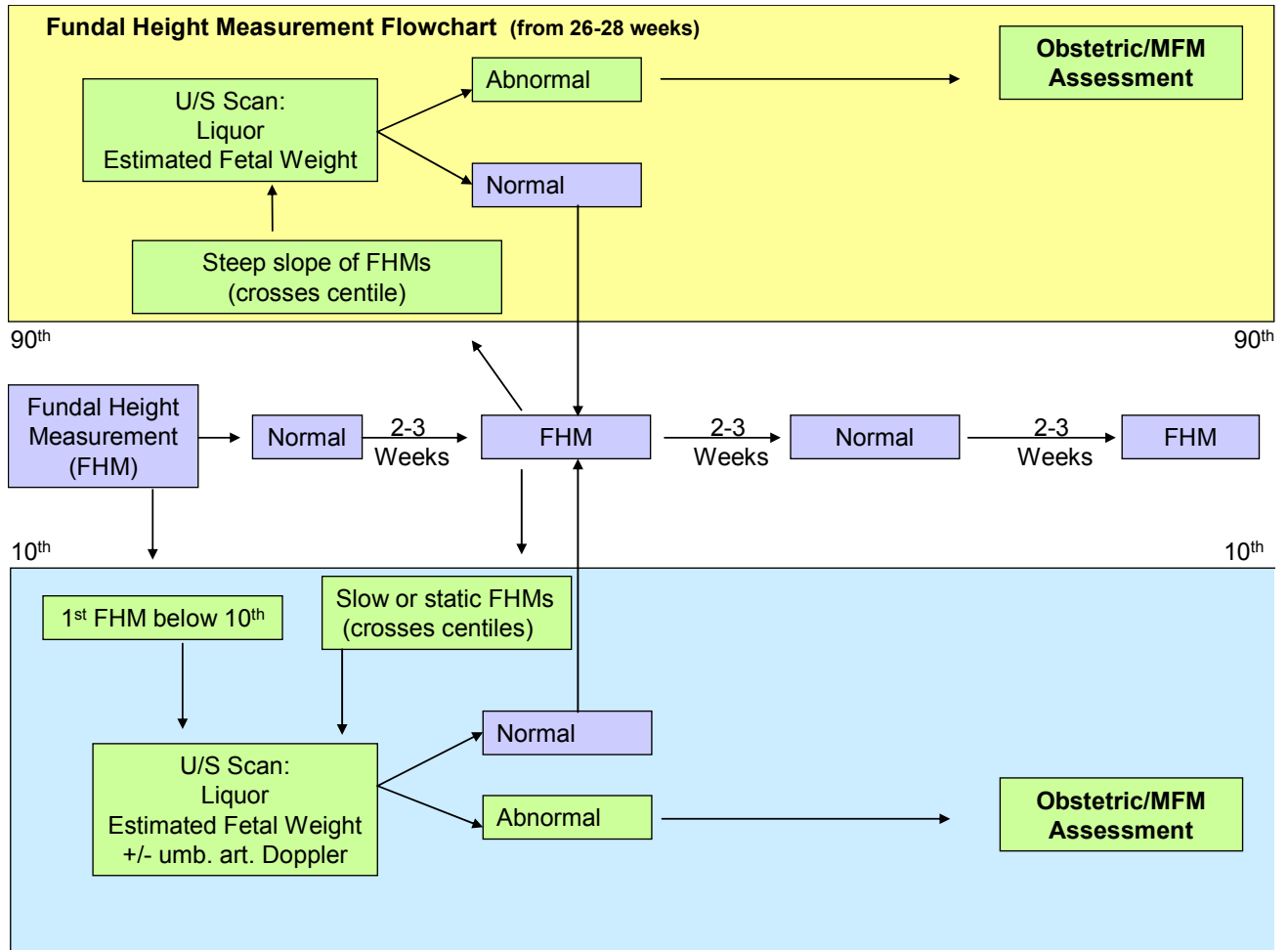
Additional references

Local Antenatal Care Pathway

Local Multiple Pregnancy Protocol

APPENDICES

Appendix 1



IMPLEMENTATION AND TRAINING

- *Initial training for at least 50% of multi-disciplinary team focusing on community midwives and all others those providing antenatal care including sonographers*
- *Identify local project lead*
- *Document how on-going training will be facilitated within the Trust*
- *Document how frequently staff will attend update sessions*

MONITORING AND REVIEW

- *Audit detection rates of IUGR*
- *Audit compliance of adherence to protocol*
- *Audit staff training*