Guideline for referral and management of Large For Gestational Age Fetuses or Polyhydramnios

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V8.0	25/09/2020	Practice Development Midwife, Obstetric Consultant	Flowchart removed.
V9.0	01/10/2023	Gemma Horsefield, Midwife Sonographer Victoria Maxey, Consultant Obstetrician	Update SBL 3/IT Changes/terminology updates/Referral for USS if GTT already indicated

Previous Titles for this Document:

Previous Title/Amalgamated Titles	Date Revised
None	Not applicable

Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

Consultation

The following were consulted during the development of this document:

- Midwife sonographer, Obstetric consultants**,** Ultra sonographers (USS dept), Community midwives.
- Maternity Guidelines Committee
- Neonatal consultants
- Fetal Medicine Consultants

Monitoring and Review of Procedural Document

The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry.

Relationship of this document to other procedural documents

This document is a guideline applicable to Norfolk and Norwich University Hospital Foundation Trust; please refer to local Trust's procedural documents for further guidance, as noted in Section 4.

Inclusivity

Within this document we use the terms women and birthing people / women, her/she. However, It is important to acknowledge that it is not only people who identify as women for whom it is necessary to access care. Maternity services and delivery of care must therefore be appropriate, inclusive and sensitive to the needs of those individuals whose gender does not identity does not align with the sex they were assigned at birth.

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1. Introduction

1.1. Rationale

To support staff working in maternity services to provide safe, effective, high-quality care for women suspected or known to have LFGA / Polyhydramnios in their pregnancy in line with NICE guidance.

1.2. Objective

The purpose of this clinical guideline is to provide guidance on the identification, monitoring and management of Babies >90th centile or increased Amniotic fluid (polyhydramnios).

1.3. Scope

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

- When to refer to ultrasound for scanning of large for gestational age fetuses
- Management of large for gestational age fetuses
- Management of Polyhydramnios

1.4. Glossary

The following terms and abbreviations have been used within this document:

Term	Definition
USS	Ultrasound Scan: To assess the uterus (different types of USS inc Dating scan, Anomaly scan and Growth scan)
LFGA	Large for Gestational Age. Estimated fetal weight >90th centile.
GROW	Gestational Related Optimal Weight. The software used and chart produced to evaluate the growth of the baby at any given point in the pregnancy after 24 week and before 42 weeks (provided by Perinatal Institute integrated within NNUH MIS -maternity information system)
PI	Perinatal Institute. The agency used to supply and support NNUH GAP – Growth Assessment Protocol
GAP	Growth Assessment Protocol. The trusts agreed protocol on which to base a standardised guidance to assess fetal growth and wellbeing (advisory as per SBL and PI)
E3	Euroking. The NNUH computerised maternity Information system.
EFW	Estimated Fetal Weight. Generation using ultrasound measurement of Head Circumference (HC), Abdominal Circumference (AC) and Femur Length (FL) (via Hadlock formula) or via AC and FL alone.
SFH	Standardised Fundal Height – a primary assessment tool – a measurement of the uterus and contents to assess the Growth and fetal wellbeing of low FGR risk mothers (2-3 weekly from 26-28 weeks gest or as per NICE AN schedule of care)
EDD	Estimated Date of Delivery. At the dating scan an EDD is

	generated based on crown rump length
BMI	Body Mass Index. An index / value derived from the mass and height of a person
AFI	Amniotic Fluid Index. USS Measurement of the deepest vertical pocket (DVP) of Amniotic fluid in the uterus. >8am classified as Polyhydramnios // <2cm classified as Oligohydramnios // 0cm Anigohydramnos.
LV	Liquor Volume
Polyhydramnios	Amniotic fluid in the uterus. >8cm classified as Polyhydramnios.
Percentile Or Centile - %	Shows the position of a measured parameter within a statistical distribution. Used to identify the position of an EFW or SFH. Between 10th-90th centile is considered a normal growth range. But can also be used to identify slowing or static growth by serial plotting.
ICE	Hospital Clinical System Integrated Client Environment (ICE) found on the intranet. Hospital Clinical System.
OGTT Oral Glucose Tolerance Test	**Obstetric Indications for GDM Testing** > 90th centile EFW on USS And or Polyhydramnios >8cm ***One of the results must be equal to, or above the thresholds stated belo make a diagnosis of GDM:*** *75g OGTT* / *mmol/l* ***Fasting Plasma Glucose*** / **≥ 5.6** ***2-hour Plasma Glucose*** / **≥ 7.8**
Sonographer	Practitioner qualified to perform growth scans.
Midwife Sonographer	Qualified as third trimester USS operator.
IOL	Induction of Labour
NICE	National Institute for Clinical Excellence
RCOG	Royal College of Obstetricians and Gynaecologists
GDM	Gestational Diabetes
FGR	Fetal growth restriction
SFH	Standardised Fundal Height
DVP	Deepest Vertical Pool
TOF	Tracheo-Oesophageal Fistula

2. Responsibilities

All NNUH Maternity Obstetric, Midwifery and sonographer staff members are required to remain up to date with the guidance included in this document.

3. Processes to be followed

3.1. Monitoring of fetal growth

Fetal growth surveillance is key to a mother and fetus' wellbeing in accordance with Saving Babies Lives, National Institute for Clinical Excellence (NICE) and the Royal College of Obstetricians and Gynaecologists (RCOG). All trusts are expected to implement a Growth Assessment Protocol to assess fetal growth. The diagnosis of a baby >90th centile or increased AFI can assist in the diagnosis and screening for Gestational Diabetes (GDM) and can aid shared decision making with the woman with regard to mode and timing of delivery.

Planned fetal growth surveillance in the third trimester is dependent on the Fetal growth restriction (FGR) risk assessment (TrustDocsID 17734) performed at booking and reassessed throughout the pregnancy.

- LOW FGR risk will commence Standardised Fundal Height (SFH) from 28 and continue every 2-3 weeks until delivery.
- MODERATE FGR risk will have a SFH performed at 28 weeks, followed by serial ultrasound scans at 32,36 and 40 weeks.
- HIGH FGR risk will commence ultrasound scans at 28 and these should continue 3-4 weekly until delivery.

3.2. Referral to ultrasound due to SFH measurement

- SFH plots > 90th centile or the suggestion of accelerated growth by SFH plots (trajectory is steeper than 90th centile on the customised GROW chart) may be indicative of polyhydramnios or a Large for Gestational Age (LFGA) baby.
- A first SFH measurement at 28/40 that plots above the 90th centile is an indication for a growth scan unless a POGTT is already planned due to a pre-existing indication for example such as BMI >30, family history or ethnicity and the patient is already established on a moderate FGR risk ultrasound pathway, meaning they will commence ultrasound surveillance from 32 weeks anyway.
- Following an ultrasound scan >90th centile and a normal POGTT, an ultrasound scan at 37- 38 weeks with an antenatal clinic appointment should be arranged to provide an opportunity for further fetal growth and liquor assessment and further discussion around mode and timing of delivery. Serial scans are not indicated in the interim if the patient is LOW risk for FGR.

3.3. Referral to ultrasound due to clinically suspected polyhydramnios

A history of sudden increase in fundal height with the clinical impression of polyhydramnios warrants ultrasound assessment. Polyhydramnios can result in excessive fetal mobility with fetal parts difficult to palpate. Refer to ultrasound (via ICE) and antenatal clinic at any gestation when polyhydramnios is suspected.

Polyhydramnios can be considered mild, moderate and severe. Whilst there is not an internationally/nationally adopted classification for polyhydramnios when using Deepest Vertical Pool (DVP) as the assessment of amniotic fluid volume, locally

agreed parameters help to clarify local management and referral triggers to neonatal teams and fetal medicine.

As per the Fetal Medicine Foundation for the purpose of this guideline polyhydramnios has been defined as:

- Mild Polyhydramnios 8.1 – 11.9cm
- Moderate Polyhydramnios 12 – 15.9cm
- Severe Polyhydramnios ≥ 16cm

If polyhydramnios is confirmed by USS, consider causes:

1. Idiopathic
2. Maternal (gestational diabetes)
3. Fetal (tracheo-oesophageal fistula (TOF) – may be absent stomach on ultrasound, although presence of stomach does not exclude diagnosis).

If a TOF is suspected due to polyhydramnios and an absent stomach bubble on growth ultrasound (after exclusion of Gestational Diabetes) a referral to fetal medicine should be made for further counselling and an individualised plan. TOF has around a 50% chance of other abnormalities and 5% association with aneuploidy.

For severe polyhydramnios it is appropriate to refer to fetal medicine for a further review. Women with significant maternal symptoms such as pain or shortness of breath may warrant amnio-drainage.

NICU alerts:

- Do not need to be sent for isolated mild polyhydramnios,
- Should be sent and an alert added to Euroking for moderate and severe polyhydramnios as defined above so that a neonatal plan can be made

3.4. Referral for Pregnancy Oral Glucose Tolerance Test following a Growth Scan

Indications from scan for a Pregnancy Oral Glucose Tolerance Test POGTT include:

- EFW above 90th centile or significantly increased growth velocity
- Polyhydramnios
- If a POGTT has been conducted in the previous 4 weeks, often the case for patients who have pre-existing risk factors for GDM this does not require repeating
- Guidance on who to perform POGTTs is contained within the Trust guideline for the management of diabetes from pre-conception to the postnatal period TrustDocs ID 19386
- POGTT should not be performed after 35+6 weeks gestation

3.5. Management of Fetal Macrosomia from 38 weeks

There is some evidence that macrosomic fetuses are at increased risk of shoulder dystocia. The NICE 2008 guideline for induction of labour does not recommend IOL

for fetal macrosomia but more recent evidence suggest that IOL may reduce the risk of shoulder dystocia, without increasing the risk of caesarian delivery (relative risk [RR] 0·32, 95% CI 0·15–0·71; p=0·004). The risks and benefits of IOL must be discussed with the woman.

Hence IOL at term can be offered for fetal macrosomia from the consultant ANC if the EFW on USS is above the 90th centile. Timing of this needs to be discussed with the woman and should include a discussion about the risk of shoulder dystocia at different fetal weights rather than simply centiles. An estimate of risks at different weights are:

- 5% (1 in 20) in birthweight of 4000 – 4250g (8lb 13oz to 9lb 6oz)
- 9% (1 in 12) in birthweight of 4250 – 4500g (9lb 6oz to 9lb 15oz)
- 14% (1 in 7) in birthweight 4500 – 4750g (9lb 15oz to 10lb 7oz)
- 21% (1 in 5) in birthweight 4750g – 5000g (10lb 7oz to 11lb) (Nesbitt1998)

Using this information, it would be reasonable to offer induction when the EFW is predicted to be around 4kg and EFW plots over the 90th centile. Induction should be offered alongside the options of expectant management and caesarean section.

Caesarean section is the only way to avoid completely shoulder dystocia at vaginal delivery, however, it should be acknowledged that there can still be surgical challenges of delivering a large for gestational age baby via caesarean e.g. uterine extensions and postpartum haemorrhage. Caesarean birth should be timed for 39 weeks to balance the chance of spontaneous labour prior with the risks of transient tachypnoea of the newborn.

If woman declines IOL and wants to consider expectant management a repeat scan in 2 weeks to reassess growth should be arranged. If fetal size increases beyond 5000 grams discussion of mode of delivery should reoccur with caesarean section offered for the indication of fetal size alone.

3.6. Following birth.

The attending midwife at delivery should generate the customised birth centile, plotted then by E3 automatically on the GROW chart. This is for audit purposes and used to plan care in subsequent pregnancies.

The birthweight must be checked against the WHO charts (Robertson's charts) to determine the risk of hypoglycaemia so that the appropriate neonatal observations can be instigated. This must be according to ***completed*** weeks of pregnancy.

Babies <3rd centile on these charts must be referred to the neonatologist for a management plan, and the hypoglycaemia guideline commenced. Trust Guideline for the Management of Hypoglycaemia in Preterm Infants Trustdocs Id: 1196.

3.6.1. Polyhydramnios

If moderate or severe polyhydramnios is present, a nasogastric tube should be passed before the baby is fed to exclude trachea oesophageal fistula (TOF).

4. Related Documents

Trust guideline on diagnosis and management of gestational diabetes	Trustdocs Id: 844
Trust Guideline for the management of Hypoglycaemia in pre-term infants.	Trustdocs Id: 1196.
Saving Babies Lives Version 3	https://www.england.nhs.uk/long-read/saving-babies-lives-version-3/

5. References

Birthweight

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Nesbitt TS, Gilbert WM, Herrchen B. Shoulder dystocia and associated risk factors with macrosomic infants born in California. Am J Obstet Gynecol. 1998 Aug;179(2):476-80.

Fetal Growth

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Fundal height

Gardosi J, Francis A (1999). Controlled trial of fundal height measurement plotted on customised antenatal growth charts. *British Journal Obstet Gynaecol* 106(4):309-17.
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Guidelines

Royal College of Obstetricians and Gynaecologists (2013). *The investigation and management of the small-for-gestational age fetus*. Guideline no 31. London: RCOG.

National Institute for Clinical Excellence (2008 updated 2017). *Antenatal care: routine care for the healthy pregnant woman*. NICE Clinical Guideline CG62 London: NICE.

CESDI (2001) Maternal and Child Health Consortium. 8th Annual Report: Confidential Enquiry of Stillbirths and Deaths in Infancy.

NHS England (2023) Saving Babies' Lives version 3.
https://www.england.nhs.uk/long-read/saving-babies-lives-version-3/

6. Monitoring Compliance

Compliance with the process will be monitored through the following:

Key elements	Process for Monitoring	By Whom (Individual / group /committee)	Responsible Governance Committee /dept	Frequency of monitoring
Occurrence of shoulder dystocia	Datix reporting	Maternity Risk Team	Maternity Clinical Governance	Case by case
Scan accuracy (recommended within 10-15%)	Audit	Ultrasound department	Ultrasound	Annually

The audit results are to be discussed at relevant governance meetings to review the results and recommendations for further action. Maternity Clinical Governance will ensure that the actions and recommendations are suitable and sufficient.

7. Appendices

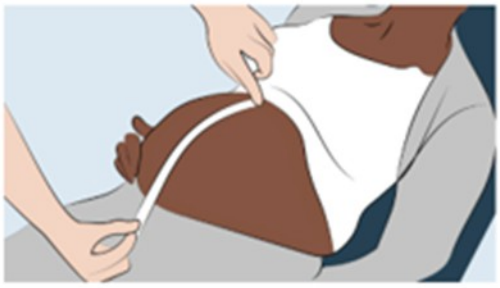
7.1. Appendix 1 – Standardised Fundal Height measurement

Appendix 1: Standardised Fundal Height measurement

Fetal Growth - Fundal Height Measurements

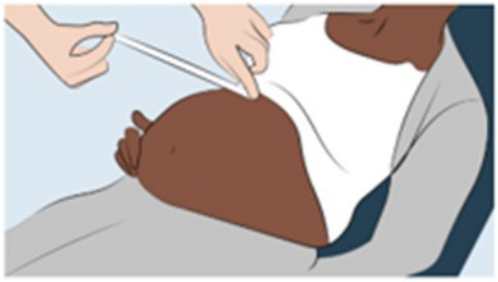
1. Mother semi-recumbent, with bladder empty.

- Explain the procedure to the mother and gain verbal consent
- Wash hands
- Have a non-elastic tape measure to hand
- Ensure the mother is comfortable in a semi-recumbent position, with an empty bladder
- Expose enough of the abdomen to allow a thorough examination



4. Measure to top of symphysis pubis.

- Measure from the top of the fundus to the top of the symphysis pubis
- The tape measure should stay in contact with the skin



3. Secure tape with hand at top of fundus.

- Use the tape measure with the centimetres on the underside to reduce bias
- Secure the tape measure at the fundus with one hand

5. Measure along longitudinal axis of uterus, note metric measurement.

- Measure along the longitudinal axis without correcting to the abdominal midline
- Measure only once

8. Equality Impact Assessment (EIA)

Type of function or policy	Existing

Division	Women and Children	**Department**	Maternity Services
Name of person completing form	V Maxey	**Date**	12/10/23

Equality Area	Potential Negative Impact	Impact Positive Impact	Which groups are affected	Full Impact Assessment Required YES/NO
Race	No	No	No	No
Pregnancy & Maternity	No	No	No	No
Disability	No	No	No	No
Religion and beliefs	No	No	No	No
Sex	No	No	No	No
Gender reassignment	No	No	No	No
Sexual Orientation	No	No	No	No
Age	No	No	No	No
Marriage & Civil Partnership	No	No	No	No
EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?	No impact			

- **A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty**
- **Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service**
- **The policy or function/service is assessed to be of high significance**

IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED

The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.