Trust Guideline for 18 to 20 weeks Fetal Anomaly Ultrasound Scan

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V6.0	23/04/2021	Michelle Drolet, Anna Haestier	Changes to audit standards and the fetal referral form updated
V7.0	09/08/2021	Richard Smith Rachel Appleton	Change to fetal referral form and GOSH referral pathway
V 8.0	24/10/2024	Martin Cameron	Minor language update. All LLP at FAS with uterine scar referred for FMU AIP assessment

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Printed copies of this document should be considered out of date.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:

- Consultant Obstetricians
- Lead Sonographer for Antenatal Ultrasound

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 clinical guideline applicable to Norfolk and Norwich University Hospitals Foundation Trust; please refer to local Trust's procedural documents for further guidance, as noted in Section 5.

Inclusivity

Within this document we use the terms pregnant 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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Quick reference: Fetal Anomaly Screening (FAS) Pathway

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1. Introduction

1.1. Rationale

Ultrasound scanning in the second trimester of pregnancy to detect structural abnormalities has been undertaken in the UK since the 1980s. The purpose of the 20 week screening scan is to identify specific conditions that:

- Benefit from treatment before or after birth
- Need treatment in a specialised setting after birth to improve health outcomes
- Could mean the baby may die shortly after birth
- Lead to a discussion about the options of continuing or terminating the pregnancy

This guidance has been written to ensure compliance with the NHS Fetal Anomaly Screening Programmes (FASP) 20-week screening pathway and with conduct of the 18+0 to 20+6 week scan

- https://www.gov.uk/government/publications/fetal-anomaly-screening-care-pathways/fetal-anomaly-screening-pathway-for-20-week-ultrasound-scan
- https://www.gov.uk/government/publications/fetal-anomaly-screening-programme-handbook/20-week-screening-scan

1.2. Objective

The objective of the guideline is to:

- Ensure access to a uniform screening programme which conforms to an agreed level of quality.
- Identify serious fetal abnormalities, either incompatible with life or associated with morbidity, allowing women to make reproductive choices.
- Identify certain abnormalities that may benefit from antenatal intervention.
- Identify certain abnormalities that require early intervention following delivery.
- make the purpose of the scan more focused by identifying the main structures that need to be assessed. These key structures lend themselves to identifying a number of conditions that should be screened for. These abnormalities and their expected detection rates form the basis of the NHS Fetal Anomaly Screening Programme (FASP).

Other conditions may be detected using ultrasound at this gestational age, but there is insufficient data to predict clear standards which should be achieved.

The eleven conditions that should be screened for as a minimum from 2010 (with expected detection rates in brackets) are:

- Anencephaly (98%)
- Open spina bifida (90%)
- Cleft lip (75%)
- Diaphragmatic hernia (60%)

- Gastroschisis (98%)
- Exomphalos (80%)
- Serious cardiac anomalies (50%)
- Bilateral renal agenesis (84%)
- Lethal skeletal dysplasias (60%)
- Edwards' Syndrome- Trisomy 18 (95%)
- Patau's syndrome- Trisomy 13 (95%)

Fetal growth measurements should be taken, and the liquor volume recorded during the FAS.

1.3. Scope

The document covers the conduct of the 18+0 to 20+6 week FAS for NHS maternity patients who have their care at the NNUHFT. It does not cover other areas of the screening pathway for maternity patients.

1.4. Glossary

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

Term	Definition
FAS	Fetal Anomaly Scan
HC	Head Circumference
AC	Abdominal Circumference
FL	Femur Length
EFW	Estimated Fetal Weight
BMI	Body Mass Index
TA	Trans-abdominal
TV	Transvaginal
AIP	Abnormally Invasive Placenta
FGR	Fetal Growth Restriction

2. Responsibilities

Community midwife – to provide information to booking pregnant women, and to refer for 18+0 to 20+6 week scan if woman requests this.

Sonographer – to complete 18+0 to 20+6 week as per national guidelines, and to refer patient to appropriate tertiary level sonographer if anomaly suspected

Fetal Medicine consultant – to offer specialist knowledge and advice to women referred for tertiary opinion following 18-20 week FAS.

3. Service to be delivered with Processes to be followed

3.1. Timing and Arrangement of Fetal Anomaly Ultrasound Scan

The quick reference guide at the beginning of this document outlines the procedure to follow for counselling and scheduling of the 20 week FAS.

The scan should be scheduled to be performed within 18+0 - 20+6/40 gestational age.

All women should be given an information leaflet about the fetal anomaly scan at the time of the first trimester scan detailing its purpose and limitations.

A 30 minutes appointment time should be scheduled for a singleton pregnancy and 60 minutes for a twin pregnancy anomaly scan.

3.2. 20 week screening scan base menu

The 20 week screening base menu outlines the minimum anatomical structures to be assessed. Where appropriate these structures should be assessed in sagittal, coronal and transverse planes.

Images of 6 specific anatomical sections should be archived. These are:

- Head circumference (HC) measurement and the atrium of the lateral ventricle
- Suboccipitobregmatic view demonstrating measurement of the transcerebellar diameter
- Coronal view of the lips with nasa tip
- Abdominal circumference (AC) measurement
- Femur length (FL) measurement
- Sagittal (preferred) or coronal view of spine including sacrum

The base menu is reproduced from NHS screening programme in Table 1 and 2:

Table 1

Area	Structure detail	Measurement	Images to be archived
Head and neck • skull • brain • neck	Head shape	Head circumference (HC)	Yes (to include HC measurement, CSP and measurement of the atrium of the posterior lateral ventricle)
	Cavum septum pellucidum (CSP)	Not required	
	Ventricular atrium (VA)	Atrium of the posterior lateral ventricle at the level of the glomus of the choroid plexus	
	Cerebellum	Transcerebellar diameter (TCD) in the suboccipitobregmatic view	Yes
	Nuchal fold (NF) Measure if appears large	Distance between the outer border of the occipital bone and the outer skin edge	Yes (only if measurement ≥ 6.0mm)
Face	Coronal view of lips and nasal tip	Not required	Yes
Chest • lungs • heart	Situs/laterality of heart	Not required	No
	4 chamber view (4CV)		
	Aorta arising from left ventricle (LVOT)		
	Pulmonary artery arising from right ventricle (RVOT) or the 3-vessel view (3VV)		
	3 vessel and trachea view (3VT)		

Table 2

Area	Structure detail	Measurement	Images to be archived
Abdomen	Stomach and position	Abdominal circumference (AC)	Yes (to include AC measurement, stomach and short section of umbilical vein)
	Kidneys Measure antero-posterior (AP) renal pelvis diameter if it appears large	Measurement not required unless AP renal pelvis diameter >7.0mm	Yes (only if AP renal pelvis diameter measures > 7.0mm)
	Abdominal wall and cord insertion	Not required	No
	Diaphragm		
	Bladder		
Spine • cervical • thoracic • lumbar • sacral	Vertebrae Skin covering To be assessed in sagittal, transverse and coronal planes	Not required	Yes (image sagittal plane. If it is not possible to archive the sagittal plane, then it is acceptable to archive the coronal plane)
Limbs • lower • upper	Femur, tibia and fibula (both legs)	Femur length (FL)	Yes (image and measure a single femur only)
	Metatarsals (both feet)	Digit count not required	No
	Radius, ulna and humerus (both arms)	Not required	
	Metacarpals (both hands)	Digit count not required	
Uterine cavity • uterine content	Placenta	According to local guidelines	According to local guidelines

If the above anatomy is clearly seen and appears normal, then the 'normal' boxes can be ticked on Astraia.

3.3. Placental Site

The placental site must be reported at the fetal anomaly scan. If the placenta overlaps or covers the internal os this is known as placenta praevia and a low-lying placenta is where the placental edge within 20mm of the internal os on ultrasound scan (either transabdominal, TAS or transvaginal, TVS) at more than 16 weeks gestation.

If a low lying/placenta praevia is found on TA scan at the time of the FAS then a TV scan should be offered to the woman at this time to confirm the diagnosis.

For women with a low lying placenta/placenta praevia and a history of any previous caesarean scar or a uterine scar from other surgery, a referral to fetal medicine should be made to assess for AIP (Abnormally Invasive Placenta). This scan should be performed around 28 weeks, but no later than 29 weeks. This includes all patients whose placenta is low, not just those that are low and anterior which was previous normal practice until the NICE Caesarean Birth Update 2023.

At the FAS, if ultrasound features of placenta accreta spectrum are suspected the patient should be referred to fetal medicine regardless of placental position (see Appendix 3 for flow chart and Appendix 4 for signs of placenta accreta spectrum).

A repeat ultrasound scan at 32 weeks should be performed for all women with low lying placenta or placenta praevia detected at the 18 - 20 fetal anomaly scan.

If the placenta is persistently low lying or classified as placenta praevia at a 32 week scan, then a further scan must be booked for 36 weeks gestation. However, clinicians should take into account the logistical challenges of arranging a high risk

caesarean section at short notice and hence particularly in cases of major placenta praevia where the chance of it persisting is higher, a provisional delivery plan should be put in place at 32 weeks.

3.4. Referral to Fetal Medicine and how to deal with "Soft Markers"

Chromosomal abnormalities occur in 0.1%-0.2% of live births. The commonest clinically significant abnormality is Down's syndrome. Several sonographic markers (choroid plexus cysts, mild hydronephrosis, cardiac echogenic foci, echogenic bowel) have been reported to be associated with Down's syndrome.

There is limited understanding of the biology and natural history of these normal variants. While some markers are indeed transient findings and may resolve spontaneously, for example, choroid plexus cysts, the distinction between a 'marker' and structural pathology is unclear. Many of these were reported in a biased manner and larger studies did not confirm their alleged predictive value. Some of these findings are therefore now considered as normal variants.

Women who are found to be 'low risk' through combined testing or women who have declined screening for Down's syndrome, **should not be referred to the fetal medicine unit** for further assessment of chromosomal abnormality even if normal variants such as the examples below (whether single or multiple) are found during the fetal anomaly scan:

1. Choroid plexus cyst(s).
2. Dilated cisterna magna.
3. Echogenic foci in the heart.
4. Two vessel cord.

The term 'soft marker' for these features is now discouraged.

The appearances listed below, however, (previously known as 'markers') are findings which **should be reported and the woman referred to the fetal medicine unit for further assessment using the Fetal Medicine Referral form (Appendix 1). See also the fetal anomaly screening pathway (in quick reference).**

1. Nuchal fold ≥6mm.
2. Ventriculomegaly (atrium ≥10mm).
3. Echogenic bowel (with density equivalent to bone).
4. Small measurements of HC, AC and/or FL (below the 5th centile on fetal biometry charts)
5. Any of the 11 conditions listed above in section 1.2.
6. Any other fetal abnormalities that the sonographer or obstetrician believes may benefit from referral (the fetal medicine team may decline or give advice if appropriate).

Of note Isolated unilateral renal pelvic dilatation (AP measurement >7mm) should have a follow up departmental scan at 32 weeks.

3.5. Screening for Fetal Growth Restriction at the 18+0 to 20+6 week scan

Although not part of NHS FASP, some findings can be associated with an increased risk of fetal growth restriction (FGR). An estimated fetal weight should be calculated at the time of the FAS ideally using a Hadlock formula with HC, AC and FL measurements and a centile then assessed.

The Royal College of Obstetricians and Gynaecologists (RCOG) guidance and the NHS England Saving Babies' Lives Care Bundle (SBLCB) require additional assessment for FGR. This includes uterine artery Doppler assessment and an individualised plan of care.

The scan findings that require referral for additional assessment for FGR are:

- echogenic bowel – should be referred to fetal medicine who will assess for FGR risk as part of assessment (see section 3.4 above)
- estimated fetal weight below the 10th centile

  If EFW is <3th centile or any biometric measurements are less than 5th centile (see section 3.4) refer to fetal medicine.

  If EFW is between 3-10th centile and biometric measurements are all above 5th centile perform uterine artery doppler. An abnormal uterine artery doppler should prompt referral to fetal medicine. Normal uterine artery doppler requires referral to antenatal clinic for FGR assessment.
- single umbilical artery (2 vessel cord) – refer to antenatal clinic for FGR risk assessment and management through the ANC

3.6. Cardiac Abnormalities

Where a cardiac abnormality is suspected by the Sonographer, then a second opinion should be sought from a sonographer. Providing both sonographers suspect a cardiac abnormality a direct referral to Fetal Cardiology at GOSH can be made following the "Direct GOSH Referral Pathway" (Appendix 2). Follow up with the Fetal Medicine team will be made once the outcome of the GOSH appointment is known.

3.7. Suboptimal views

In cases where the investigation is limited by suboptimal views (i.e. secondary to increased body mass index (BMI), scar tissue, fibroids or fetal position), a further scan should be offered to attempt to complete the base menu requirements. This scan should be completed by 23+0 weeks. A further scan will not be offered to determine fetal gender if not ascertained during the fetal anomaly scan.

3.8. Gender assessment

When a woman requests to know the fetal sex the sonographer will give their opinion, but do not write it down.

4. Training & Competencies

Any sonographer conducting the fetal anomaly screening scan will have undergone training as agreed by their professional body.

5. Related Documents

NNUHFT/East of England AIP guideline Trust Docs ID 19331

RCOG Investigation and Care of a Small-for-Gestational-Age Fetus and a Growth Restricted Fetus (Green-top Guideline No. 31) May 2024
https://obgyn.onlinelibrary.wiley.com/doi/full/10.1111/1471-0528.17814

NHS England Saving babies' lives: version 3
A care bundle for reducing perinatal mortality. 2023
https://www.england.nhs.uk/long-read/saving-babies-lives-version-3/

6. References

Public Health England. Fetal Anomaly Screening Programme Standards: 2015 to 2016.

Public Health England. NHS Fetal Anomaly Screening Programme (FASP): 18-20 weeks Fetal Anomaly Scan National Standards and Guidance for England 2010.

Public Health England. NHS Fetal Anomaly Screening Programme Handbook. August 2018.

Public Health England. NHS Public Health Functions Agreement 2019-20: Service Specification no. 17. NHS Fetal Anomaly Screening Programme- 18+0 to 20+6 Week Fetal Anomaly Scan. July 2019.

RCOG Green-top Guideline 27a. Placenta Praevia, and Placenta Accreta: Diagnosis and Management. 2018.

7. 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
Detection rate of the 11 national screening conditions (as listed in section 1.2, above).	Antenatal screening programme	Antenatal and Newborn Screening lead	Antenatal and Newborn Screening committee	Annual
Documentation of the fetal anomaly base menu	Antenatal screening programme	Antenatal and Newborn screening lead	Antenatal and Newborn Screening committee	Annual

Referral rates to fetal medicine	Antenatal screening program and/or local audit	Operational Director/Band 7 FM midwife	Maternity Directorate	Annual
Outcomes for fetuses where appearance previously known as ‘markers’ have been detected	Antenatal screening programme	Antenatal and Newborn screening lead	Antenatal and Newborn Screening committee	Annual

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

8. Appendices

Appendix 1: Referral form for Fetal Medicine Assessment

Fetal Medicine Internal Referral Form Trust Docs ID 23659

Appendix 2: Direct Great Ormond Street Hospital (GOSH) Referral Pathway

Appendix 3: Placental Assessment

Appendix 4: Ultrasound Signs of Placenta Accreta (from RCOG Green-top Guideline 27a)

Ultrasound imaging signs	Description
2D greyscale signs	
Loss of the 'clear zone'	Loss or irregularity of the hypoechoic plane in the myometrium underneath the placental bed (the 'clear zone').
Abnormal placental lacunae	Presence of numerous lacunae, including some that are large and irregular (Finberg grade 3), often containing turbulent flow visible in greyscale imaging.
Bladder wall interruption	Loss or interruption of the bright bladder wall (the hyperechoic band or 'line' between the uterine serosa and the bladder lumen).
Myometrial thinning	Thinning of the myometrium overlying the placenta to less than 1 mm or undetectable.
Placental bulge	Deviation of the uterine serosa away from the expected plane, caused by an abnormal bulge of placental tissue into a neighboring organ, typically the bladder. The uterine serosa appears intact but the outline shape is distorted.
Focal exophytic mass	Placental tissue seen breaking through the uterine serosa and extending beyond it. Most often seen inside a filled urinary bladder.
2D colour Doppler signs	
Uterovesical hypervascularity	Striking amount of colour Doppler signal seen between the myometrium and the posterior wall of the bladder. This sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact).
Subplacental hypervascularity	Striking amount of colour Doppler signal seen in the placental bed. This sign probably indicates numerous, closely packed, tortuous vessels in that region (demonstrating multidirectional flow and aliasing artifact).
Bridging vessels	Vessels appearing to extend from the placenta, across the myometrium and beyond the serosa into the bladder or other organs. Often running perpendicular to the myometrium.
Placental lacunae feeder vessels	Vessels with high velocity blood flow leading from the myometrium into the placental lacunae, causing turbulence upon entry.
3D colour Doppler signs	
Intraplacental hypervascularity (power Doppler)	Complex, irregular arrangement of numerous placental vessels, exhibiting tortuous

9. Equality Impact Assessment (EIA)

Type of function or policy	Existing

Division	Women and Childrens	**Department**	Maternity/Obstetrics
Name of person completing form	V Maxey	**Date**	24/10/24

Equality Area	Potential Negative Impact	Impact Positive Impact	Which groups are affected	Full Impact Assessment Required YES/NO
Race	No	No	N/A	No
Pregnancy & Maternity	No	Standardises care to all pregnant persons	N/A	No
Disability	No	No	N/A	No
Religion and beliefs	No	No	N/A	No
Sex	No	No	N/A	No
Gender reassignment	No	No	N/A	No
Sexual Orientation	No	No	N/A	No
Age	No	No	N/A	No
Marriage & Civil Partnership	No	No	N/A	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.