National Women & Infants Health Programme

QUICK SUMMARY DOCUMENT

The Fetal Anatomy Ultrasound

This Quick Summary Document (QSD) is a resource for all clinicians working in healthcare in Ireland who are involved in providing Fetal Anatomy Ultrasound.

Following a comprehensive literature review a number of evidence-based recommendations for Fetal Anatomy Ultrasound were agreed upon.

Key Recommendations

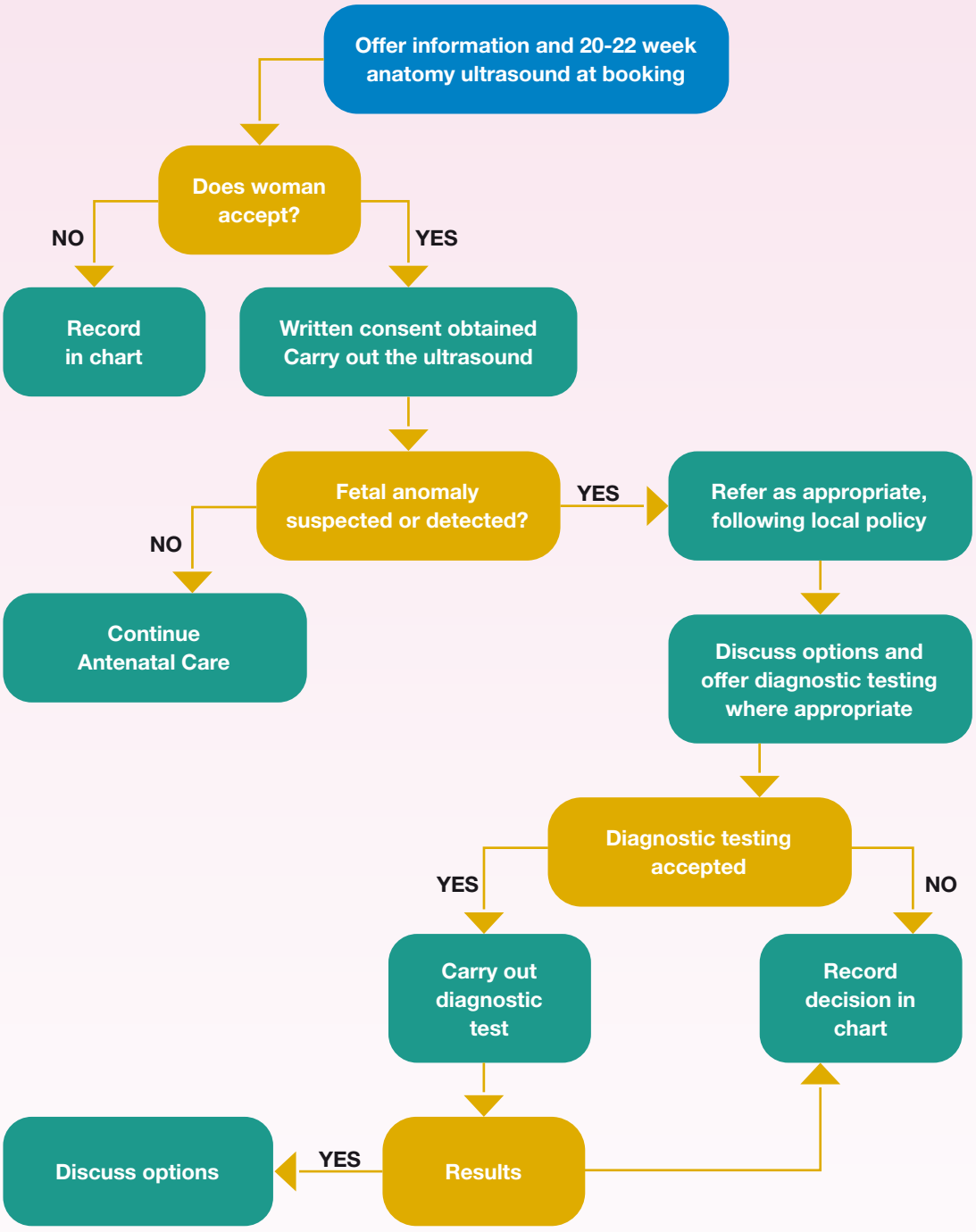
1. The aim of the fetal anatomy ultrasound examination is to optimise antenatal care by providing accurate diagnostic information to ensure better outcomes for both the pregnant woman and baby.
2. Written information should be provided in a request for a fetal anatomy ultrasound examination, ideally ahead of the ultrasound examination appointment.
3. All pregnant women in Ireland should be offered a fetal anatomy ultrasound examination as part of standard antenatal care.
4. Informed written consent should be obtained by the Sonographer prior to proceeding with ultrasound examination.
5. It is recommended that the fetal anatomy ultrasound examination be performed after 18 weeks and before 22 weeks' gestation, ideally between 20-22 weeks' gestation. This is of particular relevance in the case of maternal BMI > 30.
6. A single repeat ultrasound examination should be offered to complete the screening if the image quality of the first examination is suboptimal e.g. increased BMI, large fibroids, abdominal scarring, and/or suboptimal fetal position. The repeat ultrasound examination should be done as soon as is clinically feasible with the aim to complete the examination by 26 weeks.
7. In the event that the second ultrasound examination is still unable to demonstrate all the required structures the Sonographer should record this on the report and state the reason why. If the key cardiac components cannot be confirmed with two examinations by an experienced Sonographer, the woman should be referred to a Fetal Medicine Specialist.
8. A fetal anatomy ultrasound examination should include the assessment of the number of fetuses, cardiac activity, fetal biometry, amniotic fluid and placental location. When clinically indicated the maternal pelvic anatomy should be evaluated.
9. The fetal anatomy ultrasound examination should only be used to confirm estimated due date if first trimester ultrasound was not performed.
10. If gestational age has not already been established at a first trimester ultrasound examination and the menstrual dates are not reliable, it is recommended the estimated due date should be determined on the basis of fetal head size (biparietal diameter and head circumference) and femur length.
11. A low-lying placenta <20 mms from the internal cervical os on transabdominal or transvaginal (TAUS/TVUS) ultrasound examination should be followed up with an ultrasound at 32-34 weeks.
12. With a low-lying anterior placenta and suspected features on ultrasound for placenta accreta spectrum (PAS), referral should be made to a Fetal Medicine Specialist prior to 24 weeks' gestation. If this is not available locally, tertiary referral for further assessment is recommended.

13. Placental cord insertion (PCI) should be documented at all fetal anatomy ultrasound examinations.
14. Marginal and velamentous cord insertion may have an association with fetal growth restriction, therefore a fetal growth scan at 32 weeks is recommended.
15. In cases with risk factors for vasa praevia e.g., velamentous cord insertion, placental dysmorphology, succenturiate lobed placenta, low lying or bilobed placentas, multiple pregnancies and pregnancies conceived with in vitro fertilisation (IVF) targeted screening with TAUS colour Doppler is recommended. A TVUS is recommended if a TAUS is unclear. A Fetal Medicine opinion should be sought if vasa praevia is suspected.
16. Cervical length and uterine Doppler waveforms should only be measured in specific populations.
17. The fetal anatomy ultrasound examination should include an assessment of all major fetal organ systems. The minimum images (25) required to complete the fetal anatomy ultrasound examination are set out in the Guideline.
18. Assessment of fetal sex is not the function of the fetal anatomy ultrasound examination and where performed the accuracy of fetal sex determination should be disclosed.
19. For fetuses with an isolated echogenic intracardiac focus or choroid plexus cysts (CSP) no further investigation is required and this finding does not need to be recorded.
20. For fetuses with an isolated single umbilical artery (SUA), no additional evaluation for aneuploidy risk is necessary. This finding should prompt a thorough evaluation of the fetal renal anatomy and a third-trimester ultrasound for assessment of growth.
21. For fetuses with renal pelvic dilatation (RPD) >7mms, it is recommended to perform an ultrasound examination at 32 to 34 weeks to reassess the genitourinary tract. Isolated renal pelvic dilatation does not warrant aneuploidy assessment.
22. For pregnant women with low risk NIPS and absent nasal bone no further aneuploidy screening is necessary. If there is no previous screening test (e.g., NIPS), referral for a Fetal Medicine opinion is recommended.
23. For pregnant women with low risk NIPS and a nuchal fold >6mms detailed cardiac assessment is required. No further aneuploidy screening is necessary. If there is no previous screening test (e.g., NIPS), referral for a Fetal Medicine opinion is recommended.
24. For pregnant women with a low risk NIPS and isolated shortened humerus, femur, or both it is recommended to perform a third-trimester ultrasound for reassessment and evaluation of growth. No further aneuploidy screening is necessary. If there is no previous screening test (e.g., NIPS), referral for a Fetal Medicine opinion is recommended.
25. If there is mild, moderate or severe ventriculomegaly (including low risk NIPS or no previous screening test) referral for a Fetal Medicine opinion is recommended.
26. Pregnant women with low risk NIPS or no previous screening, with fetal echogenic bowel should be referred for a Fetal Medicine opinion for further evaluation for congenital infections and consideration of cystic fibrosis carrier testing on the parents.
27. It is appropriate for experienced Sonographers who perform fetal anatomy ultrasound examinations to impart information when they are confident of the diagnosis.
28. Every unit should have referral mechanisms to Fetal Medicine services in place to manage suspected or detected fetal anomalies.
29. All women should receive a prompt referral for a Fetal Medicine opinion ideally within 5 working days. When a major fetal anomaly is suspected referral is ideally within 3 days.
30. The woman/couple should be kept fully informed throughout the process and have the opportunity to talk fully to any relevant professionals who may be able to offer them information they require.

31. Documentation of all findings, counselling and discussion by all clinicians must be clearly documented. Communication with the referring Obstetrician/ Sonographer and GP is of paramount importance for regular updates, in order for them to provide necessary support to the woman/couple.
32. Fetal anatomy ultrasound examinations should be performed by healthcare providers with specialised training in the provision of ultrasound screening in the second trimester.
33. There must be a permanent record of the ultrasound examination and its findings. Images of all relevant areas defined in the particular examination, both normal and abnormal, should be recorded and should be stored for future reference by the person doing the examination. The responsibility for reporting lies with the person verifying the scan who, ordinarily, should be the person performing the scan.
34. Sonographers performing fetal anatomy ultrasound examination should hold at least one of the following qualifications: Higher Diploma in Diagnostic Imaging / MSc Ultrasound (or equivalent) from a Higher Education Institution relevant to obstetric ultrasound, or Advanced Training Speciality Module (ATSM) in Fetal Medicine.
35. Individuals without a recognised qualification, including student Sonographers, should always be supervised by qualified staff. A formal period of monitoring by a senior member of staff should be implemented for all new and temporary staff to confirm their ultrasound interpretation and reporting abilities.
36. Ultrasound practitioners should be registered with the relevant statutory body where appropriate. Ultrasound practitioners are required to keep a record of their continuous professional development (CPD) as defined by their registering body.
37. It is recommended that a 30 minute time slot is allocated for a singleton pregnancy and a minimum of 45 minute time slot allocated for a multiple pregnancy anatomy ultrasound examination. The ALARA principle regarding output power and duration of ultrasound exposure (‘as low as reasonably achievable’) should be observed.
38. Ultrasound imaging for non-medical reasons is not recommended unless carried out for education, training or demonstration purposes.
39. The use of telephone or video recording of the anatomy ultrasound examination is not recommended. However, there may be some situations where it is appropriate and local policies should be in place to determine whether recording of the examination is reasonable.
40. Due to the possible sensitive nature of the fetal anatomy ultrasound examination, children should not attend the examination.

Algorithm

Care Pathway for fetal anatomy ultrasound examination



Auditable standards

Audit using the key recommendations as indicators should be undertaken to identify where improvements are required and to enable changes as necessary, and to provide evidence of quality improvement initiatives.

Auditable standards for this Guideline include:

- The number of hospitals providing pregnant women the opportunity to have an anatomy ultrasound examination
- The number of hospitals providing pregnant women written information in advance of the ultrasound examination
- The number of hospitals obtaining written informed consent to perform the fetal anatomy ultrasound examination
- The number of hospitals allocating a 30 minute slot for each ultrasound appointment for a singleton and a 45 minute slot for a twin pregnancy
- The number of examinations that are completed according to the required checklist for the fetal anatomy ultrasound
- The number of pregnant women that are recalled for a second anatomy ultrasound examination
- The number of women where the ultrasound examination remains incomplete following a second examination
- The number of hospitals that have a policy in place for referral when an anomaly is suspected/ diagnosed on the fetal anatomy ultrasound examination
- The number of pregnant women that are seen within 5 working days of a suspected or confirmed anomaly and within 3 working days for a major fetal anomaly
- The number of hospitals that audit images from the fetal anatomy ultrasound examination
- The number of hospitals that audit and report the numbers and types of fetal anomalies detected at fetal anatomy ultrasound examinations
- The number of hospitals that have clear guidelines for managing clinical incidents relating to fetal anatomy ultrasound.

Recommended reading:

1. HSE Nomenclature for Clinical Audit- https://www.hse.ie/eng/about/who/nqpsd/ncca/nomenclature-a-glossary-of-terms-for-clinical-audit.pdf
2. HSE National Framework for developing Policies, Procedures, Protocols and Guidelines at https://www.hse.ie/eng/about/who/qid/nationalframeworkdevelopingpolicies/
3. Salomon LJ, Alfirevic Z, Berghella V, Bilardo CM, Chalouhi GE, Da Silva Costa F, Hernandez-Andrade E, Malinger G, Munoz H, Paladini D, Prefumo F, Sotiriadis A, Toi A, Lee W, on behalf of the ISUOG Clinical Standards Committee. ISUOG Practice Guidelines (updated): performance of the routine mid-trimester fetal ultrasound scan. Ultrasound Obstet Gynecol 2022; 59: 840–856 https://obgyn.onlinelibrary.wiley.com/doi/10.1002/uog.24888
4. McLennon A, Walker S. Prenatal-assessment-of-fetal-structural-conditions; The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. 2022. Access at: https://ranzcog.edu.au/wp-content/uploads/2022/05/Prenatal-Assessment-of-Fetal-Structural-Conditions.pdf
5. NHS, Fetal Anomaly Screening Programme: Handbook for ultrasound practitioners. October 2022. https://www.gov.uk/government/publications/fetal-anomaly-screening-programme-handbook
6. Oyelese Y, Lees CC, Jauniaux E. The case for screening for vasa previa: time to implement a life-saving strategy. Ultrasound Obstet Gynecol. 2022 30 https://pubmed.ncbi.nlm.nih.gov/36178753/

7. Prabhu M, Kuller JA, Biggio JR. Society for Maternal-Fetal Medicine Consult Series #57: Evaluation and management of isolated soft ultrasound markers for aneuploidy in the second trimester. Am J Obstet Gynecol. 2021;225(4):B2–15. https://pubmed.ncbi.nlm.nih.gov/34171388/

8. Society and College of Radiographers and British Medical Ultrasound Society. Guidelines for Professional Practice. 6th edition December 2021. https://www.bmus.org/static/uploads/resources/2021_SoR_and_BMUS_guidelines_v1.0_.pdf

Authors

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https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/

https://www.rcpi.ie/faculties/obstetricians-and-gynaecologists/national-clinical-guidelines-in-obstetrics-and-gynaecology/