



Title	Routine Ultrasound Scanning Before 24 Weeks of Pregnancy
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Reference	Ritchie et al., 2004. Health Technology Assessment Report 5, Glasgow: NHS Quality Improvement Scotland. ISBN 1-903961-44-0

Aim

To determine the most clinically and cost-effective program of routine ultrasound scanning and screening which can be offered to women in Scotland before 24 weeks of pregnancy.

Conclusions and results

Strategies involving a scan in the first trimester and an anomaly scan in the second trimester are more expensive than single-scan strategies, but maximize the identification of fetal abnormalities at an acceptable false-positive rate. A first trimester test for chromosomal abnormalities involving nuchal translucency measurement is more effective than the second trimester double test currently used in Scotland. Women value early screening and would also welcome the opportunity to have a second trimester scan in addition to a first trimester scan.

Recommendations

- All women in Scotland should be offered a first trimester scan and test for chromosomal abnormalities and a second trimester scan as part of routine antenatal care.
- Appropriate written information should be available, with time for the pregnant woman to consider and discuss this with a health professional prior to ultrasound examination.
- Women who decide to participate in all or part of an antenatal screening program should provide written informed consent.
- The first trimester scan should be offered between 10 and 13 completed weeks' gestation to confirm fetal viability, assess gestational age, and identify multiple pregnancy.
- Nuchal translucency measurement should be offered as part of the first trimester scan. The results and maternal serum screening (PAPP-A and free β -hCG) should be combined with gestational age (at scan) and maternal age to assess the risk of chromosomal

abnormalities.

- Women who present after 13 completed weeks' gestation should be offered an ultrasound scan to assess gestational age at presentation and second trimester serum screening (alpha-fetoprotein and hCG) for chromosomal abnormalities.
- The second trimester scan is to exclude or detect identifiable common fetal abnormalities and should be done between 18 and 22 weeks' gestation (target is 20 weeks' gestation). It should not include detection of soft markers to assess risk of chromosomal abnormalities.
- Formally trained staff with suitable scanning equipment should perform the recommended program of scanning and screening. There should be consistent record keeping in maternity services to facilitate internal and external quality assurance and audit.

Methods

NHS maternity units in Scotland were surveyed to ascertain current practice. The literature was systematically searched to identify clinical effectiveness data. No accurate data were available from NHSScotland or from the literature review to inform on the cost of different ultrasound scans. Hence, a bottom up costing methodology was adopted using data from the best available sources. A mathematical model was constructed to estimate the costs and benefits of 6 screening policy options for congenital abnormalities. A literature review and focus groups were used to determine women's views on ultrasound scanning in pregnancy.