



Title	Ultrasound Screening in Pregnancy: A Systematic Review of the Clinical Effectiveness, Cost Effectiveness and Women's Views
Agency	NCCHTA, National Coordinating Centre for Health Technology Assessment Mailpoint 728, Boldrewood, University of Southampton, Southampton SO16 7PX, United Kingdom tel: +44 2380 595586, fax: +44 2380 595639
Reference	Health Technol Assess 2000;4(16). Sept 2000. www.ncchta.org/execsumm/summ416.htm

Aim

- To update the pre-existing Cochrane review, to compile new Cochrane reviews of routine ultrasound in late pregnancy and routine Doppler® ultrasound in pregnancy, and to compile literature reviews of women's views on undergoing routine ultrasound examination with estimates of costs and cost effectiveness of routine ultrasound examinations.
- To conduct a primary study to assess the consequences of a routine two-stage ultrasound regimen in pregnancy in a teaching hospital (clinical pathways) and to conduct a primary study of costs of a routine two-stage ultrasound regimen in early or mid-pregnancy in a UK teaching hospital.
- To refine/update a decision model of cost effectiveness of options for routine scanning for fetal anomalies.

Conclusions and results

- Evidence shows that routine ultrasound in early pregnancy (< 24 weeks gestation) provides (i) better gestational age assessment, and hence fewer inductions of labor for 'post-term pregnancy; (ii) earlier detection of multiple pregnancies, but not shown to have an important impact on outcome in multiple pregnancies; (iii) detection of clinically unsuspected fetal malformation while termination of pregnancy is possible, and hence reduces perinatal mortality rate if detection of fetal malformations is an important objective, if a high level of diagnostic expertise exists, and if termination of pregnancy for fetal abnormality is widely accepted in the population screened. No convincing evidence of benefit from routine examination in late pregnancy (> 24 weeks) was found, whether using imaging or Doppler ultrasound.
- Ultrasound is attractive to women and partners; perhaps because it provides early visual confirmation of pregnancy and contact with their babies, and reassures about fetal well being. Such features may augment the potential for anxiety, shock, and disappointment when the scan shows a problem. Recent changes in the use of ultrasound may lead to more findings of uncertain clinical significance, which is likely to have psychological and social consequences for women. Trials comparing ultrasound/no ultrasound have not considered its psychological /social impact on parents and babies.
- There are few good quality economic evaluations and primary cost studies of ultrasound scanning in pregnancy. Only one economic evaluation conducted alongside an RCT was included in the review. Routine scanning in the second trimester was shown to be relatively cost effective. However, the costs to women of attending ultrasound examinations were significant compared with NHS service costs.
- Several inefficiencies in the routine ultrasound screening program were identified (including the need for repeat scans and that not all women book at early gestations), some of which are unavoidable, but which have implications for both its clinical and cost effectiveness.

Recommendations

The authors provide a summary of implications for policy and practice to guide clinicians, women, and health planners based on available evidence from the systematic reviews, primary studies, and decision model.



- Title*** **Ultrasound Screening in Pregnancy: A Systematic Review of the Clinical Effectiveness, Cost Effectiveness and Women's Views**
- Agency*** **NCCHTA, National Coordinating Centre for Health Technology Assessment**
Mailpoint 728, Boldrewood, University of Southampton, Southampton SO16 7PX, United Kingdom
tel: +44 2380 595586, fax: +44 2380 595639
- Reference*** Health Technol Assess 2000;4(16). Sept 2000. www.ncchta.org/execsumm/summ416.htm

Methods

Systematic reviews of the literature were conducted as fully described in the main report. The systematic review findings were augmented by primary research of clinical pathways and costs, the methods of which are described in individual sections of the report.

Further research/reviews required

The authors describe the implications of their findings for research in the report covering: guidelines on research methods; priorities for research; documenting current practice; clinical pathways; costs and outcomes; defining options for screening; ethical and cultural issues; and cost effectiveness.