# WEST MIDLANDS AUDIT OF REFERRALS FOR GROWTH SCANS

**Tonks A, Wright J, North L, and Wyldes M P**

Following the introduction of customised growth charts in the West Midlands, some units reported an increase in requests for growth scans based on fundal height. Guidelines were agreed and distributed by the Perinatal Institute on appropriate ultrasound referral following plotting of fundal height measurements (www.wmpi.net/growth). At the last Regional Ultrasound Group meeting in February 2004, it was agreed that the Perinatal Institute would carry out an audit to assess the impact on workload for ultrasound departments.

The key questions the audit was designed to answer were:

- Are referrals for growth scans appropriate i.e. are the guidelines for referral, based on fundal-height plotting, being followed?
- What proportion of workload are new referrals for growth scans, based on fundal height measurement?

The audit did not include the **outcome** of any scans, only the referral criteria, i.e. it was not a comparison of ultrasound assessment with fundal measurement.

## METHODS

Data collection was in two parts. Firstly, an audit form was completed for all new requests for growth scans arising from fundal height plotting; therefore, repeat/serial growth scans were excluded. Sonographers were asked to roughly transcribe all fundal height plots from the growth chart onto the audit form. Secondly, a summary sheet was completed by the Lead Sonographer recording the daily total of all obstetric scans. To ensure confidentiality, no details of patients or staff were recorded.

Forms were collected centrally and Jill Wright, Specialist Midwife, assessed referrals against the regional guidelines circulated in November 2003.

The audit took place over five consecutive working days. Fifteen units participated in the audit; three units who were not using the growth charts were unable to contribute data (Royal Shrewsbury, North Staffordshire, and Walsall), and two units declined to participate (Sandwell and Warwick).

## RESULTS

Audit data on 187 new referrals for growth scans were received. There were 34 referrals excluded due to missing information, either because no fundal height measurements had been transcribed, or because only a single plot after 28 weeks gestation was transcribed. Therefore, 153 referrals were assessed against the audit standard.

### Appropriate referrals

Of the referrals assessed, 82% were appropriate (95% confidence interval: 76-88%). Table 1 shows the referral criteria for growth scans.

**Table 1 - Appropriate referrals: by criteria for referral**

| Criteria for referral | n | % |
|---|---|---|
| *Abnormal growth* | | |
| Excessive growth | 39 | 31% |
| Static growth | 37 | 29% |
| Slow growth | 26 | 21% |
| *Abnormal single plot 26-28 weeks* | | |
| < 10th centile | 24 | 19% |
| **Total** | **126** | **100%** |

Inappropriate referrals constituted 18% of cases. The cases that did not meet the standards for appropriate referral were categorised into patterns of growth as shown in Table 2.

**Table 2 - Inappropriate referrals: by category**

| Category | n | % |
|---|---|---|
| *Normal growth - following curve* | | |
| ≥ 90th centile | 15 | 56% |
| 50-90th centile | 5 | 19% |
| *Normal single plot 26-28 weeks* | | |
| ≥ 90th centile | 3 | 11% |
| on 50th centile | 1 | 4% |
| *Other* | | |
| referral from plot within one week | 3 | 11% |
| **Total** | **27** | **100%** |

The majority of referrals (55%) were generated by midwives and the remainder by medical staff. The proportion of appropriate referrals varied across professional groups, with midwives referring appropriately in 87% of cases.

**Workload**

The total number of obstetric scans recorded during the audit week was 3,414. The 192 new referrals for growth scans comprised 5.5% of the workload. The proportion varied across units, ranging from 0% to 16% (see **Error! Reference source not found.**).

## DISCUSSION

This audit was able to address the two key concerns arising from the introduction of customised growth charts for those working in ultrasound.

**Are referrals for growth scans appropriate i.e. are the guidelines for referral, based on fundal-height plotting, being followed?**

The majority (82%) of referrals for growth scans, based on fundal height measurements, were appropriate, according to the regional guidelines. The proportion varied across the 15 units taking part, ranging from 60% to 100%.

The largest group of inappropriate referrals were for fundal height measurements above the 90th centile. A single plot or consistent growth above the 90th centile is not an indication for referral. The Perinatal Institute is reviewing evidence for antenatal management of suspected LGA babies.

The audit has identified which growth patterns, professional groups, and maternity units have lower proportions of appropriate referrals. Support will continue to be provided, and additional training is available will be offered to reflect the findings of this audit.

**What proportion of workload are new referrals for growth scans, based on fundal height measurement?**

Following anecdotal reports of an increase in growth scan referrals, arising from the introduction of the customised charts; the audit was able to quantify this workload as 5.5% of obstetric scans.

The use of a screening tool for abnormal growth patterns will inevitably generate referrals for growth scans. A unit with no referrals is of concern and may be an indication of restrictions on direct midwifery access for ultrasound services. The aim of the charts is to identify appropriate cases for referral and to avoid unnecessary investigations and anxiety for normal growth patterns. Inappropriate serial scans will amount to a substantial additional workload.

A normal outcome to a scan, despite an abnormal growth curve from fundal height measurement, is reassuring and should not be seen as an inappropriate referral. The outcomes of ultrasound scans (i.e. estimated fetal weight) were not included in this audit. They will form part of the extensive audit of customised growth charts currently taking place at City Hospital.