

**INTRODUCTION**

The Confidential Enquiry into Stillbirths in Birmingham & Black Country [1] has highlighted considerable variation in protocols for growth scans. Previously, regional protocols have been agreed for referrals based on fundal height measurement [2]. However there appears to be uncertainty as to what is considered to be an indication for growth scans based on past history or risk assessments at the beginning of pregnancy. Protocols seem to have been influenced by what units considered to be an ‘affordable’ burden on ultrasound services. A subsequent survey of protocols from around the West Midlands confirmed that this applied throughout the region, not just to B&BC.

A RUG subgroup\* was therefore tasked to consider the evidence and make recommendations on **best practice standards**, which would allow a gap analysis for appropriate service provision. The group focussed on ultrasound for the detection of fetal growth restriction as part of antenatal assessment, as laid out in the RCOG guidelines [3].

Various drafts considered ‘optimal’ standards, assuming no shortage of scans, which was then finally amended to the following standard for best practice after excluding categories such as BMI 30-35 and smokers. It was however emphasised that even this standard was still only *aspirational* because of the current status quo of limited ultrasound resources.

**IF LOW RISK:**

Serial fundal height measurements at each visit from 28 weeks, 2-3 weekly according to NICE antenatal guidelines. The fundal height measurements should be plotted on customised growth charts as per RCOG guidelines [3] and according to regional recommendations [2].

Serial scanning is recommended with the same frequency, i.e. 2-3 weekly, in cases where **fundal height measurement is not possible / unreliable:**

	<u>Prevalence (approx. %)</u>
• Polyhydramnios (Idiopathic)	<1
• High body mass index (BMI 35+) **	7
• Large fibroids (e.g. $\geq 6$ cm) or multiple fibroids	<1

**IF HIGH RISK:** (based on past history / early pregnancy assessment)

There is a dearth of evidence on what constitutes high risk for fetal growth restriction. However it was agreed that the management plan should include serial (2-3 weekly) assessment of fetal biometry by ultrasound.

As an alternative, uterine artery Doppler assessment may be a potential predictor, but more so of pre-eclampsia and preterm delivery than IUGR, and further research is awaited.

The following conditions were associated with increased risk of fetal growth restriction [4], with an approximate **odds ratio of 2 or more**, and estimates of West Midlands prevalence [5].

	<u>Prevalence (approx; %)</u>
• Multiple pregnancy	2
• Previous history* of IUGR (Birthweight <10 cust. centile)	9
• Unexplained stillbirth (excl congenital anomaly) 3.5/1000	<1
• Chronic maternal disease	
○ Hypertension / Past history of PET*	3
○ Antiphospholipid syndrome, Lupus	<1
○ Thrombophylia	<1
○ Auto-immune disease	<1
○ Renal conditions	<1
○ Diabetes (pre-existing)	3
• Maternal age 40+ **	3
• Substance misuse:	
○ Alcohol, Drug dependency	2

\* Multips only

\*\* Cut-off limits for body mass index, maternal age etc are guides and do not preclude clinical assessment / decision to implement additional scans in borderline cases

## WORKLOAD FOR SERIAL SCANNING

Currently we do not have demographic data which would allow us to 'add up' the respective prevalence estimates. However it was considered that there would be overlap between the above risk categories. It is estimated that **a quarter** of all women would fall into one or more high risk categories and thus require serial ultrasound assessment according to these standards.

This information will be fed back to workforce to assist the planning of ultrasound services and training requirements in the West Midlands.

## References

1. Conf Enquiry into Stillbirths with fetal growth restriction [www.perinatal.nhs.uk/rpnm/CE\\_SB\\_Final.pdf](http://www.perinatal.nhs.uk/rpnm/CE_SB_Final.pdf)
2. Regional recommendation on fundal height measurements and use of customised growth charts [www.gestation.net/fetal\\_growth/clinicalassessment/Recommendations\\_fhm.pdf](http://www.gestation.net/fetal_growth/clinicalassessment/Recommendations_fhm.pdf)
3. The Investigation and Management of the Small-for-Gestational-Age Fetus (31) Nov 2002 RCOG [www.rcog.org.uk/index.asp?PageID=531](http://www.rcog.org.uk/index.asp?PageID=531)
4. Kleijer ME, Dekker GA, Heard AR. Risk factors for intrauterine growth restriction in a socio-economically disadvantaged region. J MFMM 2005;18:23-30
5. Stillbirth and Infant Mortality, West Midlands 1997-2005: Trends, factors, inequalities. Perinatal Institute, 2007 [www.perinatal.nhs.uk/pnm/WM\\_SB&IMR\\_2007report.pdf](http://www.perinatal.nhs.uk/pnm/WM_SB&IMR_2007report.pdf)

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