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Improving detection and management of restricted fetal growth to prevent perinatal death

Jason Gardosi and colleagues argue that England should adopt a coherent national programme to ensure more consistent identification and management of fetal growth restriction, the most common and avoidable cause of perinatal death

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The UK's secretary of state for health and social care ordered an investigation into failures in England's maternity service in 2025, raising concerns that unsafe care has led to the "normalisation of deaths of women and babies."¹ An overlooked contributory factor stems from the current organisation of the health service, where responsibility for local policy and audit is devolved to individual maternity units. System failures result in serious yet relatively rare outcomes such as stillbirth, which can go unnoticed in statistics for several years before being recognised. A main contributor to stillbirth risk is fetal growth restriction when not recognised during pregnancy. What is missing is evidence based guidance, national coordination, and oversight encompassing an effective audit and monitoring programme with clear accountability.

Understanding "unexplained" stillbirths

Evaluation of adverse outcomes is a key step towards prevention. Although international comparisons are affected by lack of data, differences in health systems, and varied population characteristics, England has long had one of the highest stillbirth rates in Europe, with most classified as "unexplained"—a category which has hindered the development of strategies for prevention.² In 2004 the NHS in the West Midlands commissioned the Perinatal Institute to undertake a project to reduce perinatal mortality, with clinical as well as patient and public involvement, which led to an improved understanding of the problem.

In 2005, as part of a population cohort study in England, the institute developed a new stillbirth classification system (ReCoDe, relevant condition at death) which included a category for fetal growth restriction based on the baby's customised weight centile at birth. Retrospective use of the classification on a NHS cohort resulted in far fewer stillbirths being categorised as unexplained (66% down to 15%), with fetal growth restriction emerging as the largest category.³

In 2006-07 a confidential inquiry into stillbirths with fetal growth restriction was conducted with independent multiprofessional and lay panels. It found that substandard care was a factor in most deaths, where different care would have been likely to have resulted in a different outcome. This included, primarily, lack of antenatal detection of fetal growth restriction.⁴

In 2009, a regional maternity dataset was developed and implemented for routine data collection

(perinatal episode electronic record, PEER); the subsequent population based study of PEER data found that unrecognised fetal growth restriction was the single largest risk factor for stillbirth, and that its antenatal recognition reduced the risk by half.⁵

Application of the evidence

Antenatal identification of a small baby has since become a central focus of stillbirth prevention strategies. The Perinatal Institute developed the growth assessment protocol (GAP),⁶ a clinical quality improvement programme and care pathway tailored for maternity care, with community and hospital midwives, obstetricians, maternal-fetal medicine specialists and sonographers providing most of the care. It relies on risk assessment at the beginning and throughout pregnancy: for low risk pregnancies, surveillance is through serial fundal height measurement, with referral for ultrasound scans and further investigations as required; for increased risk pregnancies, serial scans are used with diagnostic Doppler studies as needed. Measurements are plotted on growth charts (gestation related optimal weight, GROW), which can be customised to each fetus's growth potential based on maternal constitutional characteristics (height, weight, parity, and ethnic origin).⁷ GAP includes training, clinical helpdesk support, and tools for rolling audit of antenatal detection of small babies, as well as case reviews and learning from near misses—that is, when an at-risk baby was not identified antenatally.

Following endorsement of GROW charts by the Royal College of Obstetricians and Gynaecologists (RCOG) in their 2013 guidelines on fetal growth,⁸ the GAP programme was taken up by over 75% of trusts and health boards providing maternity services in the UK. Data from the Office of National Statistics show that its implementation was associated with reductions in regional and national stillbirth rates.^{9 10} A ten year comparison of stillbirth rates in groups predefined according to uptake of GAP (fig 1) showed an overall decline in stillbirths in England, including in units not using GAP; this was likely to be associated with the 2013 RCOG guidelines recommending policies such as standardised risk assessment in early pregnancy, serial scans in high risk pregnancy, and initiation of earlier delivery if fetal biometry and Doppler findings are abnormal.⁸ However the reduction was significantly larger in units that had implemented GAP, and most pronounced in those with the highest antenatal detection rates of small for gestational age babies.¹⁰

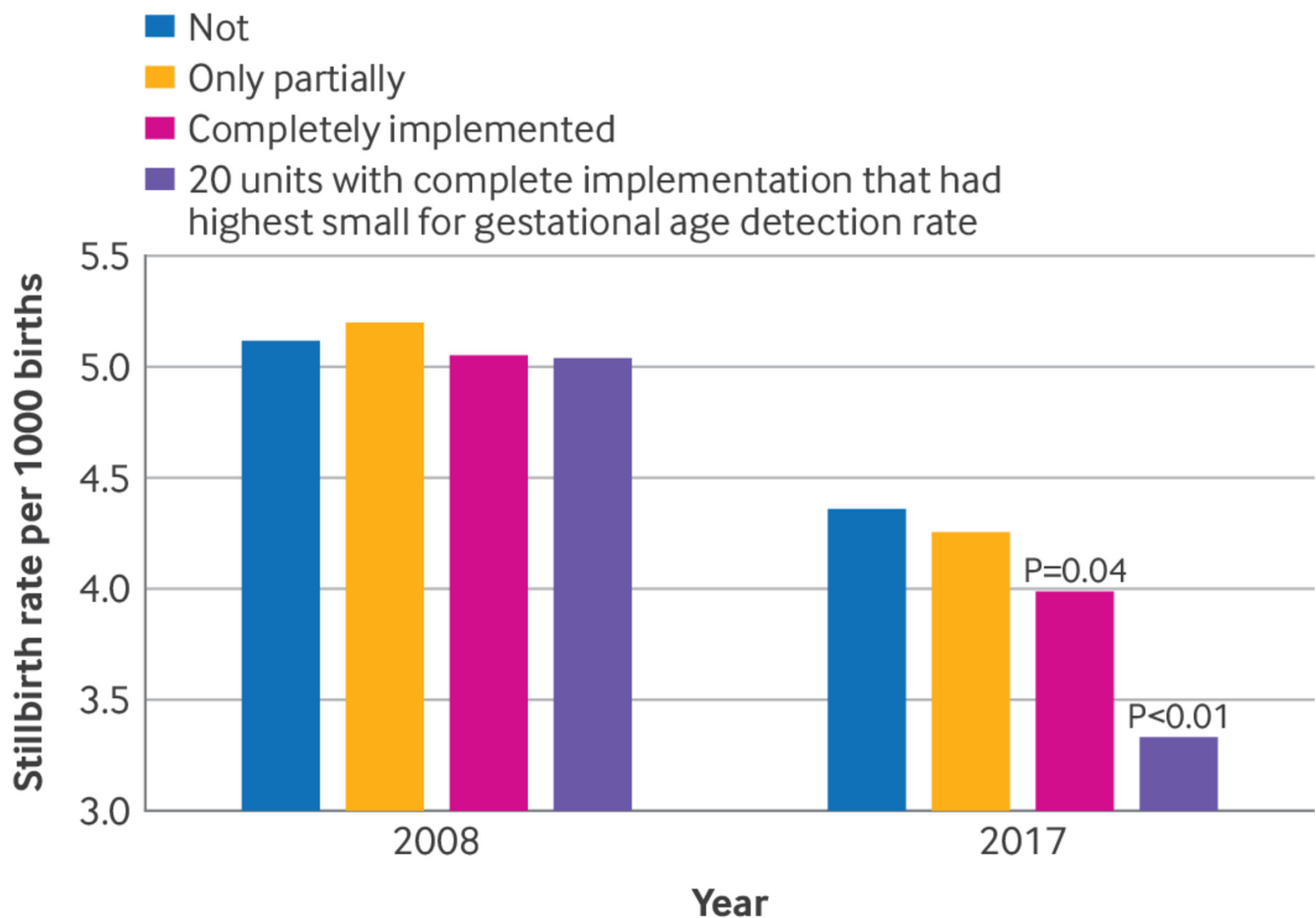


Fig 1 | Stillbirth rates in 133 maternity units in England in the same groups in 2008 and 2017, stratified according to whether the Growth Assessment Protocol (GAP) was not, partially, or completely implemented, and in a subgroup of 20 units with complete implementation that had the highest small-for-gestational-age detection rate. P values represent two proportion Z test, with significance level set at < 0.05 .¹⁰ Redrawn with permission.

NHS England subsequently introduced the Saving Babies' Lives care bundle in 2015-16,¹¹ which included a fetal growth element that was modelled on the GAP care pathway, with indicators for growth surveillance and antenatal detection of babies that are small for gestational age. An NHS commissioned, independent evaluation of the care bundle programme examined data from 19 NHS trusts, of which 17 were participating in GAP, and showed significant increases in detection rate of small for gestational age babies and reduction in stillbirths.¹² Two other care bundle elements could have contributed to fewer stillbirths: smoking cessation, although prevalence at first visit reduced only from 16% to 14%, and more mothers presenting with reduced fetal movements, which increased ultrasound scans and inductions of labour.¹² Improvement was also evident in the 2022 European Perinatal Health Report, which analysed data from 2015 to 2019: England and Wales had one of the steepest declines (20%) in stillbirth rates at ≥ 24 weeks, ranking fourth of 32 countries behind Estonia, Slovenia, and Denmark, although the report did not have data to specify underlying causes.¹³

The Design cluster randomised controlled trial recruited NHS units in London that had not implemented GAP and found no improvement in antenatal detection rates.¹⁴ However, the trial was conducted during the rollout of the NHS England care bundle in control arm units and had other challenges, including a short evaluation period.¹⁵ Nevertheless, use of GROW charts in the study

arm resulted in earlier delivery of small for gestational age babies and significant reduction in stillbirths and perinatal deaths.¹⁴ Internationally, introduction of GROW charts has been associated with improved antenatal detection of small for gestational age fetuses in a randomised controlled trial in Pakistan¹⁶ and in observational studies in Australia¹⁷ and India.¹⁸ The Indian five year longitudinal study was also able to look at outcomes, and found significant reductions in term stillbirth and neonatal encephalopathy after implementation of GROW.¹⁸ In New Zealand, GAP is run by the Perinatal Institute as a health service commissioned national programme and GROW charts are part of the country's clinical practice guideline for maternity services.¹⁹

One size does not fit all

The latest RCOG guideline, published in 2024,²⁰ listed several fetal growth standards, in particular two new universal charts for fetal weight by the Intergrowth-21st Consortium²¹ and the World Health Organization (WHO).²² The guideline authors did not evaluate the charts, possibly because of a lack of published evidence of benefit, although they did quote comparative studies which highlighted differences in screen positive rates when applied to the same population. The guideline did not recommend any chart and instead advised units to ensure that the chart they use is appropriate for their own population and to adjust thresholds for fetal growth restriction if needed. This was a big step away from the 2013

guideline, which had given a clear recommendation to use GROW charts.

A recent analysis of 3.2 million NHS births examined small and large for gestation rates in NHS integrated health board geographical

areas, according to seven charts mentioned in the RCOG guideline.²³ It found that designation of small and large babies varied widely according to the characteristics of the local population, such as maternal size and ethnic origin. [Table 1](#) illustrates differences between the two universal charts and customised charts.

Table 1 | Comparison of three fetal weight charts (Intergrowth-21st fetal growth chart,²¹ WHO fetal growth chart,²² and gestation related optimal weight (GROW) chart⁷)

	Intergrowth-21 st	WHO	GROW
Chart development			
Data source (pregnancies)	Low risk, normal outcome	Low risk, normal outcome	Low risk, normal outcome
Data origin	Longitudinal study in 8 countries, including England	Longitudinal study in 10 countries, none from UK	Average birthweight in NHS (England, Wales, Scotland, N Ireland)
Sample size (n)	1556	1386	3.2 million
Main data in cohort	Ultrasound scan estimated fetal weight	Ultrasound scan estimated fetal weight	Birthweight derived "term optimal weight," combined with adjustable growth curve to project trajectory
Usage			
Ease of use	No adjustment needed; formula programmed into existing maternity systems	No adjustment needed; formula programmed into existing maternity systems	Requires algorithm with coefficients to adjust for maternal characteristics (ethnic origin, height, weight, parity), linked to existing maternity systems
Cost	Free	Free	Provided as part of GAP programme, which includes training, GROW charts, reports, clinical audit software and helpdesk support (£2 per pregnancy)
Perinatal continuity	Separate Intergrowth neonatal chart	No neonatal chart from same cohort	Single GROW chart for antenatal and neonatal assessment
Performance in unselected NHS database²³			
Mean % (range) small for gestational age (<10th centile)	5.5 (4.3-8.5)	18.1 (15.2-25.4)	13.4 (11.6-15.2)
Mean % (range) large for gestational age (>90th centile)	17.7 (12.2-20.6)	7.6 (4.9-9.2)	8.4 (7.3-9.3)

The developers of Intergrowth describe it as a prescriptive standard and maintain that "Having separate standards for a given country, institution or ethnic group has no biological basis and makes little sense in modern, multicultural societies."²¹ However, compared with the GROW charts in an NHS population, Intergrowth systematically underestimates small for gestational age and may miss fetuses at risk of growth restriction ([table 1](#)).²³ It also overestimates large for gestational age, which may lead to unnecessary interventions and maternal anxiety.

The WHO study, while also aiming for a prescriptive standard, did find substantial variation between countries and individual maternal characteristics, and warned that "the results indicate that populations, even under optimal nutritional conditions and environment, vary and that fetal growth varies and should be considered when the WHO fetal growth charts or any growth references are applied."²⁰ When applied to the NHS population the WHO chart overestimated small for gestational age and underestimated large for gestational age, and may miss cases that are at risk of macrosomia related complications in labour, compared with GROW.²³

A common claim, although without evidence, is that a customised standard as used in GROW may normalise variation arising from pathological factors such as ethnicity associated with social deprivation. However, ample studies have shown that ethnic variation of growth is normal and exists in low risk pregnancies.⁷ Customisation by maternal characteristics, including ethnicity and

maternal weight, ensures better alignment between the small for gestational age screen positive rate and stillbirth rate, improving the targeting of interventions.²⁴

Since publication of the RCOG guideline, the Perinatal Institute has learnt of increasing instances of adverse outcomes associated with use of some charts. Two of the authors, SC and JAD, became concerned that the Intergrowth charts used in the care of their stillborn daughter Maia Devlin Corfield provided a misleading picture of the appropriateness of her weight. They subsequently undertook a national freedom of information survey,²⁵ which showed that 26 of 119 trusts providing maternity services in England were using the free Intergrowth charts, in most instances having switched from GROW. The most common reasons that trusts gave in the freedom of information responses were: thinking Intergrowth charts were the same or better than other charts (perhaps under the impression that these charts had superseded GROW), concerns with other charts, a desire to align with other maternity tools, and the lower cost of using Intergrowth charts.²⁵ No responding NHS trusts using Intergrowth charts indicated a change of thresholds for small for gestational age or fetal growth restriction, and 21 respondents reported that they did not consider making such a change based on local data,²⁵ contrary to the RCOG's recommendation.²⁰

A subsequent interrupted time series analysis showed that the antenatal recognition of babies that are small for gestational age drops by 49% with Intergrowth charts.²⁶ NHS England and RCOG

have since issued a national safety alert about Intergrowth fetal weight charts, advising hospitals to stop using them.²⁷

The potential effect of reduced rates of small for gestational age at screening on stillbirth risk has been assessed in a retrospective analysis of an NHS dataset of 127 027 singleton pregnancies.²⁸ Of the 8390 cases that were small for gestational age at last scan (average 37.0 weeks) according to GROW, 5715 (68.1%) were not small according to Intergrowth, and 15 of the 30 small for gestational age stillbirths occurred in this “missed” group within the cohort.²⁸

Standardisation and oversight

NHS England is not set up to support and oversee an effective and safe national stillbirth prevention programme. The current system, in which responsibility is devolved to trusts to determine their own protocols and standards, cannot ensure that processes and outcomes are monitored properly and that care of mothers is safe and personalised to their needs. Occasionally, regional networks are involved but, mostly, local hospital based teams are left to monitor their own performance. Most hospital boards, which have to sign off their local reports to qualify for payments from the NHS Resolution’s incentive scheme to enhance the quality and safety of maternity and neonatal care, are unlikely to have expertise for thorough assessments in each specialty which their service represents.

Standardisation also requires consistent methods for monitoring performance and learning across organisations. Feedback to clinicians about their performance enhances aspiration to improve, and can be aided by digital tools that are already available, including audit software and dashboards with risk factors, referral and detection rates, and outcome data.²⁹ Routinely collected data, with appropriate anonymisation, can provide real time information at local, network, and national level about prevalence of at-risk pregnancies and their referral, detection, and adverse outcome rates. Sequential scans allow calculation of growth velocity,³⁰ with electronic alerts when growth is too slow or fast but still within normal fetal size limits.³¹

National focus on prevention

Prospective parents depend on their local maternity services and have to trust that the care they receive is safe and follows latest evidence. Yet the care that individual hospitals provide and the methods they apply to monitor babies’ antenatal growth and wellbeing vary substantially across the NHS.

Considering the accepted evidence that many stillbirths are potentially avoidable, that poor growth increases stillbirth risk, and that its recognition and timely delivery reduces stillbirths, antenatal detection of the small baby must be considered a key performance indicator of the quality of care. This objective requires a nationally agreed standard for fetal growth surveillance, derived from a low risk NHS population with normal outcome pregnancies, using the same fetal and neonatal chart to allow calculation and monitoring of antenatal detection rates of babies that are born small. The growth standard needs to be appropriate for the population and adjusted for each individual pregnancy. Along with a personalised chart, clinical care needs to include information giving and joint decision making with the mother.

Once a unified standard is established throughout the service, routine audit data will allow benchmarking and identification of substandard performance and underlying reasons. This requires oversight and improvement of the quality of data submitted for NHS Digital’s monthly statistics reports,³² but currently such quality assurance does not seem to exist.²⁶ Standardising and auditing care

should not be hard in England’s national health service — indeed much of the infrastructure already exists. The current reality of trust level responsibility without accountability is affecting serious but rare outcomes such as stillbirth, and it can take several years before a flawed policy reveals a statistically significant increase in maternity care related deaths.

Policymakers such as the Department of Health and Social Care need to act to prevent avoidable deaths and rebuild public trust in maternity safety (box 1). As NHS England is dissolved and the new National Maternity and Neonatal Taskforce begins its work, the taskforce should consider quality improvement initiatives such as GAP for suitability as a core service within a wider, multifaceted national programme for stillbirth prevention. Such programmes need to be able to incorporate evolving evidenced based innovations without relinquishing existing gains, with effectiveness monitored through routine audit. Application of evidence based protocols and standards, training and support, and rolling audit of performance are essential for a safe maternity service.

Box 1: Actions needed to improve patient safety in maternity care

- National programming in antenatal and intrapartum care, coordinated by the Department of Health and Social Care
- Latest outcome based evidence synthesised into regularly updated National Institute for Health and Care Excellence and royal college guidelines
- Standardisation of protocols and digital tools to reduce variation across the NHS, allow personalised high quality care, and reduce adverse outcomes
- National oversight, monitoring, and benchmarking of key indicators such as antenatal detection of fetal growth restriction, with central and network based support for all trusts to audit performance and provide feedback
- Transparency and accountability on progress to parents, clinicians, and other stakeholders

Key messages

- Undetected fetal growth restriction is the largest single factor associated with stillbirth and an important contributor to neonatal death and brain injury at birth
- Use of fetal growth charts can increase detection but they must be tailored to the population and each individual pregnancy
- England needs a programmatic approach to detection, with close monitoring of processes and outcomes to reduce perinatal mortality and morbidity
- The programme should include national oversight, transparency, and accountability
- Ongoing support, staff training, audit, benchmarking, and learning from near misses is essential to recognise and reduce human factor and system failures

Contributors: After the late term stillbirth of Maia Devlin Corfield, bereaved parents SC and JAD undertook a national Freedom of Information survey to determine the national use, impact, and oversight of Intergrowth fetal growth charts. The Perinatal Institute, including JG, obstetrician and director and EB, lead midwife, described their findings from analysing data from this survey and summarised the evidence from research and implementation of successful growth surveillance programmes. HE contributed her experience of advocacy of patient safety as chief executive of MAMA Academy, the UK’s Safer Pregnancy Charity. All authors helped develop a proposal for an evidence based prevention programme needed in England, and approved the final draft. JG is guarantor.

Public and patient involvement: Bereaved parents SC and JAD undertook a national freedom of information survey to determine the national use, impact, and oversight of Intergrowth fetal growth charts.

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enterprise which provides the GAP programme and GROW charts. All other authors have no competing interests to declare.

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- 1 Department of Health and Social Care. 14 NHS trusts the focus of national maternity investigation. 2025. <https://www.gov.uk/government/news/14-nhs-trusts-the-focus-of-national-maternity-investigation>
- 2 Gardosi J. Clinical implications of 'unexplained' stillbirths. In: *Confidential Enquiries into Stillbirths and Deaths in Infancy (CESDI) 8th annual report*. 2012;-7. https://www.bmj.com/content/suppl/2012/04/03/bmj.e2105.DC1/galc002312.www2_default.pdf
- 3 Gardosi J, Kady SM, McGeown P, et al. Classification of stillbirth by relevant condition at death (ReCoDe): population based cohort study. *BMJ* 2005;331:7. pmid: 16236774. doi: 10.1136/bmj.38629.587639.7C
- 4 Perinatal Institute. Confidential Enquiry into Stillbirths with Fetal Growth Restriction. 2007. https://www.pi.nhs.uk/rpnm/CE_SB_Final.pdf
- 5 Gardosi J, Madurasinghe V, Williams M, et al. Maternal and fetal risk factors for stillbirth: population based study. *BMJ* 2013;346:. pmid: 23349424. doi: 10.1136/bmj.f108
- 6 Gardosi J, Giddings S, Buller S, et al. Preventing stillbirths through improved antenatal recognition of pregnancies at risk due to fetal growth restriction. *Public Health* 2014;128:-702. pmid: 25151298. doi: 10.1016/j.puhe.2014.06.022
- 7 Gardosi J, Francis A, Turner S, et al. Customized growth charts: rationale, validation and clinical benefits *Am J Obstet Gynecol* 2018;218:-18. doi: 10.1016/j.ajog.2017.12.011
- 8 Royal College of Obstetricians and Gynaecologists. The investigation and management of the small for gestational age fetus. Green top guideline No 31. 2013. https://www.rcog.org.uk/media/t3lmjhl/gtg_31.pdf
- 9 Gardosi J, Giddings S, Clifford S, et al. Association between reduced stillbirth rates in England and regional uptake of accreditation training in customised fetal growth assessment. *BMJ Open* 2013;3:e003942. pmid: 24345900. doi: 10.1136/bmjopen-2013-003942
- 10 Hugh O, Williams M, Turner S, et al. Reduction of stillbirths in England from 2008 to 2017 according to uptake of the growth assessment protocol: 10-year population-based cohort study. *Ultrasound Obstet Gynecol* 2021;57:-8. pmid: 32851727. doi: 10.1002/uog.22187
- 11 NHS England. Saving babies' lives: version 3. 2025. <https://www.england.nhs.uk/long-read/saving-babies-lives-version-3-2/>
- 12 Widdows K, Roberts SA, Camacho EM, et al. Stillbirth rates, service outcomes and costs of implementing NHS England's Saving Babies' Lives care bundle in maternity units in England: a cohort study. *PLoS One* 2021;16:e0250150. pmid: 33872334. doi: 10.1371/journal.pone.0250150
- 13 Euro-Peristat. European Perinatal Health Report: core indicators of the health and care of pregnant women and babies in Europe from 2015 to 2019. 2022. https://www.europeristat.com/wp-content/uploads/2022/11/Euro-Peristat_Fact_sheets_2022_for_upload.pdf
- 14 Vieira MC, Relp S, Muruet-Gutierrez W, et al. Evaluation of the Growth Assessment Protocol (GAP) for antenatal detection of small for gestational age: The DESIGN cluster randomised trial. *PLoS Med* 2022;19:e1004004. pmid: 35727800. doi: 10.1371/journal.pmed.1004004
- 15 Butler E, Hugh O, Gardosi J. Evaluating the Growth Assessment Protocol for stillbirth prevention: progress and challenges. *J Perinat Med* 2022;50:-47. pmid: 35618671. doi: 10.1515/jpm-2022-0209
- 16 Ahmed F, Hanook S, Ismail F, et al. Customized versus standard fundal-height measurements for the detection of small-for-gestational age fetuses in low-risk women (CORE study): A randomized controlled trial. *Int J Gynecol Obstet* 2025;169:-88. pmid: 39711114. doi: 10.1002/ijgo.16107
- 17 Jayawardena L, Sheehan P. Introduction of a customised growth chart protocol increased detection of small for gestational age pregnancies in a tertiary Melbourne hospital. *Aust N Z J Obstet Gynaecol* 2019;59:-500. pmid: 30302752. doi: 10.1111/ajo.12902
- 18 Ravula PC, Veluganti S, Gopireddy MMR, et al. Impact of introduction of the growth assessment protocol in a South Indian tertiary hospital on SGA detection, stillbirth rate and neonatal outcome. *J Perinat Med* 2022;50:-36. pmid: 35689297. doi: 10.1515/jpm-2022-0111
- 19 Te Whatu Ora - Health New Zealand. Small for gestational age and fetal growth restriction in Aotearoa New Zealand - A clinical practice guideline. 2023. <https://www.tewhatauora.govt.nz/publications/small-for-gestational-age-fetal-growth-restriction-guidelines/>
- 20 Morris RK, Johnstone E, Lees C, et al. Investigation and care of a small-for-gestational-age fetus and a growth restricted fetus (Green-top Guideline No. 31) *BJOG* 2024;131doi: 10.1111/1471-0528.17814
- 21 Stirnemann J, Villar J, Salomon LJ, et al. International estimated fetal weight standards of the INTERGROWTH-21st Project. *Ultrasound Obstet Gynecol* 2017;49:-86. pmid: 27804212doi: 10.1002/uog.17347
- 22 Kiserud T, Piaggio G, Carroli G, et al. The World Health Organization fetal growth charts: a multinational longitudinal study of ultrasound biometric measurements and estimated fetal weight. *PLoS Med* 2017;14:e1002220. pmid: 28118360. doi: 10.1371/journal.pmed.1002220
- 23 Gardosi J, Hugh O, Merricks A, Butler E, Ellson H. Designation of small-for-gestational age according to 7 fetal growth charts in England's National Health Service: population based cohort study of 3.2 million births. *BMJ* (forthcoming). doi: 10.1136/bmj-2026-433307
- 24 Gardosi J, Hugh O. Stillbirth risk and smallness for gestational age according to Hadlock, INTERGROWTH-21st, WHO, and GROW fetal weight standards: analysis by maternal ethnicity and body mass index. *Am J Obstet Gynecol* 2023;229:-547.e13. pmid: 37247647. doi: 10.1016/j.ajog.2023.05.026
- 25 Corfield S, Devlin JA. Use of fetal growth charts in England. *Lancet Obstet Gynaecol Women's Health* 2026;2:-4.
- 26 Merricks A, Hugh O, Gardosi J. Use of fetal growth charts in England. *Lancet Obstet Gynaecol Women's Health* 2026;2:-5.
- 27 NHS England. Intergrowth estimated fetal weight charts. 2025. https://www.rcog.org.uk/media/b15mznah/intergrowth-estimated-fetal-weight-charts_10-december.pdf
- 28 Hugh O, Butler E, Ellson H, et al. Small-for-gestational age according to INTERGROWTH-21st fetal weight standard misses most pregnancies at risk of stillbirth identified by GROW *Ultrasound Obstet Gynecol* 2025;65:-9. doi: 10.1002/uog.29214
- 29 Perinatal Institute. GROW 2.0 dashboard for fetal growth assessment and birth outcomes. 2024. <https://perinatal.org.uk/Dashboard>
- 30 Hugh O, Gardosi J. Fetal weight projection model to define growth velocity and validation against pregnancy outcome in a cohort of serially scanned pregnancies *Ultrasound Obstet Gynecol* 2022;60:-95. doi: 10.1002/uog.24860
- 31 Butler E, Ellson H, Taylor H, et al. Reduction of stillbirths supported by electronic assessment of fetal growth velocity. In: Top scoring abstracts of the RCOG World Congress 2025. *BJOG* 2025;132:. doi: 10.1111/1471-0528.18215
- 32 NHS Digital. Maternity Services Monthly Statistics. 2024. <https://digital.nhs.uk/data-and-information/publications/statistical/maternity-services-monthly-statistics>