**Table S1 – Number and proportion of babies who were LGA by each definition at birth, presented by trial arm and phase, and by gestational age at birth (imputed data)**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Pre-randomisation phase | Outcome phase |
|  |  | **Standard Care****(n=29,404)** | **GAP (n=26,546)** | **Standard Care****(n=13,810)** | **GAP (n=11,096)** |
| LGAboth | 5.7% | 5.5% | 4.8% | 5.0% |
| LGApop, not LGAcust | 1.4% | 1.3% | 1.6% | 1.4% |
| LGAcust, not LGApop | 3.0% | 3.2% | 2.7% | 3.1% |
| Proportion of LGA babies born during each gestational period (LGA defined by intervention allocation)\* | **24+1-27+6** | 0.1% | 0.6% | 0.1% | 0.7% |
| **28+0-31+6** | 0.6% | 0.8% | 0.8% | 1.6% |
| **32+0-35+6** | 2.9% | 3.6% | 3.7% | 3.6% |
| **36+0-37+6** | 13.2% | 13.0% | 15.8% | 13.1% |
| **38+0-39+6** | 50.3% | 46.9% | 53.6% | 48.2% |
| **40+0-42+6** | 33.0% | 35.0% | 26.0% | 32.8% |
| \*LGApop in both arms during the pre-randomisation phase and the standard care arm during the outcome phase, and LGAcust in the intervention arm during the outcome phase. |

| Table S2- Clinical and sociodemographic characteristics of pregnancies in which the baby was born LGA during the outcome comparison trial phase, presented by trial arm (available case data where not already presented).  | Standard Care | GAP |
| --- | --- | --- |
|   | LGAboth (n=633) | LGAboth (n=497) |
| Imputed data |
| Age at estimated conception, years | **Median (IQR)** | 33.1(29.3-36.3) | 32.6(28.8-36.4) |
| **Missing, n(%)** | 0(0.00%) | 0(0.00%) |
| Ethnicity, n(%) | **White** | 407(64.3%) | 286(57.5%) |
| **Black** | 102(16.1%) | 63(12.7%) |
| **Asian** | 54(8.5%) | 74(14.9%) |
| **Mixed** | 9(1.4%) | 4(0.8%) |
| **Other** | 40(6.3%) | 33(6.6%) |
| **Missing** | 21(33.2%) | 37(7.4%) |
| Index of Multiple Deprivation Quintiles, n(%) | **1 (Least deprived)** | 143(22.6%) | 43(8.7%) |
| **2** | 89(14.1%) | 60(12.1%) |
| **3** | 92(14.5%) | 116(23.3%) |
| **4** | 160(25.2%) | 155(31.2%) |
| **5 (Most deprived)** | 140(22.1%) | 113(22.7%) |
| **Missing** | 9(1.4%) | 10(2.0%) |
| Body Mass Index | **Median (IQR)** | 27.2(23.6-32.0) | 26.9(23.8-31.8) |
| **Missing, n(%)** | 79(12.4%) | 117(23.5%) |
| Parity, n(%) | **Nulliparous** | 171(27.0%) | 176(35.4%) |
| **1** | 207(32.7%) | 191(38.4%) |
| **2** | 74(11.7%) | 71(14.3%) |
| **3** | 36(5.7%) | 26(5.2%) |
| **4 +** | 25(3.9%) | 20(4.0%) |
| **Missing, n(%)** | 120(19.0%) | 13(2.6%) |

**Table S3 - Ultrasound utilisation amongst pregnancies in which the baby was born LGAboth at or after 36+0 weeks of gestation, presented by trial arm and phase (available case data)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | Pre-randomisation phase | Comparison phase | Intervention effect size - unadjusted (95%CI) | Intervention effect size - adjusted (95%CI) | p-value |
|   | **Standard Care**  | **GAP**  | **Standard Care**  | **GAP**  |
| Proportion of pregnancies with at least one scan, % | 72.4% | 88.1% | 94.0% | 91.0% | -1.3%(-10.4, 7.8) | -0.7%(-9.7, 8.4) | 0.86 |
| Number of all scans, mean (SD) | 3.2(3.0) | 3.5(2.3) | 4.7(2.9) | 3.8(2.2) | -0.9(-2.4, 0.7) | -0.9(-1.4, -0.4) | 0.002 |
| Proportion of pregnancies with scans ≥34+0 weeks, % | 39.9% | 56.7% | 73.0% | 62.2% | -8.5%(-26.4, 9.5) | -9.8%(-25.8, 6.2) | 0.19 |
| Number of scans ≥34+0 weeks, mean (SD) | 0.9(1.2) | 0.9(0.8) | 1.2(1.2) | 1.0(1.0) | -0.2(-0.9, 0.6) | -0.2(-0.6, 0.3) | 0.38 |
| Proportion of pregnancies with scans ≥34+0, including EFW, %\*  | 38.3% | 57.3% | 71.1% | 59.1% | -11.8%(-33.2, 9.7) | -12.9%(-31.6, 5.9) | 0.13 |
| Number of scans ≥34+0 with EFW, mean (SD)\* | 0.5(0.7) | 0.7(0.7) | 0.9(0.7) | 0.7(0.7) | -0.2(-0.5, 0.1) | -0.2(-0.4, 0.02) | 0.07 |
| Of women with EFW recorded ≥34+0 weeks, mean (SD) duration in days between the last growth scan and the birth | 18.3(12.9) | 17.7(10.8) | 17.7(11.5) | 18.2(10.4) | 1.0(-4.2, 6.1) | 0.0(-5.3, 5.4) | 0.99 |
| *\*Values for the intervention arm exclude two cluster sites at which data on estimated fetal weight was not available during both trial phases for non-SGA babies.*  |

**Table S4 – Number and proportion of babies who were LGA by each definition at birth, presented by trial arm and phase (available case data)**

|  |  |  |
| --- | --- | --- |
|  | Pre-randomisation phase | Outcome comparison phase |
|  | **Standard Care****(n=29,404)** | **Intervention (n=26,546)** | **Standard Care****(n=13,810)** | **Intervention (n=11,096)** |
| LGAboth, n (%) | 1693(5.76%) | 1395(5.3%) | 665(4.8%) | 532(4.8%) |
| LGApop, n (%) | 369(1.3%) | 303(1.1%) | 203(1.5%) | 146(1.3%) |
| LGAcust, n (%) | 852(2.9%) | 726(2.7%) | 357(2.6%) | 307(2.8%) |
| LGA (defined by intervention allocation)\* , n (%) born during each gestational period.  | **24+1-27+6** | 1(0.1%) | 7(0.3%) | 1(0.1%) | 4(0.5%) |
| **28+0-31+6** | 11(0.5%) | 14(0.7%) | 7(0.8%) | 10(1.2%) |
| **32+0-35+6** | 57(2.8%) | 69(3.3%) | 31(3.6%) | 27(3.2%) |
| **36+0-37+6** | 273(13.2%) | 282(13.3%) | 136(15.7%) | 111(13.2%) |
| **38+0-39+6** | 1038(50.3%) | 1010(47.6%) | 466(53.7%) | 411(49.0%) |
| **40+0-42+6** | 682(33.1%) | 738(34.8%) | 227(26.2%) | 275(32.8%) |
| **Missing gestational age** | 0(0.0%) | 1(0.1%) | 0(0.0%) | 1(0.1%) |

**Table S5- Clinical and sociodemographic characteristics of pregnancies in which the baby was born LGA during the outcome comparison trial phase, presented by trial arm (available case data where not already presented)**

|   | Standard care | GAP |
| --- | --- | --- |
|   | LGAboth (N=618) | LGAboth (N=506) |
| Age at estimated conception, years, median (IQR) | 33.1(29.3-36.3) | 32.6(28.8-36.4) |
| Missing age, n (%) | 0 (0.0%) | 0 (0.0%) |
| Ethnicity, n (%) | **White** | 407(66.5%) | 286(62.2%) |
| **Black** | 102(16.7%) | 63(13.7%) |
| **Asian** | 54(8.8%) | 74(16.1%) |
| **Mixed** | 9(1.5%) | 4(0.9%) |
| **Other** | 40(6.5%) | 33(7.2%) |
| **Missing** | 21(3.3%) | 37(7.4%) |
| Index of Multiple Deprivation Quintiles, n (%) | **1 (Least deprived)** | 143(22.9%) | 43(8.8%) |
| **2** | 89(14.3%) | 60(12.3%) |
| **3** | 92(14.7%) | 116(23.8%) |
| **4** | 160(25.6%) | 155(31.8%) |
| **5 (Most deprived)** | 140(22.4%) | 113(23.2%) |
| **Missing** | 9(1.4%) | 10(2.0%) |
| Body Mass Index, median (IQR) | 27.2(23.6-32.0) | 26.9(23.8-31.8) |
| Body Mass Index, n (%) | **<18.5** | 3(0.6%) | 5(1.3%) |
| **18.5-25** | 155(33.2%) | 124(32.6%) |
| **25-30** | 155(33.2%) | 123(32.4%) |
| **30-35** | 95(20.3%) | 71(18.7%) |
| **35-40** | 33(7.1%) | 41(10.8%) |
| **40+** | 26(5.6%) | 16(4.2%) |
| **Missing** | 166(26.2%) | 117(23.5%) |
| Parity, n (%) | **0** | 171(33.3%) | 176(36.4%) |
| **1** | 207(40.4%) | 191(39.5%) |
| **2** | 74(14.4%) | 71(14.7%) |
| **3** | 36(7.0%) | 26(5.4%) |
| **4 +** | 25(4.9%) | 20(4.1%) |
| **Missing** | 120(19.0%) | 13(2.6%) |
| NB. Mothers and babies with missing data have been excluded from the denominator of available case results, rates of missing values presented for information. |

**Table S6 - Rate of detection of LGA by each definition, presented by trial arm and phase (available case analysis)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | Pre-randomisation phase | Comparison phase | Intervention effect size - unadjusted (95%CI) | Intervention effect size - adjusted (95%CI) | p-value |
|   | **Standard** **Care** | **GAP** | **Standard Care** | **GAP** |
| Primary outcome |  |  |  |  |  |  |  |
| LGA at birth by customised and population centiles, %(n/N) | 5.8%(1,633/28,298) | 5.6%(1,081/19,302) | 4.8%(633/13,111) | 4.9%(388/7,941) |  |  |  |
| Antenatal detection, %(n/N) | 24.1%(393/1,633) | 40.8%(441/1,081) | 47.9%(303/633) | 39.4%(153/388) | -5.6%(-23.0, 11.8) | -5.2%(-29.6, 19.3) | 0.61 |
| False positive rate, %(n/N) | 3.3% | 2.8% | 7.2% | 4.9% | -2.8%(-7.0, 1.4) | -2.6%(-6.5, 1.3) | 0.14 |
| Secondary outcomes\* |  |  |  |  |  |  |
| LGA at birth by customised centiles (<10th centile) , %(n/N) | 8.7%(2,464/28,301) | 8.3%(1,611/19,341) | 7.5%(984/13,111) | 7.5%(598/7,976) |  |  |  |
| Antenatal detection, %(n/N) | 19.2%(474/2,464) | 32.3%(521/1,611) | 39.0%(384/984) | 37.8%(226/598) | 1.1%(-16.9, 19.0) | -0.8%(-23.8, 22.3) | 0.94 |
| False positive rate, %(n/N) | 3.1%(805/25,837) | 2.6%(394/15,274) | 6.7%(817/12,127) | 4.0%(264/6,638) | -3.1%(-7.2, 1.0) | -2.6%(-6.2, 1.0) | 0.12 |
| LGA at birth by population centiles (<10th centile) , %(n/N) | 7.0%(1,993/28,302) | 6.7%(1,301/19,305) | 6.3%(829/13,111) | 6.3%(497/7,941) |  |  |  |
| Antenatal detection, %(n/N) | 23.3%(464/1,993) | 39.2%(510/1,301) | 45.7%(379/829) | 34.8%(173/497) | -9.6%(-22.5, 3.3) | -7.1%(-26.5, 12.4) | 0.39 |
| False positive rate, %(n/N) | 3.1%(816/26,309) | 2.6%(404/15,542) | 6.7%(822/12,282) | 4.7%(318/6,718) | -2.4%(-6.3, 1.5) | -2.3%(-5.9, 1.3) | 0.15 |
| *\*One site did not contribute data on screening outcomes for the pre-randomisation phase, so excluded from all secondary outcomes* |

**Table S7 - Secondary outcomes for mothers who gave birth to LGAboth babies at or after 36+0 weeks of gestation, presented by trial arm and phase (available case data where not already presented).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | Pre-randomisation phase | Comparison phase | Intervention effect size - unadjusted (95%CI) | Intervention effect size - adjusted (95%CI) | p-value |
|   | **Standard Care (n=1633)** | **GAP (n= 1320)** | **Standard Care** **(n= 633)** | **GAP (n= 497)** |
| Induction of Labour, n/N(%) | 396/1629(24.3%) | 322/1151(28.0%) | 158/632(25.0%) | 148/479(30.9%) | 8.2%(-5.0, 21.5) | 0.8%(-9.4, 11.0) | 0.86 |
| Mode of birth, n/N (%) |  |  |  |  |  |  |  |
| Spontaneous vaginal delivery | 747/1632(45.8%) | 603/1231(49.0%) | 274/633(43.3%) | 200/472(42.4%) | 1.7%(-11.8, 15.2) | -8.1%(-22.4, 6.1) | 0.21 |
| Instrumental delivery | 155/1632(9.5%) | 142/1231(11.5%) | 62/633(9.8%) | 43/472(9.1%) | 0.4%(-5.6, 6.3) | -3.8%(-7.9, 0.4) | 0.07 |
| Elective caesarean section | 412/1632(25.3%) | 308/1231(25.0%) | 187/633(29.5%) | 143/472(30.3%) | -2.4%(-17.7, 12.9) | -5.6%(-20.6, 9.5) | 0.40 |
| Emergency caesarean section | 317/1632(19.4%) | 176/1231(14.3%) | 110/633(17.4%) | 86/472(18.2%) | 0.3%(-4.3, 5.0) | -3.0%(-7.3, 1.3) | 0.14 |
| Estimated blood loss, mlsmean (SD) | 625.5(483.5) | 640.0(486.0) | 651.4(551.2) | 647.3(455.6) | -26.7(-124.8, 71.3) | 2.1(-84.2, 88.5) | 0.95 |
| Post-partum haemorrhage (>1500mls), n/N(%) | 90/1621(5.6%) | 58/1291(4.5%) | 38/630(6.0%) | 20/475(4.2%) | -2.4%(-5.5, 0.7) | -2.4%(-4.8, -0.0) | 0.048 |
| 3rd/4th degree tears, n/N (%) | 35/1633(2.1%) | 40/1320(3.0%) | 8/633(1.3%) | 11/497(2.2%) | 1.4%(-1.5, 4.3) | 0.7%(-1.4, 2.8) | 0.46 |
| Epidural, n/N (%) | 458/1435(31.9%) | 375/1318(28.5%) | 177/556(31.8%) | 141/496(28.4%) | -5.2%(-26.7, 16.3) | -5.7%(-18.7, 7.3) | 0.33 |
| Episiotomy, n/N (%) | 165/1358(12.2%) | 167/909(18.4%) | 76/558(13.6%) | 46/319(14.4%) | 14.0%(-11.2, 39.1) | -5.7%(-12.2, 0.8) | 0.08 |

**Table S8 - Secondary outcomes for LGAboth babies born at or after 36+0 weeks of gestation, presented by trial arm and phase (available case data).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | Pre-randomisation phase | Comparison phase | Intervention effect size - unadjusted (95%CI) | Intervention effect size - adjusted (95%CI) | p-value |
|  | **Standard Care (n=1633)** | **GAP****(n= 1320)** | **Standard Care (n= 633)** | **GAP (n= 479)** |
| Gestational age at birth, weeks , mean (SD) | 39.3(1.3) | 39.2(1.3) | 39.2(1.3) | 39.3(1.3) | 0.1(-0.1, 0.2) | 0.1(-0.1, 0.3) | 0.20 |
| Babies born before 39+0 weeks, n/N (%) | 594/1633(36.4%) | 513/1320(38.9%) | 248/633(39.2%) | 185/497(37.2%) | -2.1%(-10.7, 6.5) | -6.4%(-19.6, 6.7) | 0.28 |
| Birthweight, grams, mean (SD) | 4207.2(351.8) | 4180.4(372.3) | 4183.94(337.0) | 4196.8(334.3) | 17.3(-27.3, 61.8) | 32.7(-18.0, 83.3) | 0.167 |
| Apgar score < 7 at 5 minutes, n/N (%) | 28/1633(1.7%) | 22/1320(1.7%) | 15/633(2.4%) | 5/497(1.0%) | -1.1%(-2.6, 0.3) | -1.1%(-3.0,0.9) | 0.23 |
| Arterial cord pH < 7.1, n/N (%) | 38/1404(2.7%) | 42/1320(3.2%) | 16/552(2.9%) | 15/497(3.0%) | -0.1%(-2.3, 2.2) | -0.3%(-2.0, 1.4) | 0.67 |
| Neonatal unit admission, n/N (%) | 216/1333(16.2%) | 146/1320(11.1%) | 104/514(20.2%) | 46/497(9.3%) | -10.3%(-31.8,11.2) | -6.4%(-14.4, 1.6) | 0.10 |
| Hypoxic-Ischaemic encephalopathy, n/N (%) | 1/1633(0.1%) | 2/1320(0.2%) | 2/633(0.3%) | 2/497(0.4%) | 0.1%(-0.5, 0.7) | 0.3%(-0.5, 1.1) | 0.35 |
| Hypoglycaemia, n/N (%) | 37/1633(2.3%) | 41/1320(3.1%) | 20/633(3.2%) | 10/497(2.0%) | -0.6%(-3.2, 2.0) | -0.4%(-3.7, 2.9) | 0.77 |
| Nasogastric tube feeding, n/N (%) | 16/1333(1.2%) | 38/1320(2.9%) | 8/514(1.6%) | 13/497(2.6%) | 0.9%(-1.4, 3.1) | 0.8%(-1.4, 2.9) | 0.40 |
| Stillbirth, n/N (%) | 0/1633(0.0%) | 2/1320(0.2%) | 1/633(0.2%) | 0/495(0.0%) | -0.2%(-0.5, 0.2) | # | 0.39\* |
| Neonatal death, n/N (%) | 0/1633(0.0%) | 0/1320(0.0%) | 0/633(0.0%) | 0/497(0.0%) | 0.0%(0.0, 0.0) | # | 1.00\* |
| Perinatal mortality, n/N (%) | 0/1633(0.0%) | 2/1320(0.2%) | 1/633(0.2%) | 0/495(0.0%) | -0.2%(-0.5, 0.2) | # | 0.39\* |
| *# Cannot be calculated due to too few events**\*Unadjusted p-value* |