NMPA

National Maternity & Perinatal Audit

Annual Clinical Report

Based on births in NHS maternity services in England, Scotland and Wales during 2023

Measures Technical Specification

Published September 2025

Contents

Introduction

This technical specification provides details of the cohort construction, data definitions and data sources used for the NMPA annual clinical report based on births in NHS maternity services in England, Scotland and Wales during 2023. A State of the Nation report and supporting documents can be found online, as well as trust/board level results.

What has changed since our previous annual clinical report?

- The datasets we use have changed since previous reports; for the first time, our annual clinical report uses the English Maternity Services Data Set version 2.0 (MSDS v2.0). Unforeseen delays in the supply of this dataset from NHS England led to a significant delay in the production of NMPA reports for births occurring between 2019 and 2023. Following publication of the annual clinical report based on births occurring in 2023, data from the intervening years (2019–2022) will be reported on the NMPA website.

- We have moved to calendar year reporting, to align reporting periods with other related projects such as the *National Neonatal Audit Programme* (NNAP) and *Mothers and Babies: Reducing Risk through Audits and Confidential Enquires across the UK* (MBRRACE-UK).

- We have reviewed and revised our suite of measures, for which details of the process can be found on our website.

- We have amended our ethnic group categories to include 'Chinese' in the 'Asian' ethnic group, whereas in previous reports 'Chinese' women and birthing people were included in the 'Any Other' ethnic group category.

- Scottish data has been reintroduced into our reports and outputs.

How to use this document

This technical specification supports the NMPA annual clinical report on births occurring in 2023, and a range of additional supporting documents available online:

- Data flow diagrams
- A methods document
- A data completeness overview, at trust/board and national levels
- An outlier policy document with trust/board responses
- A glossary explaining the terminology and abbreviations used in our reports
- The NMPA State of the Nation report on births occurring in 2023
- Country-level summary results tables
- Trust/board-level interactive data tables and funnel plots
- A line-of-sight table describing the evidence base for the recommendations in this report
- Quality Improvement (QI) resources

Results can be used to benchmark against national standards and recommendations where these exist, and to identify good practice among maternity care providers and specific clinical areas for quality improvement. Only records and maternity services which passed thorough data quality

checks are included in these results. This means that some trusts/boards will not have results for every measure.

Case-mix adjustment models used in our previous reports included: maternal age, parity, previous caesarean birth, birthweight, gestational age, BMI, smoking status at booking, diabetes, hypertension, pre/eclampsia, placental problems, poly/oligo/anhydramnios. However BMI, smoking status at booking, diabetes, hypertension, pre/eclampsia, placental problems, poly/oligo/anhydramnios were removed from the models for 2023 due to some trusts having insufficient data completeness for BMI and smoking status or poor linkage to the administrative Admitted Patient Care datasets from which the other items are derived (England and Wales).

List of audit measures for 2023

Late booking

Of women and birthing people who give birth to a singleton baby between 24^{+0} and 42^{+6} weeks, the proportion attending the first appointment with a midwife (booking) after 10^{+0} weeks of gestation.

Preterm birth

Of women and birthing people who give birth to a singleton baby between 24^{+0} and 42^{+6} weeks of gestation:

a) the proportion whose baby is born preterm between 24^{+0} and 36^{+6}, and:

Of those, the proportion whose birth is recorded as:

b) spontaneous

c) iatrogenic

Induction of labour

Of women and birthing people who give birth to a singleton baby between 37^{+0} and 42^{+6}, the proportion who have an induction of labour.

Small for gestational age babies

Of term singleton babies born small for gestational age (defined as below the 10th birthweight centile using the British 1990 charts[*]), the proportion who are born at or after their estimated due date (40 weeks of gestation).

Third- and fourth-degree perineal tears

Of women and birthing people who give birth vaginally to a singleton baby between 37^{+0} and 42^{+6} weeks, the proportion who experience a third- or fourth-degree perineal tear.

Episiotomy

Of women and birthing people who give birth vaginally to a singleton baby between 37^{+0} and 42^{+6} weeks, the proportion who have an episiotomy.

Vaginal birth with and without the use of instruments

Of women and birthing people who give birth to a singleton baby between 34^{+0} and 42^{+6} weeks, the proportion giving birth vaginally:

a) without the use of instruments

b) with the use of instruments (overall)

c) with the use of forceps

d) with the use of ventouse

Caesarean birth

Of women and birthing people who give birth to a singleton baby between 34^{+0} and 42^{+6} weeks, the proportion who have:

a) an unplanned / emergency caesarean birth

b) a planned / elective caesarean birth

c) a caesarean birth reported by selected Robson groups

Vaginal birth after caesarean (VBAC)

Of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} that is their second baby, after having had a caesarean birth for their first baby, the proportion who give birth vaginally.

PPH ≥1500 ml

Of women and birthing people who give birth to a singleton baby between 34^{+0} and 42^{+6}, the proportion who have a postpartum haemorrhage of ≥1500 ml.

Unplanned maternal readmission

Of women and birthing people who give birth to a singleton baby between 37^{+0} and 42^{+6} weeks, those who have an unplanned overnight readmission to hospital within 42 days of birth.

---

[*] Cole et al, British 1990 growth reference centiles for weight, height, body mass index and head circumference fitted by maximum penalized likelihood. 1998. PMID: 9496720

Apgar Score <7 at 5 minutes

Of liveborn singleton babies born between 34^{+0} and 42^{+6} weeks of gestation, the proportion who are assigned an Apgar score of less than 7 at 5 minutes of age.

Skin-to-skin contact

Of liveborn singleton babies born between 34^{+0} and 42^{+6}, the proportion who receive skin-to-skin contact within one hour of birth.

Breast milk

Of liveborn singleton babies born between 34^{+0} and 42^{+6}, the proportion who receive:

a) any breast milk at first feed

b) any breast milk at discharge from the maternity unit

Potential outlier indicators

Potential outlier indicator reporting was not performed for NMPA annual clinical reports on births occurring between 1 April 2017 and 31 March 2018, and between 1 April 2018 and 31 March 2019.

Third- or fourth-degree perineal tears

Lowest level of reporting in NMPA results for births occurring in 2023: Trusts/boards with at least one obstetric unit (OU).

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of women and birthing people giving birth vaginally to a singleton baby between 37^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Perineal tears	• ≥70% complete	$3^{rd}/4^{th}$ degree tear rate is ≥0% and <15%
Mode of birth	• ≥70% complete	If trust/board has at least one OU • Caesarean birth rate is between ≥5% and ≤60% If trust/board has no OUs and is not in Scotland: • Caesarean birth rate is <5% If trust/board has no OUs and is in Scotland: Any caesarean birth rate
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on perineal tears, method of birth, gestational age, or number of babies (multiplicity).

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for perineal tears was less than 70%

Numerator: Number of women and birthing people giving birth vaginally to a singleton baby between 37^{+0} and 42^{+6} weeks of gestation, who experience a third or fourth degree perineal tear.

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age.

Postpartum haemorrhage of 1500ml or more

Lowest level of reporting in NMPA results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Estimated blood loss (ml)	• ≥70% complete	Blood loss of 0ml occurs in ≤5% of births Blood loss >500ml occurs in ≤60% of births
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on estimated blood loss, gestational age, or number of babies (multiplicity).

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for estimated blood loss was less than 70%

Numerator: Number of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} weeks of gestation, who have a postpartum haemorrhage of ≥1500 ml.

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age.

Apgar score of less than 7 at 5 minutes

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of liveborn singleton babies born between 34^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Apgar score at 5 minutes	• ≥70% complete	If trust/board has at least one OU: • Rate of Apgar scores less than 7 at 5 minutes is ≥0.5% If trust/board has no OUs: Any rate of Apgar scores less than 7 at 5 minutes
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A
Fetus outcome	If trust/board is not in Scotland: • ≥70% complete If trust/board is in Scotland: • Any completeness	If trust/board has at least one OU: • More than one stillbirth was recorded If trust/board has no OUs or is in Scotland: • Any number of stillbirths

Records were excluded if they were missing information on Apgar score at 5 minutes, gestational age, number of babies (multiplicity), or fetus outcome (stillbirth or livebirth).

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for Apgar score at 5 minutes was less than 70%

Numerator: Number of liveborn singleton babies born between 34^{+0} and 42^{+6} weeks of gestation with an Apgar score of less than 7 at 5 minutes of age.

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age.

Other measures

First meeting with a midwife (booking)

Lowest level of reporting in NMPA Results for births occurring in 2023: All Trusts/boards

Lowest level of reporting on NMPA website: All sites (where possible to report)

Relevant population (denominator): Number of women and birthing people giving birth to a singleton baby between 24^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Gestational age at booking	• ≥70% complete overall	N/A
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on gestational age at booking and number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for gestational age at booking was less than 70%

Numerator: Number of women and birthing people giving birth to a singleton baby between 24^{+0} and 42^{+6} weeks of gestation, who attend their first appointment with a midwife (booking) after 10^{+0} weeks of gestation.

Case-mix factors: Maternal age, parity, previous caesarean birth, birthweight, gestational age.

Preterm birth

Lowest level of reporting in NMPA Results for births occurring in 2023: All trusts/boards

Lowest level of reporting on NMPA website: All sites (where possible to report)

Relevant population (denominator):

a) Number of women and birthing people giving birth to a singleton baby between 24^{+0} to 42^{+6} weeks of gestation

b) and c) Number of women and birthing people giving birth to a singleton baby between 24^{+0} to 42^{+6} weeks of gestation

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A
Additional items, for numerators b) and c)		
Mode of labour onset	≥70% complete	If trust/board has at least one OU: • Induction of labour rate is ≥10% and ≤60%, overall • Induction of labour rate is ≥10% and ≤60%, amongst vaginal births • Induction of labour rate is ≥10% and ≤60%, amongst emergency caesarean births • Induction of labour rate is <5%, amongst elective caesarean births If trust/board has no OUs: • Induction of labour rate is <5%

Mode of birth	≥70% complete	• If trust/board has at least one OU Caesarean birth rate is between ≥5% and ≤60% If trust/board has no OUs and is not in Scotland: • Caesarean birth rate is <5% If trust/board has no OUs and is in Scotland: Any caesarean birth rate

Records were excluded if they were missing information on gestational age, number of babies, or mode of labour onset or method of birth (the latter two for b) and c) only).

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for gestational age was less than 70%

Numerators:

a) Number of women and birthing people giving birth to a singleton baby between 24^{+0} and 36^{+6} weeks of gestation
b) Of those who give birth to a singleton baby between 24^{+0} and 36^{+6} weeks gestation, the number of births that were spontaneous
c) Of those who give birth to a singleton baby between 24^{+0} and 36^{+6} weeks gestation, the number of births that were iatrogenic

Case-mix factors: Maternal age, parity, previous caesarean birth.

Induction of labour

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of women and birthing people giving birth to a singleton baby between $37^{+0}$and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Mode of labour onset	≥70% complete	If trust/board has at least one OU: • Induction of labour rate is ≥10% and ≤60%, overall • Induction of labour rate is ≥10% and ≤60%, amongst vaginal births • Induction of labour rate is ≥10% and ≤60%, amongst emergency caesarean births • Induction of labour rate is <5%, amongst elective caesarean births If trust/board has no OUs: Induction of labour rate is <5%
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: • ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on labour onset, gestational age, or number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for labour onset was less than 70%

Numerator: Number of women and birthing people giving birth to a singleton baby between 37^{+0} and 42^{+6} weeks of gestation, who have an induction of labour.

Case-mix factors: Maternal age, parity, previous caesarean birth, birthweight, gestational age.

Small for gestational age babies born at or after 40 weeks

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of singleton babies born small for gestational age (defined as less than 10th birthweight centile using the British 1990 charts)[*] between 37^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Birthweight	• ≥70% complete	Birthweight ≥2500g and ≤4500g in ≥80% of babies born between 37 and 42 weeks (inclusive)
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A
Fetus outcome	If trust/board is not in Scotland: • ≥70% complete If trust/board is in Scotland: • Any completeness	If trust/board has at least one OU: • More than one stillbirth was recorded If trust/board has no OUs or is in Scotland: Any number of stillbirths

Records were excluded if they were missing information on birthweight, gestational age, number of babies, or fetus outcome.

For each trust / board, specific months were excluded if:

• counts were less than 70% of the expected monthly average
• completeness for birthweight was less than 70%

Numerator: Number of singleton babies born small for gestation age (defined as less than the 10th birthweight centile using the British 1990 charts)[*] that are born on or after their estimated due date (between 40^{+0} and 42^{+6} weeks of gestation)

Case-mix factors: Maternal age, parity, previous caesarean birth.

---

[*] Cole et al, British 1990 growth reference centiles for weight, height, body mass index and head circumference fitted by maximum penalized likelihood. 1998. PMID: 9496720

Vaginal birth with and without the use of instruments

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Mode of birth	• ≥70% complete	If trust/board has at least one OU: • Caesarean birth rate is between ≥5% and ≤60% If trust/board has no OUs and is not in Scotland: • Caesarean birth rate is <5% If trust/board has no OUs and is in Scotland: Any caesarean birth rate
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on mode of birth, gestational age, or number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for mode of birth was less than 70%

Numerator: Number of women and birth people giving birth to a singleton baby between 34^{+0} and 42^{+6} weeks of gestation who have the following mode of birth:

a. Vaginal birth without the use of instruments

b. Vaginal birth with the use of instruments (overall)

c. Vaginal birth with the use of forceps

d. Vaginal birth with the use of ventouse

Case-mix factors: Maternal age, parity, previous caesarean birth, birthweight, gestational age.

Caesarean birth

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator):

a) Number of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} weeks of gestation.
b) Number of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} weeks of gestation.
c) Robson groups as follow:

- Robson Group 1: Singleton, term (37–42w), cephalic, primiparous, spontaneous onset of labour
- Robson Group 2: Singleton, term (37–42w), cephalic, primiparous, with an onset of labour of either induction or pre-labour caesarean birth
- Robson Group 5: Singleton, term (37–42w), cephalic, multiparous with a previous caesarean birth

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Mode of birth	• ≥70% complete	If trust/board has at least one OU: • Caesarean birth rate is between ≥5% and ≤60% If trust/board has no OUs and is not in Scotland: • Caesarean birth rate is <5% If trust/board has no OUs and is in Scotland: Any caesarean birth rate
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: • ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	• ≥70% complete	N/A
Additional items for Robson Groups		
Parity	• ≥70% complete	If trust/board has at least one OU:

		• Proportion of births to primiparous women ≥31% and ≤61% If trust/board has no OUs: Proportion of births to primiparous women ≥15% and ≤61%
Mode of labour onset	≥70% complete	If trust/board has at least one OU: • Induction of labour rate is ≥10% and ≤60%, overall • Induction of labour rate is ≥10% and ≤60%, amongst vaginal births • Induction of labour rate is ≥10% and ≤60%, amongst emergency caesarean births • Induction of labour rate is <5%, amongst elective caesarean births If trust/board has no OUs: • Induction of labour rate is <5%
Fetal presentation	• ≥70% complete within vaginal births	Cephalic rate ≥70%

Records were excluded if they were missing information on mode of birth, gestational age, or number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for mode of birth was less than 70%

Numerators:

Number of women and birthing people giving birth to a singleton baby within the gestational length above specified, who have the following mode of birth:

a) unplanned / emergency caesarean birth

b) planned / elective caesarean birth

c) caesarean birth

Case-mix factors:

a) and b) maternal age, parity, previous caesarean birth, birthweight, gestational age.
c) maternal age, previous caesarean birth (Robson Groups 1 & 2 only), birthweight, gestational age.

Vaginal birth after caesarean (VBAC)

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} that is their second baby, after having had a caesarean birth for their first baby and without an indication for a repeat caesarean birth.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Mode of birth	≥70% complete	If trust/board has at least one OU: • Caesarean birth rate is between ≥5% and ≤60% If trust/board has no OUs and is not in Scotland: • Caesarean birth rate is <5% If trust/board has no OUs and is in Scotland: Any caesarean birth rate
Previous caesarean birth	• ≥70% complete	If trust/board has at least one OU: • Previous caesarean birth rate is >1% among births to multiparous women • Rate of no previous caesarean is ≥75% and <96% If trust/board has no OUs: Previous caesarean birth rate is <5% among births to multiparous women
Parity	• ≥70% complete	If trust/board has at least one OU: • Proportion of births to primiparous women ≥31% and ≤61% If trust/board has no OUs: Proportion of births to primiparous women ≥15% and ≤61%

| Gestational age | If trust/board has at least one OU:
• ≥70% complete within vaginal births
• ≥70% complete within caesarean births
• ≥70% complete overall

If trust/board has no OUs: ≥70% complete overall | If trust/board has at least one OU:
• Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births

If trust/board has no OUs:
• Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births |
| **Number of babies** | ≥70% complete | N/A |

Records were excluded if they were missing information on mode of birth, previous caesarean birth, parity, gestational age, or number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for mode of birth was less than 70%

Numerator: Number of women and birthing people giving birth to a singleton baby between 34^{+0} and 42^{+6} that is their second baby, after having had a caesarean birth for their first baby, who give birth vaginally.

Case-mix factors: Maternal age, birthweight, gestational age.

Episiotomy

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of women and birthing people giving birth to a singleton baby between 37^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Episiotomy	≥70% complete in vaginal births	Episiotomy rate >0% and <45% within vaginal births
Mode of birth	≥70% complete	If trust/board has at least one OU: • Caesarean birth rate is between ≥5% and ≤60% If trust/board has no OUs and is not in Scotland: • Caesarean birth rate is <5% If trust/board has no OUs and is in Scotland: Any caesarean birth rate
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	• ≥70% complete	N/A

Records were excluded if they were missing information on episiotomy, mode of birth, gestational age, or number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness for episiotomy was less than 70%

Numerator: Number of women and birthing people giving birth vaginally to a singleton baby between $37^{+0}$and 42^{+6} weeks of gestation, who have an episiotomy.

Case-mix factors: Maternal age, parity, previous caesarean birth, birthweight, gestational age.

Unplanned maternal readmission

Lowest level of reporting in NMPA Results for births occurring in 2023: Trusts/boards with at least one OU

Lowest level of reporting on NMPA website: Sites with an OU (where possible to report)

Relevant population (denominator): Number of women and birthing people who give birth to a singleton baby between 37^{+0} and 42^{+6} weeks of gestation, excluding those who die before discharge or are not discharged within 42 days of birth.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Type of readmission	≥70% of records could be linked with HES (England), SMR-01 (Scotland) or PEDW (Wales)	N/A
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on date of birth, gestational age, or number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- linkage to HES (England) / SMR-01 (Scotland) / PEDW (Wales) was less than 70%

Numerator: Number of women and birthing people giving birth to a singleton baby between 37^{+0} and 42^{+6} weeks of gestation (excluding those who died before discharge or were not discharged within 42 days of birth), who were readmitted to hospital within 42 days[*].

Case-mix factors: Maternal age, parity, previous caesarean birth, birthweight, gestational age.

---

[*] Excluding: planned readmission, planned transfers, readmissions of less than one day, and those accompanying an unwell baby.

Skin-to-skin contact within one hour of birth

Lowest level of reporting in NMPA Results for births occurring in 2023: All trusts/boards

Lowest level of reporting on NMPA website: All sites (where possible to report)

Relevant population (denominator): Number of liveborn singleton babies born between 34^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Skin-to-skin	• ≥70% complete within vaginal births • ≥70% complete within caesarean births	N/A
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: • ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Fetus outcome	If trust/board is not in Scotland: • ≥70% complete If trust/board is in Scotland: • Any completeness	If trust/board has at least one OU: • More than one stillbirth was recorded If trust/board has no OUs or is in Scotland: Any number of stillbirths
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on skin-to-skin, gestational age, fetus outcome, or number of babies.

For each trust / board, specific months were excluded if:

• counts were less than 70% of the expected monthly average
• completeness for skin-to-skin was less than 70%

Numerator: Number of liveborn singleton babies born between 34^{+0} and 42^{+6} weeks of gestation who receive skin-to-skin contact within one hour of birth.

Case-mix factors: Maternal age, parity, previous caesarean birth, birthweight, gestational age.

Breast milk at first feed and at discharge

Lowest level of reporting in NMPA Results for births occurring in 2023: All trusts/boards

Lowest level of reporting on NMPA website: All sites (where possible to report)

Relevant population (denominator): Number of liveborn singleton babies born between 34^{+0} and 42^{+6} weeks of gestation.

Exclusions: Trusts/boards were excluded if they <u>did not</u> meet the following criteria:

Data item	Completeness check	Distribution check
Breast milk at first feed	• ≥70% complete within vaginal births, • ≥70% complete overall	>1% breast milk at first feed rate
Breast milk at discharge	≥70% complete overall	>1% breast milk at discharge rate
Gestational age	If trust/board has at least one OU: • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: • ≥70% complete overall	If trust/board has at least one OU: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Fetus outcome	If trust/board is not in Scotland: • ≥70% complete • If trust/board is in Scotland: • Any completeness	If trust/board has at least one OU: • More than one stillbirth was recorded If trust/board has no OUs or is in Scotland: Any number of stillbirths
Number of babies	≥70% complete	N/A

Records were excluded if they were missing information on breast milk at first feed/breast milk at discharge respectively, gestational age, fetus outcome, or number of babies.

For each trust / board, specific months were excluded if:

- counts were less than 70% of the expected monthly average
- completeness breast milk at first feed/breast milk at discharge respectively was less than 70%

26

Numerator: Number of liveborn singleton babies born between 34^{+0} and 42^{+6} weeks of gestation who received:

    a.   Any breast milk at their first feed

    b.   Any breast milk at discharge from the maternity unit

Case-mix factors: Maternal age, parity, previous caesarean birth, birthweight, gestational age.

Data item definitions and data sources used

Data item	Coding and data source(s)		
	England	Scotland	Wales
	Data items used for indicator construction		
Trust / Board code	MSDS v2: OrgCodeProvider HES: Procode3 ONS-PDS: first 3 characters of Org_Code	NRS Births: location	CHE: first 3 characters of HospitalSiteCodeBirth PEDW: first 3 characters of PEDWOrganisationCode MIds: first 3 characters of BirthTreatmentSiteCode
Region code	Integrated Care Board (ICB) codes mapped to trust codes	We defined the regions in Scotland as: North Scotland: NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Western Isles, NHS Tayside West Scotland: NHS Ayrshire and Arran, NHS Dumfries and Galloway, NHS Forth Valley, NHS Greater Glasgow and Clyde, NHS Lanarkshire	We defined the regions in Wales as: North, Mid and West Wales: Powys Teaching Health Board, Betsi Cadwaladr University Health Board, Hywel Dda Health Board South East Wales: Abertawe Bro Morgannwg University Health Board, Cardiff and Vale University Health Board, Cwm Taf University Health Board, Aneurin Bevan Health Board

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
		<u>East Scotland:</u> NHS Borders, NHS Lothian, NHS Fife	
Singleton	N/A: NumberInfants is not available in MSDS, therefore we had to derive a proxy for it.	SMR-02: Num_Of_Births_This_Pregnancy = 1	CHE: Number_BornCHE = 1 If Number_BornCHE was missing we used MIds's LabourOnsetFoetusNumberMI
Gestation Length at Birth	MSDS v2: GestationLengthBirth HES: Gestat_1 ONS-PDS: Gestation	SMR-02: Estimated_Gestation	CHE: Gestational_AgeCHE If gestation was missing in CHE, we used MIds's LabourOnsetGestationWeeksMI.
Livebirth	MSDS v2: PregnancyOutcome = 1 (Live birth) HES: birstat_1 = 1 ONS-PDS: stillbirth_icd10_1 to stillbirth_icd10_15: all missing	SMR-02: Outcome_of_Pregnancy_Baby_n = 1 (Live birth) If Outcome_of_Pregnancy_Baby_n was missing in SMR-02, we used NRS Births and NRS Stillbirth: Live_males Live_females Stillborn_males Stillborn_females	MIds: BirthOutcomeCodeMI = 1 (Live birth)

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
		Liveborn_sex_not_known Stillborn_sex_not_known	
Induction of labour	MSDS v2: LabourOnsetMethod: 3; 4; 5. If LabourOnsetMethod was missing from MSDS, we used delonset: 3; 4; 5 from HES. + failed induction defined as ICD-10 code 'O61' in HES.	SMR02: Induction_of_labour: 1; 2; 3; 4; 5; 6; 7; 8.	MIds: LabourOnsetModeCodeMI: 3; 4; 5. If mode of labour onset was missing in MIds, we used Onset_Of_LabourCHE = 2 (Induced).
Vaginal birth	MSDS v2: DeliveryMethodCode: 0 (Spontaneous Vertex); 1 (Spontaneous, other cephalic); 2 (Low forceps, not breech); 3 (Other forceps, not breech); 4 (Ventouse, vacuum extraction). If method of delivery was missing in the MSDS we used method of delivery as recorded in HES (OPCS, delmeth). If the quality (completeness and/or distribution) of DeliveryMethodCode in MSDS was insufficient for a given trust, it was replaced with delmeth from HES for that	SMR-02: Mode_of_delivery_baby_n: 0 (Normal (SVD)); 1 (Cephalic – abnormal presentation); 2 (Low forceps – no rotation, forceps NOS); A–E (Mid cavity forceps; Rotational forceps; Ventouse; Ventouse with rotation; Other forceps); 5 (Breech, spontaneous); 6 (Breech extraction, NOS).	We used information from CHE, MIds and PEDW as follows: CHE: Mode_Of_DeliveryCHE): 0 (Spontaneous vertex); 1 (Spontaneous other cephalic); 2 (Low forceps, not breech); 3 (Other forceps, not breech); 4 (Ventouse, vacuum extraction); 5 (Breech); 6 (Breech extraction). MIds: DeliveryMethodBaby: 1 (Spontaneous Vaginal Birth); 2 (Ventouse); 3 (Forceps). PEDW: PEDW Main Operation Description: Normal […]; Cephalic […]; Breech […]; Other breech […]; Forceps […] or Vacuum […].

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	entire trust (subject to HES delmeth being of sufficient quality).		
Caesarean birth	MSDS v2: DeliveryMethodCode: 7 (Planned/elective caesarean birth); 8 (Unplanned/emergency caesarean birth). If method of delivery was missing in the MSDS we used method of delivery as recorded in HES (delmethd). If the quality (completeness and/or distribution) of DeliveryMethodCode in MSDS was insufficient for a given trust, it was replaced with delmethd from HES for that entire trust (subject to HES delmethd being of sufficient quality).	SMR-02: Mode_of_delivery_baby_n: 7 (Elective/planned caesarean birth); 8 (Emergency and unspecified caesarean birth).	We used information from CHE, MIds and PEDW as follows: CHE: Mode_Of_DeliveryCHE: 7 (Planned/elective caesarean birth); 8 (Unplanned/emergency caesarean birth). MIds: DeliveryMethodBaby: 4 (Planned/elective caesarean birth); 5 (Unplanned/emergency caesarean birth). PEDW: PEDW Main Operation Description: Elective caesarean […]; Other caesarean […].

Data item	Coding and data source(s)		
	England	Scotland	Wales
Cephalic	MSDS: FetusPresentation: 01 (Cephalic) If presentation was missing, we used DeliveryMethodcode to determine presentation where possible	SMR-02: Presentation_At_Delivery: 1 (Occipito-anterior); 2 (Occipito-posterior); 3 (Occipito-lateral). If presentation was missing, we used Mode_Of_Delivery to determine presentation where possible	MIds: LabourOnsetFoetalPresentationCodeMI: 1 (Cephalic) If presentation was missing, we used BirthModeCodeMI or Mode_Of_DeliveryCHE to determine presentation where possible
3rd or 4th degree perineal tear	MSDS v2: ICD-10: O702; O703. OR SNOMED CT: Anal sphincter tear (disorder); Fourth degree perineal laceration (disorder); Fourth degree perineal laceration involving anal mucosa (disorder); Fourth degree perineal laceration involving rectal mucosa (disorder); Fourth degree perineal tear during delivery – delivered (disorder); Fourth degree perineal tear during delivery with postnatal problem (disorder); Laceration of anus (disorder); Repair of complete perineal tear (procedure); Repair of obstetric laceration of perineum and anal sphincter and mucosa of rectum (procedure); Third degree perineal laceration (disorder); Third degree perineal tear during delivery – delivered (disorder); Third degree	SMR-02: Tears: 3 (3rd degree tear); 4 (4th degree tear) OR SMR-02: OPCS: R32.2; R32.5 or ICD10: O70.2; O70.3.	MIds: LabourPerinealStatusCodeMI = 1 (Yes) OR PEDW: OPCS-4: R32.2; R32.5 or ICD-10: O70.2; O70.3.

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	perineal tear during delivery with postnatal problem (disorder); Type 3a third degree laceration of perineum (disorder); Type 3b third degree laceration of perineum (disorder); Type 3c third degree laceration of perineum (disorder). OR HES: OPCS-4: R32.2; R32.5 OR ICD-10: O70.2; O70.3.		
Obstetric haemorrhage ≥1500ml	MSDS v2: The latest recorded blood loss volume, within 4 days of delivery and where the volume was ≥1500ml with SNOMED CT: Blood loss in labour (observable entity); Estimated maternal blood loss (observable entity); Quantity of postpartum maternal blood loss (observable entity); Finding of blood loss in labour (finding); Atonic postpartum hemorrhage (disorder); Delayed AND/OR secondary postpartum hemorrhage (disorder); Major postpartum haemorrhage (disorder); Minor postpartum haemorrhage (disorder); Postpartum haemorrhage (disorder).	SBR: Delivery_blood_loss: ≥1500ml	MIds: LabourEstimatedBloodLossML: ≥1500ml

Data item	Coding and data source(s)		
	England	Scotland	Wales
Maternal readmission	HES admission date >= delivery date. HES admission date <= delivery date +42. Only HES admissions methods corresponding to emergency admissions were included (admission method codes: 21, 22, 23, 24, 25, 28, 31, 32). Excluded HES admissions not due to illness (any diagnosis code of Z763). Excluded any HES admissions within the delivery spell. Excluded transfers (admission source 51, 52, 53, 87). When missing, MSDS delivery date was infilled with HES operation date of the HES operation corresponding to a delivery OPCS-4 code. Excluded readmissions of less than one day (discharge date = admission date and there were no other records within the same spell as this record with a later discharge date).	SMR-01 admission date >= delivery date. SMR-01 admission date <= delivery date +42. Only SMR-01 admissions methods corresponding to emergency admissions were included (admission type codes: greater or equal to 20 and less or equal to 39) Excluded SMR-01 admissions not due to illness (any diagnosis code of Z763). Excluded any SMR-01 admissions within the delivery spell. Excluded transfers (admission type code 18). When missing, SMR-02 delivery date was infilled with NRS Births admission date. Excluded readmissions of less than one day (discharge date = admission date and there	PEDW Admission date >= delivery date. PEDW admission date <= delivery date +42. Only PEDW admissions methods corresponding to emergency admissions were included (admission method codes: 21, 22, 23, 24, 25, 26, 27, 28, 31, 32). Excluded PEDW admissions not due to illness (any diagnosis code of Z763). Excluded any PEDW admissions within the delivery spell. Excluded transfers (admission methods: 81, 82, 83, 84, 85, 86, 87). When missing, MIds delivery date was infilled with PEDW admission date of the PEDW operation corresponding to a delivery OPCS-4 code. Excluded readmissions of less than one day (discharge date = admission date and there

Data item	Coding and data source(s)		
	England	Scotland	Wales
		were no other records within the same spell as this record with a later discharge date).	were no other records within the same spell as this record with a later discharge date).
Apgar score <7 at 5 min	MSDS v2: SNOMED CT: Where the value is less than 7: Apgar score at 5 minutes (observable entity); Apgar at 5 minutes = 1 (finding); Apgar at 5 minutes = 2 (finding); Apgar at 5 minutes = 3 (finding); Apgar at 5 minutes = 4 (finding); Apgar at 5 minutes = 5 (finding); Apgar at 5 minutes = 6 (finding).	SMR-02: Apgar_5_minutes_baby_n: 0; 1; 2; 3; 4; 5; 6; NR (Baby being actively resuscitated at the 5 minute check).	CHE: Apgar_2CHE: 0; 1; 2; 3; 4; 5; 6. When Apgar_2CHE was missing, Apgar score at 5 minutes was infilled with MIds' BirthApgarScoreMI: 0; 1; 2; 3; 4; 5; 6.
Breast milk at first feed	MSDS v2: BabyFirstFeed: 1 (Maternal breast milk); 2 (Donor breast milk). OR SNOMED CT: Breast fed at birth (finding); Breastfeeding started (finding); Breast fed (finding); Breast and Supplementary bottle fed	SMR-02: First_Feed_Given_baby_n: 1 (Breast only); 4 (Mixed (breast and formula)).	CHE: BreastFeedingAtBirthCombinedCodeCHE: 1 (Exclusive Milk); 2 (Combined Milk – Predominantly Breast); 3 (Combined – Partially Breast).

Data item	Coding and data source(s)		
	England	Scotland	Wales
	at birth; Giving expressed breast milk (regime/therapy).		
Breast milk at discharge	MSDS v2: SNOMED CT: Breastfeeding at discharge from hospital (finding); Breastfeeding and supplementary bottle feeding at discharge from hospital (finding).	SMR-02: Feed_On_Discharge_baby_n: 1 (Breast only); 4 (Mixed (breast and formula)).	N/A
Episiotomy	MSDS v2: OPCS-4: R271 OR SNOMED CT: Delayed repair of episiotomy (procedure); Delivery by Malstrom's extraction with episiotomy (procedure); Delivery by vacuum extraction with episiotomy (procedure); Disruption of episiotomy wound in the puerperium (disorder); Episiotomy (procedure); Episiotomy care (regime/therapy); Episiotomy infection (disorder); Episiotomy wound (disorder); High forceps delivery with episiotomy (procedure); Low forceps delivery with episiotomy (procedure); Mid forceps delivery with episiotomy (procedure); Post-episiotomy pain (finding); Postpartum episiotomy pain (finding); Repair of episiotomy (procedure); Repair of right mediolateral episiotomy (procedure);	SMR-02: Episiotomy = y	MIds: LabourEpisiotomyCodeMI = 1 (Yes)

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	Resuture of episiotomy (procedure); Resuture of episiotomy dehiscence (procedure); Right mediolateral episiotomy (procedure); Routine episiotomy and repair (procedure). If the quality (distribution) of episiotomy in MSDS was insufficient for a given trust, it was replaced with episiotomy from HES for that entire trust (subject to HES episiotomy being of sufficient quality). HES: OPCS-4: P141; P142; P143; R271.		
Skin-to-skin contact within one hour	MSDS v2: SkinToSkin1Hour = Y (Yes).	N/A	N/A

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
Data items used as case mix adjustors			
Maternal age	MSDS v2: AgeAtBirthMother

In completed years of age and categorised as: 12–19; 20–24; 25–29; 30–34; 35–39; 40–44; 45+; Unknown. | SMR-02: Age_In_Years at delivery

In completed years of age and categorised as: 12–19; 20–24; 25–29; 30–34; 35–39; 40–44; 45+; Unknown. | CHE: MaternalAgeAtDeliveryCHE

In completed years of age and categorised as: 12–19; 20–24; 25–29; 30–34; 35–39; 40–44; 45+; Unknown. |
| Parity | MSDS v2: Number of previous registerable births: PreviousLiveBirths + Previous StillBirths.

We also checked for evidence of previous births in the 14 years of HES data preceding the birth of reference.

If the quality (completeness and/or distribution) of parity in MSDS was insufficient for a given trust, it was replaced with parity from HES for that entire trust (subject to HES parity being of sufficient quality). | SMR-02: Number of previous completed pregnancies: Parity.

Categorised as 0 (primiparous); 1 (parous); Unknown. | IA: Number of previous registerable births: ParityCodeIA.

If parity was missing in IA we used CHE's ParityCHE

We also checked for evidence of previous births in the 20 years of PEDW data preceding the birth of reference.

If the quality (completeness & distribution) of parity in IA / CHE was insufficient for a given board, it was replaced with parity from PEDW for that entire board (subject to PEDW parity being of sufficient quality). |

Data item	Coding and data source(s)		
	England	Scotland	Wales
	Categorised as 0 (primiparous); 1 (parous); Unknown.		Categorised as 0 (primiparous); 1 (parous); Unknown.
Previous caesarean birth (CS)	MSDS v2: Number of previous caesarean sections: PreviousCaesareanSections. We also checked for evidence of previous caesarean births in the 14 years of HES data preceding the birth of reference. If the quality (completeness and/or distribution) of previous caesarean birth in MSDS was insufficient for a given trust, it was replaced with previous caesarean birth from HES for that entire trust (subject to HES's previous caesarean birth being of sufficient quality). Categorised this as: 0 (no previous CS) and 1 (one or more previous CS), Unknown.	SMR-02: Number of previous caesarean sections: Previous_caesarean_sections. Categorised this as: 0 (no previous CS) and 1 (one or more previous CS), Unknown.	IA: Number of previous caesarean sections: PreviousCaesareansIA. We also checked for evidence of previous caesarean sections in the 20 years of PEDW data preceding the birth of reference. If the quality (completeness & distribution) of previous caesarean birth in IA was insufficient for a site/trust, it was replaced with previous caesarean birth from PEDW for that entire site/trust (subject to PEDW's previous caesarean birth being of sufficient quality). Categorised this as: 0 (no previous CS) and 1 (one or more previous CS), Unknown.

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
Birthweight	MSDS v2: BirthWeight HES: Birweith_1 ONS-PDS: Birth_Weight Categorised as: <2500g; <2500–3000g; <3000–3500g; <3500–4000g; <4000–4500; >4500g; Unknown.	SMR-02: Birthweight_baby_n Categorised as: <2500g; <2500–3000g; <3000–3500g; <3500–4000g; <4000–4500; >4500g; Unknown.	CHE: Weight_At_BirthCHE If birth weight was missing in CHE, we used MIds's BabyWeightGramsMI. Categorised as: <2500g; <2500–3000g; <3000–3500g; <3500–4000g; <4000–4500; >4500g; Unknown.
Gestational age	MSDS v2: GestationLengthBirth HES: Gestat_1 ONS-PDS: Gestation Categorised in completed weeks: 24–36; 37; 38; 39; 40; 41; 42+; Unknown.	SMR-02: gestational age at birth: Estimated_Gestation Categorised in completed weeks: 24–36; 37; 38; 39; 40; 41; 42+; Unknown.	CHE: gestational age at birth: Gestational_AgeCHE If gestation was missing in CHE, we used MIds's LabourOnsetGestationWeeksMI. Categorised in completed weeks: 24–36; 37; 38; 39; 40; 41; 42+; Unknown.
BMI [*]	MSDS v2: Mother's BMI at booking: (MotherWeight / MotherHeight^2) Where MotherWeight was the earliest entry of any records with a gestation below 14 weeks.	SMR-02: Mother's BMI at booking (Weight_Of_Mother / Height^2)	IA: Mother's BMI at booking (MotherWeightKgIA / MotherHeightIA ^{2})

---

[*] BMI not included in case-mix adjustment for clinical reports 2017/18,2018/19 and 2023

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	Categorised as: <18.5; 18.5 to <25; 25 to <30; 30 to <35; 35 to <40; 40+; Unknown.	Categorised as: <18.5; 18.5 to <25; 25 to <30; 30 to <35; 35 to <40; 40+; Unknown.	Categorised as: <18.5; 18.5 to <25; 25 to <30; 30 to <35; 35 to <40; 40+; Unknown.
Smoking status at booking [*]	MSDS v2: The earliest smoking status recorded in MSDS where the gestation was below 14 weeks, with SNOMED CT: Cigarette consumption (observable entity); Electronic cigarette user (finding); Smokes drugs (finding); Cigar smoker (finding); Hookah pipe smoker (finding); Pipe smoker; Heavy smoker (over 20 per day) (finding); Heavy cigarette smoker (finding); Smoker (finding); Finding of tobacco smoking behaviour (finding); Finding of tobacco smoking consumption (finding); Occasional tobacco smoker (finding); Occasional cigarette smoker (finding); Light cigarette smoker (finding); Light cigarette smoker (1–9/day) (finding); Cigarette smoker (finding); Smoking reduced (finding); Tobacco smoking consumption (observable entity);	SMR-02: Booking_smoking_history: 1 (current smoker) Categorised as: Yes, No, and unknown.	IA: SmokerStatusCodeIA: 1 (smoker, CO validated); 2 (smoker, self reported). Categorised as: Yes, No, and unknown.

---

[*] Smoking not included in case-mix adjustment for clinical reports 2017/18, 2018/19 and 2023

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	OR where record values were ≥4 with SNOMED CT: Measurement of alveolar carbon monoxide (procedure); Expired carbon monoxide concentration (observable entity); Carbon monoxide reading at 4 weeks (observable entity); Blood carbon monoxide level (observable entity). Categorised as: Yes, No, and unknown.		
Pre-existing / gestational Diabetes[#] (derived from current pregnancy records)	HES: ICD-10 codes O24; E10;E11; E13; E14 MSDS: ComplicatingDiagTypeMother code 08 PregnancyMedicalDiagType code 19 PregnancyObstetricDiagType code 06	SMR-02: Diabetes: 1 (Pre-existing diabetes); 2 (Gestational diabetes); 3 (Time of diagnosis unknown)	PEDW: ICD-10 codes O24; E10; E11; E13; E14
Hypertensive diseases[#]	HES: ICD-10 codes O10–O11; I10–I15 MSDS: ComplicatingDiagTypeMother code 01	SMR-02: ICD-10 codes O10–O11; I10–I15	PEDW: ICD-10 codes O10–O11; I10–I15
Pre-eclampsia / Eclampsia[#]	HES: ICD-10 codes O14–O15 MSDS: PregnancyObstetricDiagType codes 01; 03; 20	SMR-02: ICD-10 codes O14–O15	PEDW: ICD-10 codes O14–O15

[#] Pre-existing / gestational diabetes, hypertensive diseases, pre-eclampsia / eclampsia, placental problems, poly/oligo/anhydramnios not included in case-mix adjustment for clinical report 2023

Data item	Coding and data source(s)		
	England	Scotland	Wales
Placental problems[#]	HES: ICD-10 codes O44–O45 MSDS: PregnancyObstetricDiagType code 19	SMR-02: ICD-10 codes O44–O45	PEDW: ICD-10 codes O44–O45
Poly/oligo/anhydramnios[#]	HES: ICD-10 codes O40; O41.0	SMR-02: ICD-10 codes O40; O41.0	PEDW: ICD-10 codes O40; O41.0

[#] Pre-existing / gestational diabetes, hypertensive diseases, pre-eclampsia / eclampsia, placental problems, poly/oligo/anhydramnios not included in case-mix adjustment for clinical report 2023

Acknowledgements

For further information and resources, please visit the NMPA website where you can also subscribe to the email newsletter for regular audit updates: https://maternityaudit.org.uk

Alternatively, you can contact us at: nmpa@rcog.org.uk