NMPA

National Maternity & Perinatal Audit

Annual Clinical Report

Based on births in NHS maternity services in England, Scotland and Wales during 2024

Measures Technical Specification

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LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
RCPCH Royal College of Paediatrics and Child Health
Royal College of Midwives
Royal College of Obstetricians & Gynaecologists
HQIP Healthcare Quality Improvement Partnership

Contents

Introduction

This measures 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 2024. A State of the Nation report and supporting documents can be found online, as well as trust/board level results.

How to use this document

This measures technical specification document forms part of a suite of resources produced for the NMPA annual clinical report on births occurring in 2024. The following additional supporting documents and resources can be found online:

- Data flow diagrams
- NMPA online results at trust/board level
- A methods document
- Data completeness by trust and board
- An outlier policy document with trust/board responses
- State of the Nation report on births occurring in 2024
- Singleton births country-level summary results tables
- Multiple births country-level summary results tables
- A glossary explaining the terminology and abbreviations used in our reports
- 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.

List of audit measures for 2024

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 (booking) appointment with a midwife 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

Additional measures reported for multiple births (see Appendix 1)

Sequential vaginal followed by caesarean birth	Of women and birthing people who give birth vaginally to baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks, the proportion who give birth to baby two or more by caesarean.
Episiotomy followed by caesarean birth	Of women and birthing people who have an episiotomy when giving birth vaginally to baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks, the proportion who give birth to baby 2 or more by caesarean.
Birthweight discordance in twins	Of twin baby pairs, where both are liveborn, who have a birthweight discordance of ≥25%, the proportion who are born at or after 36 weeks of gestation.

Potential outlier indicators

Third- or fourth-degree perineal tears

Lowest level of reporting in NMPA results for births occurring in 2024: 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 did not 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 infants	• ≥70% complete	N/A

Records were excluded if they were missing information on perineal tears, method of birth, gestational age, or number of infants (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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Postpartum haemorrhage of 1500ml or more

Lowest level of reporting in NMPA results for births occurring in 2024: 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 did not 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 infants	• ≥70% complete	N/A

Records were excluded if they were missing information on estimated blood loss, gestational age, or number of infants (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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Apgar score of less than 7 at 5 minutes

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥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 infants (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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Other measures

First meeting with a midwife (booking)

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not meet the following criteria:

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

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

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 (booking) appointment with a midwife after 10^{+0} weeks of gestation.

Case-mix factors: maternal age, parity, previous caesarean birth, pre-existing hypertensive diseases and/or diabetes, BMI (Body Mass Index) and smoking status at booking appointment.

Preterm birth

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥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 infants, 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, birthweight, gestational age, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Induction of labour

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	≥70% complete	N/A

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

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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Small for gestational age babies born at or after 40 weeks

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not meet the following criteria:

Data item	Completeness check	Distribution check
Birthweight	• ≥70% complete	Birthweight ≥2500g and ≤4500g in ≥80% of infants 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 infants	• ≥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 infants, 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)

* 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

Case-mix factors: maternal age, parity, previous caesarean birth, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Vaginal birth with and without the use of instruments

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	≥70% complete	N/A

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

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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Caesarean birth

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥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 infants.

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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

c) maternal age, previous caesarean birth (Robson Groups 1 & 2 only), birthweight, gestational age, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Vaginal birth after caesarean (VBAC)

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥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 infants.

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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Episiotomy

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥70% complete	N/A

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

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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Unplanned maternal readmission

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥70% complete	N/A

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

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*.

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

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Skin-to-skin contact within one hour of birth

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥70% complete	N/A

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

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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

Breast milk at first feed and at discharge

Lowest level of reporting in NMPA Results for births occurring in 2024: 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 did not 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 infants	• ≥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 infants.

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%

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, hypertensive diseases, diabetes, gestational diabetes, pre/eclampsia, placental problems, poly/oligo/anhydramnios; and BMI (Body Mass Index) and smoking status at booking appointment.

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: <u>North Scotland:</u> NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Western Isles, NHS Tayside <u>West Scotland:</u> 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: <u>North, Mid and West Wales:</u> Powys Teaching Health Board, Betsi Cadwaladr University Health Board, Hywel Dda Health Board <u>South East Wales:</u> 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**
		East Scotland: NHS Borders, NHS Lothian, NHS Fife	
Singleton	MSDS v2: BirthsPerLabAndDel = 1 Number of infant was also derived as a "proxy" count of unique baby ID per mother ID in MSDS, and indication of multiples was also checked for in ONS-PDS and HES. Relevant corrections were made (including where baby-mother linkage errors were suspected) following thorough exploration of those 3 source datasets.	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:	MIds: BirthOutcomeCodeMI = 1 (Live birth)

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
		Live_males Live_females Stillborn_males Stillborn_females 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).	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).

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	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 entire trust (subject to HES delmeth being of sufficient quality).		PEDW: PEDW Main Operation Description: Normal […]; Cephalic […]; Breech […]; Other breech […]; Forceps […] or Vacuum […].
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: OPCS-4: R322; R325 or ICD-10: O702; O703. OR SNOMED CT: Anal sphincteroplasty for current obstetrical laceration (procedure); 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); Immediate repair of obstetric laceration of perineum and sphincter of anus (procedure); Laceration of anus (disorder); Repair of complete perineal tear (procedure); Repair of current obstetric	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**
	laceration of rectum and sphincter ani (procedure); Repair of obstetric laceration of anus (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 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: We first derive a **continuous blood loss variable** retaining the Obsvalue entered alongside any of the below SNOMED CT: Blood loss in labour (observable entity); Estimated maternal blood loss (observable entity); Quantity of postpartum maternal	SBR: Delivery_blood_loss: ≥1500ml	MIds: LabourEstimatedBloodLossML: ≥1500ml

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	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). Then for each woman, we retain the latest recorded blood loss volume, within 4 days of delivery and where the volume was ≥1500ml.		
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.	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.	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.

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	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).	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 were no other records within the same spell as this record with a later discharge date).	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 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	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**
	SNOMED CT: Breast fed at birth (finding); Breastfeeding started (finding); Breast fed (finding); Breast and Supplementary bottle fed 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: Birweit_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 at booking*	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 2020–2023

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. **Current Smoker status:** SNOMED-CT entries that contain the strings "igar" and/or "mok" that are relevant to a current smoker status (including smoking cessation referrals etc) (43 SNOMED-CT codes searched). 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	SMR-02: Booking_smoking_history: 1 (current smoker) Categorised as: Yes (currently smoker), No (not currently smoker), and unknown.	IA: SmokerStatusCodeIA: 1 (smoker, CO validated); 2 (smoker, self reported). Categorised as: Yes (currently smoker), No (not currently smoker), and unknown.

* Smoking not included in case-mix adjustment for clinical reports 2017/18, 2018/19 and 2020–2023

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	(observable entity); Blood carbon monoxide level (observable entity). **Non-Smoker / Ex-Smoker status:** SNOMED-CT entries that contain the strings "igar" and/or "mok" that are relevant to a non- or ex-smoker status (including date ceased smoking etc) (26 SNOMED-CT codes searched). 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). **Unknown Smoker status:** SNOMED-CT entries for "Tobacco smoking consumption unknown (finding) OR There were no SNOMED-CT entries that contained the strings "igar" and/or "mok" relevant to a smoking status AND There were no entries with SNOMED CT: Measurement of alveolar carbon monoxide		

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
	(procedure); Expired carbon monoxide concentration (observable entity); Carbon monoxide reading at 4 weeks (observable entity); Blood carbon monoxide level (observable entity). Categorised as: Yes (currently smoker), No (not currently smoker), and unknown.		
Pre-existing / gestational Diabetes[#] (derived from current pregnancy records)	HES: ICD-10 codes O24; E10;E11; E13; E14	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	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	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 2020–2023

Data item	Coding and data source(s)		
	England	**Scotland**	**Wales**
Placental problems[#]	HES: ICD-10 codes O44–O45	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 2020–2023

Appendix 1

Multiple Births

In March 2026, the NMPA published a snapshot audit titled *Multiple Births Outcomes of Maternity Care*. The report determined that it is possible to report the majority of the NMPA clinical audit measures for women and birthing people giving birth to twins, triplets or more. Three new measures relevant to multiples births were added during the process and will be included in the annual clinical report results for multiple births; these measures are:

Sequential vaginal followed by caesarean birth: Of women and birthing people who give birth vaginally to baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks, the proportion who give birth to baby two or more by caesarean.

Episiotomy followed by caesarean birth: Of women and birthing people who have an episiotomy when giving birth vaginally to baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks, the proportion who give birth to baby 2 or more by caesarean.

Birthweight discordance in twins: Of twin baby pairs, where both are liveborn, who have a birthweight discordance of ≥25%, the proportion who are born at or after 36 weeks of gestation.

In order to report multiple births results at a trust/board level, data years have been combined to report results on the NMPA online for 2022–2024 multiple births, as well as country-level multiple births summary results tables.

Technical specification for multiple births measures

This appendix should be reviewed in conjunction with the full measures technical specification (this document) and methods as they provide details of the cohort construction, data definitions and data sources used for the NMPA annual clinical report based on singleton births in the NHS maternity services in England, Scotland and Wales during 2024. The cohort construction for multiple births can be found in Appendix 1 of the methods document. The completeness and distribution criteria are the same, however the case-mix adjustment factors differ for the multiple births records.

The multiple births results have been adjusted for: maternal age, parity, previous caesarean birth, birthweight, gestational age; with the exception of preterm birth where gestational age is removed from the model.

The following measures technical specifications provide the data definitions for the additional measures that are relevant to multiple births, along with their relevant case-mix model.

Sequential vaginal birth followed by caesarean birth

Lowest level of reporting in NMPA Results for birth: 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 vaginally to baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks.

Exclusions: Trusts/boards were excluded if they did not 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 infants	• ≥70% complete	N/A

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

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 baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks vaginally and baby two or more by caesarean.

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

Episiotomy followed by caesarean birth

Lowest level of reporting in NMPA Results for birth: 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 have an episiotomy when giving birth vaginally to baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks.

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

Data item	Completeness check	Distribution check
Episiotomy	• ≥70% complete 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 infants	• ≥70% complete	N/A

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

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 who have an episiotomy when giving birth vaginally to baby one of twins, triplets or more between 32^{+0} and 42^{+6} weeks, who give birth to baby two or more by caesarean.

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

Birthweight discordance in twins

Lowest level of reporting in NMPA results for births: 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 twin baby pairs, where both are liveborn between 32^{+0} and 42^{+6}, who have a birthweight discordance of ≥25%.

Exclusions: Trusts/boards were excluded if they did not 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 infants	• ≥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 infants, or fetus outcome.

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 twin baby pairs, where both are liveborn, who have a birthweight discordance of ≥25% who are born at or after 36 weeks of gestation.

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

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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

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