

NMPA Measures - Technical Specification relating to births from 1 April 2017

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Potential outlier indicators¹

Third or fourth degree perineal tears

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit (OU)²

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

Relevant population (denominator): Number of women giving birth vaginally to a singleton baby with a cephalic presentation between 37+0 and 42+6 weeks of gestation

Exclusions:

Trust/board level:³

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Method of delivery	≥70% complete	If trust/board has at least one OU and is not in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >40% If trust/board has at least one OU and is in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >30%

¹ Outlier indicator reporting was not performed for individual trusts/boards for births occurring between 1 April 2017 and 31 March 2018

² Pre-publication review of results by trusts and boards is performed at trust/board level.

³ The same exclusions are applied at site level for site level results

		<p>If trust/board has no OUs and is not in Scotland:</p> <ul style="list-style-type: none"> • Caesarean birth rate is <5% • Spontaneous vaginal rate ≥90% <p>If trust/board has no OUs and is in Scotland:</p> <ul style="list-style-type: none"> • Any caesarean birth rate • Spontaneous vaginal rate >30%
Perineal tears	N/A	3 rd /4 th degree tear rate is ≥0.1% and <15%
Number of infants	≥70% complete	N/A
Fetal presentation	≥70% complete within vaginal births	Cephalic rate ≥70%
Measure under denominator restrictions	N/A	3 rd /4 th degree tear rate is ≥0.1% and ≤10%

Record level:

Records were excluded if they were missing information on: perineal tears, method of delivery, gestational age, number of infants (multiplicity) or fetal presentation

Numerator: Number of women giving birth vaginally to a singleton baby with a cephalic presentation between 37+0 and 42+6 weeks (inclusive) of gestation who have a third or fourth degree perineal tear

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Postpartum haemorrhage of 1500ml or more

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

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

Exclusions:

Trust/board level:

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Estimated blood loss (ml)	≥70% complete	Blood loss of 0ml occurs in ≤5% of births Blood loss >500ml occurs in ≤60% of births
Number of infants	≥70% complete	N/A
Measure under denominator restrictions	N/A	Blood loss ≥1500ml rate is ≥0.5% and ≤20% of births

Record level: records were excluded if they were missing information on estimated blood loss, number of babies (multiplicity), or gestational age

Numerator: Number of women giving birth to a singleton baby between 37+0 and 42+6 weeks (inclusive) of gestation who have a postpartum haemorrhage of greater than or equal to 1500ml

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

5-minute Apgar score less than 7

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

Relevant population (denominator): Number of singleton, liveborn infants born between 37+0 and 42+6 weeks (inclusive) of gestation

Exclusions:

Trust/board level:

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Apgar score at 5 minutes	≥70% complete	Rate of Apgar scores less than 7 at 5 minutes is ≥0.5%
Number of infants	≥70% complete	N/A
Fetus outcome	If trust/board is not in Scotland: <ul style="list-style-type: none"> • ≥70% complete If trust/board is in Scotland: <ul style="list-style-type: none"> • Any completeness 	If trust/board has at least one OU: <ul style="list-style-type: none"> • More than one stillbirth was recorded If trust/board has no OUs or is in Scotland: <ul style="list-style-type: none"> • Any number of stillbirths
Measure under denominator restrictions	N/A	Rate of Apgar scores less than 7 at 5 minutes is ≥0.1% and ≤7%

Record level: records were excluded if they were missing information on: Apgar score at 5 minutes, gestational age, number of infants (multiplicity), fetal outcome (stillbirth or livebirth)

Numerator: Number of singleton, liveborn infants born between 37+0 and 42+6 weeks (inclusive) of gestation with a 5-minute Apgar score less than 7

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Other measures

Induction of labour

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

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

Exclusions:

Trust/board level:

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of infants	≥70% complete	N/A
Mode of labour onset	≥70% complete	If trust/board has at least one OU: <ul style="list-style-type: none"> • Induction of labour rate is ≥10% and <50% If trust/board has no OUs: <ul style="list-style-type: none"> • Induction of labour rate is <5% For all trusts/boards: <ul style="list-style-type: none"> • Where labour onset = '2' (caesarean birth), mode of delivery should be caesarean birth in >70% of records
Measure under denominator restrictions	N/A	Induction of labour rate is ≥5% and ≤55%

Record level:

Records were excluded if they were missing information on: gestational age, number of infants (multiplicity) or mode of labour onset

Numerator: Number of women giving birth to a singleton baby between 37+0 and 42+6 weeks of gestation, who had their labour induced

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Small-for-gestational-age babies born at or after 40 weeks

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

Relevant population (denominator): Number of babies born small for gestational age (defined as less than the 10th birthweight centile using the WHO-UK 1990 charts)⁴ between 37+0 and 42+6 weeks of gestation

Exclusions:

Trust/board level:

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • ≥70% complete If trust/board is in Scotland: <ul style="list-style-type: none"> • Any completeness 	If trust/board has at least one OU: <ul style="list-style-type: none"> • More than one stillbirth was recorded If trust/board has no OUs or is in Scotland: <ul style="list-style-type: none"> • Any number of stillbirths
Birthweight	≥70% complete	Birthweight ≥2500g and ≤4500g in ≥80% of infants born between 37 and 42 weeks (inclusive)
Measure under denominator restrictions	N/A	Rate is ≥20% and ≤80%

⁴ Cole TJ, Williams AF, Wright CM. Revised birth centiles for weight, length and head circumference in the UK-WHO growth charts. *Annals of Human Biology*. 2010 Jun 9;38(1):7–11.

Record level:

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

Numerator: Number of babies born small for gestational age (defined as less than the 10th birthweight centile using the WHO-UK 1990 charts)⁵ that are born on or after their estimated due date (between 40+0 weeks and 42+6 weeks (inclusive))

Case-mix factors: maternal age, parity, previous caesarean birth, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

⁵ Cole (n 4)

Mode of birth

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

Relevant population (denominator): Number of women who give birth to a singleton baby between 37+0 and 42+6 weeks of gestation

Exclusions:

Trust/board level:

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

Data item	Completeness check	Distribution check
Gestational age	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • ≥70% complete overall 	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of infants	≥70% complete	N/A
Method of delivery	≥70% complete	<p>If trust/board has at least one OU and is not in Scotland:</p> <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >40% <p>If trust/board has at least one OU and is in Scotland:</p> <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >30% <p>If trust/board has no OUs and is not in Scotland:</p> <ul style="list-style-type: none"> • Caesarean birth rate is <5% • Spontaneous vaginal rate is ≥90% <p>If trust/board has no OUs and is in Scotland:</p> <ul style="list-style-type: none"> • Any caesarean birth rate

		<ul style="list-style-type: none"> • Spontaneous vaginal rate >30%
Measure under denominator restrictions	N/A	<p>Caesarean birth rate is $\geq 5\%$ and $\leq 50\%$</p> <p>Spontaneous vaginal rate is $\geq 20\%$ and $\leq 95\%$</p> <p>Instrumental rate is $\geq 4\%$ and $\leq 50\%$</p>

Record level:

Records were excluded if they were missing information on: gestational age, number of infants, or method of delivery

Numerator:

Number of women who give birth to a singleton baby between 37+0 and 42+6 weeks of gestation who had the following method of delivery:

1. Spontaneous vaginal birth
2. Instrumental birth
3. Caesarean birth

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Birth without intervention

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

Relevant population (denominator): Number of women who give birth to a singleton baby between 37+0 and 42+6 weeks of gestation

Exclusions:

Trust/board level:

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of infants	≥70% complete	N/A
Mode of labour onset	≥70% complete	If trust/board has at least one OU: <ul style="list-style-type: none"> • Induction of labour rate is ≥10% and <50% If trust/board has no OUs: <ul style="list-style-type: none"> • Induction of labour rate is <5% For all trusts/boards: <ul style="list-style-type: none"> • Where labour onset = '2' (caesarean birth), mode of delivery should be caesarean birth in >70% of records
Augmentation of labour with oxytocin	≥70% complete within vaginal births ≥70% complete within caesarean births	If trust/board has at least one OU: <ul style="list-style-type: none"> • Augmentation rate is ≥1% and <80% within non-breech vaginal births If trust/board has no OUs: <ul style="list-style-type: none"> • Any augmentation rate

Method of delivery	≥70% complete	<p>If trust/board has at least one OU and is not in Scotland:</p> <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >40% <p>If trust/board has at least one OU and is in Scotland:</p> <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >30% <p>If trust/board has no OUs and is not in Scotland:</p> <ul style="list-style-type: none"> • Caesarean birth rate is <5% • Spontaneous vaginal rate is ≥90% <p>If trust/board has no OUs and is in Scotland:</p> <ul style="list-style-type: none"> • Any caesarean birth rate • Spontaneous vaginal rate >30%
Anaesthesia	≥70% complete	≥70% of caesarean births are performed under general anaesthetic, epidural or caudal anaesthetic, or spinal anaesthetic
Episiotomy	≥70% complete in vaginal births	Episiotomy rate >1% and <45% within vaginal births
Measure under denominator restrictions	N/A	Rate is ≥15% and ≤95%

Record level:

Records were excluded if they were missing information on: gestational age, number of infants, method of delivery, mode of labour onset, augmentation, anaesthesia or episiotomy

Numerator:

Number of women who give birth to a singleton baby between 37+0 and 42+6 weeks of gestation whose birth meets the following criteria:

1. Spontaneous labour onset (no induction of labour)
2. Spontaneous labour progress (no augmentation with oxytocin)
3. Spontaneous vaginal birth (no instrumental birth or caesarean birth)
4. No epidural, spinal or general anaesthetic
5. No episiotomy

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Vaginal birth after caesarean birth

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

Relevant population (denominator): Number of women having their second baby between 37+0 and 42+6 weeks of gestation, following a caesarean birth for their first baby and without an indication for repeat caesarean birth

Exclusions:

Trust/board level:

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of infants	≥70% complete	N/A
Method of delivery	≥70% complete	If trust/board has at least one OU and is not in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >40% If trust/board has at least one OU and is in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >30% If trust/board has no OUs and is not in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is <5% • Spontaneous vaginal rate is ≥90%

		<p>If trust/board has no OUs and is in Scotland:</p> <ul style="list-style-type: none"> • Any caesarean birth rate • Spontaneous vaginal rate >30%
Parity	≥70% complete	Proportion of births to primiparous women ≥20% and ≤70%
Previous caesarean birth	≥70% complete	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • Previous caesarean birth rate is >1% among births to multiparous women • Previous caesarean = 0 is between 79%-95%. <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • Previous caesarean birth rate is <5% among births to multiparous women
Measure under denominator restrictions	N/A	Rate is ≥5% and ≤80%

Record level:

Records were excluded if they were missing information on: previous caesarean birth, gestational age, number of infants, method of delivery, or parity

Numerator: Number of women having their second baby between 37+0 and 42+6 weeks of gestation following a caesarean birth for their first baby, who give birth to their second baby vaginally

Case-mix factors: maternal age, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Smoking cessation

Lowest level of reporting in NMPA clinical report for 2017-18 births and on NMPA website: All trusts/boards

Relevant population (denominator): Number of women recorded as being current smokers at their booking visit

Exclusions:

Trust/board level:

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

Data item	Completeness check	Distribution check
Smoking at booking	≥70% complete	Current smokers ≥0.25% and ≤50%
Smoking at delivery	≥70% complete	Current smokers ≥0.25% and ≤50%

Record level:

Records were excluded if they were missing information on: smoking at booking or smoking at delivery

Numerator: Number of women recorded as being current smokers at their booking visit who were recorded as non-smokers or ex-smokers by the time of birth

Case-mix factors: none

Episiotomy

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

Relevant population (denominator): Number women giving birth vaginally to a singleton baby with a cephalic presentation 37+0 to 42+6 weeks (inclusive)

Exclusions:

Trust/board level:

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: <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall If trust/board has no OUs: <ul style="list-style-type: none"> • ≥70% complete overall 	If trust/board has at least one OU: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births If trust/board has no OUs: <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of infants	≥70% complete	N/A
Fetal presentation	≥70% complete within vaginal births	Cephalic rate ≥70%
Method of delivery	≥70% complete	If trust/board has at least one OU and is not in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >40% If trust/board has at least one OU and is in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is between ≥5% and ≤50% • Spontaneous vaginal rate >30% If trust/board has no OUs and is not in Scotland: <ul style="list-style-type: none"> • Caesarean birth rate is <5% • Spontaneous vaginal rate is ≥90%

		If trust/board has no OUs and is in Scotland: <ul style="list-style-type: none"> Any caesarean birth rate Spontaneous vaginal rate >30%
Episiotomy	≥70% complete in vaginal births	Episiotomy rate >1% and <45% within vaginal births
Measure under denominator restrictions	N/A	Episiotomy rate >5% and <40% within vaginal births

Record level:

Records were excluded if they were missing information on: gestational age, number of infants, fetal presentation, method of delivery, or episiotomy

Numerator: Number women giving birth vaginally to a singleton baby with a cephalic presentation 37+0 to 42+6 weeks (inclusive) who have an episiotomy

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Maternal readmissions

Lowest level of reporting in NMPA clinical report for 2017-18 births: Trusts/boards with at least one obstetric unit

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

Relevant population (denominator): Number of women 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 delivery

Exclusions:

Trust/board level:

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

Data item	Completeness check	Distribution check
Gestational age	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • ≥70% complete overall 	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Number of infants	≥70% complete	N/A
Type of readmission	≥70% of records could be linked with HES/PEDW/SMR02	N/A

Record level:

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

Numerator: Number of women 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 delivery, who were readmitted to hospital within 42 days, excluding: planned readmissions, planned transfers, readmissions of less than one day and women accompanying an unwell baby.

Case-mix factors: maternal age, parity, previous caesarean birth, birthweight, gestational age, diabetes, hypertension, preeclampsia, placental problems, poly/oligo/anhydramnios

Skin-to-skin contact within one hour of birth

Lowest level of reporting in NMPA clinical report for 2017-18 births: All trusts/boards

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

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

Exclusions:

Trust/board level:

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

Data item	Completeness check	Distribution check
Gestational age	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • ≥70% complete overall 	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Fetus outcome	<p>If trust/board is not in Scotland:</p> <ul style="list-style-type: none"> • ≥70% complete <p>If trust/board is in Scotland:</p> <ul style="list-style-type: none"> • Any completeness 	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • More than one stillbirth was recorded <p>If trust/board has no OUs or is in Scotland:</p> <ul style="list-style-type: none"> • Any number of stillbirths
Skin-to-skin	<p>≥70% complete within vaginal births</p> <p>≥70% complete within caesarean births</p>	N/A
Measure under denominator restrictions	N/A	Rate is <40%

Record level:

Records were excluded if they were missing information on: gestational age, fetus outcome or skin-to-skin contact

Numerator: Number of liveborn babies born between 34+0 and 42+6 weeks of gestation who received skin-to-skin contact within one hour of birth

Case-mix factors: none

Breast milk at first feed, and at discharge

Lowest level of reporting in NMPA clinical report for 2017-18 births: All trusts/boards

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

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

Exclusions:

Trust/board level:

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

Data item	Completeness check	Distribution check
Gestational age	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • ≥70% complete within vaginal births • ≥70% complete within caesarean births • ≥70% complete overall <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • ≥70% complete overall 	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥70% of births <p>If trust/board has no OUs:</p> <ul style="list-style-type: none"> • Gestational age at birth is between 37 and 42 weeks (inclusive) in ≥90% of births
Fetus outcome	<p>If trust/board is not in Scotland:</p> <ul style="list-style-type: none"> • ≥70% complete <p>If trust/board is in Scotland:</p> <ul style="list-style-type: none"> • Any completeness 	<p>If trust/board has at least one OU:</p> <ul style="list-style-type: none"> • More than one stillbirth was recorded <p>If trust/board has no OUs or is in Scotland:</p> <ul style="list-style-type: none"> • Any number of stillbirths
Breast milk at first feed	<p>≥70% complete within vaginal births</p> <p>≥70% complete within caesarean births</p>	>1% breast milk at first feed rate
Breast milk at discharge	≥70% complete	>1% breast milk at discharge rate
Measure under denominator restrictions	N/A	<p>Breast milk at first feed rate is ≥25%</p> <p>Breast milk at discharge rate is ≥25% and ≤98%</p>

Record level:

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

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

- a) Any breast milk for their first feed
- b) Any breast milk at discharge from the maternity unit

Case-mix factors: none

Data item definitions and data sources used

Data item	Coding and data source(s)		
	England	Wales	Scotland
Data items used for indicator construction			
Singleton	N/A: NumberInfants is not available in MSDS v1.5, therefore we had to derive a proxy for it.	CHE: Number_BornCHE = 1. If Number_BornCHE was missing we used MIDs's LabourOnsetFoetusNumberMI	SMR-02Num_Of_Births_This_Pregnancy = 1.
Term	MSDS v1.5: GestationLengthBirth = 37+0 weeks to 42+6 weeks inclusive. If gestational age was missing in the MSDS we used gestational age as recorded in HES (gestat_1)	CHE: Gestational_Ageche = 37+0 weeks to 42+6 weeks inclusive. If gestation was missing in CHE, we used MIDs's LabourOnsetGestationWeeksMI.	SMR-02: Estimated_Gestation = 37+0 weeks to 42+6 weeks inclusive.
Cephalic	MSDS v1.5: Fetal presentation at delivery: LabourOnsetPresentation = 01 (Cephalic) If presentation was missing, we used method of delivery (DeliveryMethodBaby) to determine presentation where possible (e.g. if spontaneous vertex delivery, recoded as 01 (Cephalic)).	MIDs: Fetal presentation at delivery: LabourOnsetFoetalPresentationCodeMI = 1 (Cephalic) If presentation was missing, we used method of delivery (BirthModeCodeMI (MIDs) or Mode_Of_DeliveryCHE (CHE)) to determine presentation where possible (e.g. if spontaneous vertex delivery, recoded as 01 (Cephalic)).	SMR-02: Fetal presentation at delivery: Presentation_At_Delivery = 1 (Occipito-anterior); 2 (Occipito-posterior) or 3 (Occipito-lateral).
Induction of labour	MSDS v1.5: LabourInductionMethod:1,2,3,4	MIDs: LabourOnsetModeCodeMI = 3, 4 or 5. If mode of labour onset was missing in MIDs, we	SMR-02: Induction_Of_Labour = 2,3,4,5,6,7.

Data item	Coding and data source(s)		
	England	Wales	Scotland
		used Onset_Of_LabourCHE = 2 (Induced)	
Augmentation of labour	MSDS v1.5:LabourInductionMethod: 4, <u>OR</u> OxytocinAdministeredDateTime not = missing, <u>OR</u> ROMReason = 02 (Augmentation of labour).	Mids: LabourAugmentationCode MI=1	Not recorded independently of induction, therefore not available
Anaesthesia	MSDS v1.5: LabourAnaesthesiaType = 01 (General anaesthetic), 02 (Epidural or caudal anaesthetic), or 03 (Spinal anaesthetic).	Mids: LabourEpiduralStatusCode MI=1, supplemented with CHE's Pain_Relief_DuringCHE = 3 (General anaesthetic), 4 (Epidural or caudal), 5 (Spinal), or combinations of these (6, 7, 8).	SMR-02: LabourAnaesthesiaType = 2 (epidural), 4 (General anaesthetic), 5 (Spinal).
Vaginal birth	MSDS v1.5: DeliveryMethodBaby = 0 (Spontaneous Vertex), 1 (Spontaneous, other cephalic), 2 (Low forceps, not breech), 3 (Other forceps, not breech) or 4 (Ventouse, vacuum extraction). If method of delivery was missing in the MSDS we used method of delivery as recorded in HES (delmethd)	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) or 6 (Breech extraction) Mids: DeliveryMethodBaby = 1 (Spontaneous Vaginal Birth), 2 (Ventouse), 3 (Forceps). PEDW: PEDW Main Operation Description:	SMR-02: DeliveryMethodBaby = 0 (Normal (SVD)), 1 (Cephalic – abnormal presentation), 2 (Low forceps - no rotation, forceps NOS), or A-E (Mid cavity forceps; Rotational forceps; Ventouse; Ventouse with rotation; Other forceps).

Data item	Coding and data source(s)		
	England	Wales	Scotland
		Normal [...], Cephalic [...], Breech [...], Other breech [...], Forceps [...] or Vacuum [...].	
Livebirth	MSDS v1.5: FetusOutcome = 10 (Live birth).	Mids: BirthOutcomeCodeMI = 1 (Live birth).	SMR-02: Outcome_Oof_Pregna ncy = 1 (Live birth).
3 rd or 4 th degree perineal tear	MSDS v1.5: GenitalTractTraumaticL esion = 6 (Third degree tear) or 7 (Fourth degree tear), <u>OR</u> HES: OPCS = R32.2/R32.5 OR ICD10 = O70.2/O70.3.	Mids: LabourPerinealStatusCode MI = 1 (Yes) <u>OR</u> PEDW: OPCS = R32.2/R32.5 OR ICD10 = O70.2/O70.3.	SMR-02: Tears = 3 (3rd degree tear) or 4 (4th degree tear) <u>OR</u> SMR-02: OPCS = R32.2/R32.5 OR ICD10 = O70.2/O70.3.
Obstetric haemorrhage ≥1500ml	N/A. Cannot derive rate ≥1500 ml due to missing <500 ml category in MaternalCriticalInciden t	Mids: LabourEstimatedBloodLoss ML ≥1500ml	N/A

Data item	Coding and data source(s)		
	England	Wales	Scotland
Maternal readmission	<p>HES admission date >= delivery date.</p> <p>HES admission date <= delivery date +42.</p> <p>Excluded HES admission methods corresponding to non-emergency admissions (admission methods <20, admission methods greater than 80 and less than 90).</p> <p>Excluded HES admissions not due to illness (any diagnosis code of Z763).</p> <p>Excluded any HES admissions within the delivery spell.</p> <p>Excluded transfers (admission source of 30, between 48 and 53 inclusive and 87).</p> <p>When missing, MSDS delivery date was infilled with HES operation date of the HES operation corresponding to a delivery OPCS code.</p> <p>Excluded readmissions of less than one day (discharge</p>	<p>PEDW Admission date >= delivery date.</p> <p>PEDW admission date <= delivery date +42.</p> <p>Only PEDW admissions methods corresponding to emergency admissions were included (admission method codes: 30, 31, 32, 33, 34, 35, 36).</p> <p>Excluded PEDW admissions not due to illness (any diagnosis code of Z763).</p> <p>Excluded any PEDW admissions within the delivery spell.</p> <p>Excluded transfers (admission methods: 81, 18, 24, 40, 41, 42, 43, 44 / discharge methods: 8, 49, 51, 52, 53, 54, 55, 56, 57, 98).</p> <p>When missing, MIDs delivery date was infilled with PEDW admission date of the PEDW operation corresponding to a delivery OPCS code.</p> <p>Excluded readmissions of less than one day (discharge date=admission date and there were no other records within the same spell as this record</p>	<p>SMR-01 Admission date >= delivery date (derived from date of birth in NRS and substituted with SMR-01 admission date where admission corresponded to a delivery).</p> <p>SMR-01 Admission date <= delivery date + 42.</p> <p>Only SMR-01 admission methods corresponding to emergency admissions were included (admission type codes 30-39).</p> <p>Excluded SMR-01 admissions not due to illness (any diagnosis code of Z763).</p> <p>Excluded any SMR-01 admissions within the delivery spell.</p> <p>Excluded transfers (using admission transfer and discharge variables where transfer was from a Health Care Provider, admission type 18 and discharge type 13).</p> <p>Excluded readmissions of less than one day</p>

Data item	Coding and data source(s)		
	England	Wales	Scotland
	date=admission date and there were no other records within the same spell as this record with a later discharge date).	with a later discharge date).	(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 mins	MSDS v1.5: ApgarScore5 of 0 to 6.	CHE: Apgar score at 5 minutes: Apgar_2CHE of 0 to 6. When Apgar_2CHE is missing, Apgar score at 5 minutes was infilled with Mlds' BirthApgarScoreMI of 0 to 6.	SMR-02: Apgar_5_minutes_baby of 0 to 6.
Breast milk at first feed	MSDS v1.5: BabyFirstFeedBreastMilkStatus = 1 (Maternal breast milk) or 2 (Donor breast milk).	CHE: BreastFeedingAtBirthCombinedCodeCHE= 1 (Exclusive Milk) or 2 (Combined Milk – Predominantly Breast) or 3 (Combined – Partially Breast).	SMR-02: First_Feed_Given = 1 (Breast only) or 4 (Mixed (breast and formula)).
Breast milk at discharge	MSDS v1.5: BabyBreastMilkStatusDischarge = breast milk at discharge = 1 (Exclusively breast milk feeding) or 2 (Partially breast milk feeding)	N/A	SMR-02: Feed_On_Discharge = 1 (Breast only) or 4 (Mixed (breast and formula)).
Episiotomy	MSDS v1.5: GenitalTractTraumaticLesion = 08 (Episiotomy), <u>OR</u> MAT404 EpisiotomyReason not = missing.	Mlds: LabourEpisiotomyCodeMI = 1 (Yes)	SMR-02: Episiotomy = y

Data item	Coding and data source(s)		
	England	Wales	Scotland
Skin-to-skin contact within one hour	MSDS v1.5: SkinToSkinContact1Hour = 'Y' = y (Yes).	N/A	N/A
Smoking status at delivery	MSDS v1.5: EoPSmokingStatus, categorised as: Yes; No, and unknown.	Used both CHE (Mothers_Smoking_HabitCHE) and MIDs (SmokerStatusCodeMI) as sources for smoking status at delivery: categorised as: Yes; No, and unknown.	Not included in Clinical Audit.
Data items used as case mix adjustors			
Maternal age	MSDS v1.5: Derived from mother's date of birth at delivery: PersonBirthDateMother, in completed years of age and categorised as: 12-15; 16-19; 20-24; 25-29; 30-34; 35-39; 40-44; 45-49; 50+, and unknown.	CHE: derived from mother's date of birth (MotherBirthDateCHE) at delivery, in completed years of age and categorised as: 12-15; 16-19; 20-24; 25-29; 30-34; 35-39; 40-44; 45-49; 50+, and unknown.	SMR-02: Age_In_Years at delivery, in completed years of age and categorised as: 12-15; 16-19; 20-24; 25-29; 30-34; 35-39; 40-44; 45-49; 50+, and unknown.
Parity	MSDS v1.5: Number of previous registerable births: PreviousLiveBirths + PreviousStillBirths), categorised as 0 (primiparous); 1 (parous), and unknown. We also checked for evidence of previous births in HES and infilled parity with 1 if we found one or more previous delivery records for that woman.	IA: Number of previous registerable births: ParityCodeIA, categorised as 0 (primiparous); 1 (parous), and unknown. If parity was missing in IA we used CHE's ParityCHE, recategorised as above. We also checked for evidence of previous births in PEDW and infilled parity with 1 if we found one or more previous delivery records for that woman.	Number of previous registerable births: Parity categorised as 0 (primiparous); 1 (parous), and unknown.

Data item	Coding and data source(s)		
	England	Wales	Scotland
Previous caesarean birth (CS)	<p>MSDS v1.5: Number of previous caesarean sections: PreviousCaesareanSections.</p> <p>We also checked for evidence of previous caesarean sections in HES and categorised this as: 0 (no previous CS) and 1 (one or more previous CS), unknown.</p>	<p>IA: Number of previous caesarean sections: PreviousCaesareansIA.</p> <p>We also checked for evidence of previous caesarean sections in PEDW and categorised this as: 0 (no previous CS) and 1 (one or more previous CS), unknown.</p>	<p>SMR-02: Number of previous caesarean sections: PreviousCaesarean_Sections, categorised as: 0 (no previous CS) and 1 (one or more previous CS), unknown.</p>
Birthweight	<p>MSDS v1.5: BirthWeight, categorised as: <2500g; 2500-4000g; >4000g, and unknown.</p> <p>If birthweight was missing in MSDS we used birthweight as recorded in HES (birweit_1).</p>	<p>CHE: Weight_At_BirthCHE categorised as: <2500g; 2500-4000g; >4000g, and unknown.</p> <p>If birth weight was missing in CHE, we used MIDs's BabyWeightGramsMI, categorised as above.</p>	<p>SMR-02: Birthweight_Baby, categorised as: <2500g; 2500-4000g; >4000g, and unknown.</p>
Gestational age	<p>MSDS v1.5: GestationLengthBirth, categorised in completed weeks: 37; 38; 39; 40; 41; 42, and unknown.</p> <p>If gestational age was missing in MSDS we used gestational age as recorded in HES (gestat_1).</p>	<p>CHE: gestational age at birth: Gestational_AgeCHE, categorised in completed weeks: 37; 38; 39; 40; 41; 42, and unknown.</p> <p>If gestation was missing in CHE, we used MIDs's LabourOnsetGestationWeeksMI.</p>	<p>SMR-02: Estimated_Gestation, categorised in completed weeks: 37; 38; 39; 40; 41; 42, and unknown.</p>

Data item	Coding and data source(s)		
	England	Wales	Scotland
BMI ⁶	MSDS v1.5: Mother's BMI at booking: $\text{PersonWeight} / \text{PersonHeight}^2$, categorised as: <18.5; 18.5 to 25; >25 to <30; >=30, and unknown.	IA: Mother's BMI at booking ($\text{MotherWeightKglA} / \text{MotherHeightIA}^2$), categorised as: <18.5; 18.5 to 25; >25 to <30; >=30, and unknown.	SMR-02: Mother's BMI at booking ($\text{Weight_Of_Mother} / \text{Height}^2$), categorised as: <18.5; 18.5 to 25; >25 to <30; >=30, and unknown.
Smoking status at booking ⁷	MSDS v1.5: SmokingStatusBooking, categorised as: Yes; No, and unknown.	IA: SmokerStatusCodeIA, categorised as: Yes; No, and unknown.	Not included in Clinical Audit.
Diabetes	HES: ICD-10 codes O24.0-O23.4; O24.4; O24.9; E10-E11	PEDW: ICD-10 codes O24.0-O23.4; O24.4; O24.9; E10-E11	SMR-02: ICD-10 codes O24.0-O23.4; O24.4; O24.9; E10-E11 SMR-02: If variable diabetes has value 1, 2 or 3
Hypertension	HES: ICD-10 codes O10-O11; I10	PEDW: ICD-10 codes O10-O11; I10	SMR-02: ICD-10 codes O10-O11; I10
Preeclampsia	HES: ICD-10 codes O14-O15	PEDW: ICD-10 codes O14-O15	SMR-02: ICD-10 codes O14-O15
Placental problems	HES: ICD-10 codes O44-O45	PEDW: ICD-10 codes O44-O45	SMR-02: ICD-10 codes O44-O45
Poly/oligo/anhydramnios	HES: ICD-10 codes O40	PEDW: ICD-10 codes O40	SMR-02: ICD-10 codes O40

⁶ BMI not included in case-mix adjustment for Clinical report on births between 1 April 2017 and 31 March 2018

⁷ Smoking not included in case-mix adjustment for Clinical report on births between 1 April 2017 and 31 March 2018