

Atlas of Healthcare Variation | Methodology

Maternity Indicators

The table below outlines details of the data used in the analysis of the Maternity Indicators. Data includes New Zealand resident and non-resident population and is for the time period 1 January 2009 – 31 December 2016.

General points

- Each indicator is presented by single year (2009–2016) and by ethnicity for the five year period, 2011–2016.
- Data are not presented where the number of people was less than 10. This is to preserve confidentiality.
- People were assigned to their district health board (DHB) of residence at the time of the birth. People who could not be assigned to a DHB were excluded from all analyses.
- Ethnicity data presented is prioritised ethnic group in the following order: Māori, Pacific, Asian and European/Other.

Data source: Ministry of Health. 2016. *New Zealand Maternity Clinical Indicators 2016* Wellington: Ministry of Health. <https://www.health.govt.nz/publication/new-zealand-maternity-clinical-indicators-2016>

Definitions: See Appendix 2 of *New Zealand Maternity Clinical Indicators 2016* report for a full description of clinical codes and definitions used to produce the indicators.

Standard primiparae (Indicators 2–9) are defined as women recorded in the National Maternity Collection who meet all of the following inclusions:

- gave birth at a maternity facility or had a home birth
- are aged between 20 and 34 years (inclusive)
- are pregnant with a single baby presenting in labour in cephalic position
- have no known prior pregnancy of 20 weeks and over gestation
- give birth to a live or stillborn baby at term gestation: between 37 and 41 weeks inclusive
- have no recorded obstetric complications in the present pregnancy that are indications for specific obstetric interventions

The standard primipara definition is used to identify a group of women who are considered to be 'low risk', for whom rates of intervention and outcomes should be similar between units and regions.

Exclusions: The following indicators are not presented in this Atlas due to the low number of cases reported (<10 in most DHBs in 2016).

- Indicator 9: *Standard primiparae undergoing episiotomy and sustaining a 3rd- or 4th-degree perineal tear*
- Indicator 13: *Diagnosis of eclampsia at birth admission*
- Indicator 14: *Women having a peripartum hysterectomy*
- Indicator 15: *Women admitted to ICU and requiring ventilation during the pregnancy or postnatal period*

Standard deviation

Data are presented as standard deviation from the mean on the map.

Standard deviation is a statistical measure of variation from a mean. Assuming that recorded instances are normally distributed (i.e. they are in the usual 'bell-shaped curve') 95% of all

recorded instances would be expected to be within two standard deviations either side of the mean. The two 'middle' shades will be within one standard deviation of the mean.

Confidence intervals

Data for each DHB is presented as a percentage. Upper and lower confidence intervals were calculated to 95 percent level of confidence.

Indicator #1:	Registration with a Lead Maternity Carer (LMC) in the first trimester of pregnancy
Numerator	Number of women who register with a Lead Maternity Carer in the first trimester of their pregnancy
Denominator	Total number of women who register with a Lead Maternity Carer
Data source	National Maternity Collection (MAT)
Comments	<p>Comparing data about standard primiparae (rather than all women giving birth) controls for differences in case mix and increases the validity of inter-hospital comparisons of maternity care (adapted from Australian Council on Healthcare Standards 2008, p 29).</p> <p>Approximately 15% of women giving birth in New Zealand are considered to be standard primiparae in this publication. These women are a sub-set of the general maternity population and so are not representative of birthing women in New Zealand.</p>

Indicator #2:	Standard primiparae who have a spontaneous vaginal birth
Numerator	Number of standard primiparae who have a spontaneous vaginal birth at a maternity facility
Denominator	Total number of standard primiparae
Data source	MAT with additional information from NMDS (National Minimum Dataset)
Comments	Includes births where labour has been induced or augmented.

Indicator #3:	Standard primiparae who undergo an instrumental vaginal birth
Numerator	Number of standard primiparae who undergo an instrumental vaginal birth
Denominator	Total number of standard primiparae
Data source	MAT with additional data from NMDS
Comments	A vaginal birth requiring instrumental assistance with no concurrent clinical code indicating a caesarean section. Interventions include forceps and/or vacuum (ventouse) extraction. Failed trial of forceps or vacuum extraction are excluded.

Indicator #4:	Standard primiparae who undergo caesarean section
Numerator	Number of standard primiparae who undergo caesarean section
Denominator	Total number of standard primiparae
Data source	MAT with additional data from NMDS
Comments	Includes emergency and elective, lower segment and classical.

Indicator #5:	Standard primiparae who undergo induction of labour
Numerator	Number of standard primiparae who undergo induction of labour
Denominator	Total number of standard primiparae
Data source	MAT with additional data from NMDS

Indicator #6:	Standard primiparae with an intact lower genital tract (no 1st- to 4th-degree tear or episiotomy)
Numerator	Number of standard primiparae with an intact lower genital tract with vaginal birth at a maternity facility
Denominator	Total number of standard primiparae who give birth vaginally
Data source	MAT with additional data from NMDS
Comments	Identified by the absence of clinical codes indicating an episiotomy or a tear of any degree (1 st to 4 th and including unspecified). Wide regional variation suggests that investigation of both data integrity and local clinical practice is required.

Indicator #7:	Standard primiparae undergoing episiotomy and no 3rd- or 4th-degree perineal tear
Numerator	Number of standard primiparae undergoing episiotomy and no 3rd- or 4th-degree perineal tear with vaginal birth at a maternity facility
Denominator	Total number of standard primiparae who give birth vaginally
Data source	MAT with additional data from NMDS
Comments	<p>Episiotomy: an incision of the perineal tissue surrounding the vagina at the time of birth to facilitate delivery.</p> <p>The National Institute for Health and Clinical Excellence¹ defines perineal or genital trauma caused by either tearing or episiotomy as follows:</p> <ul style="list-style-type: none"> - first degree – injury to skin only - second degree – injury to the perineal muscles but not the anal sphincter - third degree – injury to the perineum involving the anal sphincter complex: <ul style="list-style-type: none"> 3a – less than 50% of external anal sphincter thickness torn 3b – more than 50% of external anal sphincter thickness torn 3c – internal anal sphincter torn. - fourth degree – injury to the perineum involving the anal sphincter complex (external and internal anal sphincter) and anal epithelium. <p>Reference:</p> <ol style="list-style-type: none"> 1. National Institute for Health and Clinical Excellence. 2014. Clinical guideline 190. Intrapartum care: care of healthy women and their babies during childbirth. NICE, London.

Indicator #8:	Standard primiparae sustaining a 3rd- or 4th-degree perineal tear and no episiotomy
Numerator	Number of standard primiparae sustaining a 3rd- or 4th-degree perineal tear and no episiotomy with vaginal birth at a maternity facility
Denominator	Total number of standard primiparae who give birth vaginally
Data source	MAT with additional data from NMDS
Comments	A third- or fourth-degree perineal laceration during birth, identified by the presence of a third- or fourth-degree tear clinical code

Indicator #9 is not presented in the Atlas

Indicator #10:	Women having a general anaesthetic for caesarean section
Numerator	Number of women having a general anaesthetic for caesarean section
Denominator	Total number of women who undergo caesarean section
Data source	All women giving birth from National Maternity Collection (MAT)

Indicator #11:	Women requiring a blood transfusion with caesarean section
Numerator	Number of women requiring a blood transfusion with caesarean section
Denominator	Total number of women who undergo caesarean section
Data source	All women giving birth from National Maternity Collection (MAT)

Indicator #12:	Women requiring a blood transfusion with vaginal birth
Numerator	Number of women requiring a blood transfusion with vaginal birth
Denominator	Total number of women who give birth vaginally
Data source	All women giving birth from National Maternity Collection (MAT)

Indicators #13, #14, #15 are not presented in the Atlas.

Indicator #16:	Maternal tobacco use during postnatal period
Numerator	Number of women identified as smokers at two weeks after birth
Denominator	Total number of women registered with an LMC or a DHB primary maternity service with smoking status at two weeks after birth reported
Data source	National Maternity Collection (MAT)
Comments	Completeness of these data varies between DHBs, ranging from 47% to 97% of all women giving birth.

Indicator #17:	Preterm birth
Numerator	Number of babies born under 37 weeks gestation
Denominator	Total number of live-born babies
Data source	National Maternity Collection (MAT)
Comments	Preterm birth is the birth of a baby born between 20 weeks 0 days and 36 weeks 6 days gestation.

Indicator #18:	Small babies at term (37–42 weeks' gestation)
Numerator	Number of babies born at 37–42 weeks' gestation with birthweight under the 10th percentile for their gestation
Denominator	Total number of live-born babies born at 37–42 weeks' gestation
Data source	National Maternity Collection (MAT)

Indicator #19:	Small babies at term born at 40–42 weeks' gestation
Numerator	Number of babies born at 40–42 weeks' gestation with birthweight under the 10th percentile for their gestation
Denominator	Total number of live-born babies born at 37–42 weeks' gestation with birthweight under the 10th percentile for their gestation
Data source	National Maternity Collection (MAT)

Indicator #20:	Babies born at 37+ weeks' gestation requiring respiratory support
Numerator	Number of babies born at 37+ weeks' gestation requiring over four hours of respiratory support
Denominator	Total number of live-born babies born at 37+ weeks' gestation
Data source	National Maternity Collection (MAT) with additional data from NMDS
Comments	Respiratory support includes both mechanical and non-invasive ventilation where the sum of both is greater than four hours.