

Surveillance Perinatal Indicators by Place of Delivery Annual Report 2004/05 to 2013/14

Technical Notes

The Surveillance Perinatal Indicators Report for 2004/05 to 2013/14 includes perinatal data for deliveries occurring within BC for 10 fiscal years (April 1, 2004 to March 31, 2014). This report provides a summary set of indicators for British Columbia overall and for each health authority in BC. The Appendix lists the calculation methods and description of indicators used in this report.

Methodology and Limitations

Inclusions

- Data on all births and deliveries (singletons, twins, and multiples) in BC
- All pregnancy outcomes that satisfy the definition of live birth or stillbirth (including pregnancy terminations)
- Linked mothers and newborns for each fiscal year (<0.02% of records are not linked)

Notes

- Mother-newborn assigned fiscal year is based on maternal discharge date.
- Births occurring at home and attended by registered midwives are included in and assigned to delivery place by resident health authority.
- The reader should use caution when interpreting rates based on small numbers including rare events such as neonatal mortality and morbidity as well as severe maternal morbidity.

List of Tables (Appendix)

[Table 1. Definitions](#)

[Table 2. Methods for Selected Indicators](#)

Appendix

Table 1. Definitions

Indicator	Description
Mean Maternal Age at Delivery	Average maternal age at delivery. Age is reflected in whole numbers only.
Maternal Age at Delivery ≥35 Years	Age calculated using mother's date of birth and delivery date. Includes all mothers aged 35 years and older.
Mean Maternal Age at First Delivery	Average maternal age at first delivery. Includes all mothers who have never delivered a baby (500 grams or 20 weeks gestation) in a previous pregnancy.
Maternal Age at First Delivery ≥35 Years	Age of mother at first delivery calculated using mother's date of birth and delivery date. Includes all mothers aged 35 years and older who have never delivered a baby (500 grams or 20 weeks gestation) in a previous pregnancy.
First Time Mothers	A mother who has never delivered a baby (500 grams birth weight or 20 weeks gestation) in a previous pregnancy. Also known as nulliparous.
First Time Mothers with <5 Antenatal Visits	A first time mother who has had fewer than 5 primary care prenatal care visits, exclusive of consultant and clinic visits.
Pre-Pregnancy Body Mass Index (BMI)	Ratio of weight to height, as measured pre-pregnancy or up to 12 weeks gestation.
Body Mass Index ≥30 kg/m ²	Women categorized as obese according to the Canadian Guidelines for Body Weight Classification.
Unknown Pre-Pregnancy BMI	Refers to maternal records where either the pre-pregnancy weight and/or height information are missing.
Smoking During Pregnancy	Documentation to indicate that the mother smoked during the current pregnancy. If the mother smoked at any time during the pregnancy (even if she quit smoking), she is categorized as a smoker during this pregnancy.
Labour Induction	Mother who received instrumental or pharmacological assistance to promote labour, prior to the onset of first stage of labour.
Intermittent Auscultation Only	Any mother receiving intermittent auscultation exclusively as a method of fetal heart monitoring during the first and/or second stage of labour.
Epidural Use in First Time Mothers with Labour	First time mothers receiving an epidural during the first, second or third stage of labour.
Cesarean Delivery	A delivery involving the surgical incision of the abdomen and uterine walls.
Delivery Care Provider	The person who provides the hands-on delivery of the baby: Obstetrician – includes obstetrician or fellow and obstetrical resident. Family Physician – includes general practitioner and family practice resident. Midwife – includes registered midwife and midwife trainee. Other – includes surgeon, medical student intern, nurse, no attendant or unknown.
Mean Postpartum Length of Stay after Vaginal Delivery	The average number of hours the mother remained in hospital after a vaginal delivery.

Indicator	Description
Mean Postpartum Length of Stay after Cesarean Delivery	The average number of hours the mother remained in hospital after a cesarean delivery.
Mothers Not Residing in Delivery Health Authority	Any mother who delivered in a health authority where she is not a resident (based on delivery facility/location).
Stillbirth Rate ≥ 500 grams	The number of stillbirths ≥ 500 grams as a proportion of all births ≥ 500 grams, excluding late terminations.
Multiple Births	Births in which more than one infant is born (twins, triplets, etc.).
Preterm Births <37 weeks	Live births after 20 and before 37 completed weeks of gestation.
Spontaneous Preterm Births	A preterm birth that occurs following spontaneous labour.
Iatrogenic Preterm Births	A preterm birth that occurs following labour that is non-spontaneous, i.e. labour was induced or mother had a cesarean delivery with no labour.
Infants Receiving Exclusive Breast Milk	Babies (≥ 37 completed weeks gestation) receiving exclusive breast milk during birth admission.
Delivery Health Authority	The Health Authority in which the patient delivered. The BC Ministry of Health has defined six macro level administrative boundaries called health authorities which govern the manner in which health care services are delivered within the province of BC.
Proportion of Total Births Delivered in BC	The number of births occurring in a specified delivery Health Authority as a proportion of the total births in BC.

Table 2. Methods for Selected Indicators

Indicator	Method
Mean Maternal Age at Delivery	$\frac{\text{Sum (Mother's delivery date - Mother's date of birth)}}{\text{Total deliveries}}$
Maternal Age at Delivery ≥ 35 Years	$\frac{\text{Number of mothers } \geq 35 \text{ years of age at delivery} \times 100}{\text{Total deliveries}}$ Exclusions: Mothers <35 years of age
Mean Maternal Age at First Delivery	$\frac{\text{Sum (Mother's delivery date - Mother's date of birth) at first delivery}}{\text{Total first time deliveries}}$ Exclusions: Women of parity ≥ 1
Maternal Age at First Delivery ≥ 35 Years	$\frac{\text{Number of mothers } \geq 35 \text{ years of age at first delivery} \times 100}{\text{Total first time deliveries}}$ Exclusions: Women of parity ≥ 1
First Time Mothers	$\frac{\text{Number of first time mothers} \times 100}{\text{Total deliveries}}$
First Time Mothers with <5 Antenatal Visits	$\frac{\text{Number of first time mothers with } < 5 \text{ antenatal visits} \times 100}{\text{Total first time deliveries}}$ Exclusions: Consultant visits and clinic visits
Pre-Pregnancy Body Mass Index (BMI)	$\frac{\text{Weight (kg)}}{\text{height (m)}^2}$
Body Mass Index $\geq 30 \text{ kg/m}^2$	$\frac{\text{Number of mothers with pre-pregnancy BMI } \geq 30 \text{ kg/m}^2 \times 100}{\text{Total deliveries with known pre-pregnancy BMI}}$

Indicator	Method
Unknown Pre-Pregnancy BMI	$\frac{\text{Number of mothers with unknown pre-pregnancy BMI}}{\text{Total deliveries}} \times 100$
Smoking During Pregnancy	$\frac{\text{Number of mothers who are current smokers}}{\text{Total deliveries}} \times 100$
Labour Induction	$\frac{\text{Number of mothers with labour induction}}{\text{Total deliveries}} \times 100$
Intermittent Auscultation Only	$\frac{\text{Number of mothers with intermittent auscultation only}}{\text{Total mothers with labour}} \times 100$
Epidural Use in First Time Mothers with Labour	$\frac{\text{Number of first time mothers in labour with epidural}}{\text{Total first time mothers in labour}} \times 100$
Cesarean Delivery	$\frac{\text{Number of mothers with cesarean delivery}}{\text{Total deliveries}} \times 100$
Delivery Care Provider	$\frac{\text{Number of mothers delivered by a care provider}}{\text{Total deliveries}} \times 100$
Mean Postpartum Length of Stay after Vaginal Delivery	$\frac{\text{Sum (discharge date/time - delivery date/time) for vaginal deliveries}}{\text{Total vaginal deliveries}}$
Mean Postpartum Length of Stay after Cesarean Delivery	$\frac{\text{Sum (discharge date/time - delivery date/time) for cesarean deliveries}}{\text{Total cesarean deliveries}}$
Mothers Not Residing in Delivery Healthy Authority	$\frac{\text{Number of mothers who are not resident at the delivery HA}}{\text{Total deliveries in health authority}} \times 100$
Stillbirth Rate ≥ 500 grams	$\frac{\text{Number of stillbirths } \geq 500 \text{ grams}}{\text{Total births } \geq 500 \text{ grams}} \times 1000$ Exclusions: Late pregnancy terminations
Multiple Births	$\frac{\text{Number of multiple live births}}{\text{Total live births}} \times 100$
Preterm Births <37 weeks	$\frac{\text{Number of live births with gestational age after 20 and before 37 completed weeks}}{\text{Total live births}} \times 100$
Spontaneous Preterm Births	$\frac{\text{Number of preterm live births where mother had spontaneous labour}}{\text{Total live births where mother had non-spontaneous labour}} \times 100$
Iatrogenic Preterm Births	$\frac{\text{Number of preterm live births where mother had non-spontaneous labour}}{\text{Total live births where mother had non-spontaneous labour}} \times 100$
Infants Receiving Exclusive Breast Milk	$\frac{\text{Number of term babies receiving exclusive breast milk}}{\text{Total term live births}} \times 100$
Proportion of Total Births Delivered in BC	$\frac{\text{Number of births in Health Authority}}{\text{Total BC births}} \times 100$