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Perinatal Health Indicators for Canada 2011

Canada

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Perinatal Health Indicators for Canada 2011

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Introduction

This document was produced by the Public Health Agency of Canada's Canadian Perinatal Surveillance System (CPSS) to update data on key perinatal health indicators described in the *Canadian Perinatal Health Report, 2008 Edition*,[1] and provide current information on major determinants and outcomes of maternal, fetal and infant health in Canada.

This report includes data from the birth registries up to 2008, death registries up to 2007, the birth-death linked database up to 2005 (birth year), the Canadian Institute for Health Information (CIHI)'s Discharge Abstract Database (DAD) up to 2009/2010 (fiscal year), and the *Canadian Community Health Survey* (CCHS) up to 2010. Numbers based on vital statistics or hospital databases may be different from those published by Statistics Canada or CIHI because of database updating (e.g., elimination of duplicates) or because of differences in inclusion and exclusion criteria.

Unless otherwise specified, definitions, methods of calculations and data limitations are the same as those described in the 2008 Canadian Perinatal Health Report and are in most cases cited verbatim from that document. The data sources and method used to calculate maternal mortality have changed, and publications describing the details and the justification for these changes are referenced.

Indicators presented in this report are the top 13 based on the priority ranking published by CPSS in 2000,[2] with two exceptions. Data on maternal smoking and alcohol consumption during pregnancy, two determinants of both maternal and infant health, could not be updated for this document because these questions are no longer part of the core component of the CCHS after 2005. More recent data on maternal smoking and alcohol consumption during pregnancy in Canada have been published from the Public Health Agency of Canada's *Maternity Experiences Survey*.[3] As this was a one-time study conducted in 2006, no inference on temporal trends can be derived from these data. Conversely, we added the rate of live births to older mothers, which was deemed to be of increasing importance since 2000.

Indicators calculated from vital statistics data (live births to teenage mothers, older mothers, preterm and postterm birth, small- and large-for-gestational age, fetal and infant death, and multiple birth) exclude Ontario because of data quality concerns previously described.[1] Similarly, rates of cesarean delivery, maternal mortality and severe maternal morbidity exclude Quebec because this province does not contribute data to the DAD from which these indicators were calculated.

Detailed data tables for all indicators are included as appendices.

References

1. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.
2. Health Canada. *Perinatal Health Indicators for Canada. A Resource Manual*. Ottawa: Health Canada, 2000.
3. Public Health Agency of Canada. What Mothers Say: the Canadian Maternity Experience Survey. Ottawa: Public Health Agency of Canada; 2009.

1. Fetal Mortality Rate

The rates of fetal deaths with birth weights ≥500 g and ≥1,000 g were stable during the 1999–2008 period. In 2008, these were 4.6 and 3.1 per 1,000 total births, respectively.

Definition

Fetal mortality rate is defined as the number of fetal deaths per 1,000 total births (live births and stillbirths) in a given place and time. The definition of stillbirth in most of Canada includes all fetal deaths with a gestation of 20 weeks or greater, or a birth weight of at least 500 g. The definition varies slightly in Quebec where only the birth weight criterion applies (birth weight ≥500 g).

In all provinces and territories, any expulsion or extraction of a dead fetus, including pregnancy termination, meeting the gestational age and birth weight criteria mentioned above must be registered as a stillbirth. As some of the temporal and geographic variations in fetal death rates may have occurred due to differences in birth registration at the borderline of viability,[1] mortality rates for fetuses with a birth weight ≥500 g and ≥1,000 g were calculated in addition to mortality rates for fetuses of all birth weights (crude fetal death rate). For the cause-specific fetal death rates, the cause categories used are those described in the *Canadian Perinatal Health Report, 2008 Edition*.

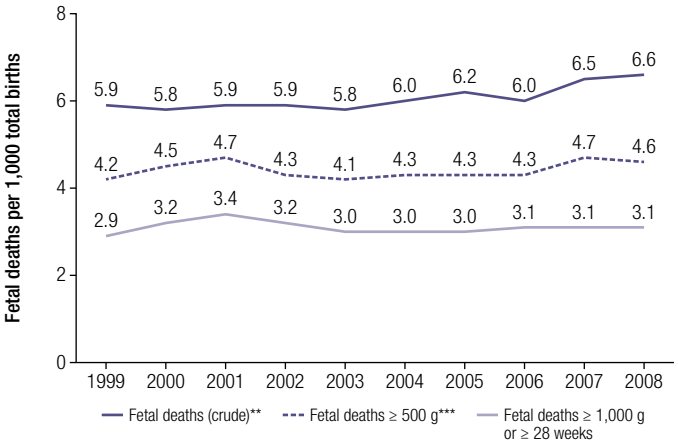
Data source

Fetal death rates were calculated for the period 1999 to 2008 using vital statistics data (stillbirth and live birth registrations). Cause-specific fetal death rates were calculated for the period 2000 to 2008 when causes of death were coded using the *International Statistical Classification of Diseases, 10th Revision* (ICD-10).[2] Data from Ontario were excluded because of data quality concerns.[3]

Results

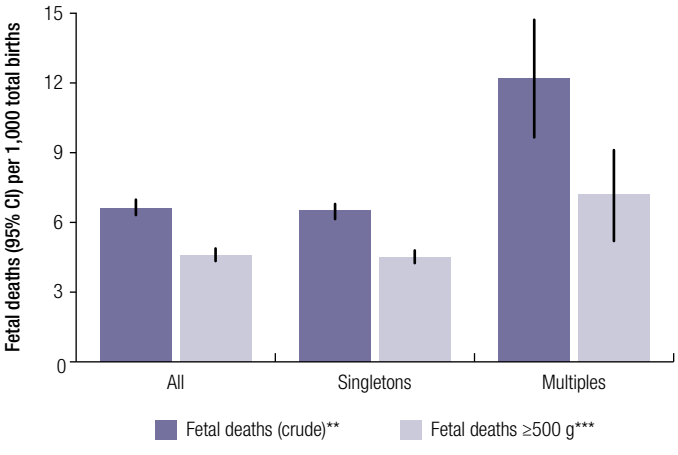
The crude rate of fetal death remained stable at 5.8–5.9 deaths per 1,000 total births between 1999 and 2003, but increased from 5.8 to 6.6 between 2003 and 2008. The rate of fetal death ≥500 g peaked at 4.7 in 2001, decreased to 4.1 in 2003, and increased again to 4.7 in 2007. In contrast, the rate of fetal death ≥1000 g or ≥ 28 weeks remained stable between 1999 and 2008, ranging from 2.9 to 3.4 per 1,000 total births (Figure 1.1).

FIGURE 1.1 Fetal death rate, Canada (excluding Ontario),* 1999–2008



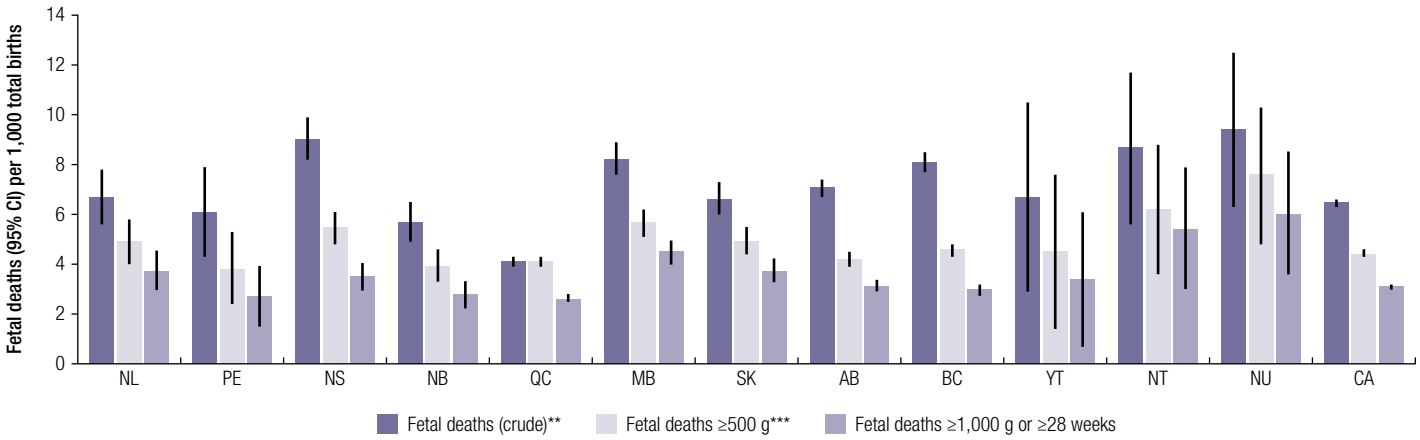
Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. ** Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks. *** Based on WHO recommendation, which includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown.

FIGURE 1.2 Rate of fetal death by plurality, Canada (excluding Ontario),* 2008



Source: Statistics Canada. Canadian Vital Statistics System, 2008. * Data for Ontario were excluded because of data quality concerns. ** Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks. *** Based on WHO recommendation, which includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown. CI – confidence interval

FIGURE 1.3 Rate of fetal death, by province/territory, Canada (excluding Ontario),* 2004–2008



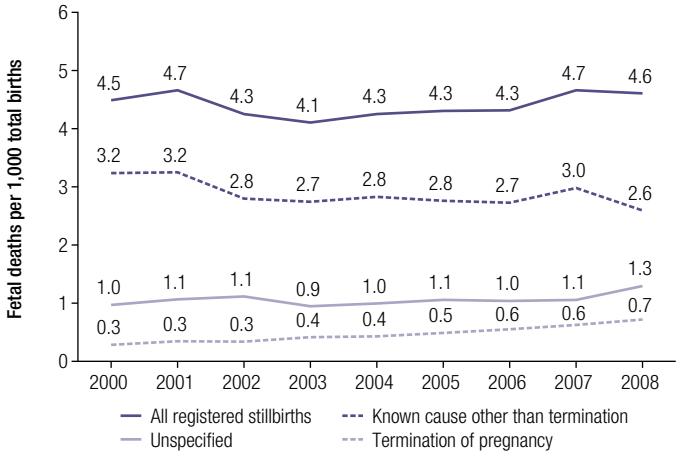
Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks. *** Based on WHO recommendation, which includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown. CI – confidence interval

In 2008, the crude rate of fetal death was significantly higher among multiple births (12.2 per 1,000 total births, 95% CI: 9.7–14.7) than among singletons (6.5, 95% CI: 6.1–6.8). Rates of fetal death ≥500 g were 7.2 (95% CI: 5.2–9.1) among multiples and 4.5 (95% CI: 4.3–4.8) among singletons (Figure 1.2).

In 2004–2008, fetal mortality rate ≥500 g ranged from 3.8 per 1,000 total births (95% CI: 2.4–5.3) in Prince Edward Island to 7.6 (95% CI: 4.8–10.3) in Nunavut (Figure 1.3).

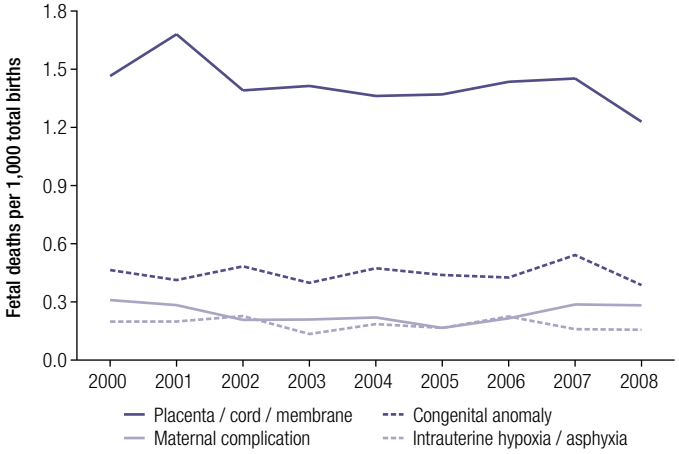
The rate of fetal deaths excluding terminations of pregnancy and unknown causes decreased from 3.2 to 2.6 deaths per 1,000 total births between 2000 and 2008. The rate of termination of pregnancy increased from 0.3 to 0.7 deaths per 1,000 total births, and the rate of deaths of unspecified causes increased from 1.0 to 1.3 deaths per 1,000 total births during the same period (Figure 1.4). There was no clear trend among other cause-specific fetal mortality rates (Figure 1.5).

FIGURE 1.4 Fetal death rate ≥500 g by type of event, Canada (excluding Ontario),* 2000–2008



Source: Statistics Canada. Canadian Vital Statistics System, 2000–2008. Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks.
* Data for Ontario were excluded because of data quality concerns.

FIGURE 1.5 Cause-specific rates of fetal death ≥500 g, Canada (excluding Ontario),* 2000–2008



Source: Statistics Canada. Canadian Vital Statistics System, 2000–2008. Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks.
* Data for Ontario were excluded because of data quality concerns.

Limitations

Vital statistics data may be affected by temporal and regional variations in birth registration practices, particularly for stillbirths and live births at the low end of the birth weight or gestational age range.[1] Although pregnancy termination can be recorded as the cause of stillbirth, terminations cannot always be distinguished from other types of fetal death because the cause is unspecified in 24% of records between 2000 and 2008.

References

1. Joseph KS, Allen AC, Kramer MS, Cyr M, Fair M. Changes in the registration of stillbirths less than 500 g in Canada, 1985–1995. *Paediatric Perinatal Epidemiol* 1999; 13: 278–287.
2. WHO. *International Statistical Classification of Diseases and Related Health Problems, 10th Revision*. Geneva: World Health Organization, 1992.
3. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.

2. Infant Mortality Rate

Between 1998 and 2007, the crude infant mortality rate fluctuated between 5.0 and 5.5 per 1,000 live births. The infant mortality rate among live births ≥500 g declined from 4.8 per 1,000 live births in 1998 to 4.0 per 1,000 live births in 2005. Neonatal death constituted 72% of infant deaths in 2007. Immaturity and congenital anomalies were the leading causes of neonatal death, while congenital anomalies, SIDS and infection were the leading causes of postneonatal death.

Definition

Infant mortality rate is defined as the number of deaths of live born babies in the first year after birth per 1,000 live births (in a given place and time). Infant deaths can be categorized into neonatal deaths (0–27 days) and postneonatal deaths (28–364 days). For postneonatal mortality, the denominator is the number of infants at risk, i.e. those who survived 28 days. As some of the temporal and geographic variations in infant mortality may be due to differences in reporting deaths of infants born at the borderline of viability,[1] mortality rates for infants with a birth weight ≥500 g were calculated in addition to mortality rates for infants of all birth weights (crude infant mortality).

Data source

Crude infant mortality rates were calculated from vital statistics data (death registrations), and rates excluding infants born at less than 500 g were calculated from the birth-death linked file created by linking live birth and infant death registrations. These linked records are available up to 2005, so mortality rates in infants with a birth weight of ≥500 g are available up to that year. Data from Ontario were excluded because of data quality concerns.[2] Cause-specific infant mortality was categorized according to modified International Collaborative Effort (ICE) groupings comprising of eight categories: congenital anomalies, asphyxia, immaturity, infection, sudden infant death syndrome (SIDS), other unexplained infant death, external causes, and other conditions.[3]

Results

Between 1998 and 2007, the crude infant mortality rate fluctuated between 5.0 and 5.5 per 1,000 live births (Figure 2.1). During that period, neonatal death rates varied between 3.4 and 3.9 per 1,000 live births, while postneonatal deaths varied between 1.3 and 1.8 per 1,000 infants at risk.

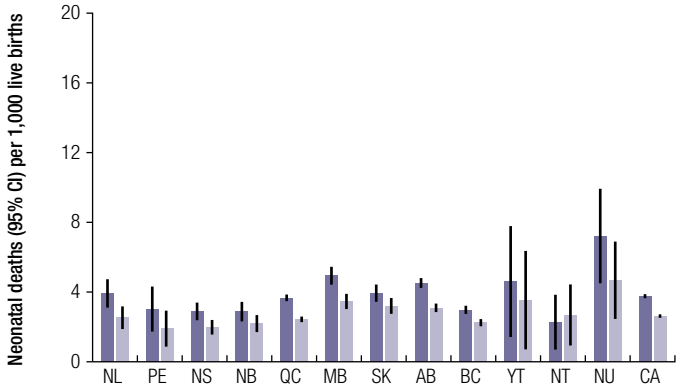
FIGURE 2.1 Rates of neonatal, postneonatal and infant death, Canada (excluding Ontario),* 1998–2007

Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 1998–2005 (cohort calculation) and Unlinked File, 1998–2007 (period calculation).
* Data for Ontario were excluded because of data quality concerns.

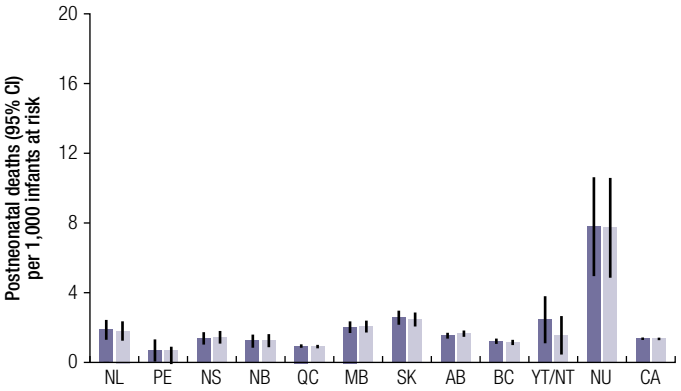
The infant mortality rate among live births ≥500 g declined from 4.8 per 1,000 live births in 1998 to 4.0 per 1,000 live births in 2005. Neonatal and postneonatal mortality rates declined from 3.0 to 2.7 per 1,000 live births and from 1.8 to 1.3 per 1,000 infants at risk, respectively.

FIGURE 2.2 Rate of neonatal, postneonatal and infant death, by province/territory, Canada excluding Ontario),* 2003–2007 and 2001–2005

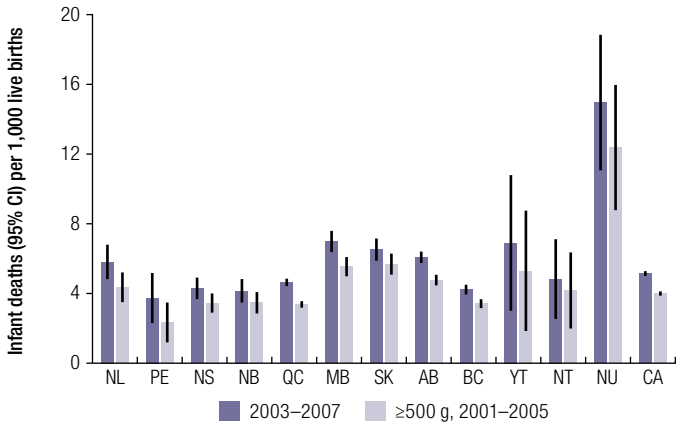
Rate of neonatal death



Rate of postneonatal death



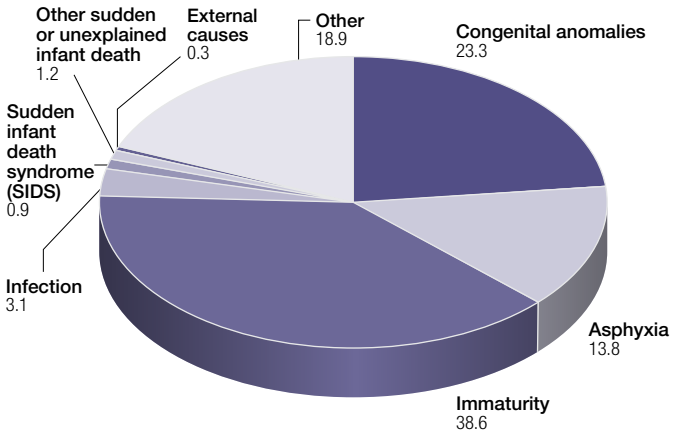
Rate of infant death



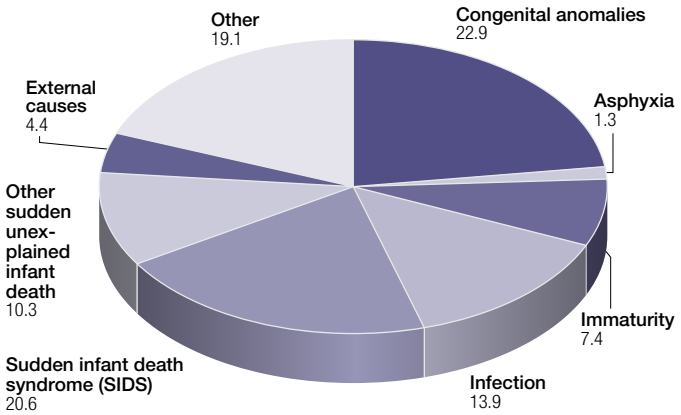
Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 2001–2005 (cohort calculation) and Unlinked File, 2003–2007 (period calculation). * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

FIGURE 2.3 Causes of neonatal, postneonatal, and infant death, Canada (excluding Ontario),* 2003–2007

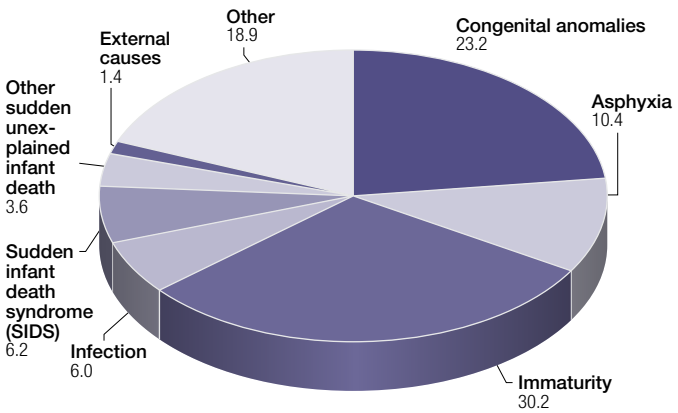
Proportion (%) of neonatal death by cause



Proportion (%) of postneonatal death by cause



Proportion (%) of overall infant death by cause



Source: Statistics Canada. Canadian Vital Statistics System, 2003–2007.
* Data for Ontario were excluded because of data quality concerns.

In 2001–2005, among infants with a birth weight ≥500 g, the infant mortality rates ranged from 2.3 per 1,000 live births (95% CI: 1.2–3.5) in Prince Edward Island to 12.4 per 1,000 live births (95% CI: 8.8–16.0) in Nunavut (Figure 2.2).

The leading causes of neonatal death were immaturity (38.6%), congenital anomalies (23.3%) and asphyxia (13.8%), while the leading causes of postneonatal death were congenital anomalies (22.9%), sudden infant death syndrome (20.6%), and infections (13.9%). For overall infant death, the leading causes were immaturity (30.2%), congenital anomalies (23.2%) and asphyxia (10.4%) (Figure 2.3).

Limitations

Vital statistics data have been found to be affected by regional variations in birth registration, particularly for extremely small, immature newborns.[1,4,5]

References

1. Joseph KS, Kramer MS. Recent trends in Canadian infant mortality rates: Effect of changes in registration of live newborns weighing less than 500 g. *CMAJ* 1996; 155: 1047–1052.
2. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.
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4. Joseph KS, Allen A, Kramer MS, Cyr M, Fair M. Changes in the registration of stillbirths <500 g in Canada, 1985–95. *Paediatr Perinat Epidemiol* 1999; 13: 278–287.
5. Wen SW, Kramer MS, Liu S, Dzakpasu S, Sauve R. Infant mortality by gestational age and birth weight in Canadian provinces and territories, 1990–1994 births. *Chronic Dis Can* 2000; 21: 14–22.

3. Small-for-gestational-age Rate

The rate of small-for-gestational-age (SGA) fluctuated between 7.8% and 8.2% between 2000 and 2008. It was 7.8% in 2008.

Definition

The SGA rate is defined as the number of live births whose birth weight is below the 10th percentile of the sex-specific birth weight for gestational age reference, expressed as a proportion of all singleton live births (in a given place and time). The reference used for this report was the most recent population-based Canadian reference of birth weight for gestational age, according to 1994–1996 births.[1]

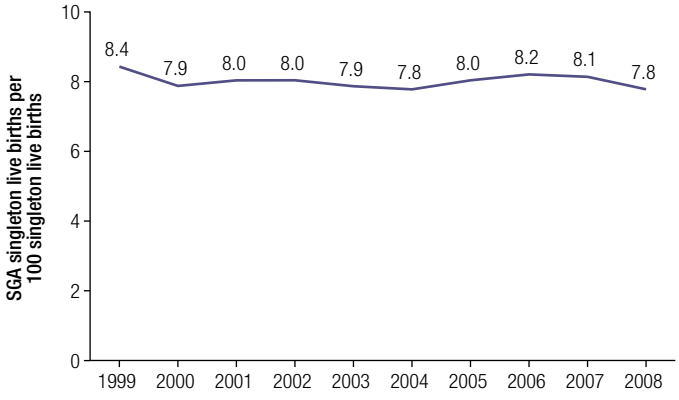
Data source

SGA rates were calculated using vital statistics data (birth registrations). Data from Ontario were excluded because of data quality concerns.[2] Live births with unknown gestational age, live births with gestational age smaller than 22 weeks or greater than 43 weeks, live births with unknown birth weight, and multiple births were excluded from these calculations.

Results

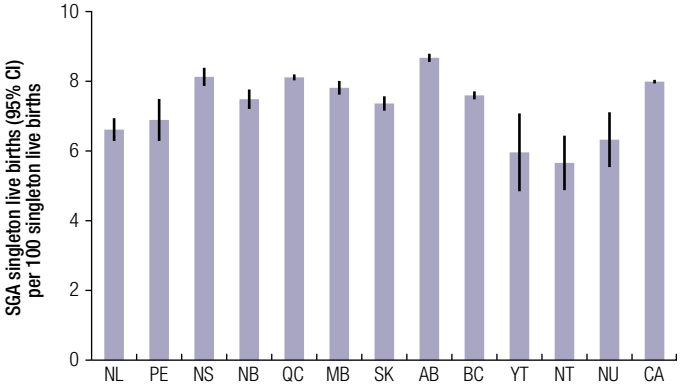
The SGA rate fluctuated between 7.8% and 8.2% between 2000 and 2008. It was 7.8% in 2008 (Figure 3.1). In 2004–2008, rates ranged from 5.7% (95% CI: 4.9–6.4) in the Northwest Territories to 8.7% (95% CI: 8.6–8.8) in Alberta (Figure 3.2).

FIGURE 3.1 Rate of small-for-gestational-age (SGA), Canada (excluding Ontario),* 1999–2008



Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. Data exclude live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. SGA cut-off is based on the 10th percentile of the sex-specific birth weight for gestational age. * Data for Ontario were excluded because of data quality concerns.

FIGURE 3.2 Rate of small-for-gestational-age (SGA), by province/territory, Canada (excluding Ontario),* 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. Data exclude live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. SGA cut-off is based on the 10th percentile of the sex-specific birth weight for gestational age. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

Limitations

An important limitation in the surveillance of SGA births is the potential for error in determining gestational age, particularly when menstrual dates are used. The accuracy of gestational age estimation can be substantially improved by ultrasound-assisted dating early in pregnancy.[3] SGA is a relative measure and rates vary according to the reference used for calculation.

References

1. Kramer MS, Platt RW, Wen SW, Joseph KS, Allen A, Abrahamowicz M, et al. A new and improved population-based Canadian reference for birth weight for gestational age. *Pediatrics* 2001; 108: E35.
2. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.
3. Kramer MS, McLean FH, Boyd ME, Usher RH. The validity of gestational age estimation by menstrual dating in term, preterm, and postterm gestations. *JAMA* 1988; 260: 3306–3308.

4. Large-for-gestational-age Rate

The rate of large-for-gestational-age (LGA) among singleton infants remained stable between 1999 and 2008. It was 11.1% in 2008.

Definition

The LGA rate is defined as the number of live births whose birth weight is above the 90th percentile of the sex-specific birth weight for gestational age reference, expressed as a proportion of all singleton live births (in a given place and time). The reference used for this report was the most recent population-based Canadian reference of birth weight for gestational age, according to 1994–1996 births.[1]

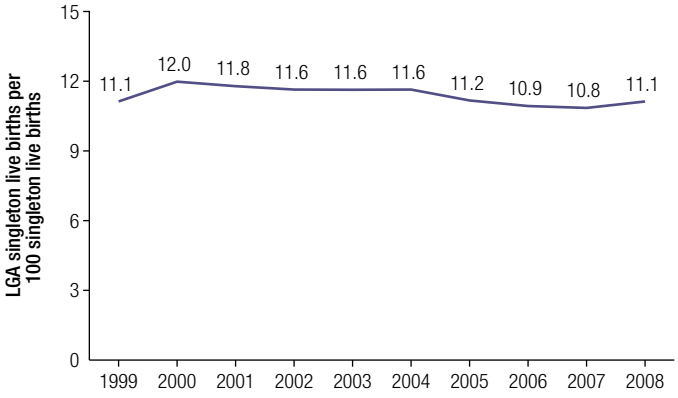
Data source

LGA rates were calculated using vital statistics data (birth registrations). Data from Ontario were excluded because of data quality concerns.[2] Live births with unknown gestational age, live births with gestational age smaller than 22 weeks or greater than 43 weeks, live births with unknown birth weights, and multiple births were excluded from these calculations.

Results

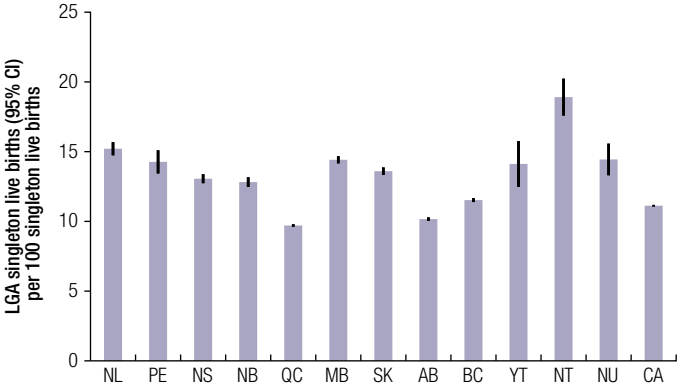
The LGA rate among singleton infants remained stable between 1999 and 2008. It was 11.1% in 2008 (Figure 4.1). Between 2004 and 2008, rates ranged from 9.7% (95% CI: 9.6–9.8) in Quebec to 18.9% (95% CI: 17.6–20.2) in the Northwest Territories (Figure 4.2).

FIGURE 4.1 Rate of large-for-gestational-age (LGA), Canada (excluding Ontario),* 1999–2008



Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. Data exclude live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. LGA cut-off is based on the 90th percentile of the sex-specific birth weight for gestational age. * Data for Ontario were excluded because of data quality concerns.

FIGURE 4.2 Rate of large-for-gestational-age (LGA), by province/territory, Canada (excluding Ontario),* 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. Data excludes live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. LGA cut-off is based on the 90th percentile of the sex-specific birth weight for gestational age. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

Limitations

An important limitation in the surveillance of LGA births is the potential for error in determining gestational age, particularly when only menstrual dates are used. The accuracy of gestational age estimation can be substantially improved by ultrasound-assisted dating early in pregnancy.[3] LGA is a relative measure and rates vary according to the reference used for calculation.

References

1. Kramer MS, Platt RW, Wen SW, Joseph KS, Allen A, Abrahamowicz M, et al. A new and improved population-based Canadian reference for birth weight for gestational age. *Pediatrics* 2001; 108: E35.
2. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.
3. Kramer MS, McLean FH, Boyd ME, Usher RH. The validity of gestational age estimation by menstrual dating in term, preterm, and postterm gestations. *JAMA* 1988; 260: 3306–3308.

5. Preterm Birth Rate

The rate of preterm birth remained stable between 2004 and 2008. It was 7.9% in 2008.

Definition

Preterm birth rate is defined as the number of live births with a gestational age at birth of less than 37 completed weeks (<259 days) expressed as a proportion of all live births (in a given place and time).

Data source

Preterm birth rates were calculated using vital statistics data (birth registrations). Data from Ontario were excluded because of data quality concerns.[1]

Results

The preterm birth rate remained stable in Canada between 2004 and 2008, fluctuating between 7.7% and 8.2%, with an average of 7.9%. This contrasts with the 1995–2004 decade during which the preterm birth rate increased steadily.[1] The highest proportion of preterm births occurred between 32 and 36 weeks gestation (rate ranging from 6.3% to 7.0% between 1999 and 2008). During the same period, the rate of early preterm birth (<32 weeks) remained stable at 1.1–1.2% (Figure 5.1).

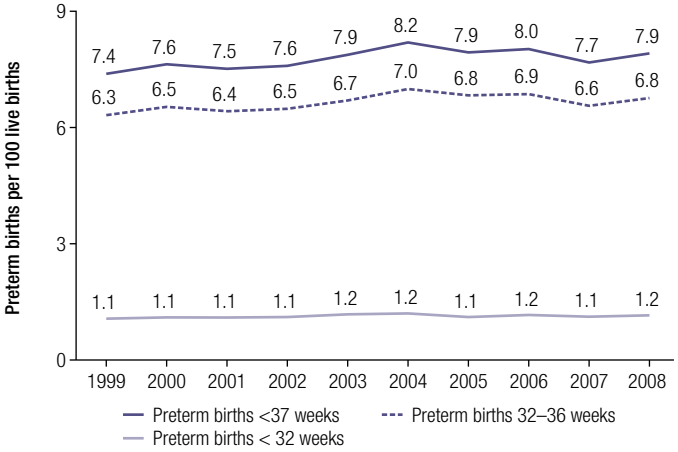
Preterm birth rates were substantially higher among multiple births. Preterm birth rates among singleton, twins, and triplets or higher order live births were 6.4%, 55.1%, and 98.5%, respectively (Figure 5.2).

In 2004–2008, preterm birth rates ranged from 7.4% (95% CI: 6.8–8.0) in Prince Edward Island to 12.9% (95% CI: 11.8–14.0) in Nunavut (Figure 5.3).

Limitations

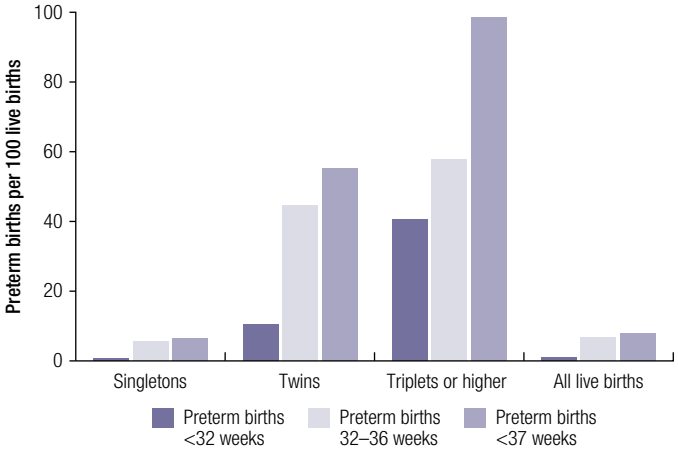
An important limitation of data on preterm birth is error in reporting of gestational age, particularly when it is based on menstrual dates. Such errors arise due to inaccurate maternal reporting of the last menstrual period, the interpretation of postconception bleeding as normal menses, irregular menstrual cycles or intervening unrecognized pregnancy losses.[2] These errors have diminished in recent decades as ultrasound confirmation of gestational age is widely used across Canada.

FIGURE 5.1 **Rate of preterm birth**, Canada (excluding Ontario),* 1999–2008



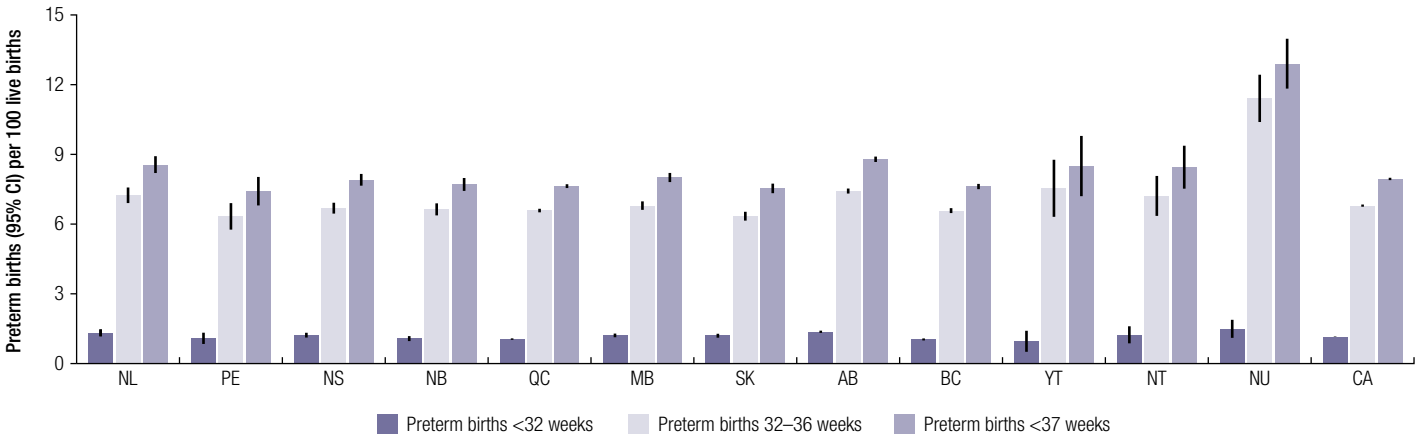
Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns.

FIGURE 5.2 **Rate of preterm birth by plurality**, Canada (excluding Ontario),* 2008



Source: Statistics Canada. Canadian Vital Statistics System, 2008. * Data for Ontario were excluded because of data quality concerns.

FIGURE 5.3 **Rate of preterm birth**, by province/territory, Canada (excluding Ontario),* 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. CI - confidence interval

References

1. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.
2. Kramer MS, McLean FH, Boyd ME, Usher RH. The validity of gestational age estimation by menstrual dating in term, preterm, and postterm gestations. *JAMA*. 1988; 260: 3306–3308.

6. Postterm Birth Rate

The rate of postterm birth declined steadily in Canada from 1.46 per 100 live births in 1999 to 0.62 per 100 live births in 2008.

Definition

Postterm birth rate is defined as the number of live births that occur at a gestational age of 42 or more completed weeks (≥294 days) of pregnancy, expressed as a proportion of all live births (in a given place and time).

Data source

Postterm birth rates were calculated using vital statistics data (birth registrations). Data from Ontario were excluded because of data quality concerns.[1]

Results

The rate of postterm birth continued to decline in Canada, from 1.46% in 1999 to 0.76% in 2004 and 0.62% in 2008 (Figure 6.1).

Between 2004 and 2008, the Canadian average was 0.70%. Rates ranged from 0.34% (95% CI: 0.32–0.35) in Quebec to 3.66% (95% CI: 2.79–4.53) in Yukon (Figure 6.2).

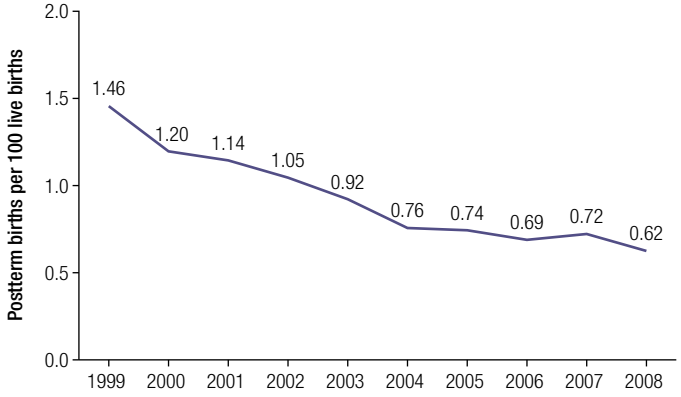
Limitations

An important limitation of data on postterm birth is error in reporting of gestational age, particularly when it is based on menstrual dates. Such errors arise due to inaccurate maternal reporting of the last menstrual period, the interpretation of postconception bleeding as normal menses, irregular menstrual cycles or intervening unrecognized pregnancy losses.[2] These errors have diminished in recent decades as ultrasound confirmation of gestational age is widely used across Canada.

References

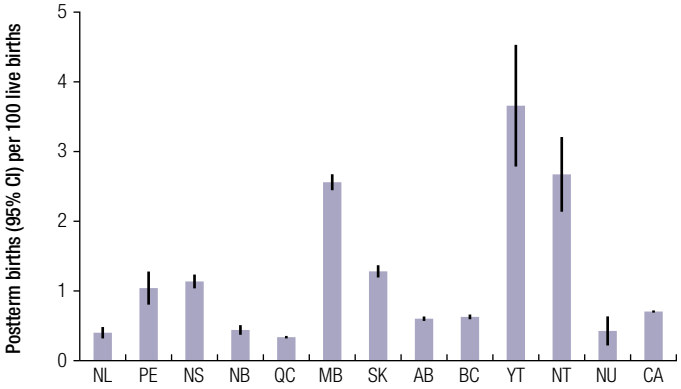
1. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.
2. Kramer MS, McLean FH, Boyd ME, Usher RH. The validity of gestational age estimation by menstrual dating in term, preterm, and postterm gestations. JAMA. 1988; 260: 3306–3308.

FIGURE 6.1 **Rate of postterm birth**, Canada (excluding Ontario),* 1999–2008



Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008.
* Data for Ontario were excluded because of data quality concerns.

FIGURE 6.2 **Rate of postterm birth**, by province/territory, Canada (excluding Ontario),* 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

7. Maternal Mortality Rate

From 1996/1997 to 2009/2010, the maternal mortality rate remained stable, fluctuating between 6.8 and 11.9 per 100,000 deliveries, with no discernable trend. The most common diagnosis associated with maternal death was circulatory system diseases.

Definition

The definition of maternal death under the tenth revision of the International Statistical Classification of Diseases (ICD-10) is: "The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes."[1] For the purpose of this report, the maternal mortality rate is defined as the number of maternal deaths (occurring during pregnancy, childbirth, or within 42 days after delivery or termination of pregnancy) divided by the number of deliveries, and expressed per 100,000 deliveries.[2,3]

Data source

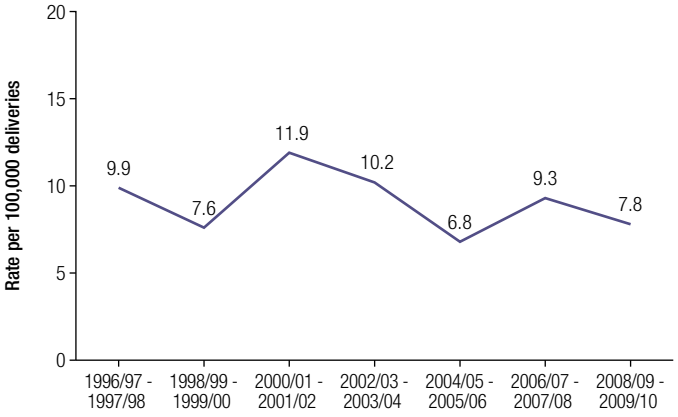
Data from the Canadian Institute of Health Information (CIHI)'s Discharge Abstract Database (DAD) were used to identify in-hospital deaths among women of reproductive age (15–54 years) in Canada (excluding Quebec). CIHI data were used instead of the more traditional vital statistics data because recent studies by the Canadian Perinatal Surveillance System have shown that hospitalization data are more comprehensive and timely.[1,2] Methods used are described in detail elsewhere.[3] Temporal trends are presented by two fiscal year periods because of the small number of events. Manitoba data, which were incomplete for earlier years, were included from fiscal year 2004/2005.

Results

From 2008/2009 to 2009/2010, there were 7.8 maternal deaths per 100,000 deliveries. From 1996/1997 to 2009/2010, the maternal mortality rate fluctuated between 6.8 and 11.9 per 100,000 deliveries (Figure 7.1).

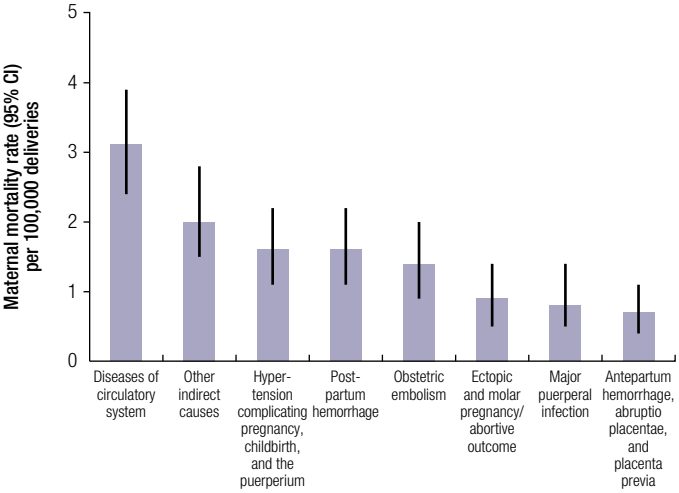
The most common diagnoses associated with these deaths were diseases of the circulatory system; other indirect causes; hypertension complicating pregnancy, childbirth and the puerperium; postpartum hemorrhage; obstetric embolism; ectopic and molar pregnancy and abortive outcome; major puerperal infection; and antepartum hemorrhage, abruptio placentae and placenta previa (Figure 7.2).

FIGURE 7.1 Maternal mortality rate, Canada (excluding Quebec),* 1996/1997 to 2009/2010



Source: Canadian Institute for Health Information, Discharge Abstract Database. * Quebec does not contribute data to DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/05.

FIGURE 7.2 Diagnoses associated with maternal deaths, Canada (excluding Quebec),* 2002/03 to 2009/10



Source: Canadian Institute for Health Information, Discharge Abstract Database. Diagnoses do not represent underlying causes of death. Cases could have more than one associated diagnosis hence sum of individual diagnoses exceeds the overall maternal mortality rate. * Quebec does not contribute data to DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/05. CI – confidence interval

Limitations

The DAD does not include data from Quebec and data from Manitoba were excluded from some analyses because they were incomplete until 2004/2005. The small numbers of deaths that occurred outside the hospital were not included in this analysis. The DAD data include multiple diagnostic codes for each maternal death, but do not assign an underlying cause of death. Therefore, maternal mortality rates by underlying cause of death cannot be presented from these data.

References

1. WHO. *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, 2008 Edition*. Geneva: World Health Organization, 2008.
2. Lisonkova S, Bartholomew S, Rouleau J, Liu S, Liston RM, Joseph KS; for the Maternal Health Study Group of the Canadian Perinatal Surveillance System. Temporal trends in maternal mortality in Canada I: Estimates based on Vital Statistics data. *J Obstet Gynecol Can* 2011; 33: 1011–1019.
3. Lisonkova S, Liu S, Bartholomew S, Liston RM, Joseph KS; for the Maternal Health Study Group of the Canadian Perinatal Surveillance System. Temporal trends in maternal mortality in Canada II: Estimates based on hospitalization data. *J Obstet Gynecol Can* 2011; 33: 1020–1030.

8. Rate of Live Births to Teenage Mothers

The age-specific rate of live births to mothers aged 15–17 years decreased steadily from 11.0 to 7.4 per 1,000 females between 1999 and 2005, and increased to 8.2 to 1,000 females in 2008. Similarly, the rate of live births to mothers aged 18–19 years decreased from 34.3 to 26.6 per 1,000 females between 1999 and 2005, and increased to 28.4 and 28.1 per 1,000 females in 2007 and 2008, respectively. Live births to teenage mothers expressed as a proportion of all live births decreased from 6.4% in 1999 to 4.6% in 2005 after which it remained stable.

Definition

Age-specific rate of live births to teenage mothers is defined as the number of live births to mothers aged 10–14, 15–17 or 18–19 years per 1,000 females in the same age category (in a given place and time). The proportion of live births to teenage mothers refers to the number of live births to mothers aged 10–14, 15–17 or 18–19 years, expressed as a percentage of all live births (in a given place and time).

Data source

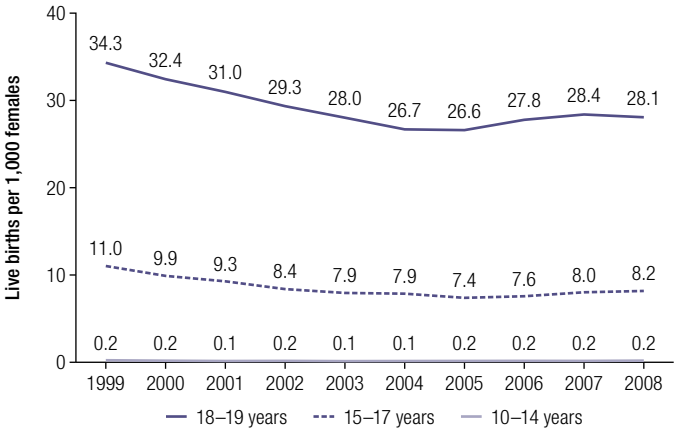
Rates of live births to teenage mothers were calculated using vital statistics data (birth registrations). The denominators for the age-specific rate of live birth were population estimates for the corresponding age category for the specific calendar year. Data from Ontario were excluded because of data quality concerns.[1]

Results

After decreasing steadily from 11.0 per 1,000 females in 1999 to 7.4 per 1,000 females in 2005, the age-specific rate of live births to mothers aged 15–17 years increased slightly to 8.2 in 2008. Similarly, the rate of live births to mothers aged 18–19 years decreased from 34.3 per 1,000 females in 1999 to 26.6 in 2005 and then increased to 28.4 and 28.1 per 1,000 females in 2007 and 2008, respectively. The live birth to mothers aged 10–14 years fluctuated between 0.1 and 0.2 per 1,000 females (Figure 8.1).

The proportion of live births to mothers aged 10–19 years decreased from 6.4% to 4.6% of total births between 1999 and 2005, and remained stable at 4.6% until 2008 (Figure 8.2).

FIGURE 8.1 Age-specific live birth rates, females aged 10–14, 15–17 and 18–19 years, Canada (excluding Ontario),* 1999–2008

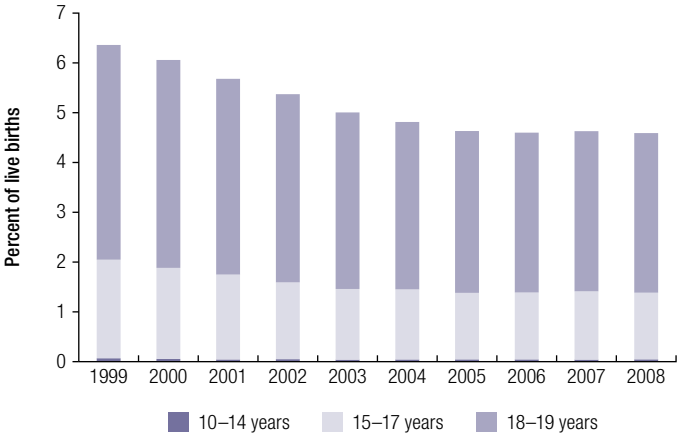


Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns.

In 2004–2008, age-specific live birth rates ranged from 1.5 per 1,000 females (95% CI: 1.4–1.5) in Quebec to 29.0 per 1,000 females (95% CI: 26.3–31.7) in Nunavut among women aged 10 to 17 years. Age-specific birth rates ranged from 18.8 per 1,000 females (95% CI: 18.3–19.3) in British Columbia to 176.1 (95% CI: 170.8–181.3) in Nunavut in women aged 18–19 years (Figure 8.3).

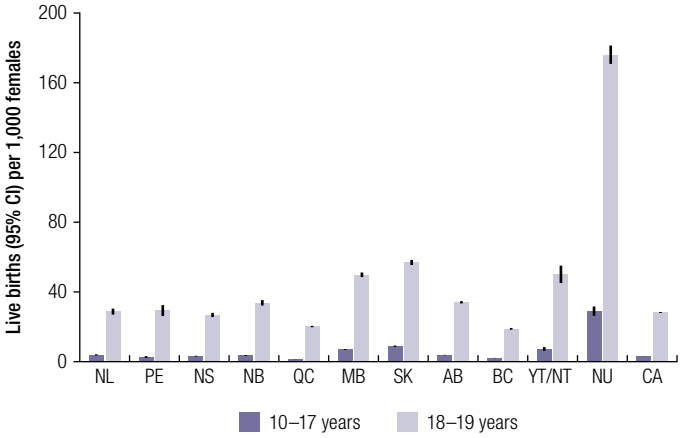
The proportion of births to mothers aged 10–19 years ranged from 2.9% (95% CI: 2.9–2.9) in Quebec to 23.5% (95% CI: 22.8–24.3) in Nunavut (Figure 8.4).

FIGURE 8.2 Proportion (%) of live births to mothers aged 10–14, 15–17 and 18–19 years,* Canada (excluding Ontario),** 1999–2008



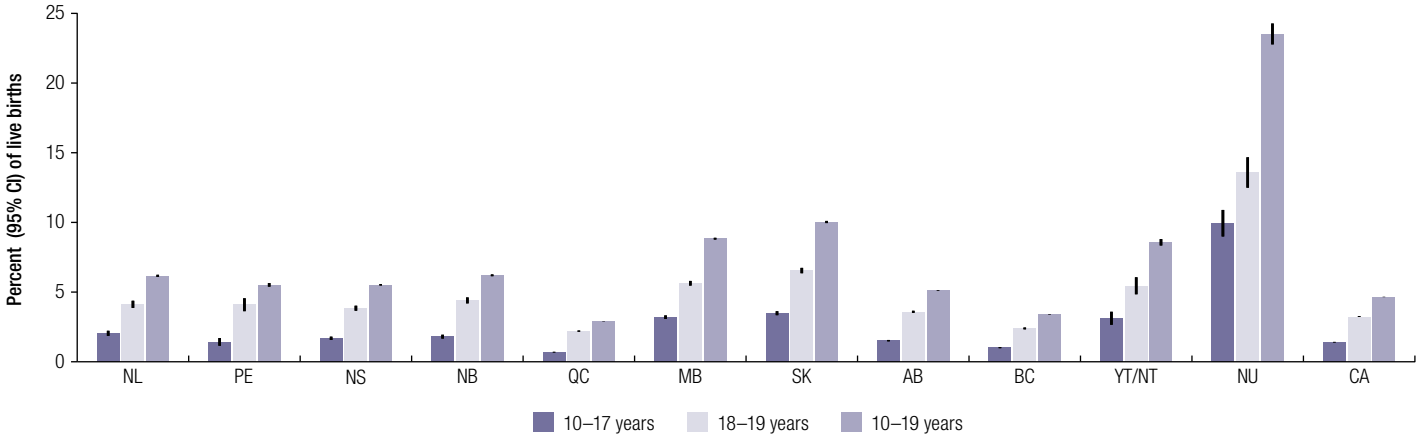
Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Live births to mothers ≥ 50 years and those with unknown maternal age are excluded from the denominator. ** Data for Ontario were excluded because of data quality concerns.

FIGURE 8.3 Age-specific live birth rates, females 10–19 years, by province/territory, Canada (excluding Ontario),* 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

FIGURE 8.4 Proportion (%) of live births to mothers aged 10–19 years, by province/territory,* Canada (excluding Ontario),** 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Live births to mothers ≥50 years and those with unknown maternal age are excluded from the denominator. ** Data for Ontario were excluded because of data quality concerns. CI – confidence interval

Limitations

Rates of live births to teenage mothers do not reflect the total number of pregnancies to teenagers as they exclude stillbirths, ectopic pregnancies and pregnancy terminations.

References

1. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.

9. Rate of Live Births to Older Mothers

The rate of live births to older mothers increased steadily between 1999 and 2008. The age-specific live birth rates to mothers aged 35–39 years, 40–44 years and 45–49 years increased from 30.3 to 47.7, from 4.8 to 7.7, and from 0.2 to 0.4 per 1,000 females respectively.

Definition

Age-specific rate of live births to older mothers is defined as the number of live births to mothers aged 35–39, 40–44 or 45–49 years per 1,000 females in the same age category (in a given place and time). The proportion of live births to older mothers refers to the number of live births to mothers aged 35–39, 40–44 or 45–49 years, expressed as a percentage of all live births (in a given place and time).

Data source

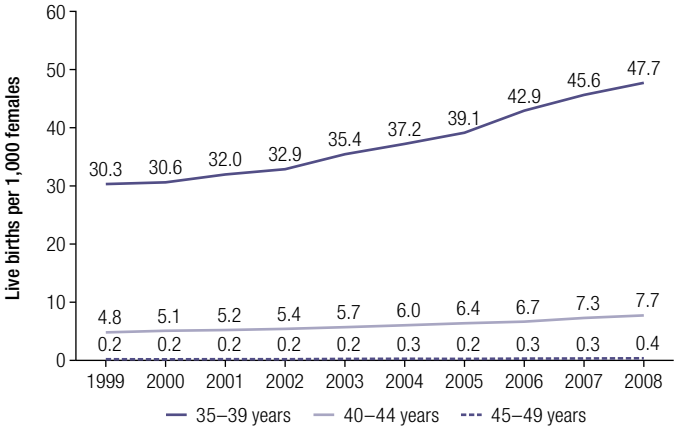
Rates of live births to older mothers were calculated using vital statistics data (birth registrations). The denominators for the age-specific rate of live birth were population estimates for the corresponding age category for the specific calendar year. Data from Ontario were excluded because of data quality concerns.[1]

Results

Between 1999 and 2008, the live birth rate to mothers aged 35–39, 40–44 and 45–49 years increased steadily from 30.3 to 47.7, from 4.8 to 7.7, and from 0.2 to 0.4 per 1,000 females, respectively (Figure 9.1). Similarly, the proportion of live births to women aged 35–39 and 40–49 years increased steadily from 12.1% to 13.7% of live births, and from 1.9% to 2.6% of live births, respectively (Figure 9.2).

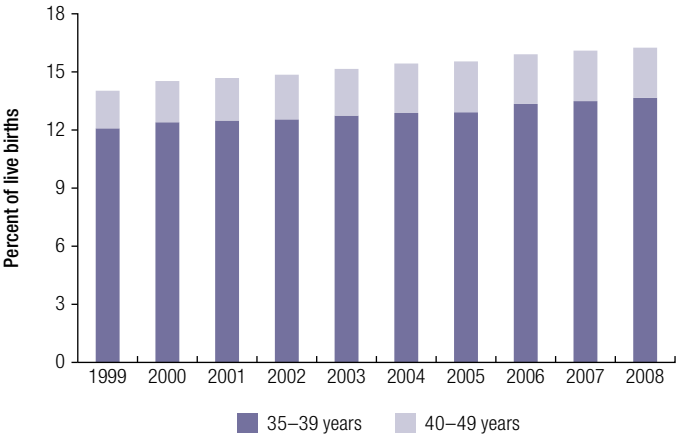
The live birth rate to mothers aged 35–39 years ranged from 27.6 per 1,000 females (95% CI: 26.8–28.5) in New Brunswick to 49.7 (95% CI: 49.3–50.2) in British Columbia, and the live birth rate to mothers aged 40–49 years ranged from 1.8 (95% CI: 1.6–2.0) in Newfoundland and Labrador and 1.8 (95% CI: 1.6–1.9) in New Brunswick to 6.5 per 1,000 females (95% CI: 4.8–8.2) in Nunavut (Figure 9.3). The proportion of live births to mothers aged 35–49 years ranged from 10.2% (95% CI: 10.1–10.3%) in Saskatchewan to 22.0% (95% CI 22.0%–22.1%) in British Columbia (Figure 9.4).

FIGURE 9.1 Age-specific birth rates, females aged 35–39, 40–44, and 45–49 years, Canada (excluding Ontario),* 1999–2008



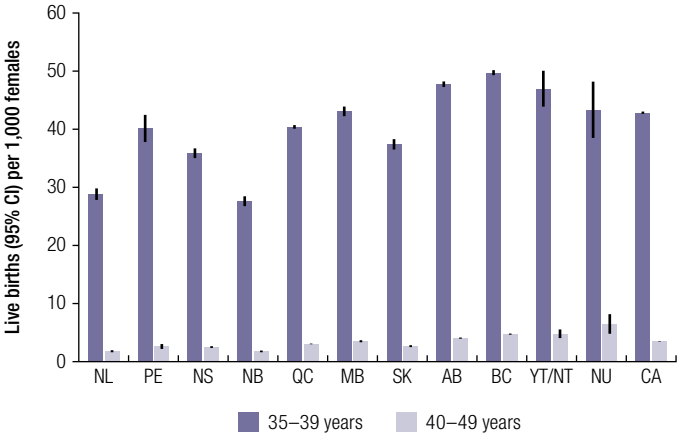
Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns.

FIGURE 9.2 Proportion (%) of live births to older mothers,* Canada (excluding Ontario),** 1999–2008



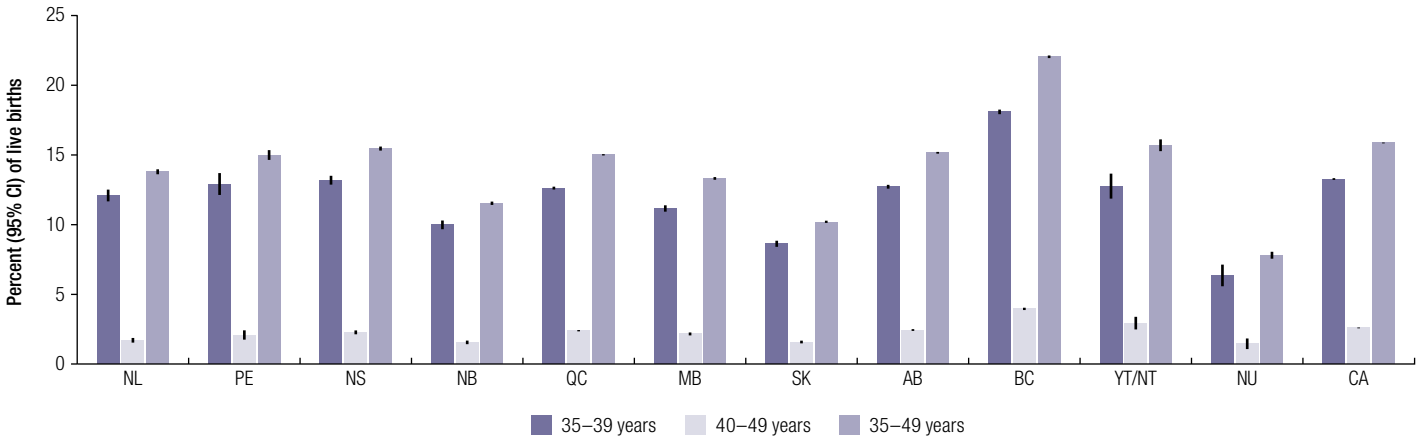
Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Excludes live births to mothers ≥50 years and those with unknown maternal age. ** Data for Ontario were excluded because of data quality concerns.

FIGURE 9.3 **Age-specific live birth rates, females 35–49 years**, by province/territory, Canada (excluding Ontario),* 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

FIGURE 9.4 **Proportion (%) of live births to older mothers (35–49 years)**, by province/territory,* Canada (excluding Ontario),** 2004–2008



Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Excludes live births to mothers ≥50 years and those with unknown maternal age. ** Data for Ontario were excluded because of data. quality concerns. CI – confidence interval

Limitations

Rates of live births to older mothers do not reflect the total number of pregnancies to older women as they exclude stillbirths, ectopic pregnancies and pregnancy terminations.

References

1. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.

10. Birth Prevalence of Congenital Anomalies

The birth prevalence of congenital anomalies decreased in recent years from 5.0% in 2001 to 4.1% in 2007.

Definition

Congenital anomalies, birth defects and congenital malformations are synonymous terms that describe an abnormality of structure or function present at birth.[1] The prevalence of congenital anomalies (CAs) at birth is defined as the number of live born or stillborn births identified as having at least one CA, expressed as a proportion of the total number of live births and stillbirths (in a given place and time).

In addition to overall congenital anomaly rates, prevalence rates of three of the most commonly recognized anomalies, namely, Down syndrome, neural tube defects and orofacial clefts are presented.

Data source

The prevalence of congenital anomalies at birth was calculated using data from PHAC's Canadian Congenital Anomalies Surveillance System (CCASS).

Results

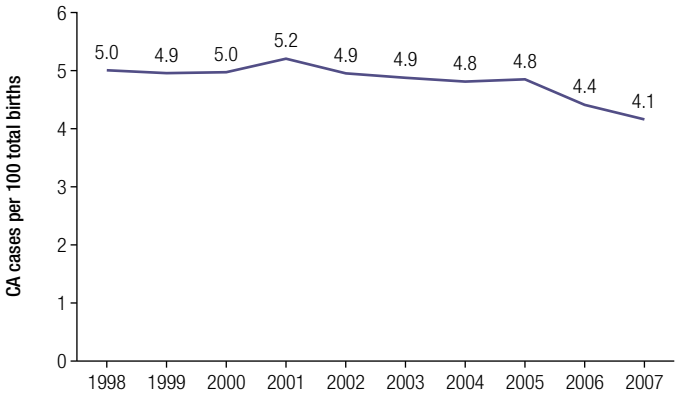
The overall birth prevalence of congenital anomalies was 4.1% in 2007. The rate has been declining since 2001 (Figure 10.1).

There was no clear temporal trend for Down syndrome (Figure 10.2). Prevalence rates of Down syndrome ranged from 11.2 per 1,000 total births (95% CI: 10.5–12.0) in Quebec to 24.2 (95% CI: 14.3–38.3) in the Northwest Territories (Figure 10.3).

Neural tube defects declined between 1998 and 2004, but there was no clear trend after 2004 (Figure 10.4). Trends for spina bifida were similar to those for overall neural tube defects, while there were no clear trends for anencephaly and similar anomalies. Rates of neural tube defects ranged from 3.8 per 1,000 total births (95% CI: 3.4–4.3) in Quebec to 6.5 (95% CI: 4.9–8.4) in Nova Scotia (Figure 10.5).

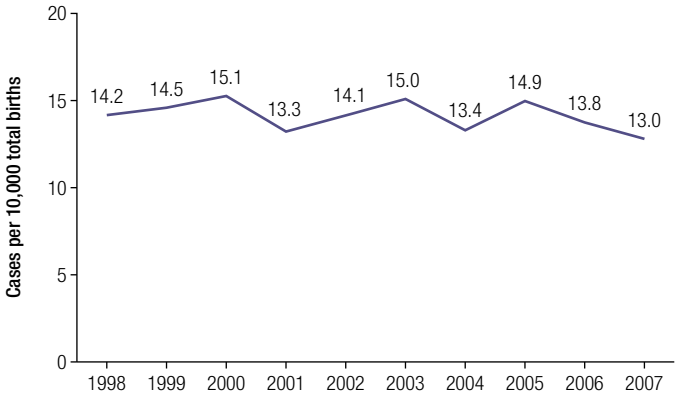
The rate of cleft lip with or without cleft palate declined between 1998–2000 and 2001–2007, but there was no clear trend for cleft palate (Figure 10.6). Rates of cleft lip with or without cleft palate ranged from 6.4 per 10,000 total births (95% CI: 2.9–12.1) in Prince Edward Island to 28.7 (95% CI: 14.8–50.1) in Nunavut (Figure 10.7).

FIGURE 10.1 **Birth prevalence of congenital anomalies**, Canada, 1998–2007



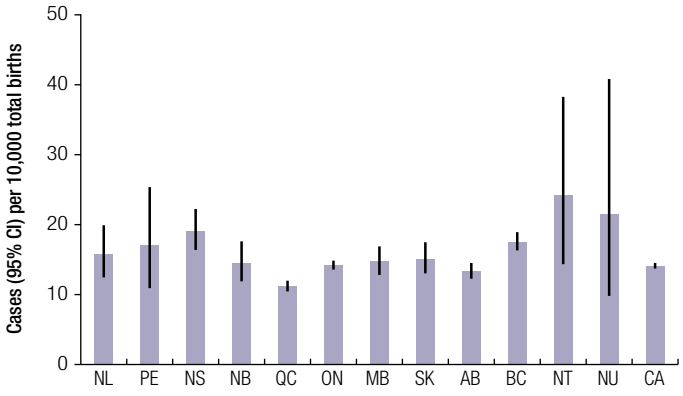
Source: Public Health Agency of Canada, Canadian Congenital Anomalies Surveillance System, 1998–2007.

FIGURE 10.2 **Rate of Down syndrome**, Canada, 1998–2007



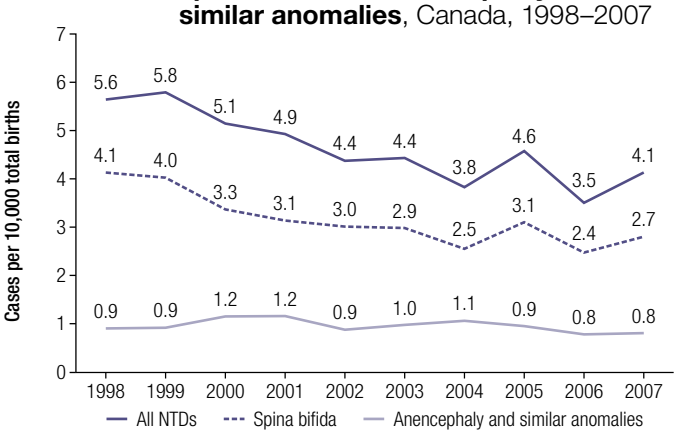
Source: Public Health Agency of Canada, Canadian Congenital Anomalies Surveillance System, 1998–2007.

FIGURE 10.3 Rate of Down syndrome, by province/territory, Canada, 1998–2007



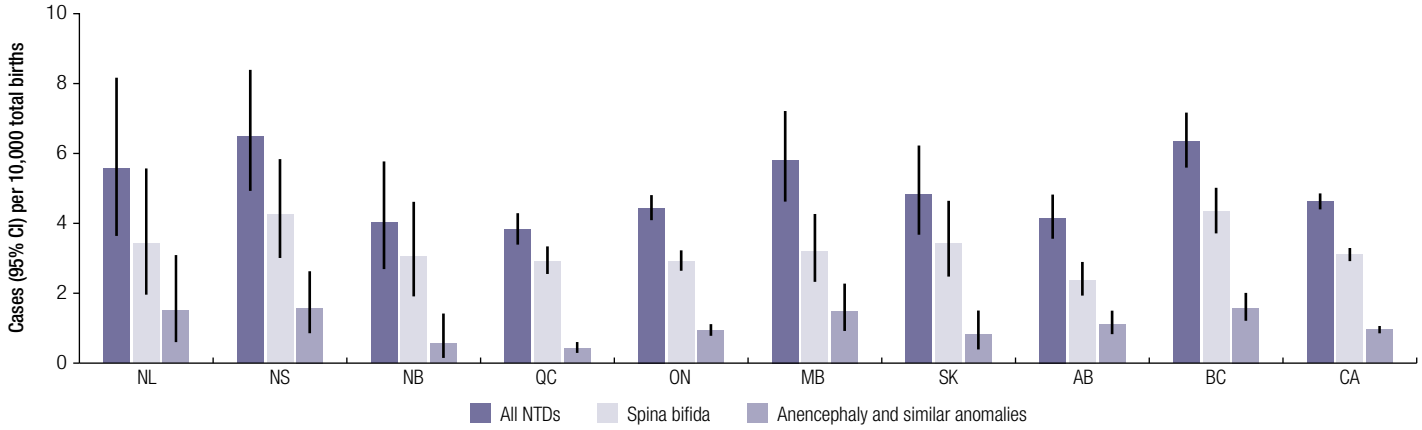
Source: Public Health Agency of Canada, Canadian Congenital Anomalies Surveillance System, 1998–2007. The rate from Yukon is not shown because it is based a small cell counts (<5). CI – confidence interval

FIGURE 10.4 Rate of neural tube defects (NTD), spina bifida and anencephaly and similar anomalies, Canada, 1998–2007



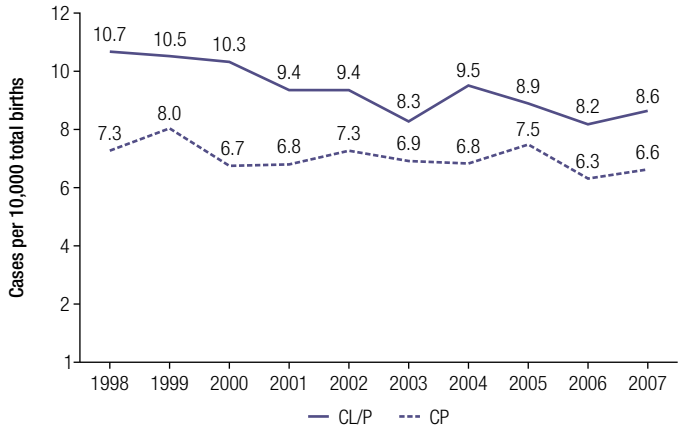
Source: Public Health Agency of Canada, Canadian Congenital Anomalies Surveillance System, 1998–2007

FIGURE 10.5 Rate of neural tube defects (NTD), spina bifida and anencephaly and similar anomalies, by province/territory, Canada, 1998–2007



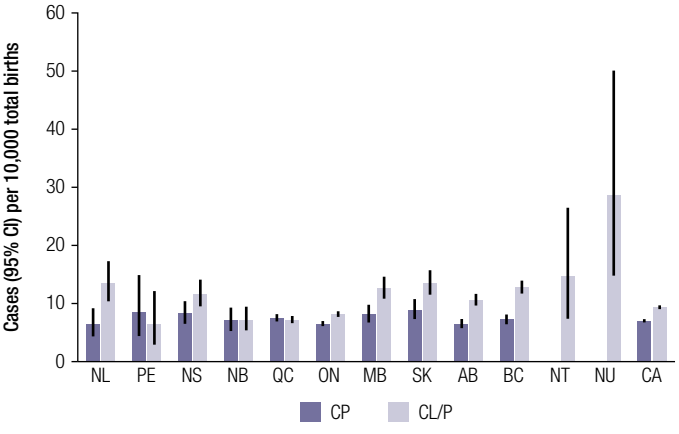
Source: Public Health Agency of Canada, Canadian Congenital Anomalies Surveillance System, 1998–2007. Rates from Prince Edward Island, Yukon, Northwest Territories and Nunavut are not shown because they are based on small cell counts (<5). CI – confidence interval

FIGURE 10.6 Rate of cleft palate (CP) and cleft lip with or without cleft palate (CL/P), Canada, 1998–2007



Source: Public Health Agency of Canada, Canadian Congenital Anomalies Surveillance System,1998–2007.

FIGURE 10.7 Rate of cleft palate (CP) and cleft lip with or without cleft palate (CL/P), by province/territory, Canada, 1998–2007



Source: Public Health Agency of Canada, Canadian Congenital Anomalies Surveillance System, 1998–2007. Rates from the Yukon, Northwest Territories (CP only) and Nunavut (CP only) are not shown because they are based on small cell counts (<5). CI – confidence interval

Limitations

Incomplete ascertainment of cases and inconsistent coding practices due to lack of standardized case definitions are important limitations for population-based congenital anomalies surveillance systems. Another important limitation is the lack of data on pregnancy terminations prior to 20 weeks. The data from the CCASS capture natural stillbirths and terminations of pregnancy at ≥20 weeks of gestation, but earlier terminations or spontaneous losses are not identified, even if the fetus had a congenital anomaly. This results in an underestimation of the incidence of congenital anomalies, such as neural tube defects and Down syndrome, and also limits the interpretation of temporal and geographical patterns and the impact of prenatal diagnosis and termination of affected pregnancies. Comparisons of rates of neural tube defects from the seven-province study[2] before and after fortification with those identified by CCASS[3] clearly indicate that the CCASS data are incomplete.

References

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3. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.

11. Severe Maternal Morbidity Rate

Between fiscal year 2003/2004 and 2009/2010, the overall rates of severe maternal morbidity fluctuated between 13.2 and 14.9 events per 1,000 deliveries. In 2009/2010, the rate was 14.5. The most common severe conditions included blood transfusion; postpartum hemorrhage and blood transfusion; cardiac arrest/failure, myocardial infarction or pulmonary edema; hysterectomy; and puerperal sepsis.

Definition

The Canadian Perinatal Surveillance System uses a pragmatic definition for severe maternal morbidity which includes disease-specific (e.g. eclampsia), intervention specific (e.g. blood transfusion) and organ dysfunction-based (e.g. acute renal failure) criteria. The severe morbidity rate is expressed per 1,000 deliveries in a given place and time. The list of conditions and interventions included in the composite severe maternal morbidity indicator can be found in other publications.[1,2]

Data source

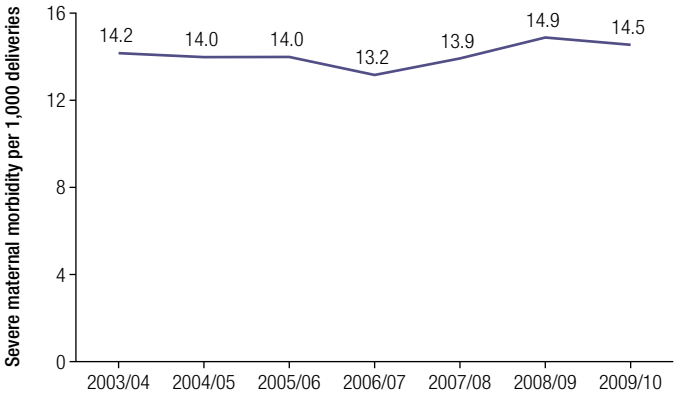
Rates of severe maternal morbidity were calculated using data from the Discharge Abstract Database of the Canadian Institute for Health Information for the period 2003/2004 to 2009/2010. This database contains information on all hospital discharges in Canada (except Quebec). Diagnoses and procedures in the database are coded using the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision*[3] (ICD-10) and the Canadian Classification of Health Interventions (CCI), respectively. Rates are calculated based on fiscal years (April 1 to March 31).

Results

Between fiscal year 2003/2004 and 2009/2010, the overall rates of severe maternal morbidity fluctuated between 13.2 and 14.9 events per 1,000 deliveries. In 2009/2010, the rate was 14.5 per 1,000 deliveries (Figure 11.1).

The most common severe maternal morbidities included: blood transfusion; postpartum hemorrhage and blood transfusion; cardiac arrest/failure, myocardial infarction or pulmonary edema; hysterectomy; puerperal sepsis; eclampsia; uterine rupture during labour; and repair of bladder, urethra, or intestine (Figure 11.2).

FIGURE 11.1 **Rate of severe maternal morbidity**, Canada (excluding Quebec),* fiscal years 2003/2004 to 2009/2010



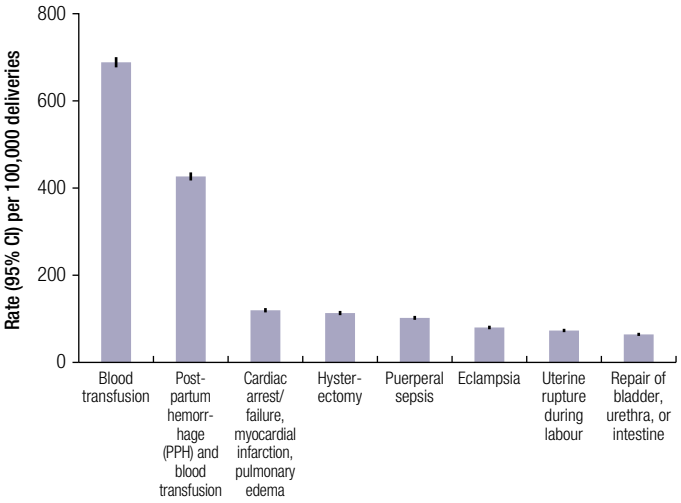
Source: Canadian Institute for Health Information, Discharge Abstract Database (DAD). Manitoba data were incomplete for fiscal year 2003/2004. * Quebec data was not included because it does not contribute data to DAD.

Overall rates of severe maternal morbidity varied across provinces and territories. Rates in Newfoundland and Labrador, Saskatchewan, Alberta, Northwest Territories, and Yukon were significantly higher than the Canadian average (Figure 11.3).

Limitations

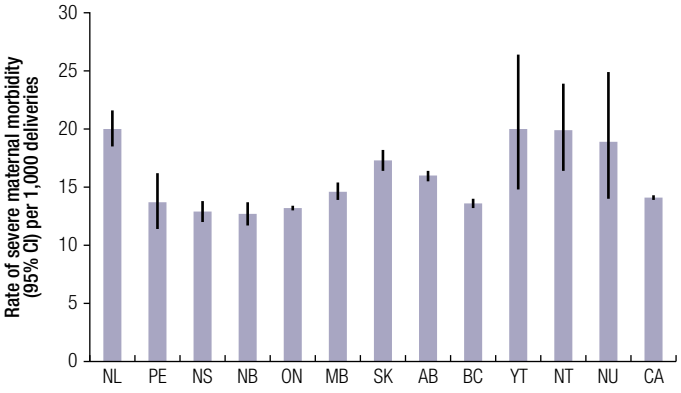
Some severe maternal conditions (e.g. severe preeclampsia) could not be identified due to limitations of the ICD-10 codes.

FIGURE 11.2 **Rates of the most common severe maternal morbidities**, Canada (excluding Quebec),* fiscal years 2003/2004 to 2009/2010



Source: Canadian Institute for Health Information, Discharge Abstract Database (DAD). Manitoba data were incomplete for fiscal year 2003/04. * Quebec data not included because this province does not contribute data to DAD. CI – confidence interval

FIGURE 11.3 **Rate of severe maternal morbidity**, by province/territory, Canada (excluding Quebec),* fiscal years 2003/2004 to 2009/2010



Source: Canadian Institute for Health Information, Discharge Abstract Database (DAD). Manitoba data were incomplete for fiscal year 2003/04. * Quebec data not included because this province does not contribute data to DAD. CI – confidence interval

References

1. Joseph KS, Liu S, Rouleau J, Kirby RS, Kramer MS, Sauve R, Fraser WD, Young DC, Liston RM; Maternal Health Study Group of the Canadian Perinatal Surveillance System. Severe maternal morbidity in Canada, 2003 to 2007: surveillance using routine hospitalization data and ICD-10CA codes. *J Obstet Gynaecol Can* 2010; 32: 837–46.
2. Liu S, Joseph KS, Bartholomew S, Fahey J, Lee L, Allen AC, Kramer MS, Sauve R, Young DC, Liston RM; Maternal Health Study Group of the Canadian Perinatal Surveillance System. Temporal trends and regional variations in severe maternal morbidity in Canada, 2003 to 2007. *J Obstet Gynaecol Can* 2010; 32: 847–55.
3. WHO. *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, 2008 Edition*. Geneva: World Health Organization, 2008.

12. Rate of Cesarean Delivery

The rate of cesarean delivery in Canada increased from 21.9% in 2001/2002 to 27.8% in 2009/2010. Primary cesarean delivery rates increased from 16.1% to 19.7%, while repeat cesarean deliveries increased from 71.0% to 81.7% during the same period.

Definition

The cesarean delivery rate is defined as the number of cesarean deliveries expressed as a percentage of the total number of hospital deliveries (in a given place and time). The primary cesarean delivery rate is the number of cesarean deliveries to women who have not had a previous cesarean delivery, expressed as a percentage of all deliveries to women who have not had a cesarean delivery previously. This rate includes deliveries to primiparous (i.e., women giving birth for the first time) and multiparous (i.e., women who have given birth one or more times previously) women. The repeat cesarean delivery rate is the number of cesarean deliveries to women who have had a cesarean delivery previously, expressed as a percentage of all deliveries to women who have had a previous cesarean delivery.

Data source

Cesarean delivery rates were calculated using the Discharge Abstract Database (DAD) from the Canadian Institute for Health Information (CIHI). This database does not include information from Quebec. Rates were calculated by fiscal year (April 1 to March 31). Provincial and territorial rates are based on province or territory of residence (i.e., not of delivery). The numbers for 2000/2001 to 2004/2005 differ from those published in the *Canadian Perinatal Health Report, 2008 Edition*[1] because the latter were derived from CIHI's Hospital Morbidity Database and included Quebec.

Results

The rate of cesarean delivery in Canada increased from 21.9% to 27.8% between 2001/2002 and 2009/2010. Both primary and repeat cesarean delivery rates increased during that period, from 16.1% to 19.7% and from 71.0% to 81.7%, respectively (Table 12.1).

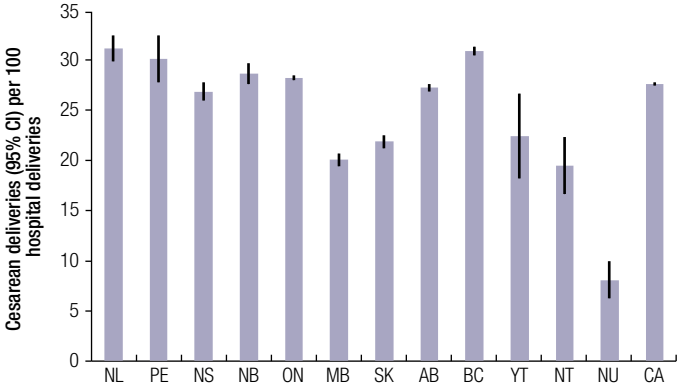
In 2009/2010, caesarean delivery rates ranged from 8.1% (95% CI: 6.3–10.0) in Nunavut to 31.4% (95% CI: 30.1–32.7) in Newfoundland and Labrador (Figure 12.1).

TABLE 12.1 Rate of cesarean delivery, primary and repeat cesarean delivery, Canada (excluding Quebec),* 2000/2001 to 2009/2010

Fiscal year	Cesarean deliveries per 100 hospital deliveries	Primary cesarean deliveries per 100 hospital deliveries	Repeat cesarean deliveries per 100 hospital deliveries
2000/2001	21.9	16.1	71.0
2001/2002	23.4	17.1	74.2
2002/2003	24.5	18.1	76.5
2003/2004	25.8	19.1	78.5
2004/2005	26.5	19.4	80.3
2005/2006	27.3	19.7	81.5
2006/2007	27.3	19.6	82.0
2007/2008	27.7	19.8	82.1
2008/2009	28.0	19.9	82.1
2009/2010	27.8	19.7	81.7

Source: Canadian Institute for Health Information, Discharge Abstract Database, 2000/01 to 2009/10.
* Quebec does not contribute data to DAD.

FIGURE 12.1 Rate of cesarean deliveries, by province/territory of residence, Canada (excluding Quebec),* 2009/2010



Source: Canadian Institute for Health Information, Discharge Abstract Database (DAD). Patients whose province of residence was not specified are excluded. * Quebec does not contribute data to DAD.
CI – confidence interval

Limitations

Out-of-hospital deliveries were not included in the calculation of cesarean delivery rates. In addition, data does not allow elective cesarean deliveries to be distinguished, which limits interpretation of results.

References

1. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.

13. Rate of Breastfeeding

Between 2005 and 2009/2010, the rate of breastfeeding initiation remained stable between 87% and 88%, while the rate of exclusive breastfeeding for 6 months increased significantly from 20.3% to 25.9%.

Definition

The rate of breastfeeding initiation is defined as the number of women who have given birth to a live born child and ever breastfed that child, expressed as a proportion of all the women who delivered a live born child (in a given place and time). Exclusive breastfeeding is defined as breastfeeding with no other liquid or solid food given to the infant.

Data source

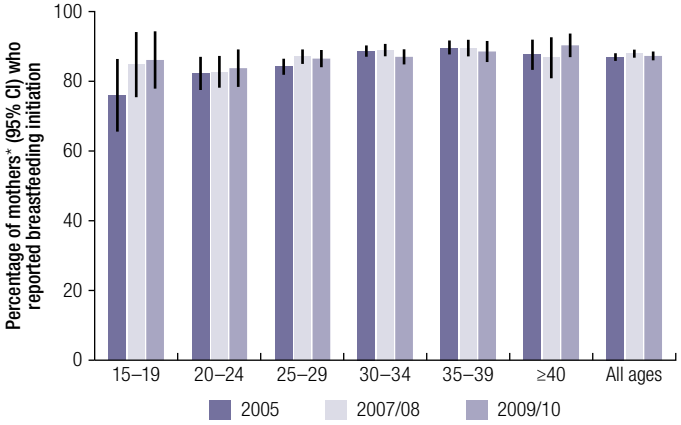
Breastfeeding rates were calculated using data from the 2005, 2007/2008 and 2009/2010 cycles of the *Canadian Community Health Survey* (CCHS).[1] In 2007, CCHS started to collect data continuously and to release datasets for two-year periods.

Results

The rate of breastfeeding initiation remained stable at 87.0% in 2005, 87.9% in 2007/2008 and 87.3% in 2009/2010 (Figure 13.1). In 2009/2010, breastfeeding initiation rates ranged from 61.5% (95%: CI 53.1–69.9) in Newfoundland and Labrador to 97.2% (95% CI: 94.2–100.0) in Yukon (Figure 13.2).

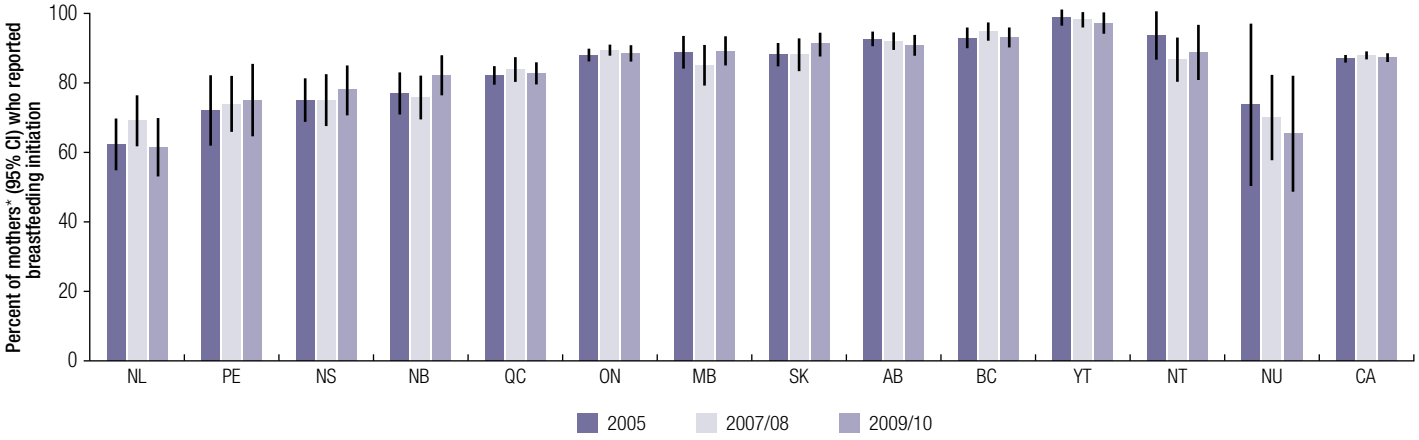
The western provinces had higher rates of breastfeeding initiation than eastern provinces.

FIGURE 13.1 Rate of breastfeeding initiation, by maternal age, Canada, 2005, 2007/2008, and 2009/2010



Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007/08, and 2009/10.
* Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. CI – confidence interval

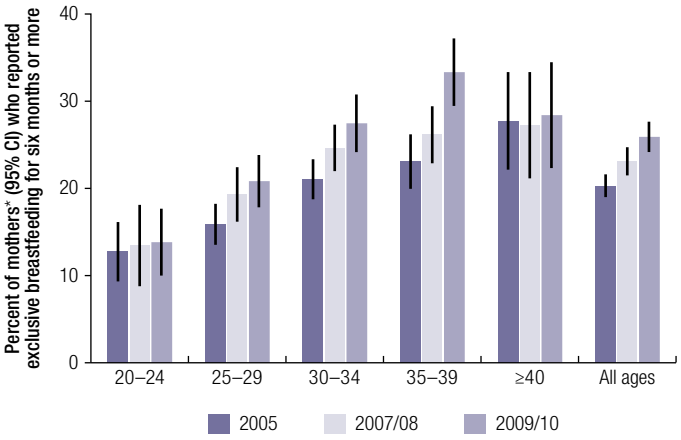
FIGURE 13.2 Rate of breastfeeding initiation, by province/territory, Canada, 2005, 2007/2008, and 2009/2010



Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007/08, and 2009/10. * Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. CI – confidence interval

The rate of exclusive breastfeeding for at least 6 months increased from 20.3% in 2005 to 23.1% in 2007/2008 and 25.9% in 2009/2010. Exclusive breastfeeding increased with maternal age. In 2009/2010, it was lowest at 13.8% (95% CI: 10.0–17.7) in mothers aged 20–24 years, and highest at 33.3% (95% CI: 29.5–37.2) and 28.4% (95% CI: 22.3–34.5) in mothers aged 35–39 and 40 and over, respectively (Figure 13.3). During the same years, rates ranged from 15.4% (95% CI: 8.1–22.7) in Newfoundland and Labrador to 42.0% (95% CI: 25.8–58.1) in Yukon. As with breastfeeding initiation, there was an east-west gradient across Canada (Figure 13.4).

FIGURE 13.3 **Rate of exclusive breastfeeding for six months or more**, by maternal age, Canada, 2005, 2007/2008, and 2009/2010



Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007/08, and 2009/10. Data for the 15–19 year category not shown because of high coefficients of variation (≥33%). * Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. CI – confidence interval

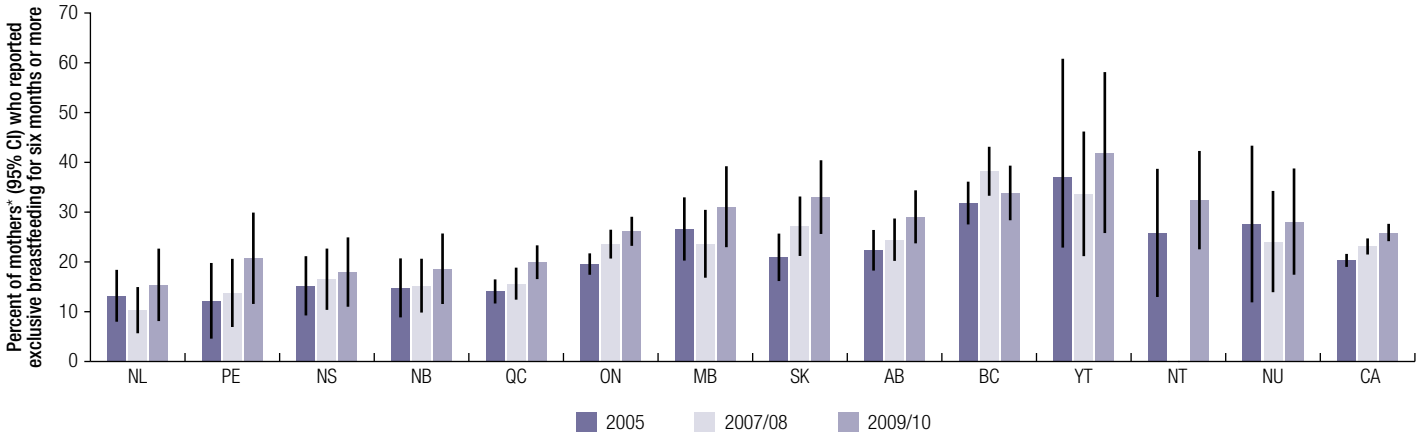
Limitations

Information reported from the CCHS was collected from mothers recalling pregnancies up to five years preceding the survey, which may have affected the accuracy of the information obtained. Changes in the method for calculating exclusive breastfeeding rates resulted in slightly different rates than those published in the *Perinatal Health Report, 2008 Edition*.

References

1. Béland Y. Canadian Community Health Survey - methodological overview. *Health Rep* 2002; 13: 9–14.

FIGURE 13.4 **Rate of exclusive breastfeeding for six months or more**, by province/territory, Canada, 2005, 2007/2008, and 2009/2010



Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007-2008, and 2009-2010. Data from Northwest Territories 2007/08 not shown because of high coefficients of variation (≥33%).
* Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. CI – confidence interval

14. Multiple Birth Rate

After increasing from 2.6% to 3.0% between 1999 and 2003, the rate of multiple births remained stable between 2.9% and 3.1% between 2004 and 2008. It was 3.0% in 2008.

Definition

The multiple birth rate is defined as the number of live births and stillbirths following a multiple gestation pregnancy, expressed as a proportion of all live births and stillbirths (in a given place and time).

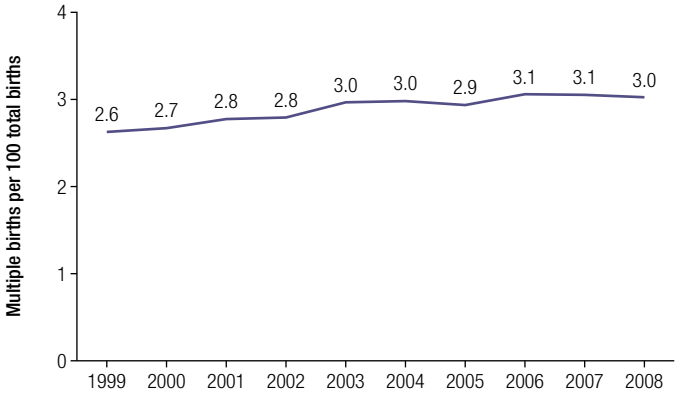
Data source

Rates of multiple births rates were calculated using vital statistics data (live birth and stillbirth registrations). Data from Ontario were excluded because of quality concerns.[1]

Results

Between 2004 and 2008, the rate of multiple births remained stable between 2.9% and 3.1%; it was 3.0% in 2008. This contrasts with the steady increase observed between 1999 and 2003 (Figure 14.1).

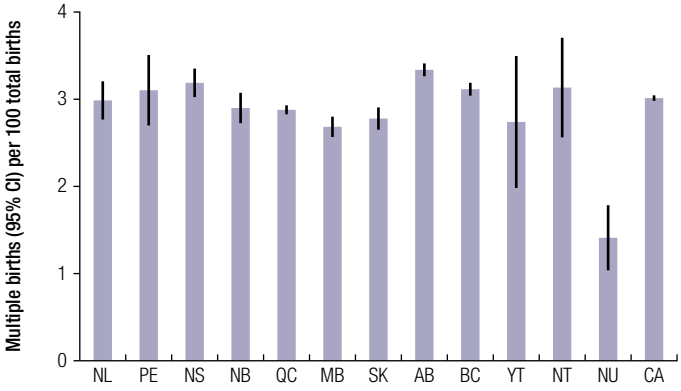
FIGURE 14.1 **Rate of multiple births**, Canada (excluding Ontario),* 1999–2008



Source: Statistics Canada. CANSIM Table 102-4515. * Data for Ontario were excluded because of data quality concerns.

The average rate in 2004–2008 was 3.0%. Multiple birth rates ranged from 1.4% (95% CI: 1.0–1.8) in Nunavut to 3.3% (95% CI: 3.3–3.4) in Alberta (Figure 14.2).

FIGURE 14.2 **Rate of multiple births**, by province/territory, Canada (excluding Ontario),* 2004–2008



Source: Statistics Canada. CANSIM Table 102-4515. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

Limitations

Data on multiple births in Canada were obtained from birth registrations, which may be subject to some transcribing errors.

References

1. Public Health Agency of Canada. *Canadian Perinatal Health Report. 2008 Edition*. Ottawa: Public Health Agency of Canada; 2008.

Appendix: Data Tables

A1. Fetal Death

TABLE A1.1 Rate of fetal death, by year, Canada (excluding Ontario),* 1999–2008

Year	Fetal deaths (crude)**			Fetal deaths ≥500 g***			Fetal deaths ≥1,000 g or ≥28 weeks		
	Total births	Stillbirths	Deaths per 1000 total births	Total births	Stillbirths	Deaths per 1000 total births	Total births	Stillbirths	Deaths per 1000 total births
1999	207,394	1,230	5.9	206,850	873	4.2	205,966	590	2.9
2000	201,633	1,175	5.8	201,183	903	4.5	200,337	642	3.2
2001	203,233	1,200	5.9	202,773	945	4.7	201,794	683	3.4
2002	201,464	1,194	5.9	200,894	854	4.3	199,951	634	3.2
2003	205,471	1,198	5.8	204,863	841	4.1	203,929	618	3.0
2004	205,746	1,231	6.0	205,111	872	4.3	204,043	621	3.0
2005	209,713	1,297	6.2	209,049	900	4.3	208,082	634	3.0
2006	220,338	1,322	6.0	219,686	948	4.3	218,762	670	3.1
2007	230,920	1,493	6.5	230,238	1,073	4.7	229,177	713	3.1
2008	238,679	1,585	6.6	237,907	1,096	4.6	236,875	734	3.1

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. ** Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks. *** Based on WHO recommendations, which includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown.

TABLE A1.2 Rate of fetal death, by province/region, Canada (excluding Ontario),* 2004–2008

Province/Territory	Fetal deaths (crude)**			Fetal deaths ≥500 g***			Fetal deaths ≥1,000 g or ≥28 weeks		
	Stillbirths	Deaths per 1,000 live births		Stillbirths	Deaths per 1,000 live births		Stillbirths	Deaths per 1,000 live births	
		Estimate	95% CI		Estimate	95% CI		Estimate	95% CI
Newfoundland and Labrador	155	6.7	5.6 – 7.8	112	4.9	4.0 – 5.8	86	3.7	3.0 – 4.5
Prince Edward Island	43	6.1	4.3 – 7.9	27	3.8	2.4 – 5.3	19	2.7	1.5 – 3.9
Nova Scotia	400	9.0	8.2 – 9.9	240	5.5	4.8 – 6.1	153	3.5	2.9 – 4.0
New Brunswick	204	5.7	4.9 – 6.5	139	3.9	3.3 – 4.6	98	2.8	2.2 – 3.3
Quebec	1,672	4.1	3.9 – 4.3	1,655	4.1	3.9 – 4.3	1,067	2.6	2.5 – 2.8
Manitoba	606	8.2	7.6 – 8.9	419	5.7	5.1 – 6.2	327	4.5	4.0 – 4.9
Saskatchewan	423	6.6	6.0 – 7.3	313	4.9	4.4 – 5.5	237	3.7	3.3 – 4.2
Alberta	1,628	7.1	6.7 – 7.4	959	4.2	3.9 – 4.5	714	3.1	2.9 – 3.4
British Columbia	1,718	8.1	7.7 – 8.5	966	4.6	4.3 – 4.8	623	3.0	2.7 – 3.2
Yukon	12	6.7	2.9 – 10.5	8	4.5	1.4 – 7.6	6	3.4	0.7 – 6.1
Northwest Territories	31	8.7	5.6 – 11.7	22	6.2	3.6 – 8.8	19	5.4	3.0 – 7.9
Nunavut	36	9.4	6.3 – 12.5	29	7.6	4.8 – 10.3	23	6.0	3.6 – 8.5
CANADA	6,928	6.5	6.3 – 6.6	4,889	4.4	4.3 – 4.6	3,372	3.1	3.0 – 3.2

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks. *** Based on WHO recommendation, which includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown. CI – confidence interval

TABLE A1.3 Rate of fetal death in singleton and multiple births, Canada (excluding Ontario),* 2008

Plurality	Fetal deaths (crude)**				Fetal deaths ≥500 g***			
			Deaths per 1,000 live births				Deaths per 1,000 live births	
	Total Births	Stillbirths	Estimate	95% CI	Total Births	Stillbirths	Estimate	95% CI
All	238,679	1,585	6.6	6.3 – 7.0	237,907	1,096	4.6	4.3 – 4.9
Singletons	231,459	1,497	6.5	6.1 – 6.8	230,779	1,045	4.5	4.3 – 4.8
Multiples	7,220	88	12.2	9.7 – 14.7	7,128	51	7.2	5.2 – 9.1

Source: Statistics Canada. Canadian Vital Statistics System, 2008. * Data for Ontario were excluded because of data quality concerns. ** Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks. *** Based on WHO recommendation, which includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown. CI – confidence interval

TABLE A1.4 Causes of fetal death, by year, Canada (excluding Ontario),* 2000–2008

Year	Maternal complication		Placenta / cord / membrane		Congenital anomaly		Intrauterine hypoxia / asphyxia	
	Number of fetal deaths	Fetal deaths per 1,000 total births	Number of fetal deaths	Fetal deaths per 1,000 total births	Number of fetal deaths	Fetal deaths per 1,000 total births	Number of fetal deaths	Fetal deaths per 1,000 total births
2000	64	0.3	303	1.5	96	0.5	41	0.2
2001	57	0.3	338	1.7	83	0.4	40	0.2
2002	42	0.2	282	1.4	98	0.5	46	0.2
2003	42	0.2	284	1.4	80	0.4	27	0.1
2004	45	0.2	279	1.4	97	0.5	38	0.2
2005	34	0.2	281	1.4	90	0.4	35	0.2
2006	45	0.2	300	1.4	89	0.4	47	0.2
2007	63	0.3	319	1.5	119	0.5	35	0.2
2008	65	0.3	283	1.2	89	0.4	36	0.2

Source: Statistics Canada. Canadian Vital Statistics System, 2000–2008. * Data for Ontario were excluded because of data quality concerns. Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks.

TABLE A1.5 Types of fetal deaths, by year, Canada (excluding Ontario*), 2000–2008

Year	Number of total births	Known cause other than termination of pregnancy		Termination of pregnancy		Unspecified		All registered stillbirths	
		Number of deaths	Deaths per 1,000 total births	Number of deaths	Deaths per 1,000 total births	Number of deaths	Deaths per 1,000 total births	Number of deaths	Deaths per 1,000 total births
2000	201,183	651	3.2	57	0.3	195	1.0	903	4.5
2001	202,773	659	3.2	70	0.3	216	1.1	945	4.7
2002	200,894	562	2.8	68	0.3	224	1.1	854	4.3
2003	204,863	562	2.7	85	0.4	194	0.9	841	4.1
2004	205,111	580	2.8	88	0.4	204	1.0	872	4.3
2005	209,049	577	2.8	102	0.5	221	1.1	900	4.3
2006	219,686	599	2.7	121	0.6	228	1.0	948	4.3
2007	230,238	686	3.0	144	0.6	243	1.1	1,073	4.7
2008	237,907	617	2.6	171	0.7	308	1.3	1,096	4.6

Source: Statistics Canada. Canadian Vital Statistics System, 2000–2008. * Data for Ontario were excluded because of data quality concerns. Data exclude all stillbirths and live births with a birth weight of <500 g and a gestational age of <20 weeks.

A2. Infant Mortality

TABLE A2.1 Rate of neonatal death (0–27 days), by year, Canada (excluding Ontario),* 1998–2007

Year	Birth period calculation				Birth cohort calculation			
	Number of live births	Number of neonatal deaths	All neonatal deaths per 1,000 live births**		Number of births (cohort)	Number of neonatal deaths ≥500 g	Rate of neonatal deaths ≥500g per 1,000 live births***	
			Estimate	95% CI			Estimate	95% CI
1998	209,789	762	3.6	3.4 – 3.9	209,633	635	3.0	2.8 – 3.3
1999	206,157	712	3.5	3.2 – 3.7	205,982	550	2.7	2.4 – 2.9
2000	200,458	688	3.4	3.2 – 3.7	200,298	514	2.6	2.3 – 2.8
2001	202,033	739	3.7	3.4 – 3.9	201,832	553	2.7	2.5 – 3.0
2002	200,270	757	3.8	3.5 – 4.0	200,057	542	2.7	2.5 – 2.9
2003	204,273	781	3.8	3.6 – 4.1	204,024	503	2.5	2.3 – 2.7
2004	204,515	766	3.7	3.5 – 4.0	204,245	507	2.5	2.3 – 2.7
2005	208,416	819	3.9	3.7 – 4.2	208,149	563	2.7	2.5 – 2.9
2006	219,016	804	3.7	3.4 – 3.9				
2007	229,427	836	3.6	3.4 – 3.9				

Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 1998–2005 (cohort calculation) and Unlinked File, 1998–2007 (period calculation). * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation). *** Includes deaths occurring to births weighing ≥500 g for the specified calendar year (cohort calculation). Unlinked infant deaths (i.e., infants whose death registration could not be linked to their birth registration) and live births/infant deaths with missing birth weight were also included, but live births/infant deaths with a missing birth weight and a gestational age <22 weeks were excluded. CI – confidence interval

TABLE A2.2 Rate of postneonatal death (28–364 days), by year, Canada (excluding Ontario),* 1998–2007

Year	Birth period calculation				Birth cohort calculation			
	Number of neonatal survivors	Number of postneonatal deaths	Postneonatal deaths per 1,000 neonatal survivors**		Number of neonatal survivors	Number of postneonatal deaths ≥500 g	Postneonatal deaths ≥500 g per 1,000 neonatal survivors***	
			Estimate	95% CI			Estimate	95% CI
1998	209,027	382	1.8	1.6 – 2.0	208,998	379	1.8	1.6 – 2.0
1999	205,445	359	1.7	1.6 – 1.9	205,432	354	1.7	1.5 – 1.9
2000	199,770	336	1.7	1.5 – 1.9	199,784	317	1.6	1.4 – 1.8
2001	201,294	286	1.4	1.3 – 1.6	201,279	296	1.5	1.3 – 1.6
2002	199,513	324	1.6	1.4 – 1.8	199,515	299	1.5	1.3 – 1.7
2003	203,492	292	1.4	1.3 – 1.6	203,521	255	1.3	1.1 – 1.4
2004	203,749	273	1.3	1.2 – 1.5	203,738	274	1.3	1.2 – 1.5
2005	207,597	299	1.4	1.3 – 1.6	207,586	280	1.3	1.2 – 1.5
2006	218,212	292	1.3	1.2 – 1.5				
2007	228,591	322	1.4	1.3 – 1.6				

Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 1998–2005 (cohort calculation) and Unlinked File, 1998–2007 (period calculation). * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation). *** Includes deaths occurring to births weighing ≥500 g for the specified calendar year (cohort calculation). Unlinked infant deaths (i.e., infants whose death registration could not be linked to their birth registration) and live births/infant deaths with missing birth weight were also included, but live births/infant deaths with a missing birth weight and a gestational age <22 weeks were excluded. CI – confidence interval

TABLE A2.3 Rate of infant death (0–364 days), by year, Canada (excluding Ontario),* 1998–2007

Year	Birth period calculation				Birth cohort calculation			
	Number of live births	Number of infant deaths	All infant deaths per 1,000 live births**		Number of live births (cohort)	Number of infant deaths ≥500 g	Rate of infant deaths ≥500 g per 1,000 live births***	
			Estimate	95% CI			Estimate	95% CI
1998	209,789	1,144	5.5	5.1 – 5.8	209,633	1,014	4.8	4.5 – 5.1
1999	206,157	1,071	5.2	4.9 – 5.5	205,982	904	4.4	4.1 – 4.7
2000	200,458	1,024	5.1	4.8 – 5.4	200,298	831	4.1	3.9 – 4.4
2001	202,033	1,025	5.1	4.8 – 5.4	201,832	849	4.2	3.9 – 4.5
2002	200,270	1,081	5.4	5.1 – 5.7	200,057	841	4.2	3.9 – 4.5
2003	204,273	1,073	5.3	4.9 – 5.6	204,024	758	3.7	3.5 – 4.0
2004	204,515	1,039	5.1	4.8 – 5.4	204,245	781	3.8	3.6 – 4.1
2005	208,416	1,118	5.4	5.1 – 5.7	208,149	843	4.0	3.8 – 4.3
2006	219,016	1,096	5.0	4.7 – 5.3				
2007	229,427	1,158	5.0	4.8 – 5.3				

Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 1998–2005 (cohort calculation) and Unlinked File, 1998–2007 (period calculation). * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation). *** Includes deaths occurring to births weighing ≥500 g for the specified calendar year (cohort calculation). Unlinked infant deaths (i.e., infants whose death registration could not be linked to their birth registration) and live births/infant deaths with missing birth weight were also included, but live births/infant deaths with a missing birth weight and a gestational age <22 weeks were excluded. CI – confidence interval

TABLE A2.4 Rate of neonatal death (0–27 days), by province/territory, Canada (excluding Ontario)*

Province/Territory	Birth period calculation (2003–2007)				Birth cohort calculation (2001–2005)			
	Number of live births	Number of neonatal deaths	All neonatal deaths per 1,000 live births**		Number of live births	Number of neonatal deaths ≥500 g	Neonatal deaths ≥500 g per 1,000 live births***	
			Estimate	95% CI			Estimate	95% CI
Newfoundland and Labrador	22,713	89	3.9	3.1 – 4.7	22,962	58	2.5	1.9 – 3.2
Prince Edward Island	6,949	21	3.0	1.7 – 4.3	6,845	13	1.9	0.9 – 2.9
Nova Scotia	43,294	125	2.9	2.4 – 3.4	43,456	86	2.0	1.6 – 2.4
New Brunswick	35,144	101	2.9	2.3 – 3.4	35,190	77	2.2	1.7 – 2.7
Quebec	390,647	1,432	3.7	3.5 – 3.9	370,083	900	2.4	2.3 – 2.6
Manitoba	71,746	354	4.9	4.4 – 5.4	69,686	241	3.5	3.0 – 3.9
Saskatchewan	61,524	242	3.9	3.4 – 4.4	59,973	192	3.2	2.7 – 3.7
Alberta	217,433	982	4.5	4.2 – 4.8	199,168	616	3.1	2.8 – 3.3
British Columbia	207,190	617	3.0	2.7 – 3.2	202,239	453	2.2	2.0 – 2.4
Yukon	1,739	8	4.6	1.4 – 7.8	1,698	6	3.5	0.7 – 6.4
Northwest Territories	3,523	8	2.3	0.7 – 3.8	3,354	9	2.7	0.9 – 4.4
Nunavut	3,745	27	7.2	4.5 – 9.9	3,637	17	4.7	2.5 – 6.9
CANADA	1,065,647	4,006	3.8	3.6 – 3.9	1,018,307	2,668	2.6	2.5 – 2.7

Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 2001–2005 (cohort calculation) and Unlinked File, 2003–2007 (period calculation). * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation). *** Includes deaths occurring to births weighing ≥500 g for the specified calendar year (cohort calculation). Unlinked infant deaths (i.e., infants whose death registration could not be linked to their birth registration) and live births/infant deaths with missing birth weight were also included, but live births/infant deaths with a missing birth weight and a gestational age <22 weeks were excluded. CI – confidence interval

TABLE A2.5 Rate of postneonatal death (28-364 days), by province/territory, Canada (excluding Ontario)*

Province/Territory	Birth period calculation (2003–2007)				Birth cohort calculation (2001–2005)			
	Number of neonatal survivors	Number of post-neonatal deaths	Postneonatal deaths per 1,000 neonatal survivors**		Number of neonatal survivors	Number of post-neonatal deaths ≥500 g	Postneonatal deaths ≥500 g per 1,000 neonatal survivors***	
			Estimate	95% CI			Estimate	95% CI
Newfoundland and Labrador	22,624	43	1.9	1.3 – 2.5	22,904	42	1.8	1.3 – 2.4
Prince Edward Island	6,928	5	0.7	0.1 – 1.4	6,832	3	0.4	-0.1 – 0.9
Nova Scotia	43,169	61	1.4	1.1 – 1.8	43,370	64	1.5	1.1 – 1.8
New Brunswick	35,043	45	1.3	0.9 – 1.7	35,113	45	1.3	0.9 – 1.7
Quebec	389,215	379	1.0	0.9 – 1.1	369,183	348	0.9	0.8 – 1.0
Manitoba	71,392	147	2.1	1.7 – 2.4	69,445	145	2.1	1.7 – 2.4
Saskatchewan	61,282	159	2.6	2.2 – 3.0	59,781	149	2.5	2.1 – 2.9
Alberta	216,451	339	1.6	1.4 – 1.7	198,552	334	1.7	1.5 – 1.9
British Columbia	206,573	258	1.2	1.1 – 1.4	201,786	238	1.2	1.0 – 1.3
Yukon / Northwest Territories	5,246	13	2.5	1.1 – 3.8	5,037	8	1.6	0.5 – 2.7
Nunavut	3,718	29	7.8	5.0 – 10.6	3,620	28	7.7	4.9 – 10.6
CANADA	1,061,641	1,478	1.4	1.3 – 1.5	1,015,639	1,404	1.4	1.3 – 1.5

Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 2001–2005 (cohort calculation) and Unlinked File, 2003–2007 (period calculation). * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation). *** Includes deaths occurring to births weighing ≥500 g for the specified calendar year (cohort calculation). Unlinked infant deaths (i.e., infants whose death registration could not be linked to their birth registration) and live births/infant deaths with missing birth weight were also included, but live births/infant deaths with a missing birth weight and a gestational age <22 weeks were excluded. CI – confidence interval

TABLE A2.6 Rate of infant death (0–364 days), by province/territory, Canada (excluding Ontario)*

Province/Territory	Birth period calculation (2003–2007)				Birth cohort calculation (2001–2005)			
	Number of live births	Number of infant deaths	All infant deaths per 1,000 live births**		Number of live births ≥500 g	Number of infant deaths ≥500 g	Infant deaths ≥500 g per 1,000 live births***	
			Estimate	95% CI			Estimate	95% CI
Newfoundland and Labrador	22,713	132	5.8	4.8 – 6.8	22,962	100	4.4	3.5 – 5.2
Prince Edward Island	6,949	26	3.7	2.3 – 5.2	6,845	16	2.3	1.2 – 3.5
Nova Scotia	43,294	186	4.3	3.7 – 4.9	43,456	150	3.5	2.9 – 4.0
New Brunswick	35,144	146	4.2	3.5 – 4.8	35,190	122	3.5	2.9 – 4.1
Quebec	390,647	1,811	4.6	4.4 – 4.8	370,083	1,248	3.4	3.2 – 3.6
Manitoba	71,746	501	7.0	6.4 – 7.6	69,686	386	5.5	5.0 – 6.1
Saskatchewan	61,524	401	6.5	5.9 – 7.2	59,973	341	5.7	5.1 – 6.3
Alberta	217,433	1,321	6.1	5.7 – 6.4	199,168	950	4.8	4.5 – 5.1
British Columbia	207,190	875	4.2	3.9 – 4.5	202,239	691	3.4	3.2 – 3.7
Yukon	1,739	12	6.9	3.0 – 10.8	1,698	9	5.3	1.8 – 8.8
Northwest Territories	3,523	17	4.8	2.5 – 7.1	3,354	14	4.2	2.0 – 6.4
Nunavut	3,745	56	15.0	11.1 – 18.8	3,637	45	12.4	8.8 – 16.0
CANADA	1,065,647	5,484	5.1	5.0 – 5.3	1,018,307	4,072	4.0	3.9 – 4.1

Source: Statistics Canada. Canadian Vital Statistics System Birth-Death Linked File, 2001–2005 (cohort calculation) and Unlinked File, 2003–2007 (period calculation). * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation). *** Includes deaths occurring to births weighing ≥500 g for the specified calendar year (cohort calculation). Unlinked infant deaths (i.e., infants whose death registration could not be linked to their birth registration) and live births/infant deaths with missing birth weight were also included, but live births/infant deaths with a missing birth weight and a gestational age <22 weeks were excluded. CI – confidence interval

TABLE A2.7 Causes of infant death, Canada (excluding Ontario),* 2003–2007

Cause	Number of infant deaths	Proportion (%) of deaths among all infant deaths**	Number of neonatal deaths	Proportion (%) of deaths among all neonatal deaths**	Number of post-neonatal deaths	Proportion (%) of deaths among all postneonatal deaths**
Congenital anomalies	1,270	23.2	932	23.3	338	22.9
Asphyxia	573	10.4	554	13.8	19	1.3
Immaturity	1,655	30.2	1,545	38.6	110	7.4
Infection	329	6.0	123	3.1	206	13.9
Sudden infant death syndrome (SIDS)	342	6.2	37	0.9	305	20.6
Other sudden or unexplained infant death	199	3.6	47	1.2	152	10.3
External causes	77	1.4	12	0.3	65	4.4
Other	1,039	18.9	756	18.9	283	19.1
TOTAL	5,484	100.0	4,006	100.0	1,478	100.0

Source: Statistics Canada. Canadian Vital Statistics System Unlinked File, 2003–2007 * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation).

TABLE A2.8 Cause-specific rates of infant death, by year, Canada (excluding Ontario),* 2003–2007

Cause	2003		2004		2005		2006		2007	
	Number of infant deaths	Rate per 1,000 live births**	Number of infant deaths	Rate per 1,000 live births**	Number of infant deaths	Rate per 1,000 live births**	Number of infant deaths	Rate per 1,000 live births**	Number of infant deaths	Rate per 1,000 live births**
Congenital anomalies	263	1.3	245	1.2	262	1.3	242	1.1	258	1.1
Asphyxia	123	0.6	107	0.5	106	0.5	107	0.5	130	0.6
Immaturity	309	1.5	331	1.6	323	1.5	350	1.6	342	1.5
Infection	63	0.3	50	0.2	74	0.4	61	0.3	81	0.4
Sudden infant death syndrome (SIDS)	70	0.3	52	0.3	70	0.3	71	0.3	79	0.3
Other sudden or unexplained infant death	43	0.2	44	0.2	40	0.2	34	0.2	38	0.2
External causes	13	0.1	20	0.1	16	0.1	12	0.1	16	0.1
Other	189	0.9	190	0.9	227	1.1	219	1.0	214	0.9
TOTAL	1,073	5.3	1,039	5.1	1,118	5.4	1,096	5.0	1,158	5.0
Live births	204,273		204,515		208,416		219,016		229,427	

Source: Statistics Canada. Canadian Vital Statistics System Unlinked File, 2003–2007. * Data for Ontario were excluded because of data quality concerns. ** Includes deaths for the specified calendar year (period calculation).

A3. Small-for-gestational-age

TABLE A3.1 Rate of small-for-gestational-age (SGA), by year, Canada (excluding Ontario),* 1999–2008

Year	Number of singleton live births**	Number of SGA singleton live births	SGA live births per 100 singleton live births**
1999	200,486	16,904	8.4
2000	194,919	15,354	7.9
2001	194,524	15,634	8.0
2002	193,071	15,521	8.0
2003	196,624	15,471	7.9
2004	196,472	15,283	7.8
2005	201,775	16,219	8.0
2006	211,923	17,394	8.2
2007	222,145	18,080	8.1
2008	229,675	17,869	7.8

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. SGA cut-off is based on the 10th percentile of the sex-specific birth weight for gestational age.

TABLE A3.2 Rate of small-for-gestational-age (SGA), by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	Number of singleton live births**	Number of SGA singleton live births	SGA live births per 100 singleton live births**	
			Estimate	95% CI
Newfoundland and Labrador	22,228	1,470	6.6	6.3 – 6.9
Prince Edward Island	6,792	468	6.9	6.3 – 7.5
Nova Scotia	42,414	3,447	8.1	7.9 – 8.4
New Brunswick	34,399	2,575	7.5	7.2 – 7.8
Quebec	390,632	31,687	8.1	8.0 – 8.2
Manitoba	71,151	5,559	7.8	7.6 – 8.0
Saskatchewan	61,448	4,524	7.4	7.2 – 7.6
Alberta	220,243	19,101	8.7	8.6 – 8.8
British Columbia	203,913	15,488	7.6	7.5 – 7.7
Yukon	1,728	103	6.0	4.8 – 7.1
Northwest Territories	3,358	190	5.7	4.9 – 6.4
Nunavut	3,684	233	6.3	5.5 – 7.1
CANADA	1,061,990	84,845	8.0	7.9 – 8.0

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. SGA cut-off is based on the 10th percentile of the sex-specific birth weight for gestational age. CI – confidence interval

A4. Large-for-gestational-age

TABLE A4.1 Rate of large-for-gestational-age (LGA), by year, Canada (excluding Ontario),* 1999–2008

Year	Number of singleton live births**	Number of LGA singleton live births	LGA live births per 100 singleton live births**
1999	200,486	22,310	11.1
2000	194,919	23,351	12.0
2001	194,524	22,926	11.8
2002	193,071	22,473	11.6
2003	196,624	22,711	11.6
2004	196,472	22,758	11.6
2005	201,775	22,541	11.2
2006	211,923	23,166	10.9
2007	222,145	24,102	10.8
2008	229,675	25,557	11.1

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. LGA cut-off is based on the 90th percentile of the sex-specific birth weight for gestational age.

TABLE A4.2 Rate of large-for-gestational-age (LGA), by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	Number of singleton live births**	Number of LGA singleton live births	LGA live births per 100 singleton live births**	
			Estimate	95% CI
Newfoundland and Labrador	22,228	3,381	15.2	14.7 – 15.7
Prince Edward Island	6,792	969	14.3	13.4 – 15.1
Nova Scotia	42,414	5,539	13.1	12.7 – 13.4
New Brunswick	34,399	4,410	12.8	12.5 – 13.2
Quebec	390,632	37,911	9.7	9.6 – 9.8
Manitoba	71,151	10,258	14.4	14.2 – 14.7
Saskatchewan	61,448	8,356	13.6	13.3 – 13.9
Alberta	220,243	22,386	10.2	10.0 – 10.3
British Columbia	203,913	23,503	11.5	11.4 – 11.7
Yukon	1,728	244	14.1	12.5 – 15.8
Northwest Territories	3,358	635	18.9	17.6 – 20.2
Nunavut	3,684	532	14.4	13.3 – 15.6
CANADA	1,061,990	118,124	11.1	11.1 – 11.2

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births with unknown gestational age or birth weight, live births with gestational age <22 weeks or >43 weeks, and multiple births. LGA cut-off is based on the 90th percentile of the sex-specific birth weight for gestational age. CI – confidence interval

A5. Preterm Birth

TABLE A5.1 Rate of preterm birth, by year, Canada (excluding Ontario),* 1999–2008

Year	Number of live births**	Number of preterm births <32 weeks	Preterm births <32 weeks per 100 live births	Number of preterm births 32–36 weeks	Preterm births 32–36 weeks per 100 live births	Number of preterm births <37 weeks	Preterm births <37 weeks per 100 live births
1999	206,004	2,197	1.1	13,016	6.3	15,213	7.4
2000	200,358	2,203	1.1	13,088	6.5	15,291	7.6
2001	201,068	2,204	1.1	12,906	6.4	15,110	7.5
2002	199,435	2,211	1.1	12,929	6.5	15,140	7.6
2003	203,422	2,397	1.2	13,625	6.7	16,022	7.9
2004	203,565	2,446	1.2	14,235	7.0	16,681	8.2
2005	208,052	2,306	1.1	14,209	6.8	16,515	7.9
2006	218,840	2,544	1.2	15,016	6.9	17,560	8.0
2007	229,291	2,562	1.1	15,042	6.6	17,604	7.7
2008	237,005	2,732	1.2	16,020	6.8	18,752	7.9

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns ** Live births with unknown gestational age are excluded from this table.

TABLE A5.2 Rate of preterm birth among singleton and multiple births, Canada (excluding Ontario),* 2008

Plurality	Number of live births**	Number of preterm births <32 weeks	Preterm births <32 weeks per 100 live births	Number of preterm births 32–36 weeks	Preterm births 32–36 weeks per 100 live births	Number of preterm births <37 weeks	Preterm births <37 weeks per 100 live births
Singletons	229,873	1,931	0.8	12,806	5.6	14,737	6.4
Twins	6,933	720	10.4	3,099	44.7	3,819	55.1
Triplets or higher	199	81	40.7	115	57.8	196	98.5
All live births	237,005	2,732	1.2	16,020	6.8	18,752	7.9

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008.* Data for Ontario were excluded because of data quality concerns. * Data for Ontario were excluded because of data quality concerns
** Live births with unknown gestational age are excluded from this table.

TABLE A5.3 Rate of preterm birth, by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	Number of live births**	Number of preterm births <32 weeks	Preterm births <32 weeks per 100 live births		Number of preterm births 32–36 weeks	Preterm births 32–36 weeks per 100 live births		Number of preterm births <37 weeks	Preterm births <37 weeks per 100 live births	
			Estimate	95% CI		Estimate	95% CI		Estimate	95% CI
Newfoundland and Labrador	22,956	303	1.3	1.2 – 1.5	1,662	7.2	6.9 – 7.6	1,965	8.6	8.2 – 8.9
Prince Edward Island	7,012	76	1.1	0.8 – 1.3	444	6.3	5.8 – 6.9	520	7.4	6.8 – 8.0
Nova Scotia	43,827	535	1.2	1.1 – 1.3	2,930	6.7	6.5 – 6.9	3,465	7.9	7.7 – 8.2
New Brunswick	35,427	380	1.1	1.0 – 1.2	2,350	6.6	6.4 – 6.9	2,730	7.7	7.4 – 8.0
Quebec	403,618	4,242	1.1	1.0 – 1.1	26,568	6.6	6.5 – 6.7	30,810	7.6	7.6 – 7.7
Manitoba	73,169	885	1.2	1.1 – 1.3	4,972	6.8	6.6 – 7.0	5,857	8.0	7.8 – 8.2
Saskatchewan	63,220	756	1.2	1.1 – 1.3	4,008	6.3	6.1 – 6.5	4,764	7.5	7.3 – 7.7
Alberta	227,996	3,115	1.4	1.3 – 1.4	16,923	7.4	7.3 – 7.5	20,038	8.8	8.7 – 8.9
British Columbia	210,520	2,182	1.0	1.0 – 1.1	13,852	6.6	6.5 – 6.7	16,034	7.6	7.5 – 7.7
Yukon	1,777	17	1.0	0.5 – 1.4	134	7.5	6.3 – 8.8	151	8.5	7.2 – 9.8
Northwest Territories	3,480	43	1.2	0.9 – 1.6	251	7.2	6.4 – 8.1	294	8.4	7.5 – 9.4
Nunavut	3,751	56	1.5	1.1 – 1.9	428	11.4	10.4 – 12.4	484	12.9	11.8 – 14.0
CANADA	1,096,753	12,590	1.1	1.1 – 1.2	74,522	6.8	6.7 – 6.8	87,112	7.9	7.9 – 8.0

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Live births with unknown gestational age are excluded from this table. CI – confidence interval

A6. Postterm Birth

TABLE A6.1 **Rate of postterm birth**, by year, Canada (excluding Ontario),* 1999–2008

Year	Number of live births**	Number of postterm births	Postterm births per 100 live births
1999	206,004	2,999	1.46
2000	200,358	2,397	1.20
2001	201,068	2,301	1.14
2002	199,435	2,085	1.05
2003	203,422	1,875	0.92
2004	203,565	1,540	0.76
2005	208,052	1,547	0.74
2006	218,840	1,507	0.69
2007	229,291	1,656	0.72
2008	237,005	1,481	0.62

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. ** Live births with unknown gestational age are excluded from this table.

TABLE A6.2 **Rate of postterm birth**, by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	Number of postterm births	Postterm births per 100 live births	
		Estimate	95% CI
Newfoundland and Labrador	92	0.4	0.32 – 0.48
Prince Edward Island	73	1.0	0.80 – 1.28
Nova Scotia	498	1.1	1.04 – 1.24
New Brunswick	156	0.4	0.37 – 0.51
Quebec	1,360	0.3	0.32 – 0.35
Manitoba	1,873	2.6	2.45 – 2.67
Saskatchewan	810	1.3	1.19 – 1.37
Alberta	1,373	0.6	0.57 – 0.63
British Columbia	1,322	0.6	0.59 – 0.66
Yukon	65	3.7	2.79 – 4.53
Northwest Territories	93	2.7	2.14 – 3.21
Nunavut	16	0.4	0.22 – 0.64
CANADA	7,731	0.7	0.69 – 0.72

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Live births with unknown gestational age are excluded from this table. CI – confidence interval

A7. Maternal Mortality

TABLE A7.1 **Maternal mortality rates**, Canada (excluding Quebec),* 1996/1997 to 2009/2010

Fiscal years	Number of maternal deaths	Rate per 100,000 deliveries	95% CI
1996/1997 to 1997/1998	51	9.9	7.4 – 13.0
1998/1999 to 1999/2000	38	7.6	5.4 – 10.4
2000/2001 to 2001/2002	58	11.9	9.1 – 15.4
2002/2003 to 2003/2004	50	10.2	7.6 – 13.5
2004/2005 to 2005/2006	36	6.8	4.8 – 9.4
2006/2007 to 2007/2008	52	9.3	6.9 – 12.2
2008/2009 to 2009/2010	45	7.8	5.7 – 10.5

Source: Canadian Institute for Health Information, Discharge Abstract Database (DAD). *Quebec does not contribute data to DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/05. CI – confidence interval

TABLE A7.2 **Diagnoses associated with maternal deaths**, Canada (excluding Quebec),* 2002/2003 to 2009/2010

Diagnosis	Number of maternal deaths	Rate per 100,000 deliveries	95% CI
Ectopic and molar pregnancy/abortive outcome	19	0.88	0.52 – 1.41
Antepartum hemorrhage, abruptio placentae, and placenta previa	15	0.70	0.39 – 1.13
Hypertension complicating pregnancy, childbirth and the puerperium	34	1.58	1.14 – 2.20
Postpartum hemorrhage	34	1.58	1.14 – 2.20
Major puerperal infection	18	0.84	0.50 – 1.36
Obstetric embolism	30	1.39	0.91 – 2.01
Diseases of circulatory system	67	3.11	2.38 – 3.92
Other indirect causes	44	2.04	1.50 – 2.76

Source: Canadian Institute for Health Information, Discharge Abstract Database. Diagnoses do not represent underlying causes of death. Cases could have more than one associated diagnosis hence sum of individual diagnoses exceeds the overall maternal mortality rate. * Quebec does not contribute data to DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/05. CI – confidence interval

TABLE A7.3 **Maternal mortality rates**, by province/territory, Canada (excluding Quebec),* 1996/1997 to 2009/2010

Province/Territory	Number of maternal deaths	Rate per 100,000 deliveries	95% CI
Newfoundland and Labrador	11	16.4	8.2 – 29.3
Nova Scotia	7	5.6	2.2 – 11.4
New Brunswick	6	5.8	2.1 – 12.6
Ontario	186	9.8	8.4 – 11.2
Manitoba	5	5.5	1.8 – 12.9
Saskatchewan	11	6.3	3.1 – 11.2
Alberta	46	8.0	5.9 – 10.7
British Columbia	53	9.2	6.8 – 12.0
CANADA	330	9.0	8.1 – 10.0

Source: Canadian Institute for Health Information, Discharge Abstract Database. Data from Prince Edward Island, Yukon, Northwest Territories and Nunavut are not shown because of small cell counts (<5). *Quebec does not contribute data to the DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/05. CI – confidence interval

A8. Live Births to Teenage Mothers

TABLE A8.1 Age-specific live birth rates, females aged 10–14, 15–17 and 18–19 years, by year, Canada (excluding Ontario),* 1999–2008

Year	10–14 years			15–17 years			18–19 years		
	Number of females	Number of live births	Live births per 1,000 females	Number of females	Number of live births	Live births per 1,000 females	Number of females	Number of live births	Live births per 1,000 females
1999	612,835	142	0.2	369,882	4,079	11.0	259,066	8,890	34.3
2000	617,688	111	0.2	370,201	3,664	9.9	258,064	8,369	32.4
2001	622,577	90	0.1	371,257	3,443	9.3	256,399	7,942	31.0
2002	629,693	100	0.2	368,471	3,089	8.4	257,958	7,569	29.3
2003	634,631	82	0.1	365,140	2,900	7.9	258,446	7,242	28.0
2004	633,526	90	0.1	366,302	2,879	7.9	257,647	6,875	26.7
2005	626,780	95	0.2	377,112	2,784	7.4	254,690	6,774	26.6
2006	617,785	99	0.2	388,980	2,943	7.6	253,073	7,030	27.8
2007	604,191	94	0.2	392,424	3,147	8.0	259,890	7,378	28.4
2008	590,251	110	0.2	388,291	3,173	8.2	270,713	7,599	28.1

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns.

TABLE A8.2 Number and percent of live births, by maternal age, by year, Canada (excluding Ontario),* 1999–2008

Year	10–14 years		15–17 years		18–19 years		Total number of live births**
	Number of live births	Percent of total live births	Number of live births	Percent of total live births	Number of live births	Percent of total live births	
1999	142	0.07	4,079	2.0	8,890	4.3	206,141
2000	111	0.06	3,664	1.8	8,369	4.2	200,438
2001	90	0.04	3,443	1.7	7,942	3.9	202,020
2002	100	0.05	3,089	1.5	7,569	3.8	200,263
2003	82	0.04	2,900	1.4	7,242	3.5	204,265
2004	90	0.04	2,879	1.4	6,875	3.4	204,500
2005	95	0.05	2,784	1.3	6,774	3.3	208,399
2006	99	0.05	2,943	1.3	7,030	3.2	218,993
2007	94	0.04	3,147	1.4	7,378	3.2	229,401
2008	110	0.05	3,173	1.3	7,599	3.2	237,049

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births to mothers ≥50 years and those with unknown maternal age.

TABLE A8.3 **Age-specific live birth rates, females aged 10–17 and 18–19 years**, by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	10–17 years				18–19 years			
	Number of females in 2006	Number of live births 2004–2008	Live births per 1,000 females per year	95% CI	Number of females in 2006	Number of live births 2004–2008	Live births per 1,000 females per year	95% CI
Newfoundland and Labrador	24,253	469	3.9	3.5 – 4.2	6,600	947	28.7	27.0 – 30.4
Prince Edward Island	7,489	100	2.7	2.2 – 3.2	1,959	287	29.3	26.2 – 32.4
Nova Scotia	46,898	737	3.1	2.9 – 3.4	12,573	1,684	26.8	25.6 – 28.0
New Brunswick	36,305	638	3.5	3.2 – 3.8	9,238	1,559	33.8	32.2 – 35.3
Quebec	377,792	2,786	1.5	1.4 – 1.5	88,341	8,894	20.1	19.7 – 20.5
Manitoba	67,361	2,344	7.0	6.7 – 7.2	16,568	4,129	49.8	48.5 – 51.2
Saskatchewan	49,469	2,202	8.9	8.5 – 9.3	14,532	4,136	56.9	55.5 – 58.4
Alberta	182,926	3,452	3.8	3.6 – 3.9	47,976	8,170	34.1	33.4 – 34.7
British Columbia	207,111	2,143	2.1	2.0 – 2.2	53,543	5,045	18.8	18.3 – 19.3
Yukon and Northwest Territories	4,558	166	7.3	6.2 – 8.4	1,158	290	50.1	45.1 – 55.1
Nunavut	2,603	377	29.0	26.3 – 31.7	585	515	176.1	170.8 – 181.3
CANADA	1,006,765	15,414	3.1	3.0 – 3.1	253,073	35,656	28.2	27.9 – 28.4

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

TABLE A8.4 **Proportion of live births to teenage mothers**, by province/territory, Canada (excluding Ontario),* 2004-2008

Province/Territory	Total**	10–17 years			18–19 years			10–19 years		
		Number of live births	Proportion (%)		Number of live births	Proportion (%)		Number of live births	Proportion (%)	
			Estimate	95% CI		Estimate	95% CI		Estimate	95% CI
Newfoundland and Labrador	22,979	469	2.0	1.9 – 2.2	947	4.1	3.9 – 4.4	1,416	6.2	6.1 – 6.2
Prince Edward Island	7,014	100	1.4	1.1 – 1.7	287	4.1	3.6 – 4.6	387	5.5	5.4 – 5.6
Nova Scotia	43,826	737	1.7	1.6 – 1.8	1,684	3.8	3.7 – 4.0	2,421	5.5	5.5 – 5.6
New Brunswick	35,412	638	1.8	1.7 – 1.9	1,559	4.4	4.2 – 4.6	2,197	6.2	6.1 – 6.3
Quebec	404,583	2,786	0.7	0.7 – 0.7	8,894	2.2	2.2 – 2.2	11,680	2.9	2.9 – 2.9
Manitoba	73,289	2,344	3.2	3.1 – 3.3	4,129	5.6	5.5 – 5.8	6,473	8.8	8.8 – 8.9
Saskatchewan	63,195	2,202	3.5	3.3 – 3.6	4,136	6.5	6.4 – 6.7	6,338	10.0	10.0 – 10.1
Alberta	227,986	3,452	1.5	1.5 – 1.6	8,170	3.6	3.5 – 3.7	11,622	5.1	5.1 – 5.1
British Columbia	210,947	2,143	1.0	1.0 – 1.1	5,045	2.4	2.3 – 2.6	7,188	3.4	3.4 – 3.4
Yukon and Northwest Territories	5,319	166	3.1	2.7 – 3.6	290	5.5	4.8 – 6.1	456	8.6	8.3 – 8.8
Nunavut	3,792	377	9.9	9.0 – 10.9	515	13.6	12.5 – 14.7	892	23.5	22.8 – 24.3
CANADA	1,098,342	15,414	1.4	1.4 – 1.4	35,656	3.2	3.2 – 3.3	51,070	4.6	4.6 – 4.7

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births to mothers ≥50 years and those with unknown maternal age. CI – confidence interval

A9. Live Births to Older Mothers

TABLE A9.1 Age-specific live birth rates, females aged 35–39. 40–44 and 45–49 years, by year, Canada (excluding Ontario),* 1999–2008

Year	35–39 years			40–44 years			45–49 years		
	Number of females	Number of live births	Live births per 1,000 females	Number of females	Number of live births	Live births per 1,000 females	Number of females	Number of live births	Live births per 1,000 females
1999	821,927	24,915	30.3	803,940	3,867	4.8	710,591	136	0.2
2000	812,071	24,855	30.6	812,929	4,138	5.1	732,395	128	0.2
2001	789,292	25,228	32.0	822,596	4,288	5.2	751,287	150	0.2
2002	764,610	25,131	32.9	825,481	4,470	5.4	773,095	148	0.2
2003	734,465	26,030	35.4	828,927	4,731	5.7	791,714	195	0.2
2004	707,581	26,335	37.2	829,666	5,007	6.0	804,086	218	0.3
2005	687,823	26,920	39.1	825,173	5,266	6.4	813,676	202	0.2
2006	680,674	29,224	42.9	806,331	5,369	6.7	824,109	248	0.3
2007	678,154	30,951	45.6	783,443	5,713	7.3	829,935	267	0.3
2008	678,423	32,373	47.7	756,937	5,852	7.7	836,982	298	0.4

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns.

TABLE A9.2 Number and percent of live births, by maternal age, by year, Canada (excluding Ontario),* 1999–2008

Year	35–39 years		40–49 years		Total number of live births**
	Number of live births	Percent of total live births	Number of live births	Percent of total live births	
1999	24,915	12.1	4,003	1.9	206,141
2000	24,855	12.4	4,266	2.1	200,438
2001	25,228	12.5	4,438	2.2	202,020
2002	25,131	12.5	4,618	2.3	200,263
2003	26,030	12.7	4,926	2.4	204,265
2004	26,335	12.9	5,225	2.6	204,500
2005	26,920	12.9	5,468	2.6	208,399
2006	29,224	13.3	5,617	2.6	218,993
2007	30,951	13.5	5,980	2.6	229,401
2008	32,373	13.7	6,150	2.6	237,049

Source: Statistics Canada. Canadian Vital Statistics System, 1999–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births to mothers ≥50 years and those with unknown maternal age.

TABLE A9.3 **Age-specific live birth rates, females aged 10–14, 15–17 and 18–19 years**, by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	35–39 years				40–49 years			
	Number of females in 2006	Number of live births 2004–2008	Live births per 1,000 females per year	95% CI	Number of females in 2006	Number of live births 2004–2008	Live births per 1,000 females per year	95% CI
Newfoundland and Labrador	19,284	2,779	28.8	27.8 – 29.8	43,656	391	1.8	1.6 – 2.0
Prince Edward Island	4,515	906	40.1	37.8 – 42.5	11,195	146	2.6	2.2 – 3.0
Nova Scotia	32,237	5,781	35.9	35.0 – 36.7	79,410	995	2.5	2.4 – 2.7
New Brunswick	25,612	3,536	27.6	26.8 – 28.5	62,270	549	1.8	1.6 – 1.9
Quebec	252,880	51,077	40.4	40.1 – 40.7	633,731	9,668	3.1	3.0 – 3.1
Manitoba	37,983	8,180	43.1	42.2 – 40.7	90,095	1,581	3.5	3.3 – 3.7
Saskatchewan	29,157	5,452	37.4	36.5 – 38.3	74,744	997	2.7	2.5 – 2.8
Alberta	121,502	29,003	47.7	47.3 – 48.2	274,790	5,559	4.0	3.9 – 4.2
British Columbia	153,501	38,169	49.7	49.3 – 50.2	352,349	8,343	4.7	4.6 – 4.8
Yukon and Northwest Territories	2,891	679	47.0	43.9 – 50.1	6,504	156	4.8	4.1 – 5.5
Nunavut	1,112	241	43.3	38.5 – 48.2	1,696	55	6.5	4.8 – 8.2
CANADA	680,674	145,803	42.8	42.6 – 43.0	1,630,440	28,440	3.5	3.4 – 3.5

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval

TABLE A9.4 **Proportion of live births to older mothers**, by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	Total**	35–39 years			40–49 years			35–49 years		
		Number of live births	Proportion (%)		Number of live births	Proportion (%)		Number of live births	Proportion (%)	
			Estimate	95% CI		Estimate	95% CI		Estimate	95% CI
Newfoundland and Labrador	22,979	2,779	12.1	11.7 – 12.5	391	1.7	1.5 – 1.9	3,170	13.8	13.6 – 14.0
Prince Edward Island	7,014	906	12.9	12.1 – 13.7	146	2.1	1.7 – 2.4	1,052	15.0	14.6 – 15.3
Nova Scotia	43,826	5,781	13.2	12.9 – 13.5	995	2.3	2.1 – 2.4	6,776	15.5	15.3 – 15.6
New Brunswick	35,412	3,536	10.0	9.7 – 10.3	549	1.6	1.4 – 1.7	4,085	11.5	11.4 – 11.7
Quebec	404,583	51,077	12.6	12.5 – 12.7	9,668	2.4	2.3 – 2.4	60,745	15.0	15.0 – 15.1
Manitoba	73,289	8,180	11.2	10.9 – 11.4	1,581	2.2	2.1 – 2.3	9,761	13.3	13.2 – 13.4
Saskatchewan	63,195	5,452	8.6	8.4 – 8.8	997	1.6	1.5 – 1.7	6,449	10.2	10.1 – 10.3
Alberta	227,986	29,003	12.7	12.6 – 12.9	5,559	2.4	2.4 – 2.5	34,562	15.2	15.1 – 15.2
British Columbia	210,947	38,169	18.1	17.9 – 18.3	8,343	4.0	3.9 – 4.0	46,512	22.0	22.0 – 22.1
Yukon and Northwest Territories	5,319	679	12.8	11.9 – 13.7	156	2.9	2.5 – 3.4	835	15.7	15.3 – 16.1
Nunavut	3,792	241	6.4	5.6 – 7.1	55	1.5	1.1 – 1.8	296	7.8	7.6 – 8.1
CANADA	1,098,342	145,803	13.3	13.2 – 13.3	28,440	2.6	2.6 – 2.6	174,243	15.9	15.8 – 15.9

Source: Statistics Canada. Canadian Vital Statistics System, 2004–2008. * Data for Ontario were excluded because of data quality concerns. ** Excludes live births to mothers ≥50 years and those with unknown maternal age. CI – confidence interval

A10. Congenital Anomalies

TABLE A10.1 **Birth prevalence of congenital anomalies**, by year, Canada, 1998–2007

Year	Number of cases	Total births	Cases per 10,000 total births
1998	17,145	343,823	498.7
1999	16,729	338,407	494.3
2000	16,385	330,398	495.9
2001	17,489	336,835	519.2
2002	16,376	331,527	494.0
2003	16,459	338,417	486.4
2004	16,299	339,687	479.8
2005	16,808	347,476	483.7
2006	15,818	359,618	439.9
2007	15,464	372,724	414.9

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007.

TABLE A10.2 **Rate of Down syndrome**, by year, Canada, 1998–2007

Year	Number of cases	Total births	Cases per 10,000 total births
1998	487	343,823	14.2
1999	492	338,407	14.5
2000	500	330,398	15.1
2001	449	336,835	13.3
2002	469	331,527	14.1
2003	507	338,417	15.0
2004	455	339,687	13.4
2005	517	347,476	14.9
2006	496	359,618	13.8
2007	483	372,724	13.0

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007.

TABLE A10.3 Rate of Down syndrome, by province/territory, Canada, 1998–2007

Province/Territory	Number of cases	Total births	Cases per 10,000 total births	
			Estimate	95% CI
Newfoundland and Labrador	74	46,644	15.9	12.5 – 19.9
Prince Edward Island	24	14,078	17.0	10.9 – 25.4
Nova Scotia	171	89,344	19.1	16.4 – 22.2
New Brunswick	105	72,161	14.6	11.9 – 17.6
Quebec	838	748,444	11.2	10.5 – 12.0
Ontario	1,923	1,354,028	14.2	13.6 – 14.9
Manitoba	208	141,087	14.7	12.8 – 16.9
Saskatchewan	185	122,222	15.1	13.0 – 17.5
Alberta	556	416,281	13.4	12.3 – 14.5
British Columbia	715	406,580	17.6	16.3 – 18.9
Northwest Territories	18	7,434	24.2	14.3 – 38.3
Nunavut	9	4,186	21.5	9.8 – 40.8
CANADA	4,855	3,438,912	14.1	13.7 – 14.5

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007. Numbers from the Yukon are not shown because of a small cell count (<5). Numbers for Canada are not equal to the sum of those for provinces and territories because they include cases and births whose province of residence was unspecified.
CI – confidence interval.

TABLE A10.4 Rate of neural tube defects (NTD), by year, Canada, 1998–2007

Year	Number of cases	Total births	Cases per 10,000 total births
1998	194	343,823	5.6
1999	196	338,407	5.8
2000	170	330,398	5.1
2001	166	336,835	4.9
2002	145	331,527	4.4
2003	150	338,417	4.4
2004	130	339,687	3.8
2005	159	347,476	4.6
2006	126	359,618	3.5
2007	154	372,724	4.1

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007.

TABLE A10.5 Rate of neural tube defects (NTD), by province/territory, Canada, 1998–2007

Province/Territory	Number of cases	Total births	Cases per 10,000 total births	
			Estimate	95% CI
Newfoundland and Labrador	26	46,644	5.6	3.6 – 8.2
Nova Scotia	58	89,344	6.5	4.9 – 8.4
New Brunswick	29	72,161	4.0	2.7 – 5.8
Quebec	286	748,444	3.8	3.4 – 4.3
Ontario	601	1,354,028	4.4	4.1 – 4.8
Manitoba	82	141,087	5.8	4.6 – 7.2
Saskatchewan	59	122,222	4.8	3.7 – 6.2
Alberta	173	416,281	4.2	3.6 – 4.8
British Columbia	258	406,580	6.3	5.6 – 7.2
CANADA	1,590	3,438,912	4.6	4.4 – 4.9

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007. Numbers from Prince Edward Island, Yukon, Northwest Territories, and Nunavut are not shown because of small cell counts (<5). Numbers for Canada are not equal to the sum of those for provinces and territories because they include cases and births whose province of residence was unspecified. CI – confidence interval.

TABLE A10.6 Rate of anencephaly (and similar anomalies*), by year, Canada, 1998–2007

Year	Number of cases	Total births	Cases per 10,000 total births
1998	31	343,823	0.9
1999	31	338,407	0.9
2000	38	330,398	1.2
2001	39	336,835	1.2
2002	29	331,527	0.9
2003	33	338,417	1.0
2004	36	339,687	1.1
2005	33	347,476	0.9
2006	28	359,618	0.8
2007	30	372,724	0.8

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007. *Anencephaly and similar anomalies include craniochischisis, anencephaly and other neural tube defects such as encephalocele or open spina bifida when associated with anencephaly.

TABLE A10.7 Rate of anencephaly (and similar anomalies*), by province/territory of residence, Canada, 1998–2007

Province/Territory	Number of cases	Total births	Cases per 10,000 total births	
			Estimate	95% CI
Newfoundland and Labrador	7	46,644	1.5	0.6 – 3.1
Nova Scotia	14	89,344	1.6	0.9 – 2.6
New Brunswick	4	72,161	0.6	0.1 – 1.4
Quebec	32	748,444	0.4	0.3 – 0.6
Ontario	127	1,354,028	0.9	0.8 – 1.1
Manitoba	21	141,087	1.5	0.9 – 2.3
Saskatchewan	10	122,222	0.8	0.4 – 1.5
Alberta	47	416,281	1.1	0.8 – 1.5
British Columbia	64	406,580	1.6	1.2 – 2.0
CANADA	328	3,438,912	1.0	0.9 – 1.1

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007. Numbers from Prince Edward Island, Yukon, Northwest Territories and Nunavut are not shown because of small cell counts (<5). Numbers for Canada are not equal to the sum of those for provinces and territories because they include cases and births whose province of residence was unspecified. * Anencephaly and similar anomalies include craniochischisis, anencephaly and other neural tube defects such as encephalocele or open spina bifida when associated with anencephaly. CI – confidence interval.

TABLE A10.8 Rate of spina bifida, by year, Canada, 1998–2007

Year	Number of cases	Total births	Cases per 10,000 total births
1998	142	343,823	4.1
1999	136	338,407	4.0
2000	110	330,398	3.3
2001	104	336,835	3.1
2002	98	331,527	3.0
2003	99	338,417	2.9
2004	84	339,687	2.5
2005	106	347,476	3.1
2006	86	359,618	2.4
2007	102	372,724	2.7

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007.

TABLE A10.9 Rate of spina bifida, by province/territory, Canada, 1998–2007

Province/Territory	Number of cases	Total births	Cases per 10,000 total births	
			Estimate	95% CI
Newfoundland and Labrador	16	46,644	3.4	2.0 – 5.6
Nova Scotia	38	89,344	4.3	3.0 – 5.8
New Brunswick	22	72,161	3.0	1.9 – 4.6
Quebec	219	748,444	2.9	2.6 – 3.3
Ontario	396	1,354,028	2.9	2.6 – 3.2
Manitoba	45	141,087	3.2	2.3 – 4.3
Saskatchewan	42	122,222	3.4	2.5 – 4.6
Alberta	99	416,281	2.4	1.9 – 2.9
British Columbia	176	406,580	4.3	3.7 – 5.0
CANADA	1,067	3,438,912	3.1	2.9 – 3.3

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007. Numbers from Prince Edward Island, Yukon, Northwest Territories and Nunavut are not shown because of small cell counts (<5). Numbers for Canada are not equal to the sum of those for provinces and territories because they include cases and births whose province of residence was unspecified. CI – confidence interval.

TABLE A10.10 Rate of cleft palate, by year, Canada, 1998–2007

Year	Number of cases	Total births	Cases per 10,000 total births
1998	250	343,823	7.3
1999	272	338,407	8.0
2000	223	330,398	6.7
2001	229	336,835	6.8
2002	241	331,527	7.3
2003	234	338,417	6.9
2004	232	339,687	6.8
2005	260	347,476	7.5
2006	227	359,618	6.3
2007	247	372,724	6.6

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007.

TABLE A10.11 **Rate of cleft palate**, by province/territory, Canada, 1998–2007

Province/Territory	Number of cases	Total births	Cases per 10,000 total births	
			Estimate	95% CI
Newfoundland and Labrador	30	46,644	6.4	4.3 – 9.2
Prince Edward Island	12	14,078	8.5	4.4 – 14.9
Nova Scotia	74	89,344	8.3	6.5 – 10.4
New Brunswick	51	72,161	7.1	5.3 – 9.3
Quebec	563	748,444	7.5	6.9 – 8.2
Ontario	885	1,354,028	6.5	6.1 – 7.0
Manitoba	115	141,087	8.2	6.7 – 9.8
Saskatchewan	109	122,222	8.9	7.3 – 10.8
Alberta	271	416,281	6.5	5.8 – 7.3
British Columbia	294	406,580	7.2	6.4 – 8.1
CANADA	2,415	3,438,912	7.0	6.7 – 7.3

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007. Numbers from Yukon, Northwest territories and Nunavut not shown because of small cell count (<5). Numbers for Canada are not equal to the sum of those for provinces and territories because they include cases and births whose province of residence was unspecified. CI – confidence interval.

TABLE A10.12 **Rate of cleft lip with or without cleft palate**, by year, Canada, 1998–2007

Year	Number of cases	Total births	Cases per 10,000 total births
1998	367	343,823	10.7
1999	356	338,407	10.5
2000	341	330,398	10.3
2001	315	336,835	9.4
2002	310	331,527	9.4
2003	280	338,417	8.3
2004	323	339,687	9.5
2005	309	347,476	8.9
2006	294	359,618	8.2
2007	322	372,724	8.6

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007.

TABLE A10.13 **Rate of cleft lip with or without cleft palate**, by province/territory, Canada, 1998–2007

Province/Territory	Number of cases	Total births	Cases per 10,000 total births	
			Estimate	95% CI
Newfoundland and Labrador	63	46,644	13.5	10.4 – 17.3
Prince Edward Island	9	14,078	6.4	2.9 – 12.1
Nova Scotia	104	89,344	11.6	9.5 – 14.1
New Brunswick	52	72,161	7.2	5.4 – 9.5
Quebec	540	748,444	7.2	6.6 – 7.9
Ontario	1,106	1,354,028	8.2	7.7 – 8.7
Manitoba	178	141,087	12.6	10.8 – 14.6
Saskatchewan	165	122,222	13.5	11.5 – 15.7
Alberta	442	416,281	10.6	9.7 – 11.7
British Columbia	520	406,580	12.8	11.7 – 13.9
Northwest Territories	11	7,434	14.8	7.4 – 26.5
Nunavut	12	4,186	28.7	14.8 – 50.1
CANADA	3,317	3,438,912	9.4	9.0 – 9.7

Source: Public Health Agency of Canada. Canadian Congenital Anomalies Surveillance System, 1998–2007. Numbers from Yukon are not shown because of small cell count (<5). Numbers for Canada are not equal to the sum of those for provinces and territories because they include cases and births whose province of residence was unspecified.
CI – confidence interval.

A11. Severe Maternal Morbidity

TABLE A11.1 **Temporal trends in severe maternal morbidity**, by fiscal year, Canada (excluding Quebec),* 2003/2004 to 2009/2010

Fiscal year	Number of deliveries	Maternal morbidity	Rate per 10,000 deliveries	95% CI
2003/2004	248,496	3,519	14.2	13.7 – 14.6
2004/2005	262,673	3,672	14.0	13.5 – 14.4
2005/2006	266,172	3,723	14.0	13.5 – 14.4
2006/2007	274,090	3,607	13.2	12.7 – 13.6
2007/2008	284,925	3,966	13.9	13.5 – 14.4
2008/2009	286,432	4,255	14.9	14.4 – 15.3
2009/2010	287,942	4,188	14.5	14.1 – 15.0

Source: Canadian Institute for Health Information, Discharge Abstract Database (DAD). * Quebec does not contribute data to DAD. Manitoba data were incomplete for 2003/2004.
CI – confidence interval

TABLE A11.2 **Rates of the most common severe maternal morbidities**, Canada (excluding Quebec),* 2003/2004 to 2009/2010

Cause	Number of cases	Rate per 100,000 deliveries	95% CI
Blood transfusion	13,156	688.5	676.9 – 700.3
Postpartum hemorrhage and blood transfusion	8,151	426.6	417.4 – 435.9
Cardiac arrest/failure, myocardial infarction or pulmonary edema	2,285	119.6	114.7 – 124.6
Hysterectomy	2,162	113.2	108.4 – 118.1
Puerperal sepsis	1,951	102.1	97.7 – 106.7
Eclampsia	1,530	80.1	76.1 – 84.2
Uterine rupture during labour	1,397	73.1	69.4 – 77.1
Repair of bladder, urethra, or intestine	1,227	64.2	60.7 – 67.9

Source: Canadian Institute for Health Information, Discharge Abstract Database * Quebec does not contribute data to DAD. Manitoba data were incomplete for 2003/2004. CI – confidence interval

TABLE A11.3 **Rates of severe maternal morbidity**, by province/territory, Canada (excluding Quebec),* 2003/2004 to 2009/2010

Province/Territory	Number of cases	Cases per 1,000 deliveries	95% CI
Newfoundland and Labrador	645	20.0	18.5 – 21.6
Prince Edward Island	131	13.7	11.4 – 16.2
Nova Scotia	782	12.9	12.0 – 13.8
New Brunswick	630	12.7	11.7 – 13.7
Ontario	12,756	13.2	13.0 – 13.4
Manitoba	1,321	14.6	13.9 – 15.4
Saskatchewan	1,554	17.3	16.4 – 18.2
Alberta	5,001	16.0	15.5 – 16.4
British Columbia	3,903	13.6	13.2 – 14.0
Yukon	48	20.0	14.8 – 26.4
Northwest Territories	110	19.9	16.4 – 23.9
Nunavut	49	18.9	14.0 – 24.9
CANADA	26,930	14.1	13.9 – 14.3

Source: Canadian Institute for Health Information, Discharge Abstract Database. * Quebec does not contribute data to DAD. Manitoba data were incomplete for 2003/2004.
CI – confidence interval

A12. Cesarean Delivery

TABLE A12.1 **Rates of cesarean delivery, primary and repeat cesarean delivery**, by fiscal year, Canada (excluding Quebec),* 2000/2001 to 2009/2010

Fiscal year	Hospital deliveries	Cesarean deliveries	Cesarean delivery rate	Number of hospital deliveries without a previous cesarean delivery	Primary cesarean deliveries	Primary cesarean delivery rate	Number of hospital deliveries with previous cesarean delivery	Number of repeat cesarean deliveries	Repeat cesarean delivery rate (%)
2000/2001	250,296	54,702	21.9	224,030	36,061	16.1	26,266	18,641	71.0
2001/2002	253,543	59,208	23.4	225,660	38,516	17.1	27,883	20,692	74.2
2002/2003	250,520	61,479	24.5	223,062	40,483	18.1	27,458	20,996	76.5
2003/2004	256,928	66,376	25.8	227,627	43,384	19.1	29,301	22,992	78.5
2004/2005	261,332	69,222	26.5	230,769	44,691	19.4	30,563	24,531	80.3
2005/2006	264,705	72,190	27.3	232,095	45,629	19.7	32,610	26,561	81.5
2006/2007	272,594	74,428	27.3	238,803	46,711	19.6	33,791	27,717	82.0
2007/2008	283,295	78,564	27.7	247,098	48,838	19.8	36,197	29,726	82.1
2008/2009	284,654	79,780	28.0	247,337	49,157	19.9	37,317	30,623	82.1
2009/2010	286,179	79,683	27.8	248,458	48,879	19.7	37,721	30,804	81.7

Source: Canadian Institute for Health Information, Discharge Abstract Database, 2000/01 to 2009/10. The numbers for 2000/01 to 2004/05 differ from those published in the Canadian Perinatal Health Report, 2008 Edition because the latter were derived from CIHI's Hospital Morbidity Database and included Quebec. * Quebec does not contribute data to DAD.

TABLE A12.2 **Rate of cesarean delivery**, by province/territory of residence, Canada (excluding Quebec),* 2009/2010

Province/Territory	Number of hospital deliveries	Number of cesarean deliveries	Cesarean deliveries per 100 hospital deliveries	
			Estimate	95% CI
Newfoundland and Labrador	4,792	1,506	31.4	30.1 – 32.7
Prince Edward Island	1,432	435	30.4	28.0 – 32.8
Nova Scotia	8,746	2,368	27.1	26.1 – 28.0
New Brunswick	7,162	2,068	28.9	27.8 – 29.9
Ontario	135,432	38,553	28.5	28.2 – 28.7
Manitoba	15,454	3,121	20.2	19.6 – 20.8
Saskatchewan	14,014	3,087	22.0	21.3 – 22.7
Alberta	49,831	13,690	27.5	27.1 – 27.9
British Columbia	42,776	13,327	31.2	30.7 – 31.6
Yukon	367	83	22.6	18.3 – 26.9
Northwest Territories	744	146	19.6	16.8 – 22.5
Nunavut	837	68	8.1	6.3 – 10.0
CANADA	286,179	79,683	27.8	27.7 – 28.0

Source: Canadian Institute for Health Information, Discharge Abstract Database (DAD). * Quebec does not contribute data to DAD. CI – confidence interval

A13. Breastfeeding

TABLE A13.1 Rate of breastfeeding initiation, by maternal age, Canada, 2005, 2007/2008, and 2009/2010

Maternal age (years)	Mothers* who reported breastfeeding initiation					
	2005		2007/2008		2009/2010	
	Rate (%)	95% CI	Rate (%)	95% CI	Rate (%)	95% CI
15–19	76.0	65.6 – 86.4	84.8	75.4 – 94.1	86.1	77.9 – 94.3
20–24	82.3	77.5 – 87.0	82.7	78.2 – 87.3	83.8	78.4 – 89.1
25–29	84.2	81.9 – 86.5	87.1	85.0 – 89.1	86.5	84.0 – 89.0
30–34	88.7	87.0 – 90.3	88.9	87.2 – 90.7	87.0	84.8 – 89.2
35–39	89.7	87.7 – 91.7	89.5	87.1 – 91.9	88.5	85.5 – 91.6
≥40	87.6	83.3 – 91.9	86.7	80.9 – 92.6	90.3	86.9 – 93.7
All ages	87.0	85.9 – 88.0	87.9	86.8 – 89.1	87.3	86.0 – 88.5

Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007/2008, and 2009/2010. * Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. CI – confidence interval

TABLE A13.2 Rate of breastfeeding initiation, by province/territory, Canada, 2005, 2007/2008, and 2009/2010

Province/Territory	Mothers* who reported breastfeeding initiation					
	2005		2007/2008		2009/2010	
	Rate (%)	95% CI	Rate (%)	95% CI	Rate (%)	95% CI
Newfoundland and Labrador	62.3	54.9 – 69.8	69.1	61.8 – 76.4	61.5	53.1 – 69.9
Prince Edward Island	72.1	61.9 – 82.2	74.0	65.9 – 82.0	75.1	64.6 – 85.5
Nova Scotia	75.1	68.8 – 81.3	75.1	67.6 – 82.5	77.8	70.7 – 85.0
New Brunswick	77.0	70.9 – 83.0	75.8	69.5 – 82.1	82.2	76.4 – 88.0
Quebec	82.2	79.5 – 84.8	83.9	80.3 – 87.4	82.8	79.6 – 85.9
Ontario	88.0	86.2 – 89.9	89.4	87.8 – 91.0	88.5	86.1 – 90.9
Manitoba	88.8	84.1 – 93.5	85.1	79.2 – 90.9	89.2	85.0 – 93.4
Saskatchewan	88.1	84.8 – 91.5	88.1	83.4 – 92.8	91.0	87.6 – 94.5
Alberta	92.7	90.6 – 94.8	92.0	89.5 – 94.5	90.8	87.8 – 93.8
British Columbia	93.0	90.0 – 95.9	94.8	92.2 – 97.4	93.1	90.2 – 96.0
Yukon	98.8	96.5 – 101.0	98.2	96.0 – 100.0	97.2	94.2 – 100.0
Northwest Territories	93.6	86.7 – 100.0	86.7	80.3 – 93.1	88.8	80.8 – 96.7
Nunavut	73.7	50.3 – 97.1	70.0	57.8 – 82.3	65.4	48.7 – 82.1
Canada	87.0	85.9 – 88.0	87.9	86.8 – 89.1	87.3	86.0 – 88.5

Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007/08, and 2009/10. * Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. CI – confidence interval

TABLE A13.3 **Rate of exclusive breastfeeding**, by maternal age, Canada, 2005, 2007/2008, and 2009/2010

Maternal age (years)	Mothers* who reported exclusive breastfeeding for six months or more					
	2005		2007/2008		2009/2010	
	Rate (%)	95% CI	Rate (%)	95% CI	Rate (%)	95% CI
15–19	**		**		**	
20–24	12.7	9.3 – 16.1	13.4	8.8 – 18.1	13.8	10.0 – 17.7
25–29	15.9	13.5 – 18.2	19.3	16.2 – 22.4	20.8	17.8 – 23.8
30–34	21.1	18.8 – 23.3	24.7	22.0 – 27.3	27.5	24.2 – 30.8
35–39	23.1	20.0 – 26.2	26.2	22.9 – 29.4	33.3	29.5 – 37.2
≥40	27.8	22.2 – 33.3	27.2	21.2 – 33.3	28.4	22.3 – 34.5
All ages	20.3	19.0 – 21.6	23.1	21.5 – 24.7	25.9	24.2 – 27.7

Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007/2008, and 2009/2010. * Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. ** Estimate not shown because of high variability (coefficient of variation ≥33%). CI – confidence interval

TABLE A13.4 **Rate of exclusive breastfeeding**, by province/territory, Canada, 2005, 2007/2008, and 2009/2010

Province/Territory	Mothers* who reported exclusive breastfeeding for six months or more					
	2005		2007/2008		2009/2010	
	Rate (%)	95% CI	Rate (%)	95% CI	Rate (%)	95% CI
Newfoundland and Labrador	13.2	8.0 – 18.4	10.3	5.7 – 15.0	15.4	8.1 – 22.7
Prince Edward Island	12.2	4.6 – 19.8	13.8	6.9 – 20.6	20.7	11.6 – 29.9
Nova Scotia	15.2	9.3 – 21.2	16.5	10.4 – 22.7	18.0	11.0 – 24.9
New Brunswick	14.8	8.9 – 20.7	15.2	9.8 – 20.6	18.6	11.6 – 25.7
Quebec	14.1	11.7 – 16.5	15.6	12.4 – 18.9	19.9	16.6 – 23.3
Ontario	19.6	17.4 – 21.7	23.6	20.7 – 26.5	26.2	23.2 – 29.1
Manitoba	26.6	20.3 – 33.0	23.7	16.8 – 30.5	31.1	23.0 – 39.2
Saskatchewan	20.9	16.2 – 25.7	27.2	21.2 – 33.1	33.0	25.6 – 40.4
Alberta	22.3	18.3 – 26.4	24.5	20.2 – 28.7	29.1	23.7 – 34.4
British Columbia	31.8	27.5 – 36.1	38.2	33.3 – 43.1	33.9	28.4 – 39.3
Yukon	41.9	22.9 – 60.8	33.7	21.2 – 46.2	42.0	25.8 – 58.1
Northwest Territories	25.8	13.0 – 38.7	**		32.4	22.5 – 42.3
Nunavut	27.6	11.9 – 43.4	24.1	13.9 – 34.3	28.1	17.4 – 38.8
CANADA	20.3	19.0 – 21.6	23.1	21.5 – 24.7	25.9	24.2 – 27.7

Source: Statistics Canada, Canadian Community Health Survey, 2007, 2007/08, and 2009/10. * Women who gave birth in the five years preceding the survey; denominators exclude responses of "do not know" and "not stated", and refusal to answer. ** Estimate not shown because of high variability (coefficient of variation ≥33%). CI – confidence interval

A14. Multiple Birth

TABLE A14.1 **Rate of multiple birth**, by year, Canada (excluding Ontario),* 1999–2008

Year	Total births	Multiple births (live births and stillbirths)	Multiple births per 100 total births
1999	207,394	5,448	2.6
2000	201,633	5,384	2.7
2001	203,233	5,639	2.8
2002	201,464	5,626	2.8
2003	205,470	6,096	3.0
2004	205,746	6,133	3.0
2005	209,713	6,156	2.9
2006	220,338	6,742	3.1
2007	230,920	7,049	3.1
2008	238,679	7,220	3.0

Source: Statistics Canada. CANSIM Table 102-4515. * Data for Ontario were excluded because of data quality concerns.

TABLE A14.2 **Rate of multiple birth**, by province/territory, Canada (excluding Ontario),* 2004–2008

Province/Territory	Total births	Multiple births (live births and stillbirths)	Multiple births per 100 total births	
			Estimate	95% CI
Newfoundland and Labrador	23,137	691	3.0	2.8 – 3.2
Prince Edward Island	7,058	219	3.1	2.7 – 3.5
Nova Scotia	44,232	1,410	3.2	3.0 – 3.4
New Brunswick	35,633	1,033	2.9	2.7 – 3.1
Quebec	406,284	11,694	2.9	2.8 – 2.9
Manitoba	73,897	1,983	2.7	2.6 – 2.8
Saskatchewan	63,646	1,768	2.8	2.7 – 2.9
Alberta	229,630	7,663	3.3	3.3 – 3.4
British Columbia	212,688	6,624	3.1	3.0 – 3.2
Yukon	1,789	49	2.7	2.0 – 3.5
Northwest Territories	3,574	112	3.1	2.6 – 3.7
Nunavut	3,828	54	1.4	1.0 – 1.8
CANADA	1,105,396	33,300	3.0	3.0 – 3.0

Source: Statistics Canada. CANSIM Table 102-4515. * Data for Ontario were excluded because of data quality concerns. CI – confidence interval