PUBLIC HEALTH AGENCY OF CANADA

# PERINATAL HEALTH INDICATORS FOR CANADA 2017

## A REPORT FROM THE CANADIAN PERINATAL SURVEILLANCE SYSTEM



PROTECTING CANADIANS FROM ILLNESS

Public Health Agency of Canada
Agence de la santé publique du Canada

Canada

**TO PROMOTE AND PROTECT THE HEALTH OF CANADIANS THROUGH LEADERSHIP, PARTNERSHIP, INNOVATION AND ACTION IN PUBLIC HEALTH**

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Statistics Canada (Vital Statistics)

# INTRODUCTION

This report was produced by the Canadian Perinatal Surveillance System (CPSS) to update data on key perinatal health indicators and provide current information on major determinants and outcomes of maternal, fetal and infant health in Canada. The data used for this update are from the birth and death registries up to 2011 (vital statistics), linked birth-death data up to 2010 (vital statistics) and the Canadian Institution for Health Information (CIHI) Discharge Abstract Database (DAD) up to 2014/2015 fiscal year. Numbers based on vital statistics or hospital databases may be different in this report 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.

Indicators presented in this report are among the top 16 based on the priority ranking published by CPSS in 2000,[1] with the addition of the rate of live births to older mothers, which has increased since 2000.

Changes were made to the data sources for most indicators in the 2016 edition of the Perinatal Health Indicators Report (PHI) as more timely data were available. Specifically, after testing trends for specific indicators that were historically reported using vital statistics data, it was found that CIHI data produced very comparable trends for all indicators based on vital statistics data in the 2013 PHI, with the exception of postneonatal and infant mortality. Further, gestational age based indicators are more accurately captured using CIHI data compared to Vital Statistics data (gestational age is a clinical determination and is part of the hospitalisation record). The timely availability of CIHI data (up to 2014/2015 fiscal year data are available) also permit more up-to-date reporting.

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

Breastfeeding rates, as well as maternal smoking and alcohol consumption during pregnancy rates are not included in this version of the PHI. The most up-to-date data have been published in the 2013 edition of the PHI, and newer data will become available as part of the 2017 cycle of the Canadian Community Health Survey (CCHS). Consequently, these indicators will return in future editions of the PHI.

Detailed data tables for all indicators, and general data limitations are included as appendices.

## REFERENCE

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

CHAPTER 1

# RATE OF LIVE BIRTHS TO TEENAGE MOTHERS

The rate of live births to mothers aged 10–14 remained stable at 0.1 (95% CI: 0.1–0.1) per 1,000 females from 2005 to 2014. The rate of live births to mothers aged 15–17 years increased from 7.7 (95% CI: 7.4–7.9) per 1,000 females in 2005 to 8.4 (95% CI: 8.1–8.6) per 1,000 females in 2007 then decreased steadily to 5.3 (95% CI: 5.0–5.5) per 1,000 females in 2014. The rate of live births to mothers aged 18–19 years increased slightly from 25.5 (95% CI: 24.9–26.0) per 1,000 females in 2005 to 27.2 (95% CI: 26.7–27.8) per 1,000 in 2007 and decreased steadily to 18.6 (95% CI: 18.1–19.0) per 1,000 females in 2014.

## DEFINITION

The 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. 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.

## DATA SOURCES

Rates of live births to teenage mothers were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). The denominators for the age-specific rate of live birth were population estimates[1] for the corresponding age category for the specific calendar year. Data from Quebec were excluded because they do not contribute to DAD.

## RESULTS

The rate of live births to mothers aged 15–17 years increased from 7.7 (95% CI: 7.4–7.9) per 1,000 females in 2005 to 8.4 (95% CI: 8.1–8.6) per 1,000 females in 2007 then decreased steadily to 5.3 (95% CI: 5.0–5.5) per 1,000 females in 2014. The rate of live births to mothers aged 18–19 years increased slightly from 25.5 (95% CI: 24.9–26.0) per 1,000 females in 2005 to 27.2 (95% CI: 26.7–27.8) per 1,000 in 2007 and decreased steadily to 18.6 (95% CI: 18.1–19.0) per 1,000 females in 2014. The rate of live births to mothers aged 10–14 remained stable at 0.1 (95% CI: 0.1–0.1) per 1,000 females from 2005 to 2014 (Figure 1.1).

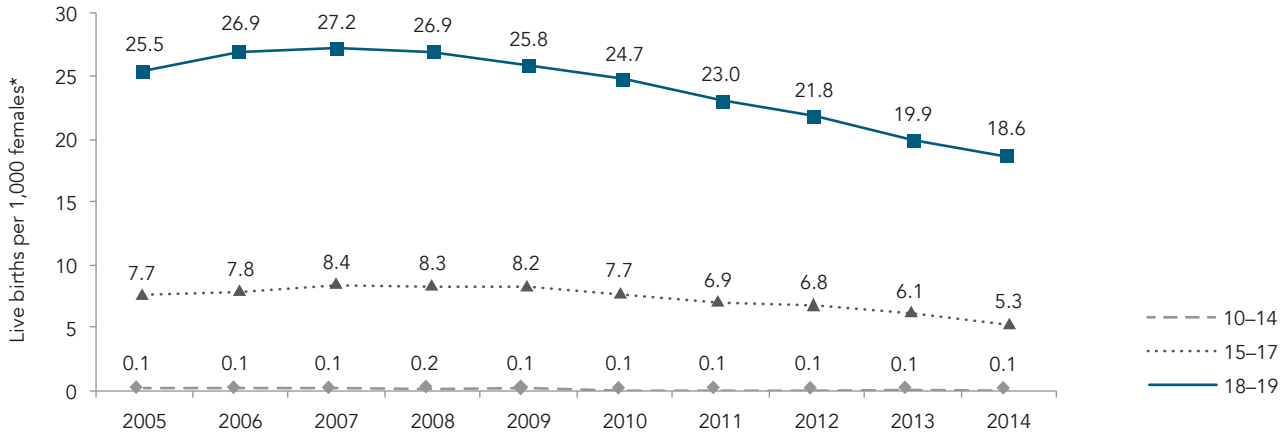
The proportion of live births to mothers aged 10–14 years fluctuated between 0.02% and 0.04% of total births between 2005 and 2014. The proportion of live births to mothers aged 15–17 years increased from 1.4% to 1.5% between 2005 and 2007, then decreased steadily to 0.9% of total births in 2014. The proportion of live births to mothers aged 18–19 years fluctuated from 3.2% to 3.3% of total births between 2005 and 2008, then decreased steadily to 2.3% of total births in 2014 (Figure 1.2).

In 2010–2014, age-specific live birth rates ranged from 1.7 per 1,000 females (95% CI: 1.6–1.7) in British Columbia to 26.8 per 1,000 females (95% CI: 24.0–29.8) in Nunavut among women aged 10 to 17 years. Age-specific birth rates ranged from 13.8 per 1,000 females (95% CI: 13.4–14.2) in British Columbia to 128.5 per 1,000 females (95% CI: 117.2–140.4) in Nunavut in women aged 18–19 years (Figure 1.3).

The proportions of births to mothers aged 10–17 and 18–19 years ranged from 0.8% and 1.8% in British Columbia to 8.4% and 10.6% in Nunavut respectively (Figure 1.4).

**FIGURE 1.1**

AGE-SPECIFIC BIRTH RATES OF YOUNGER MOTHERS, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* CANSIM Table 051–0001 (number of women by age group).

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 1.2**

PROPORTION (%) OF LIVE BIRTHS, BY MATERNAL AGE, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

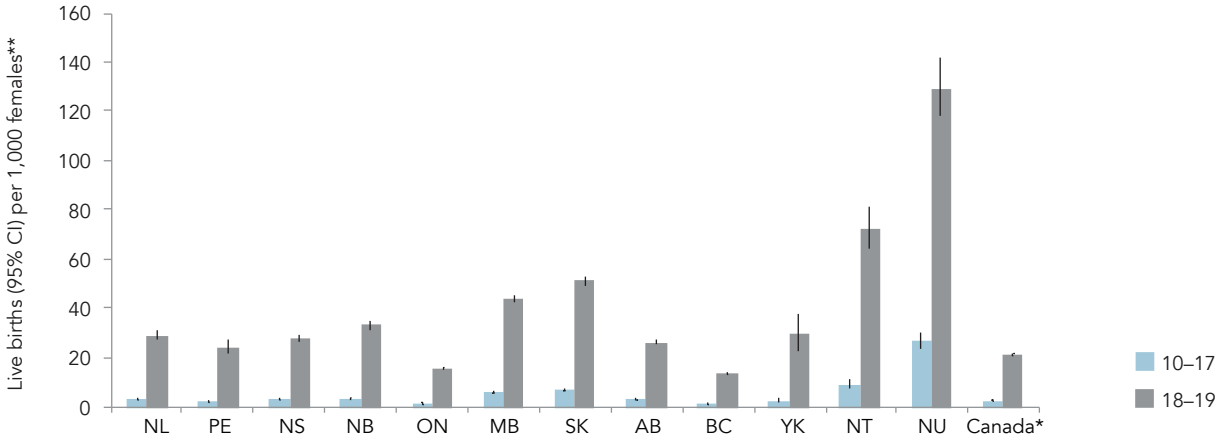

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Excludes live births to mothers aged 50 years and over, and those with unknown maternal age.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 1.3**

AGE-SPECIFIC BIRTH RATES, FEMALES AGED 10–17 AND 18–19 YEARS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

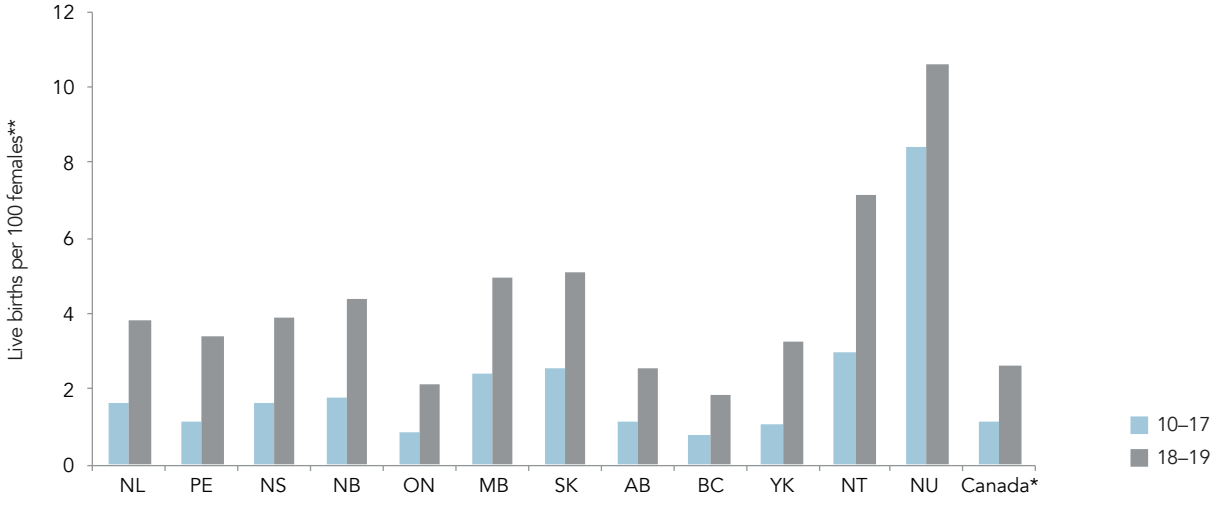
** CANSIM Table 051–0001 (number of women by age group)

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 1.4**

PROPORTION (%) OF LIVE BIRTHS TO MOTHERS AGED 10–17 AND 18–19 YEARS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** Excludes live births to mothers aged 50 years and over, and those with unknown maternal age

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

## LIMITATIONS

Please refer to Appendix B for general data limitations using CIHI-DAD.

The rates of live births to teenage mothers do not reflect the total number of pregnancies to teenagers as they exclude stillbirths, ectopic pregnancies and aborted pregnancies.

## REFERENCE

1. Statistics Canada. Table 051–0001—Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted), CANSIM (database). (accessed: July 2016).

CHAPTER 2

# RATE OF LIVE BIRTHS TO OLDER MOTHERS

The rate of live births to older mothers increased steadily between 2005 and 2014. Thus, the age-specific live birth rates to mothers aged 35–39 years increased from 44.2 (95% CI: 43.8–44.6) to 53.6 (95% CI: 53.1–54.0) per 1,000 females. For mothers aged 40–44 years, the rate increased from 7.5 (95% CI: 7.3–7.6) to 10.7 (95% CI: 10.5–10.9) per 1,000 females, and for mothers aged 45–49 years from 0.3 (95% CI: 0.3–0.4) to 0.6 (95% CI: 0.6–0.7) per 1,000 females.

## DEFINITION

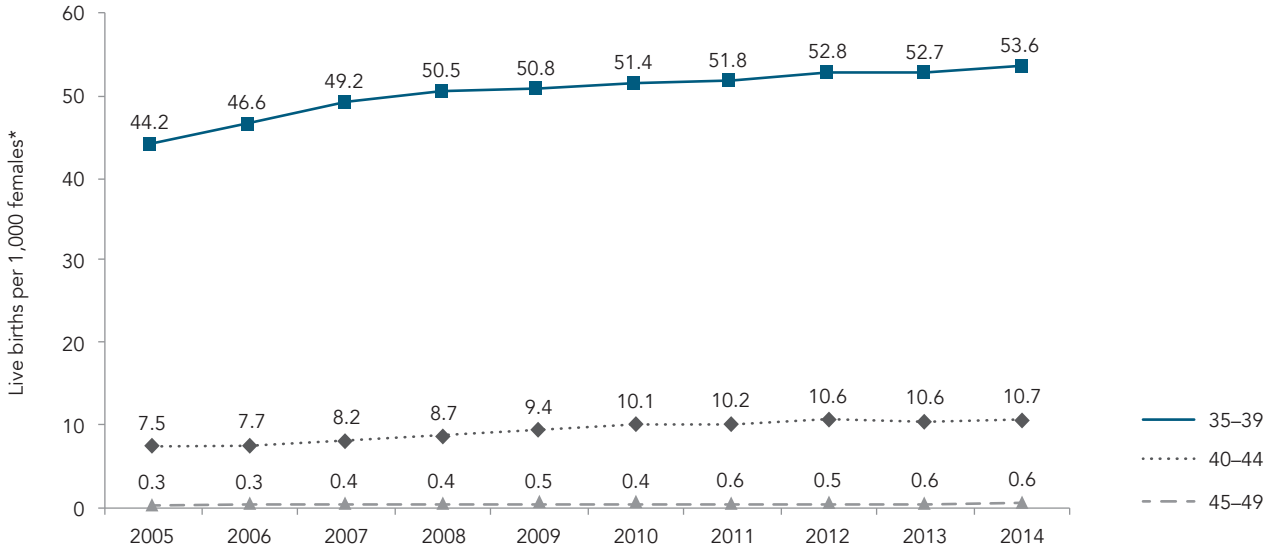
The age-specific rate of live births to older mothers is defined as the number of live births to mothers aged 35–39, 40–44 or 45–49 years per 1,000 females in the same age category. The proportion of live births to older mothers refers to the number of live births to mothers aged 35–39, 40–44 or 45–49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

## DATA SOURCES

Rates of live births to older mothers were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). The denominators for the age-specific rate of live birth were population estimates[1] for the corresponding age category for the specific calendar year. Data from Quebec were excluded because they do not contribute to DAD.

**FIGURE 2.1**

AGE-SPECIFIC BIRTH RATES OF OLDER MOTHERS, CANADA (EXCLUDING QUEBEC), 2005–2014



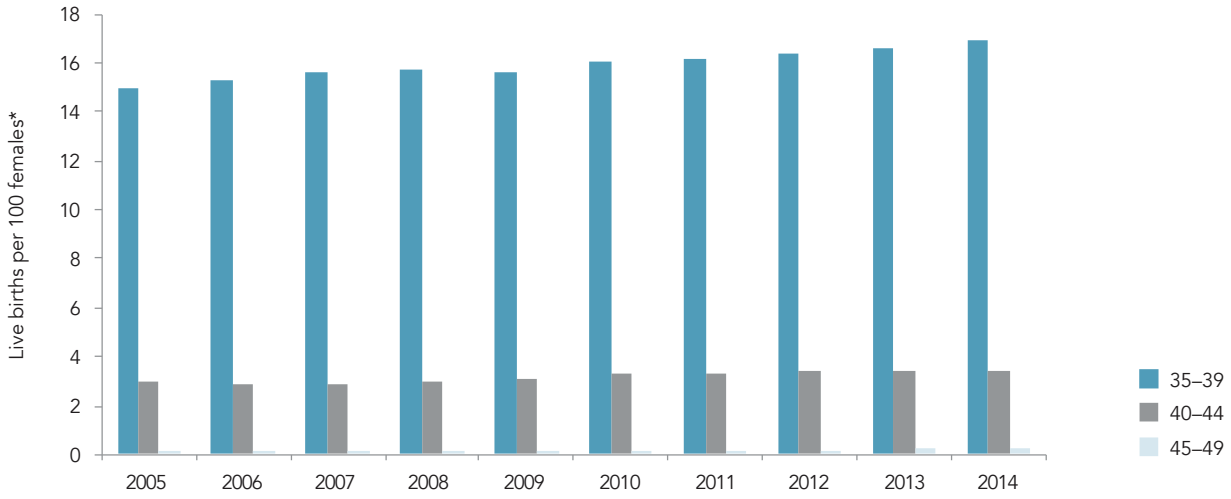

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* CANSIM Table 051–0001 (number of women by age group).

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 2.2**

PROPORTION (%) OF LIVE BIRTHS, BY MATERNAL AGE, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014



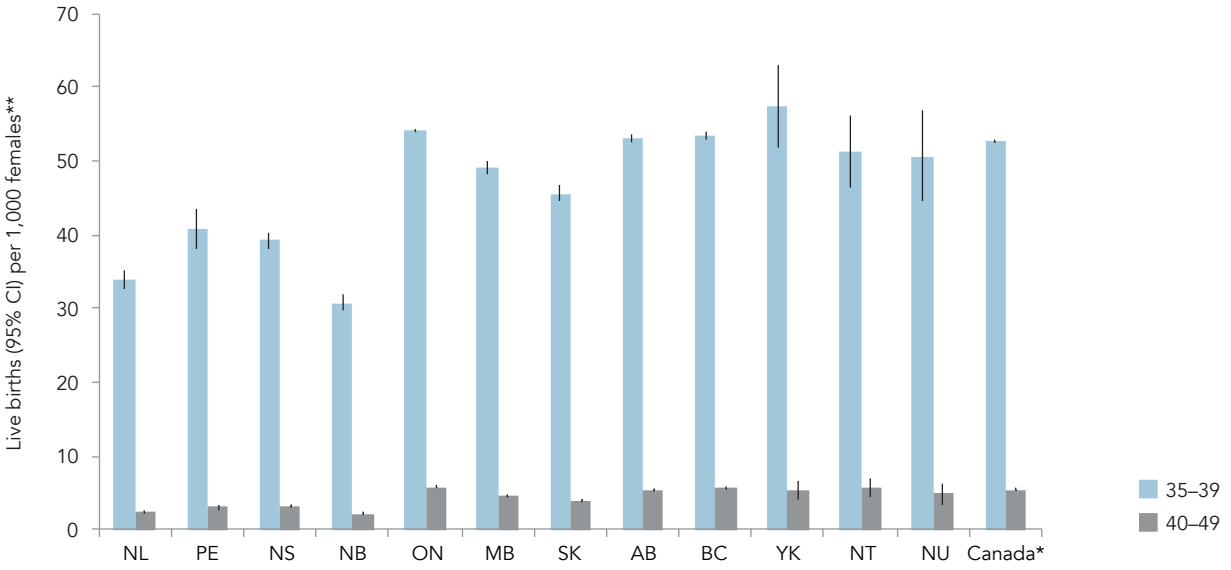

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Excludes live births to mothers aged 50 years and over, and those with unknown maternal age.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 2.3**

AGE-SPECIFIC BIRTH RATES, FEMALES AGED 35–39 AND 40–49 YEARS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

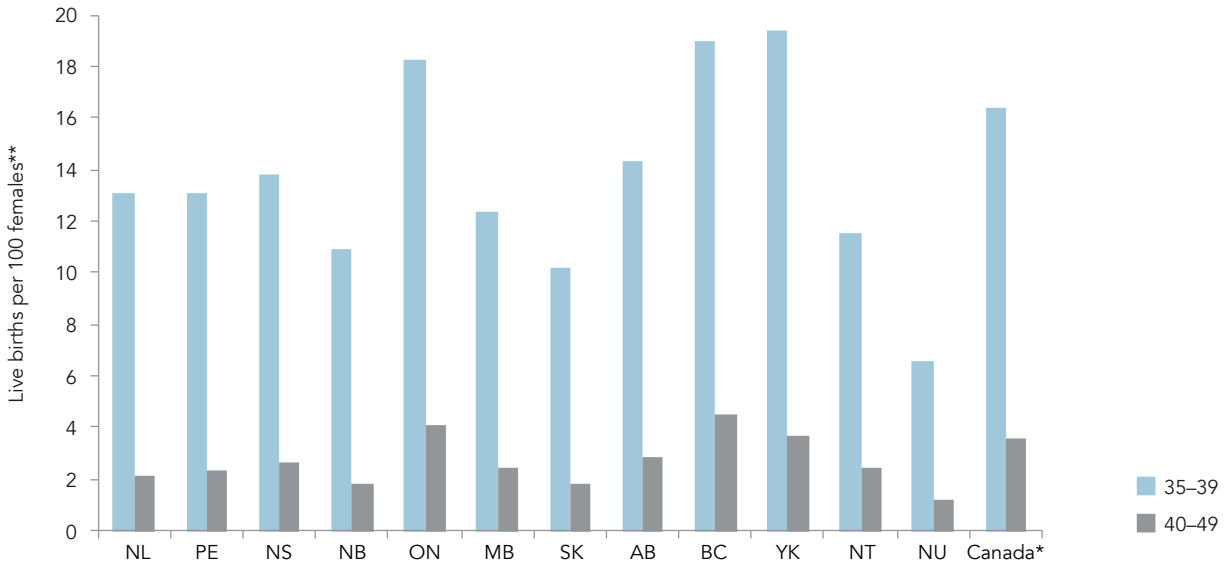
** CANSIM Table 051–0001 (number of women by age group)

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 2.4**

PROPORTION (%) OF LIVE BIRTHS TO MOTHERS AGED 35–39 AND 40–49 YEAR, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** Excludes live births to mothers aged 50 years and over, and those with unknown maternal age

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

## RESULTS

Between 2005 and 2014, the live birth rate to mothers aged 35–39 years, 40–44 years and 45–49 increased steadily from 44.2 (95% CI: 43.8–44.6) to 53.6 (95% CI: 53.1–54.0) per 1,000 females, from 7.5 (95% CI:7.3–7.6) to 10.7 (95% CI: 10.5–10.9) per 1,000 females, and from 0.3 (95% CI: 0.3–0.4) to 0.6 (95% CI: 0.6–0.7) per 1,000 females, respectively (Figure 2.1). Similarly, the proportion of live births to women aged 35–39 and 40–44 and 45–49 increased steadily from 14.9% to 16.9% of live births, from 2.9% to 3.5% of live births, and from 0.1% to 0.2% respectively (Figure 2.2).

The live birth rate to mothers aged 35–39 years ranged from 30.7 per 1,000 females (95% CI: 29.7–31.7) in New Brunswick to 57.2 per 1,000 females (95% CI: 51.8–63.0) in Yukon, and the live birth rate to mothers aged 40–49 years ranged from 2.2 per 1,000 females (95% CI: 2.1–2.4) in New Brunswick to 5.6 per 1,000 females in both British Columbia and the Northwest Territories (95% CI: 5.5–5.8 and 4.5–6.9 respectively) (Figure 2.3). In 2010–2014, the proportion of live births to mothers aged 35–39 years ranged from 6.6% in Nunavut to 19.4% in Yukon, and the proportion of live births to mothers aged 40–49 years ranged from 1.2% in Nunavut to 4.5% in British Columbia (Figure 2.4).

## LIMITATIONS

Please refer to Appendix B for general data limitations using CIHI-DAD.

The 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 aborted pregnancies.

## REFERENCE

1. Statistics Canada. Table 051–0001—Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted), CANSIM (database). (accessed: July 2016).

CHAPTER 3

# RATE OF CESAREAN DELIVERY

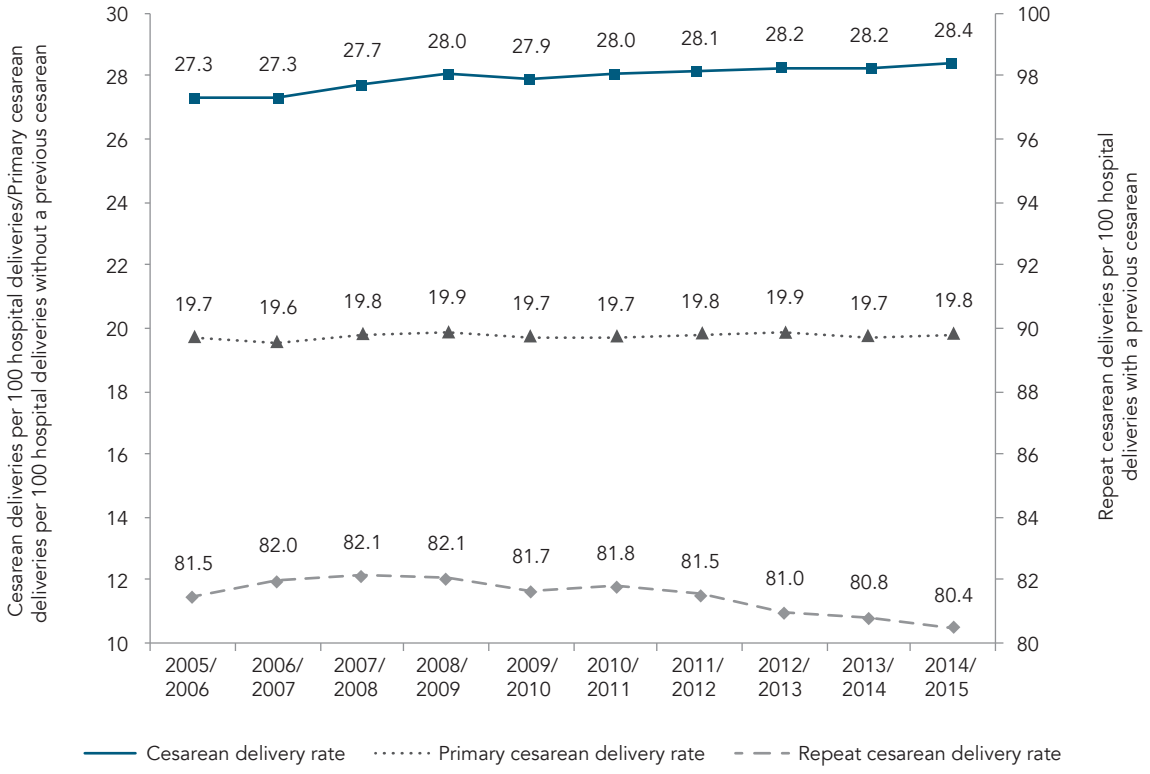
The rate of cesarean delivery increased between 2005/2006 and 2014/2015, from 27.3 (95% CI: 27.1 to 27.5) to 28.4 (95% CI: 28.2 to 28.5) per 100 hospital deliveries, respectively.

## DEFINITION

The cesarean delivery rate is defined as the number of cesarean deliveries expressed as a percentage of the total number of hospital deliveries. 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 percentage of cesarean deliveries among women who have previously had a cesarean delivery.

**FIGURE 3.1**

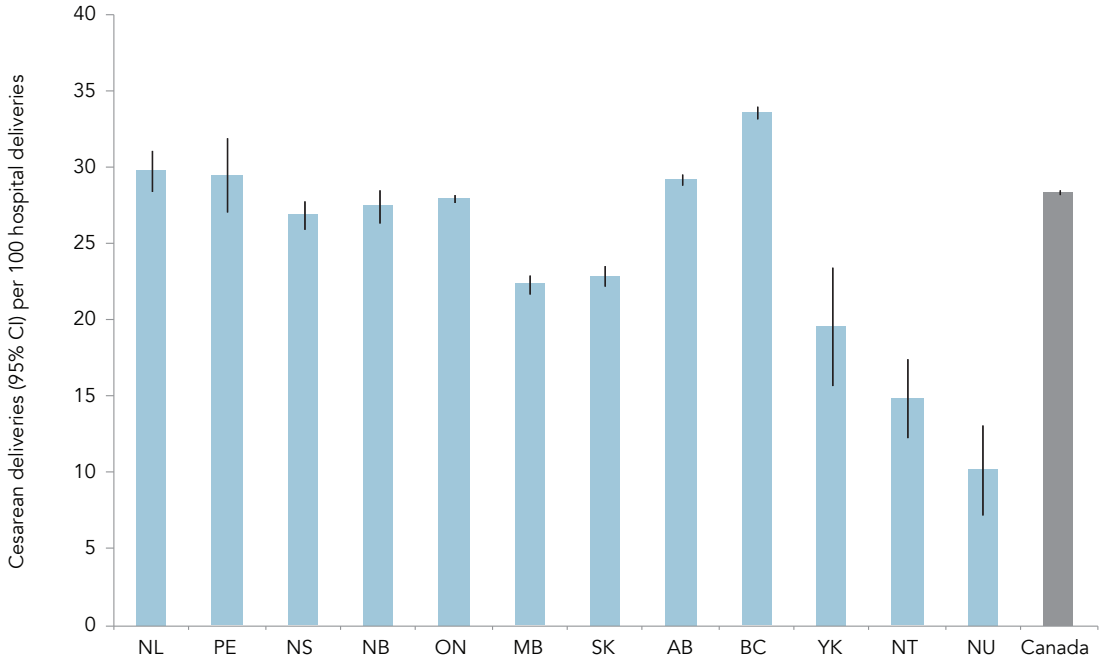
RATES OF CESAREAN DELIVERY, PRIMARY AND REPEAT CESAREAN DELIVERY BY FISCAL YEAR, CANADA (EXCLUDING QUEBEC), 2005/2006 TO 2014/2015




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 3.2**

RATE OF CESAREAN DELIVERY BY PROVINCE/TERRITORY OF OCCURRENCE, CANADA (EXCLUDING QUEBEC), 2014/2015 FISCAL YEAR




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## DATA SOURCE

Cesarean delivery rates were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data from Quebec were excluded because they do not contribute to DAD. Rates were calculated by fiscal year (April 1 to March 31). Provincial and territorial rates are based on province or territory of occurrence (i.e., not province or territory of residence).

## RESULTS

The rate of cesarean delivery increased from 27.3 (95% CI: 27.1 to 27.5) to 28.4 (95% CI: 28.2 to 28.5) per 100 hospital deliveries between 2005/2006 and 2014/2015. The primary cesarean rate remained relatively stable during this time, fluctuating between 19.6 (95% CI: 19.4 to 19.7) and 19.8 (95% CI: 19.7 to 20.0) per 100 hospital deliveries among women without a previous cesarean delivery. For repeat cesarean delivery, rates declined from 81.5 (95% CI: 81.0 to 81.9) to 80.4 (95% CI: 80.1 to 80.8) per 100 hospital deliveries between 2005/2006 and 2014/2015. In 2014/2015, the rate was 80.4 per 100 hospital deliveries among women with a previous cesarean delivery (Figure 3.1).

In 2014/2015, the lowest rates of cesarean delivery were observed in the three territories: 10.2 (95% CI: 7.2–13.2) per 100 hospital deliveries in Nunavut, 14.9 (95% CI: 12.4–17.5) per 100 hospital deliveries in the Northwest Territories and 19.6 (95% CI: 15.7–23.5) per 100 hospital deliveries in the Yukon. The highest rates were observed in British Columbia (33.6 per 100 hospital deliveries, 95% CI: 33.2–34.1), Newfoundland and Labrador (29.8 per 100 hospital deliveries 95% CI: 28.5–31.2) and Prince Edward Island (29.5 per 100 hospital deliveries, 95% CI: 27.1–31.9) (Figure 3.2).

## LIMITATIONS

Out-of-hospital deliveries were not included in the calculation of cesarean delivery rates. In addition, data do not allow determination of the reason for which cesareans were performed, which limits the interpretation of the results.

Please refer to Appendix B for general data limitations using CIHI-DAD.

CHAPTER 4

# SEVERE MATERNAL MORBIDITY RATE

The overall rate of severe maternal morbidity (SMM) increased from 14.0 (95% CI: 13.5 to 14.4) to 16.4 (95% CI: 15.9 to 16.9) per 1,000 deliveries between 2005/2006 to 2012/2013, then declined to 14.2 (95% CI: 13.7 to 14.6) per 1,000 in 2014/2015. The most common severe maternal morbidities from 2010/2011 to 2014/2015 were blood transfusion with or without comorbidity (e.g. postpartum hemorrhage); cardiac arrest/failure, myocardial infarction or pulmonary edema; embolization or ligation of pelvic vessels or suturing of uterus and postpartum hemorrhage; and hysterectomy.

## DEFINITION

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

## DATA SOURCE

Rates of SMM were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data from Quebec were excluded because they do not contribute to the DAD. Rates are calculated based on fiscal years (April 1 to March 31). Provincial and territorial rates are based on province or territory of occurrence (i.e. not province or territory of residence). Provincial and territorial rates of SMM, and rates of the most common SMMs, are reported for the five most recent years combined to increase stability of the rates.

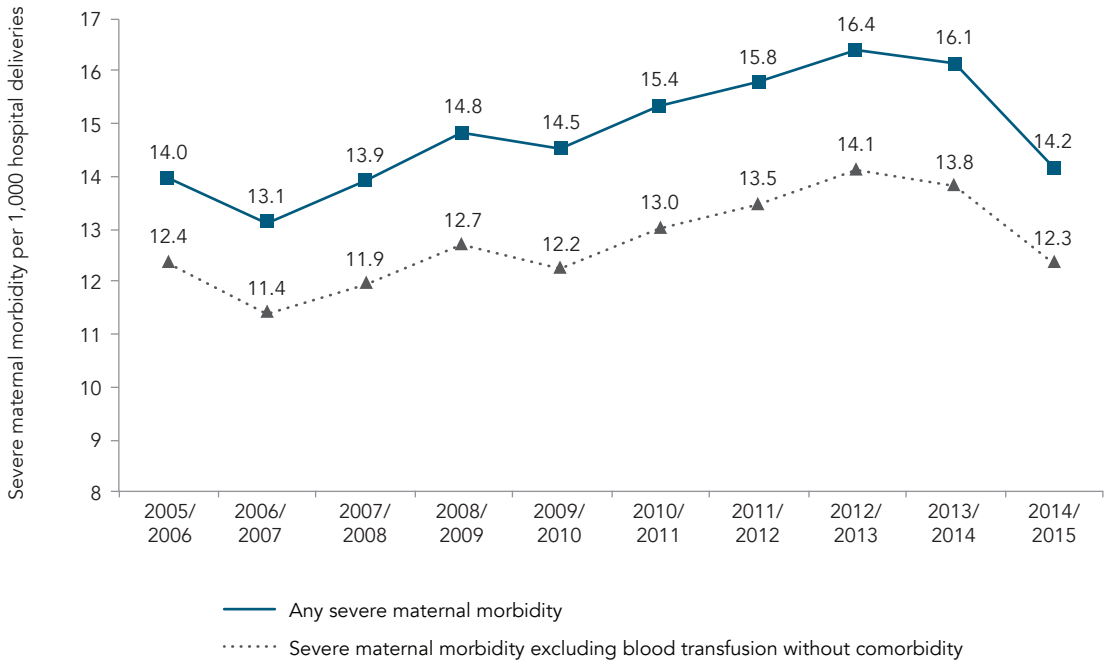
## RESULTS

The overall rate of SMM increased from 14.0 (95% CI: 13.5 to 14.4) to 16.4 (95% CI: 15.9 to 16.9) per 1,000 deliveries between 2005/2006 to 2012/2013, then declined to 14.2 (95% CI: 13.7 to 14.6) per 1,000 in 2014/2015 (Figure 4.1). The severity of morbidity is uncertain when blood transfusion is not accompanied by a comorbid diagnosis. The rate of SMM excluding blood transfusion without a comorbid diagnosis was lower than the overall SMM rate, but followed a similar trend to the overall SMM rate (Figure 4.1).

Between 2010/2011 to 2014/2015, the highest SMM rates were observed in Nunavut and the Yukon, and the lowest rates were observed in the Northwest Territories (Figure 4.2). During this period, the most common SMMs were blood transfusion with or without comorbidity (e.g. postpartum hemorrhage); cardiac arrest/failure, myocardial infarction or pulmonary edema; embolization or ligation of pelvic vessels or suturing of uterus and postpartum hemorrhage; and hysterectomy (Figure 4.3).

**FIGURE 4.1**

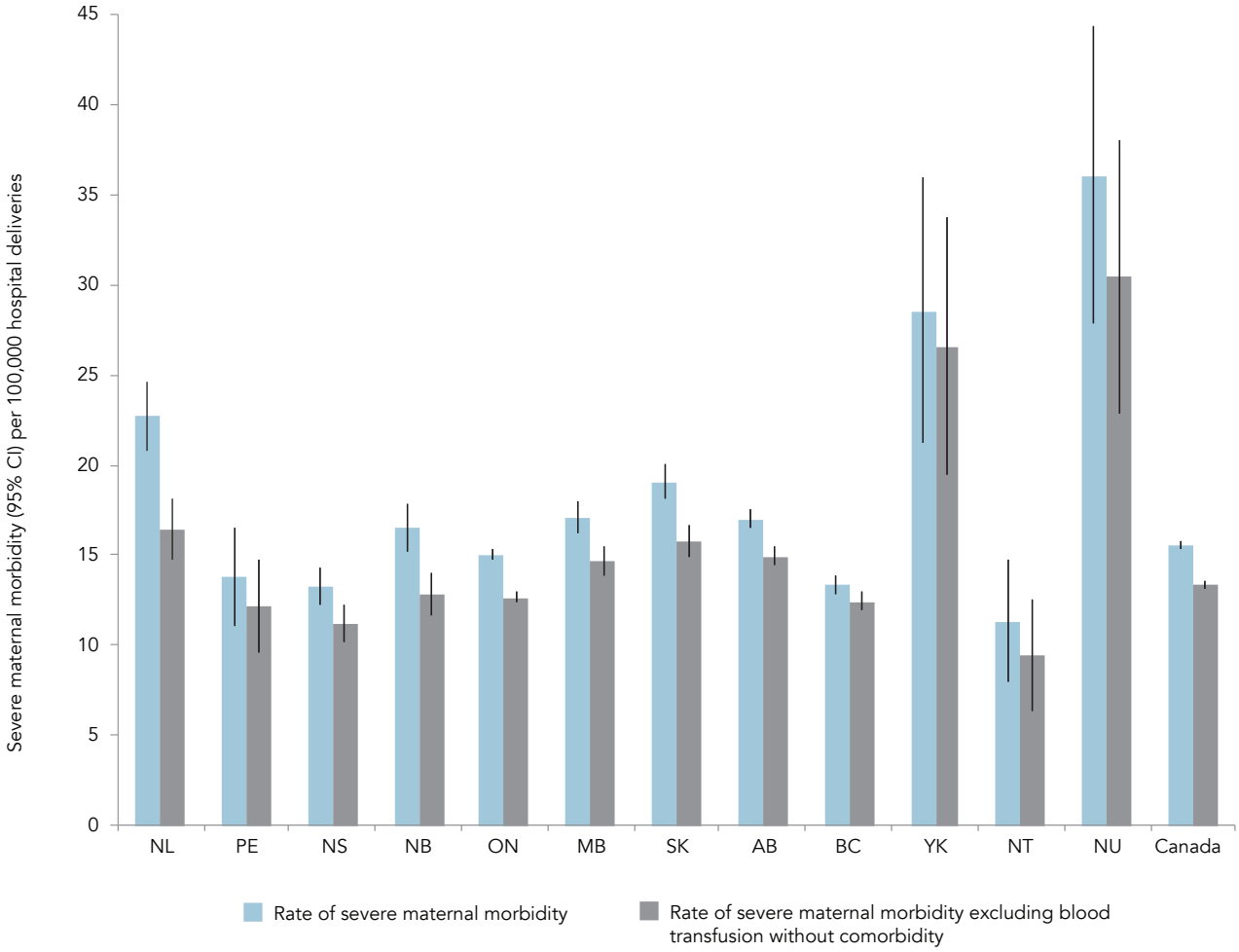
RATE OF SEVERE MATERNAL MORBIDITY, BY FISCAL YEAR, CANADA (EXCLUDING QUEBEC), 2005/2006 TO 2014/2015




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 4.2**

RATES OF SEVERE MATERNAL MORBIDITY, BY PROVINCE/TERRITORY OF OCCURRENCE, CANADA (EXCLUDING QUEBEC), 2010/2011 TO 2014/2015



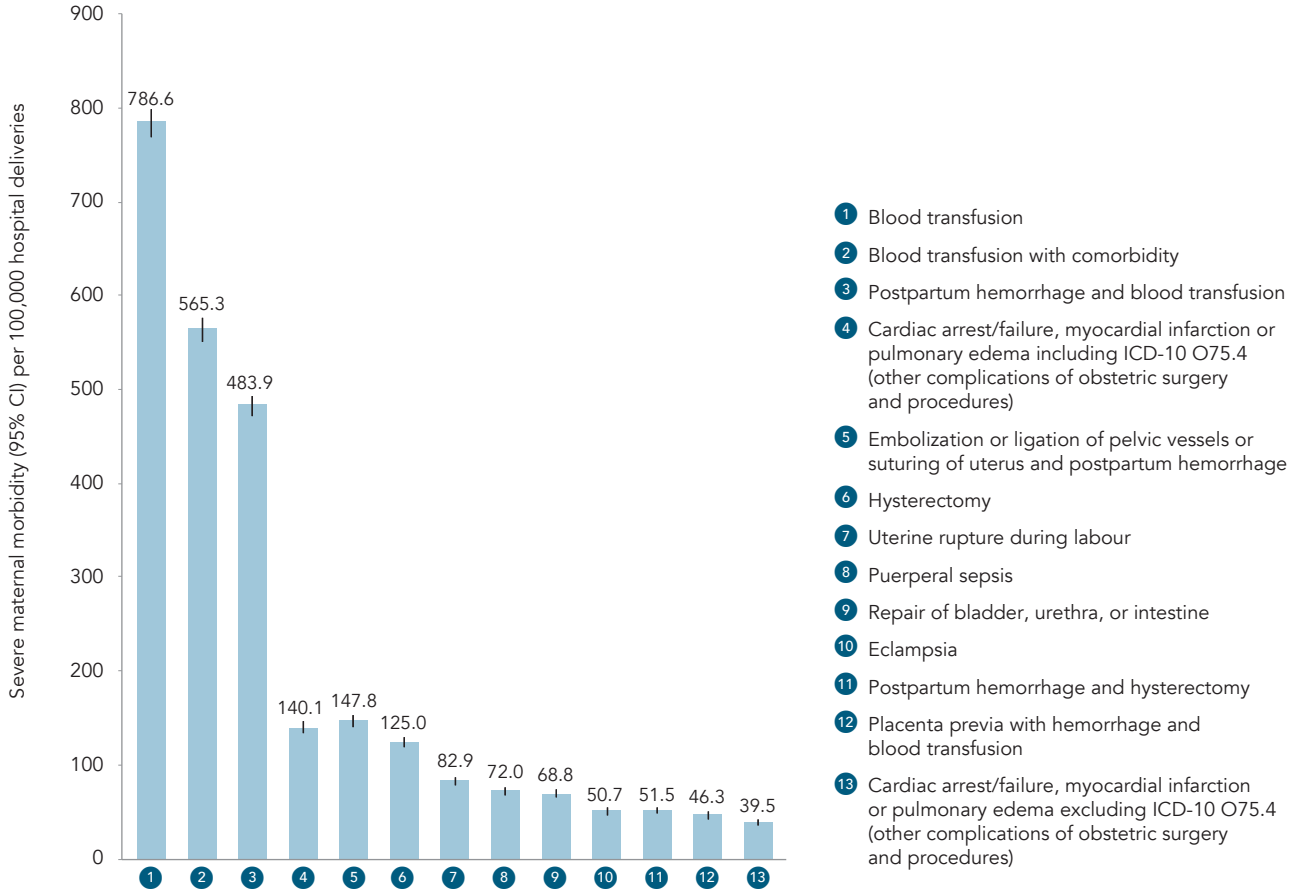

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 4.3**

RATES OF MOST COMMON SEVERE MATERNAL MORBIDITIES, CANADA (EXCLUDING QUEBEC), 2010/2011 TO 2014/2015




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD).
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## LIMITATIONS

The severity of some maternal conditions could not be distinguished due to limitations of ICD-10 codes.

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCES

1. Joseph KS, Liu S, Rouleau J, Kirby RS, Kramer MS, Sauve R, et al. Severe maternal morbidity in Canada, 2003 to 2007: surveillance using routine hospitalization data and ICD-10CA codes. J Obstet Gynaecol Can 2010;32(9):837–846.

2. Liu S, Joseph KS, Bartholomew S, Fahey J, Lee L, Allen AC, et al. Temporal trends and regional variations in severe maternal morbidity in Canada, 2003 to 2007. J Obstet Gynaecol Can 2010;32(9):847–855.

CHAPTER 5

# PREGNANCY-RELATED MORTALITY RATE

Between 1999/2000 and 2014/2015, pregnancy-related mortality fluctuated between 5.1 (95% CI: 3.2 to 6.9) and 11.9 (95% CI: 8.8 to 15.0) per 100,000 hospital deliveries. Between 2002/2003 and 2014/2015, the most common diagnostic categories associated with pregnancy-related deaths were: diseases of the circulatory system; other indirect causes; postpartum hemorrhage; hypertension complicating pregnancy, childbirth and the puerperium; and obstetric embolism.

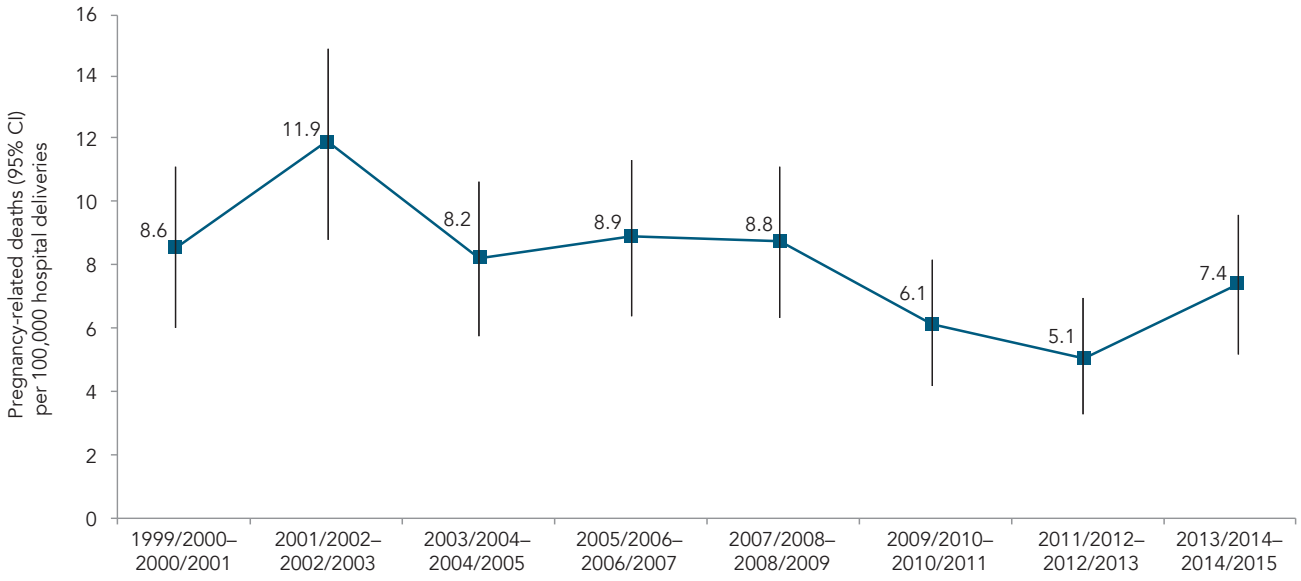
## DEFINITION

The definition of pregnancy-related mortality under the International Statistical Classification of Diseases, Tenth Revision (ICD-10) is: "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death (obstetric and non-obstetric)."[1] In this report, the pregnancy-related mortality rate is expressed as the number of these deaths in hospital per 100,000 hospital deliveries.

This measure differs from the commonly reported maternal mortality ratio, which is defined per 100,000 live births, as "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]

**FIGURE 5.1**

PREGNANCY-RELATED MORTALITY RATE, BY FISCAL YEAR, CANADA (EXCLUDING QUEBEC), 1999/2000 TO 2014/2015




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

Manitoba data, which were incomplete for earlier years, were included from 2004/2005.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI= confidence interval

## 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. Data from Quebec were excluded because they do not contribute to the DAD. CIHI data were used instead of the more traditional vital statistics data because studies by the Canadian Perinatal Surveillance System have shown that hospitalization data are more comprehensive and timely.[2,3] Methods used are described in detail elsewhere.[3] The most responsible diagnostic category associated with each death was determined based on clinical expertise. In the assessment of temporal trends, the unit of analysis was two fiscal years rather than one, because of the small number of events. Manitoba data, which were incomplete for earlier years, were included from fiscal year 2004/2005.

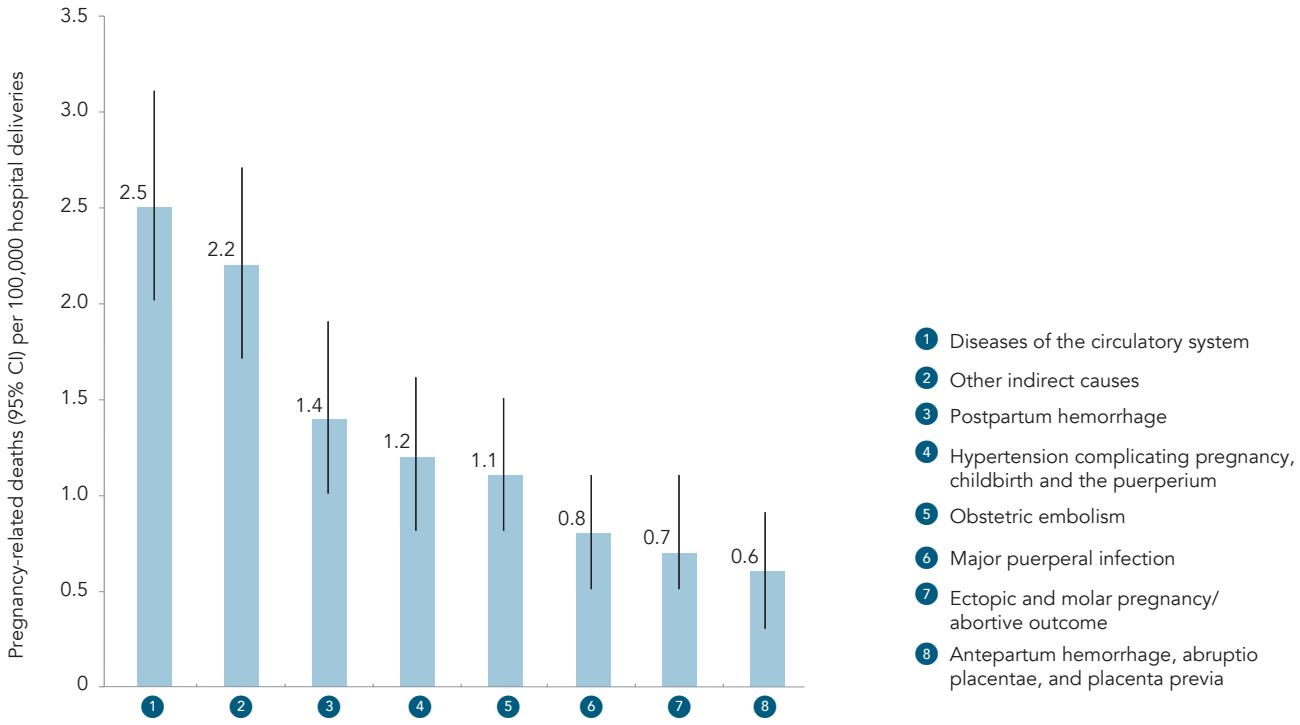
## RESULTS

Between 1999/2000 and 2014/2015, pregnancy-related mortality fluctuated between 5.1 (95% CI: 3.2 to 6.9) and 11.9 (95% CI: 8.8 to 15.0) per 100,000 hospital deliveries (Figure 5.1). These rate fluctuations were usually not statistically significant (Table 5.1).

The most common diagnostic categories associated with these deaths in 2002/2003 to 2014/2015 were diseases of the circulatory system; other indirect causes (e.g., diseases of the digestive system, mental disorders and diseases of the nervous system complicating pregnancy, childbirth and the puerperium); postpartum hemorrhage; hypertension complicating pregnancy, childbirth and the puerperium; and obstetric embolism (Figure 5.2). The rates are of diagnoses associated with each death rather than of the underlying cause as the

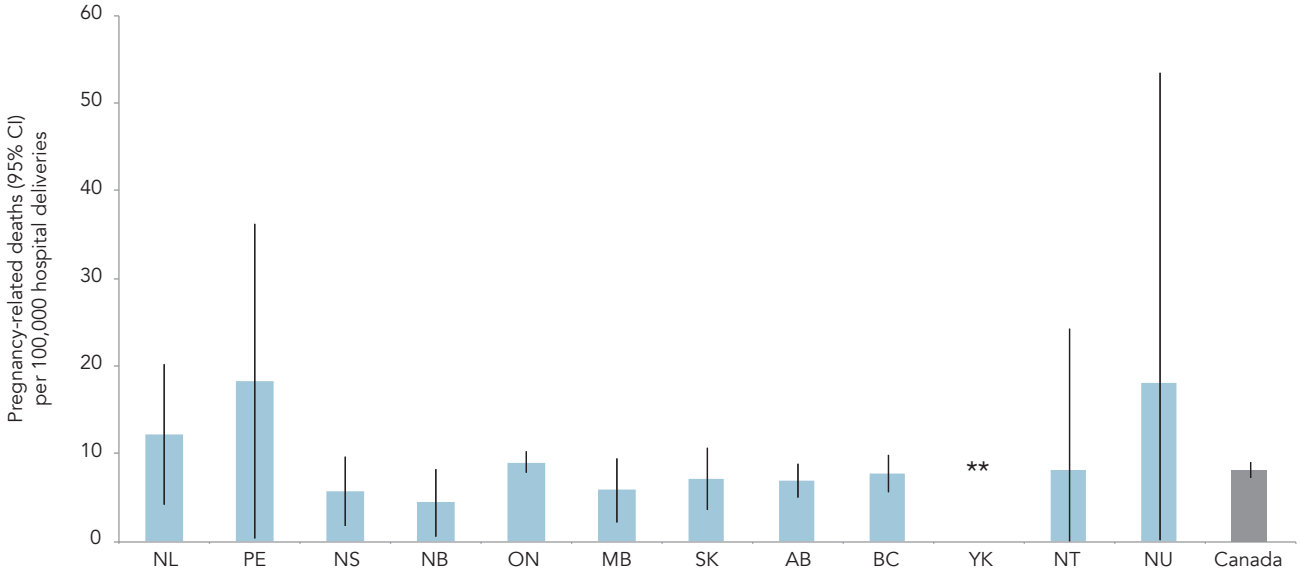
**FIGURE 5.2**

MOST COMMON DIAGNOSTIC CATEGORIES ASSOCIATED WITH PREGNANCY-RELATED DEATHS, CANADA (EXCLUDING QUEBEC), 2002/2003 TO 2014/2015




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Manitoba data, which were incomplete for earlier years, were included from 2004/2005.
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**FIGURE 5.3**
PREGNANCY-RELATED MORTALITY, BY PROVINCE/TERRITORY OF OCCURRENCE, CANADA (EXCLUDING QUEBEC), 1999/2000 TO 2014/2015




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** No pregnancy-related deaths were recorded in the Yukon during this time period.
Manitoba data, which were incomplete for earlier years, were included from 2004/2005.
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

DAD does not report the underlying cause of death. Multiple diagnoses could be coded for each death.

Between 1999/2000 and 2014/2015, the highest pregnancy-related mortality rates were observed in Prince Edward Island and Nunavut; the lowest rates were observed in New Brunswick, Manitoba and Nova Scotia (Figure 5.3). No pregnancy-related deaths were recorded in the Yukon during this time period. Provincial and territorial rates must be interpreted with caution due to a high degree of uncertainty as a result of the small number of maternal deaths in some jurisdictions.

## LIMITATIONS

Deaths that occurred outside the hospital were not included in this analysis. The DAD data include multiple diagnostic codes for each death, but do not assign an underlying cause of death. Therefore, the more commonly reported maternal mortality ratio which takes into consideration the underlying cause of death cannot be presented from these data.

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCES

1. World Health Organization. The WHO Application of ICD-10 to deaths during pregnancy, childbirth and the puerperium: ICD-MM. Geneva: World Health Organization; 2012.

2. Lisonkova S, Bartholomew S, Rouleau J, Liu S, Liston RM, Joseph KS. Temporal trends in maternal mortality in Canada I: estimates based on vital statistics data. J Obstet Gynaecol Can 2011;33(10):1011–1019.

3. Lisonkova S, Liu S, Bartholomew S, Liston RM, Joseph KS. Temporal trends in maternal mortality in Canada II: estimates based on hospitalization data. J Obstet Gynaecol Can 2011;33(10):1020–1030.

CHAPTER 6

# PRETERM BIRTH RATE

The rate of preterm birth in Canada fluctuated between 8.0 (95% CI: 7.9–8.1) and 8.3 (95% CI: 8.2–8.4) per 100 live births between 2005 and 2014. The rate of preterm birth was 8.1 per 100 live births in 2014.

## DEFINITION

The 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.

## DATA SOURCE

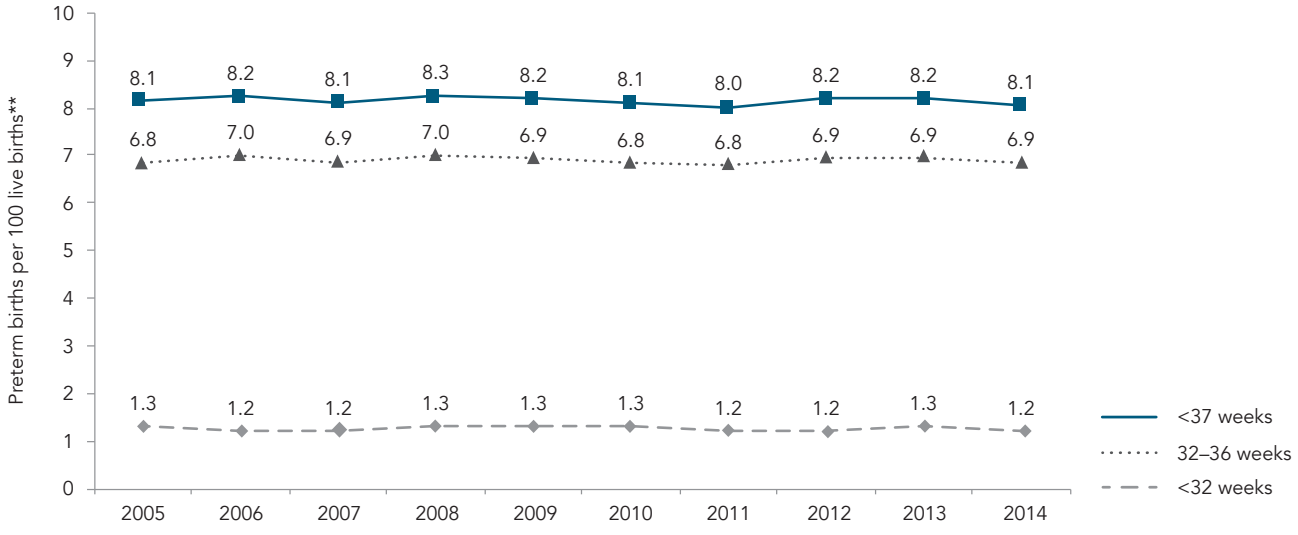
Preterm birth rates were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data from Quebec were excluded because they do not contribute to DAD.

## RESULTS

The rate of preterm births fluctuated between 8.0 (95% CI: 7.9–8.1) and 8.3 (95% CI: 8.2–8.4) per 100 live births between 2005 and 2014. Most preterm births were delivered between 32 and 36 weeks gestation, with the rate ranging from 6.8 (95% CI: 6.8–6.9) to 7.0 (95% CI: 6.9–7.1) per 100 live births. During the same period, the rate of very preterm birth (<32 weeks) remained stable at 1.2 (95% CI: 1.2–1.3) to 1.3 (95% CI: 1.2–1.3) per 100 live births (Figure 6.1).

**FIGURE 6.1**

RATE OF PRETERM BIRTH, CANADA (EXCLUDING QUEBEC), 2005–2014



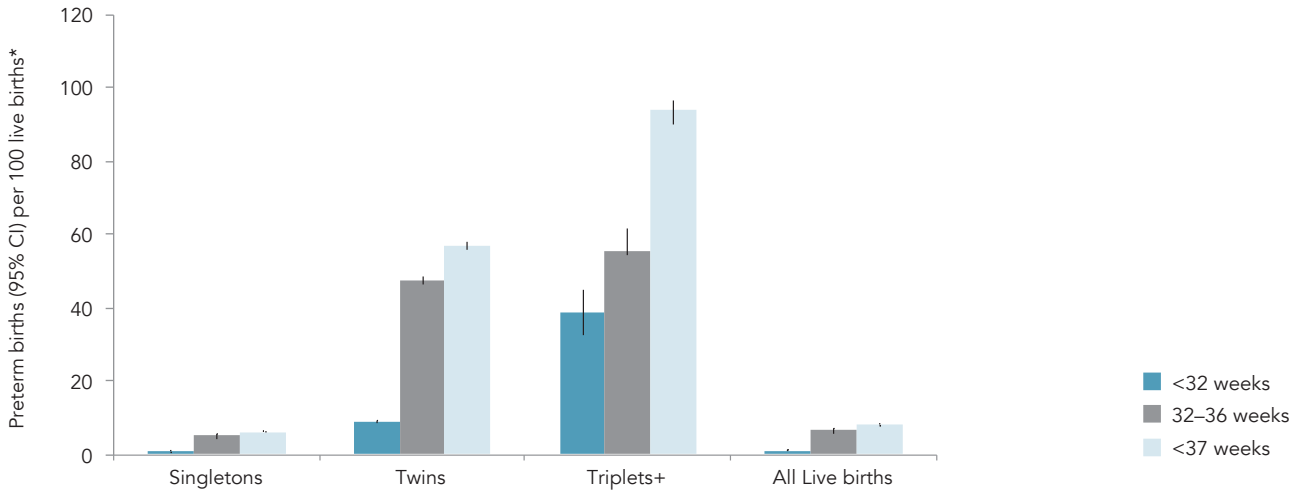

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

** Excludes live births with unknown gestational age

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 6.2**

RATE OF PRETERM BIRTH BY PLURALITY, CANADA (EXCLUDING QUEBEC), 2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

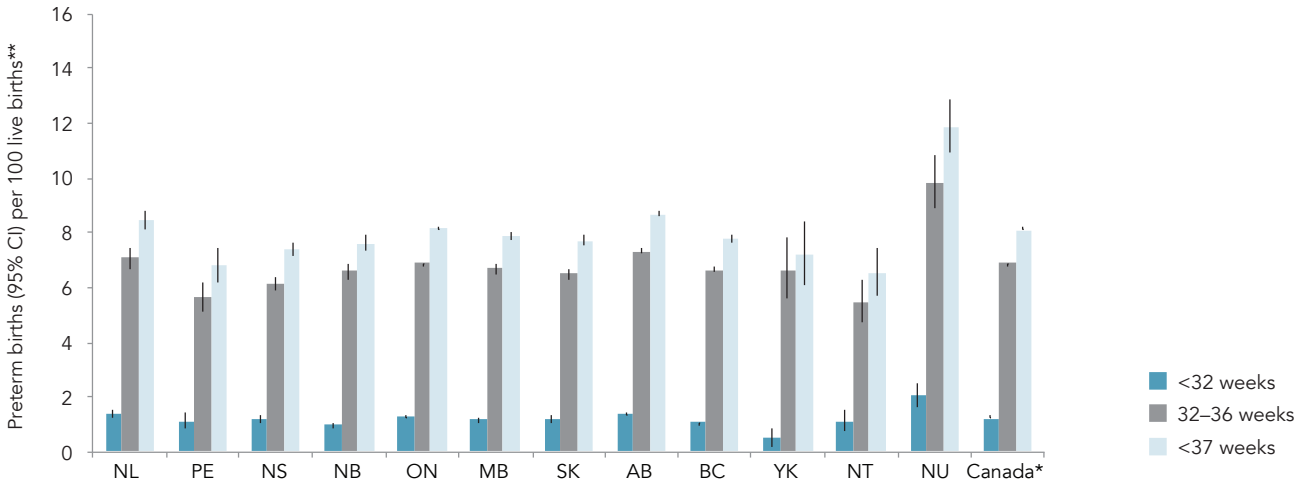
* Excludes live births with unknown gestational age

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 6.3**

RATE OF PRETERM BIRTH, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data for unknown provinces and territories

** Excludes live births with unknown gestational age.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

Preterm birth rates were substantially higher among multiple births. In 2014, preterm birth rates among singleton, twin, and triplet or higher order live births were 6.3 (95% CI: 6.2–6.4), 56.7 (95% CI: 55.7–57.7), and 93.8 (95% CI: 90.1–96.4) per 100 live births, respectively (Figure 6.2).

From 2010 to 2014, preterm birth rates ranged from 6.5 per 100 live births in the Northwest Territories (95% CI: 5.7–7.4) to 11.9 per 100 live births (95% CI: 10.9–12.9) in Nunavut (Figure 6.3).

## LIMITATIONS

An important limitation of data on preterm birth is error in reporting of gestational age, particularly when it is based on menstrual dates. These errors have diminished in recent decades as ultrasound confirmation of gestational age is widely used across Canada; however, dating ultrasounds performed in the first trimester are more accurate than in the second trimester.[1]

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCE

1. Butt K, Lim K. Determination of gestational age by ultrasound. J Obstet Gynaecol Can 2014;36(2):171–181.

CHAPTER 7

# POST-TERM BIRTH RATE

The rate of post-term birth fluctuated in Canada between 0.3 (95% CI: 0.3–0.4) and 0.5 (95% CI: 0.4–0.5) per 100 live births between 2005 and 2014. The rate of post-term birth rate was 0.3 per 100 live births in 2014.

## DEFINITION

The post-term 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.

## DATA SOURCE

The rates of post-term birth were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data from Quebec were excluded because they do not contribute to DAD.

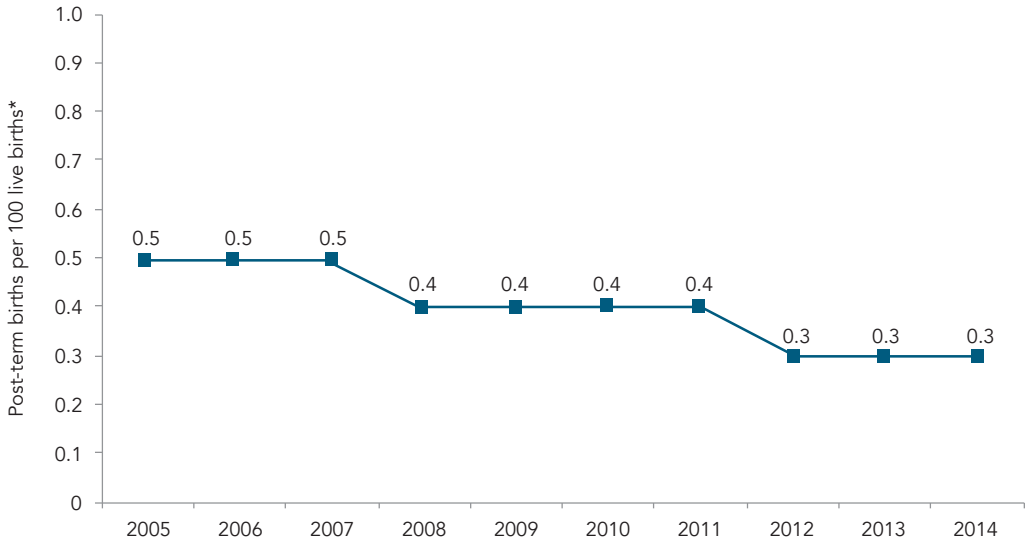
## RESULTS

The post-term birth rate declined between 0.5 (95% CI: 0.4–0.5) and 0.3 (95% CI: 0.3–0.4) per 100 live births between 2005 and 2014. (Figure 7.1).

Between 2010–2014, the Canadian average was 0.4 per 100 live births. Rates ranged from 0.1 per 100 live births (95% CI: 0.0–0.3) in Nunavut to 1.5 per 100 live births (95% CI: 1.0–2.1) in Yukon (Figure 7.2).

**FIGURE 7.1**

RATE OF POST-TERM BIRTH, CANADA (EXCLUDING QUEBEC), 2005–2014



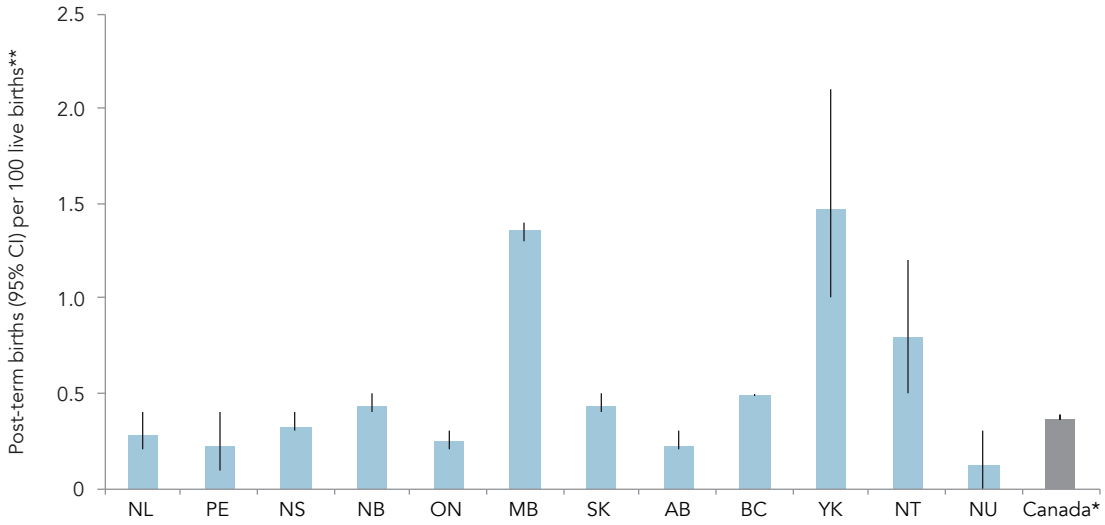

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Excludes live births with unknown gestational age

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 7.2**

RATE OF POST-TERM BIRTH, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data for unknown provinces and territories

** Excludes live births with unknown gestational age.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

## LIMITATIONS

An important limitation of data on post-term birth is error in reporting of gestational age, particularly when it is based on menstrual dates. These errors have diminished in recent decades as ultrasound confirmation of gestational age is widely used across Canada; however, dating ultrasounds offered in the first trimester are more accurate than in the second trimester.[1]

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCE

1. Butt K, Lim K. Determination of gestational age by ultrasound. J Obstet Gynaecol Can 2014;36(2):171–181.

CHAPTER 8

# SMALL-FOR-GESTATIONAL-AGE BIRTH RATE

The birth rate of small-for-gestational-age (SGA) among singleton infants fluctuated between 8.2 (95% CI: 8.1–8.3) and 8.4 (95% CI: 8.3–8.5) per 100 singleton live births between 2005 and 2008, and then increased steadily between 2008 and 2014, from 8.2 (95% CI: 8.1–8.3) to 9.1 (95% CI: 9.0–9.2) per 100 singleton live births. The rate of SGA was 9.1 per 100 singleton live births in 2014.

## DEFINITION

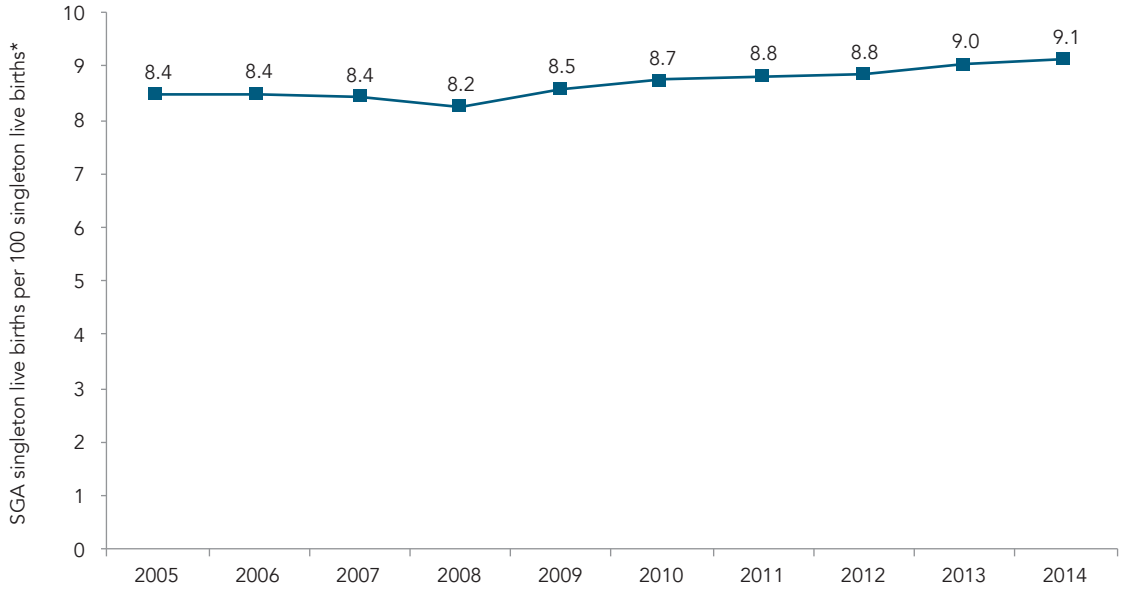
The small-for-gestational-age (SGA) birth rate is defined as the number of live births for which birth weight is below the 10th percentile of the sex and gestation-specific birth weight, expressed as a proportion of all singleton live births. The reference used for this report was the most recent population-based Canadian reference of birth weight for sex and gestational age, based on singleton live births delivered at gestational ages 22–43 weeks in the period 1994–1996.[1]

## DATA SOURCE

The birth rates of SGA were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data from Quebec were excluded because they do not contribute to DAD. Live births with unknown gestational age, live births with gestational age less than 22 weeks or greater than 43 weeks, live births with unknown birth weights, and multiple births were excluded from these calculations.

**FIGURE 8.1**

RATE OF SMALL-FOR-GESTATIONAL-AGE, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* 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.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 8.2**

RATE OF SMALL-FOR-GESTATIONAL-AGE, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014


Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** 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.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

## RESULTS

The birth rate of SGA fluctuated between 8.2 (95% CI: 8.1–8.3) and 8.4 (95% CI: 8.3–8.5) per 100 singleton live births between 2005 and 2008. Between 2008 and 2014, the rate gradually increased from 8.2 (95% CI: 8.1–8.3) to 9.1 (95% CI: 9.0–9.2) per 100 singleton live births. The SGA birth rate was 9.1 (95% CI: 9.0–9.2) per 100 singleton live births in 2014 (Figure 8.1). Between 2010 and 2014, rates ranged from 5.3 per 100 singleton live births (95% CI: 4.3–6.4) in Yukon to 9.6 (95% CI: 9.5–9.7) in Alberta (Figure 8.2).

## LIMITATIONS

An important limitation of data on SGA is error in reporting of gestational age, particularly when it is based on menstrual dates. These errors have diminished in recent decades as ultrasound confirmation of gestational age is widely used across Canada; however, dating ultrasounds offered in the first trimester are more accurate than in the second trimester.[2]

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCES

1. Kramer MS, Platt RW, Wen SW, Joseph KS, Allen A, Abrahamowicz M, Blondel B, Bréart G. Fetal/Infant Health Study Group of the Canadian Perinatal Surveillance System A new and improved population-based Canadian reference for birth weight for gestational age. Pediatrics 2001 Aug;108(2):E35.

2. Butt K, Lim K. Determination of gestational age by ultrasound. J Obstet Gynaecol Can 2014;36(2):171–181.

CHAPTER 9

# LARGE-FOR-GESTATIONAL-AGE BIRTH RATE

The birth rate of large-for-gestational-age (LGA) among singleton infants decreased from 11.6 (95% CI: 11.5–11.7) to 10.2 (95% CI: 10.1–10.3) per 100 singleton live births between 2005 and 2014. The birth rate of LGA was 10.2 in 2014.

## DEFINITION

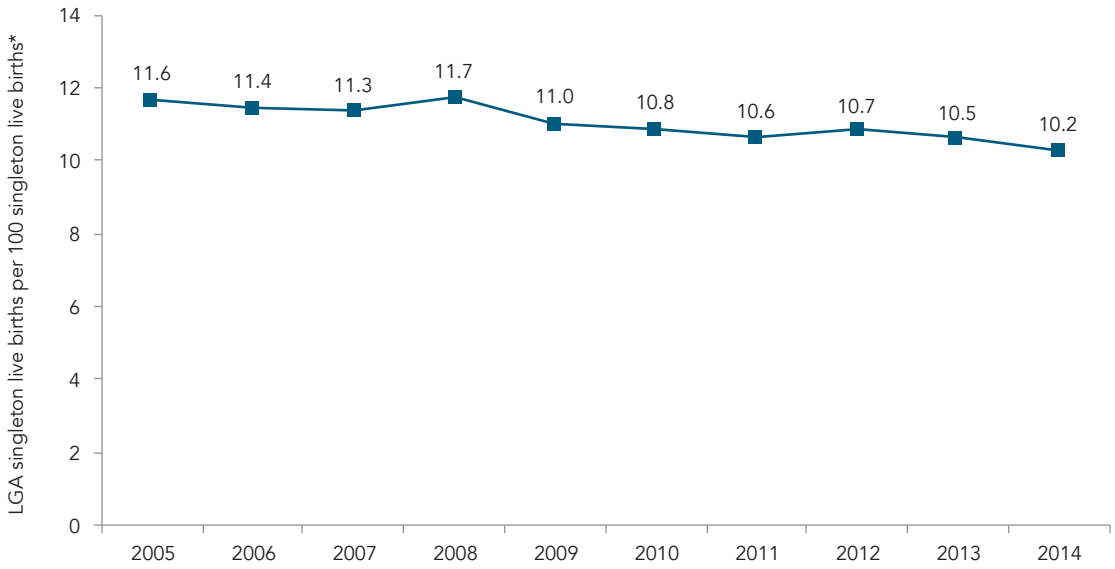
The birth rate of large-for-gestational-age (LGA) is defined as the number of live born singleton whose birth weight is above the 90th percentile of the sex- and gestation-specific birth weight for gestational age, expressed as a proportion of all singleton live births. The reference used for this report was the most recent population-based Canadian reference of birth weight for sex and gestational age, based on singleton live births delivered at gestational ages 22–43 weeks in the period 1994–1996.[1]

## DATA SOURCE

The LGA birth rates were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data from Quebec were excluded as they do not contribute to DAD. Live births with unknown gestational age, live births with gestational age less than 22 weeks or greater than 43 weeks, live births with unknown birth weights, and multiple births were excluded from these calculations.

**FIGURE 9.1**

RATE OF LARGE-FOR-GESTATIONAL-AGE, CANADA (EXCLUDING QUEBEC), 2005–2014



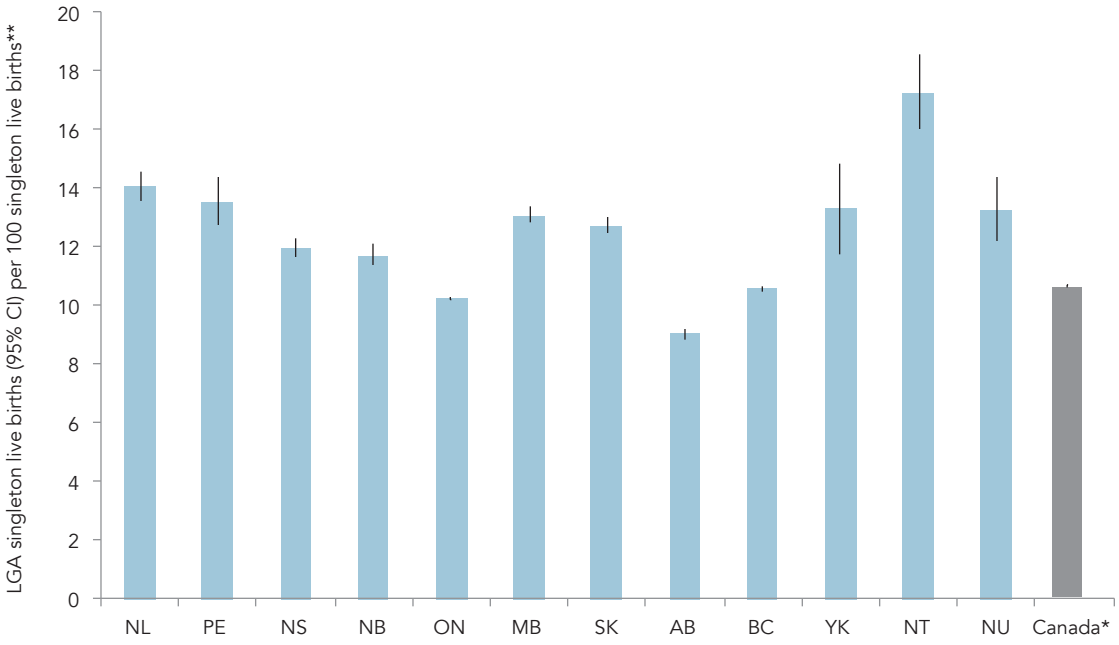

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* 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 Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 9.2**

RATE OF LARGE-FOR-GESTATIONAL-AGE, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** 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 Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

## RESULTS

The birth rate of LGA decreased from 11.6 (95% CI: 11.5–11.7) to 10.2 (95% CI: 10.1–10.3) per 100 singleton live births between 2005 and 2014 (Figure 9.1). Between 2010 and 2014, the birth rates for LGA ranged from 9.1 per 100 singleton live births (95% CI: 8.9–9.2) in Alberta to 17.3 (95% CI: 16.0–18.6) in the Northwest Territories (Figure 9.2).

## LIMITATIONS

An important limitation of data on LGA is error in reporting of gestational age, particularly when it is based on menstrual dates. These errors have diminished in recent decades as ultrasound confirmation of gestational age is widely used across Canada; however, dating ultrasounds offered in the first trimester are more accurate than in the second trimester.[2]

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCES

1. Kramer MS, Platt RW, Wen SW, Joseph KS, Allen A, Abrahamowicz M, Blondel B, Bréart G. Fetal/Infant Health Study Group of the Canadian Perinatal Surveillance System A new and improved population-based Canadian reference for birth weight for gestational age. Pediatrics 2001 Aug;108(2):E35.

2. Butt K, Lim K. Determination of gestational age by ultrasound. J Obstet Gynaecol Can 2014;36(2):171–181.

CHAPTER 10

# FETAL MORTALITY RATE

According to the Canadian definition, the fetal mortality rate among births ≥500 g birth weight or ≥20 weeks gestation at delivery fluctuated between 7.5 (95% CI: 7.1–7.8) and 8.1 (95% CI: 7.8–8.5) per 1,000 total births between 2005 and 2014.

According to the World Health Organization's definition:

- The fetal mortality rate among births ≥500 g birth weight (or ≥22 weeks gestation if birth weight was missing) fluctuated between 4.1 (95% CI: 3.9–4.4) and 4.7 (95% CI: 4.4–5.0) per 1,000 total births between 2005 and 2014.
- The fetal mortality rate among births ≥1,000 g birth weight (or ≥28 weeks gestation if birth weight was missing) fluctuated between 2.9 (95% CI: 2.7–3.1) to 3.4 (95% CI: 3.2–3.6) per 1,000 total births between 2005 and 2014.
- In 2014, the rates of fetal death per the three above-mentioned definitions were 8.1 (95% CI: 7.8–8.5), 4.4 (95% CI: 4.2–4.6) and 3.1 (95% CI: 2.9–3.3) per 1,000 total births respectively.

## DEFINITIONS

The fetal mortality rate is defined as the number of fetal deaths per 1,000 total births (live births and stillbirths). In all provinces and territories (excluding Quebec*), all stillbirths, including those following pregnancy termination, with a birth weight ≥500 g or a gestational age at delivery ≥20 weeks must be registered.

Fetal mortality rates were calculated based on the Canadian definition of stillbirth i.e., births with a birth weight ≥500 g or a gestational age at delivery of ≥20 weeks that show no evidence of life at birth. Fetal mortality rates were also calculated according to the World Health Organization's[1] recommendations (for international comparisons):

- Stillbirths with a birth weight of ≥500 g or if birth weight is missing, those with a gestational age at delivery ≥22 weeks; and
- Stillbirths among births with a birth weight ≥1,000 g, or if birth weight is missing, those with a gestational age at delivery ≥28 weeks.

For the cause-specific fetal death rates, the cause categories used were those described in the Canadian Perinatal Health Report, 2008 Edition.[2]

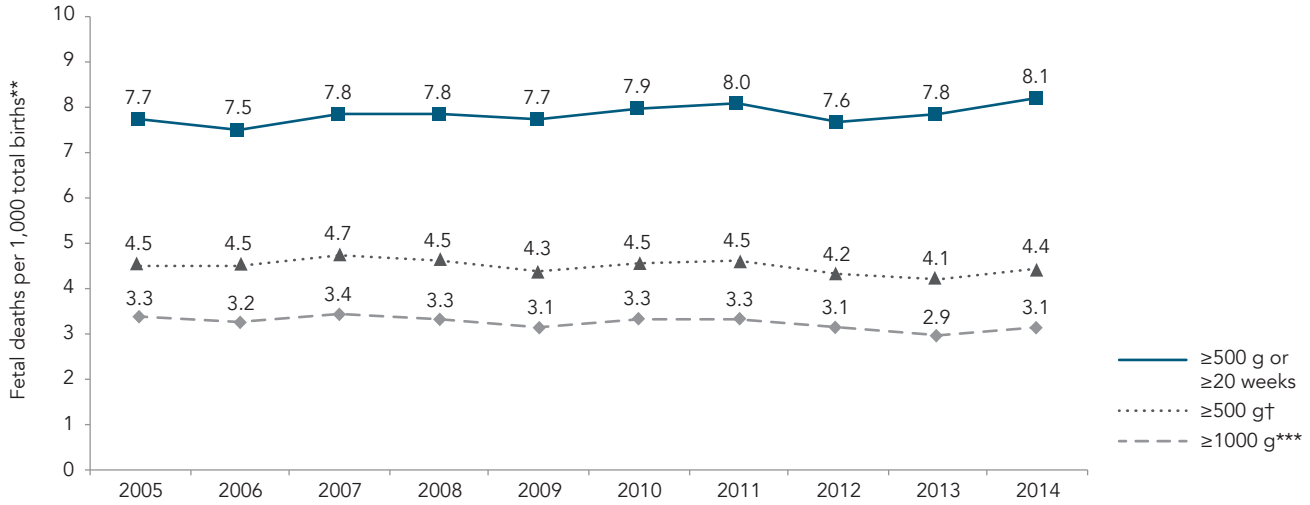
## DATA SOURCES

Fetal death rates were calculated using Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Cause-specific fetal death rates were calculated using the International Statistical Classification of Diseases, 10th Revision.[1] Data from Quebec were excluded because they do not contribute to DAD.

* Quebec requires the registration of stillbirths with a birth weight ≥500 g (i.e., Quebec does not use a gestational age criterion)

**FIGURE 10.1**

FETAL MORTALITY RATE, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown

** Includes live births and stillbirths

***Includes fetal deaths with a gestational age ≥28 weeks if birth weight is unknown

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

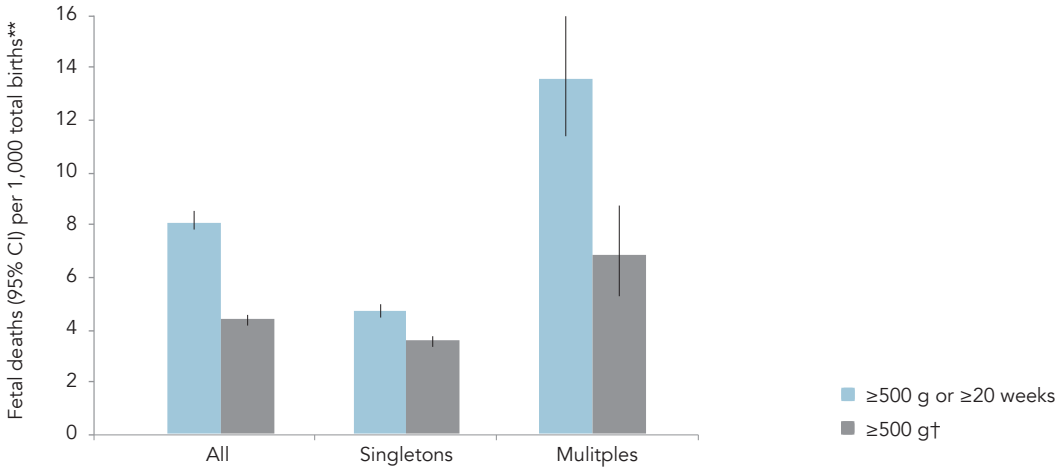
## RESULTS

The overall rate of fetal mortality among births ≥500 g birth weight or ≥20 weeks gestation at delivery fluctuated between 7.5 (95% CI: 7.1–7.8) and 8.1 (95% CI: 7.8–8.5) per 1,000 total births between 2005 and 2014. The fetal mortality rate among births ≥500 g birth weight (or ≥22 weeks gestation if birth weight was missing) fluctuated between 4.1 (95% CI: 3.9–4.4) and 4.7 (95% CI: 4.4–5.0) per 1,000 total births between 2005 and 2014. The fetal mortality rate among births ≥1,000 g birth weight (or ≥28 weeks gestational age if birth weight was missing) fluctuated between 2.9 (95% CI: 2.7–3.1) to 3.4 (95% CI: 3.2–3.6) per 1,000 total births between 2005 and 2014. In 2014, the rates of fetal death per the three above-mentioned definitions were 8.1 (95% CI: 7.8–8.5), 4.4 (95% CI: 4.2–4.6) and 3.1 (95% CI: 2.9–3.3) per 1,000 total births respectively (Figure 10.1).

In 2014, the fetal mortality rate among births ≥500 g birth weight or ≥20 weeks gestation at delivery was significantly higher among multiple births (13.5 per 1,000 total births, 95% CI: 11.4–16.0) than among singletons (4.8, 95% CI: 4.5–5.0). The rates (according to the WHO definition) among births ≥500 g birth weight (or ≥22 weeks gestation if birth weight was missing) were 6.8 (95% CI: 5.3–8.7) among multiples and 3.6 (95% CI: 3.3–3.8) among singletons (Figure 10.2).

**FIGURE 10.2**

FETAL MORTALITY RATE, BY PLURALITY, CANADA (EXCLUDING QUEBEC), 2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown

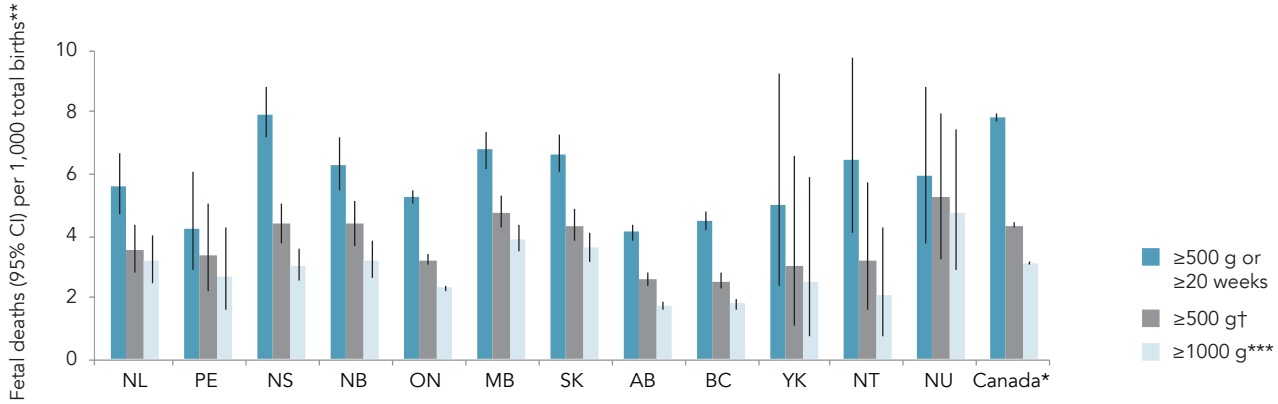
** Includes live births and stillbirths

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 10.3**

FETAL MORTALITY RATE, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown

** Includes live births and stillbirths

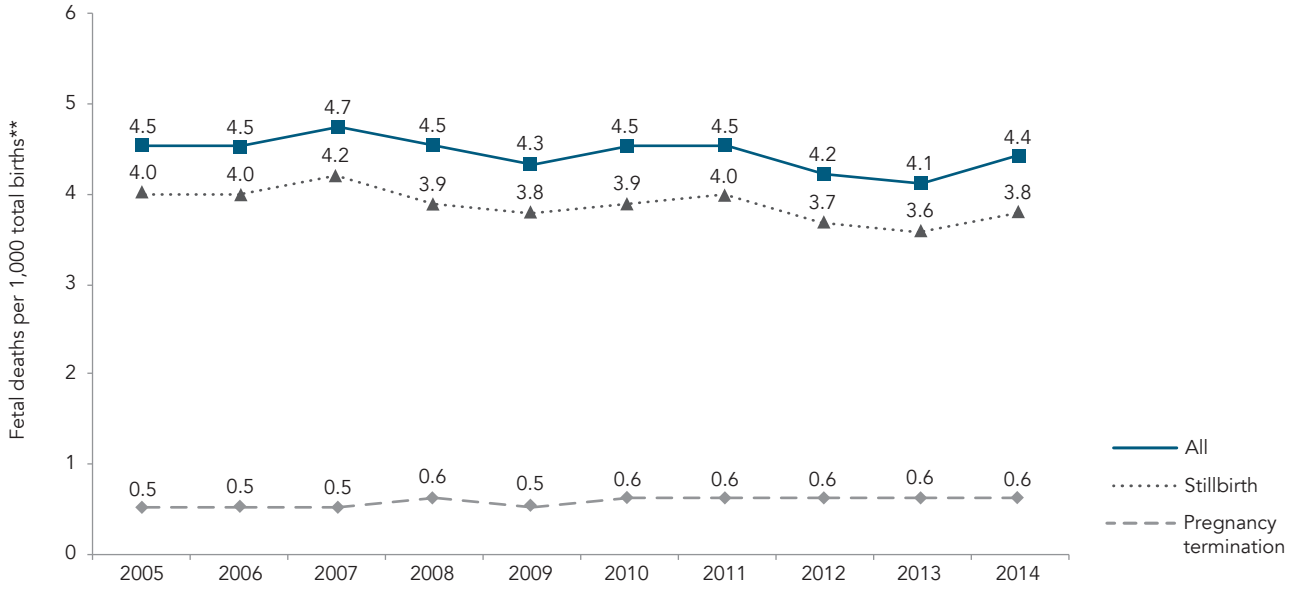
***Includes fetal deaths with a gestational age ≥28 weeks if birth weight is unknown

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 10.4**

MORTALITY RATE IN FETUSES ≥500 G† BY TYPE, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

** Includes live births and stillbirths

† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown

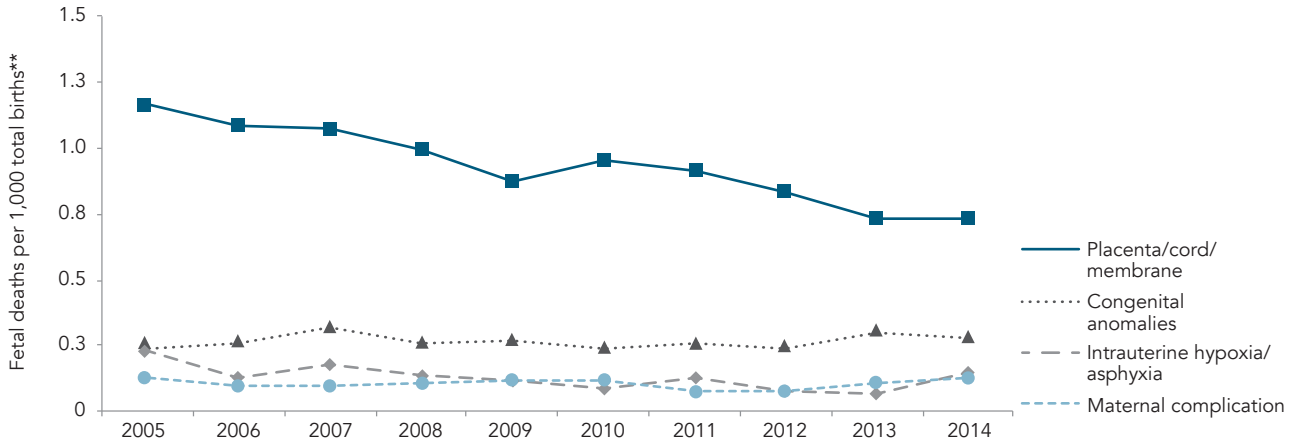
Data for Quebec were excluded because they do not contribute to CIHI-DAD.

In 2010–2014, fetal mortality rates among births ≥500 g birth weight or ≥20 weeks gestation ranged from 4.1 per 1,000 total births (95% CI: 3.9–4.4) in Alberta to 8.0 (95% CI: 7.2–8.9) in Nova Scotia (Figure 10.3). During the same time period, fetal mortality rates among births ≥500 g birth weight (or ≥22 weeks gestation if birth weight was missing) ranged from 2.5 per 1,000 births (95% CI: 2.3–2.8) in British Columbia to 5.3 per 1,000 births (95% CI: 3.3–8.0) in Nunavut. In 2010–2014 fetal mortality rates among births ≥1,000 g birth weight (or ≥28 weeks gestational age if birth weight was missing) ranged from 1.8 per 1,000 births (95% CI: 1.6–1.9) in Alberta to 4.8 per 1,000 births (95% CI: 2.9–7.5) in Nunavut.

The fetal mortality among births ≥500 g birth weight at delivery (or ≥22 weeks gestation if birth weight was missing) excluding terminations of pregnancy fluctuated from 3.6 (95% CI: 3.4–3.8) to 4.2 (95% CI: 4.0–4.4) deaths per 1,000 total births between 2005 and 2014. The rate of termination of pregnancy with a birth weight ≥500 g or ≥20 weeks gestational age remained steady from 0.5 (95% CI: 0.4–0.5) per 1,000 total births in 2005 to 0.6 (95% CI: 0.5–0.7) per 1,000 total births in 2014 (Figure 10.4). The rate of fetal mortality for causes related to the placenta/cord/membranes decreased from 1.2 (95% CI: 1.0–1.3) to 0.7 (95% CI: 0.6–0.8) per 1,000 total births during the same period. Other cause-specific fetal mortality rates were stable (Figure 10.5).

**FIGURE 10.5**

MORTALITY RATE IN FETUSES ≥500 G† (EXCLUDING TERMINATION OF PREGNANCIES), BY CAUSE, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

** Includes live births and stillbirths

† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

## LIMITATIONS

Causes of fetal death are not always discernable. 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.[3] Pregnancy terminations due to congenital anomaly diagnosis cannot be distinguish from those motivated by other indications.

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCES

1. World Health Organization. International Statistical Classification of Diseases and Related Health Problems, 10th Revision, 2008 Edition. Geneva: World Health Organization; Ottawa, 2008.

2. Public Health Agency of Canada. Canadian Perinatal Health Report, 2008 Edition. Ottawa, 2008.

3. Joseph KS, Kinniburgh B, Hutcheon JA, Mehrabadi A, Basso M, Davies C, Lee L. Determinants of increases in stillbirth rates from 2000 to 2010. CMAJ 2013;185(8):E345–E351.

CHAPTER 11A

# INFANT MORTALITY RATE

The rate of infant mortality fluctuated between 4.9 (95% CI: 4.6–5.1) and 5.4 (95% CI: 5.1–5.7) per 1,000 live births between 2002 and 2011. The infant mortality rate among live births ≥500 g fluctuated between 3.7 (95% CI: 3.5–4.0) and 4.2 (95% CI: 3.9–4.5) per 1,000 live births between 2001 and 2010. Neonatal death accounted for 73% of infant deaths in 2011. Between 2007 and 2011, immaturity and congenital anomalies were the leading causes of neonatal death, while congenital anomalies were the leading cause of postneonatal death.

## DEFINITIONS

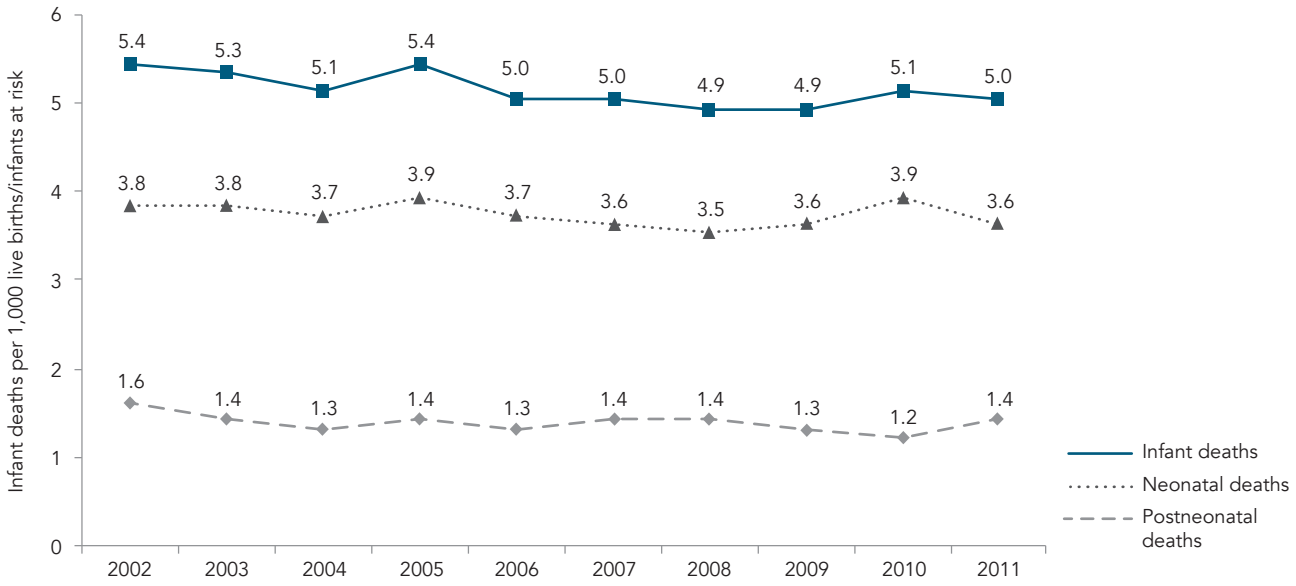
The infant mortality rate is defined as the number of deaths of live born babies in the first year after birth per 1,000 live births. Infant deaths can be subdivided into neonatal deaths (0–27 days) and postneonatal deaths (28–364 days). For postneonatal mortality, the denominator is the number of neonatal survivors, i.e., those who survived 28 days.

## DATA SOURCES

Infant mortality rates were calculated from vital statistics data (death registrations). Data from Ontario were excluded because of data quality concerns.[1] Cause-specific infant mortality was

**FIGURE 11A.1A**

CRUDE MORTALITY RATES, CANADA (EXCLUDING ONTARIO), 2002–2011




Source: Statistics Canada, Vital Statistics

Data from Ontario were excluded because of data quality concerns.

defined according to modified International Collaborative Effort (ICE) groupings comprising of eight categories: congenital anomalies, asphyxia, immaturity, infection, sudden infant death syndrome (SIDS), other sudden or unexplained infant death, external causes, and other conditions.[2]

## RESULTS

The rate of infant mortality fluctuated between 4.9 (95% CI: 4.6–5.1) and 5.4 (95% CI: 5.1–5.7) per 1,000 live births between 2002 and 2011 (Figure 11A.1A). During that period, neonatal mortality rates fluctuated between 3.5 (95% CI: 3.3–3.7) and 3.9 (95% CI: 3.6–4.1) per 1,000 live births, while postneonatal mortality rates fluctuated between 1.2 (95% CI: 1.1–1.4) and 1.6 (95% CI: 1.5–1.8) per 1,000 neonatal survivors. Neonatal mortality accounted for 73% of infant deaths in 2011.

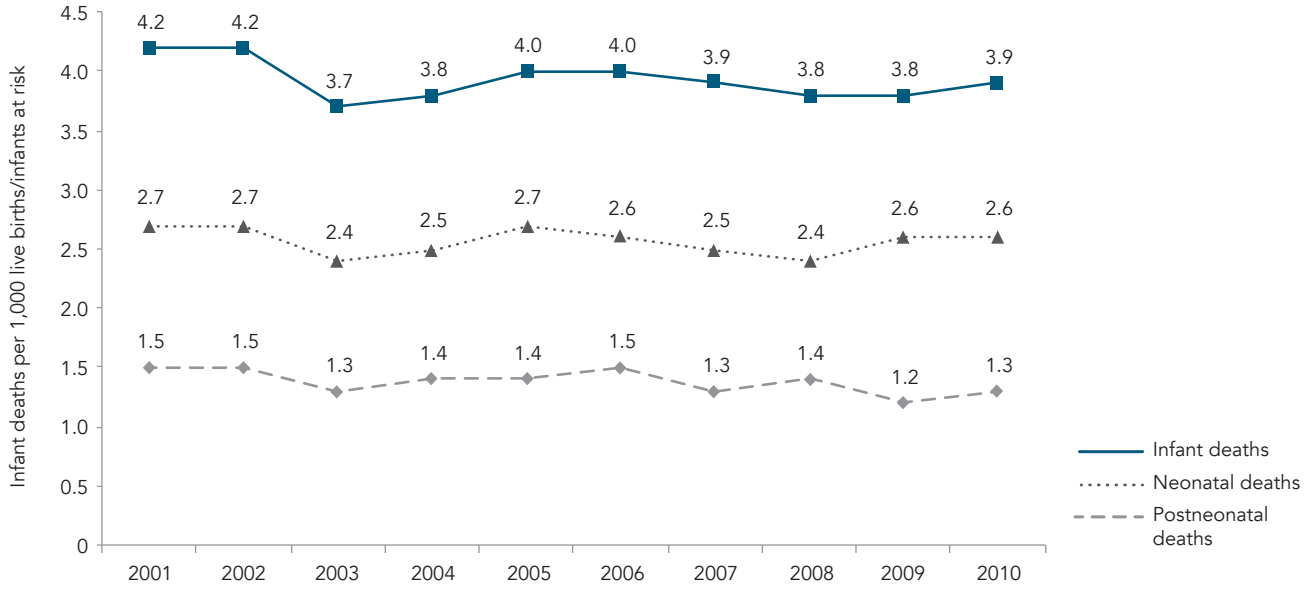
The infant mortality rate among live births ≥500 g fluctuated between 3.7 (95% CI: 3.5–4.0) and 4.2 (95% CI: 3.9–4.5) per 1,000 live births between 2001 and 2010 (Figure 11A.1B). It was 3.9 (95% CI: 3.6–4.1) per 1,000 live births in 2010. Neonatal and postneonatal mortality rates fluctuated between 2.4 (95% CI: 2.2–2.7) and 2.7 (95% CI: 2.5–2.9) per 1,000 live births, and from 1.2 (95% CI: 1.0–1.3) and 1.5 (95% CI: 1.3–1.7) per 1,000 neonatal survivors.

Between 2002 and 2011, the infant mortality rate ranged from 3.6 per 1,000 live births (95% CI: 2.4–5.3) in Prince Edward Island to 17.9 per 1,000 live births (95% CI: 14.1–22.4) in Nunavut (Figure 11A.2).

For overall infant deaths, during the period 2007–2011, the leading causes of death were immaturity (29.6%), congenital anomalies (21.7%) and other/unknown (20.3%) (Figure 11A.3A).The leading causes of neonatal death were immaturity (37.6%) and congenital anomalies (21.4%) (Figure 11A.3B). The leading causes of postneonatal death were congenital anomalies (22.3%) and sudden infant death syndrome (SIDS) (19.6%) (Figure 11A.3C).

**FIGURE 11A.1B**

INFANT MORTALITY RATES FOR BIRTHS ≥500 G†, CANADA (EXCLUDING ONTARIO), 2001–2010



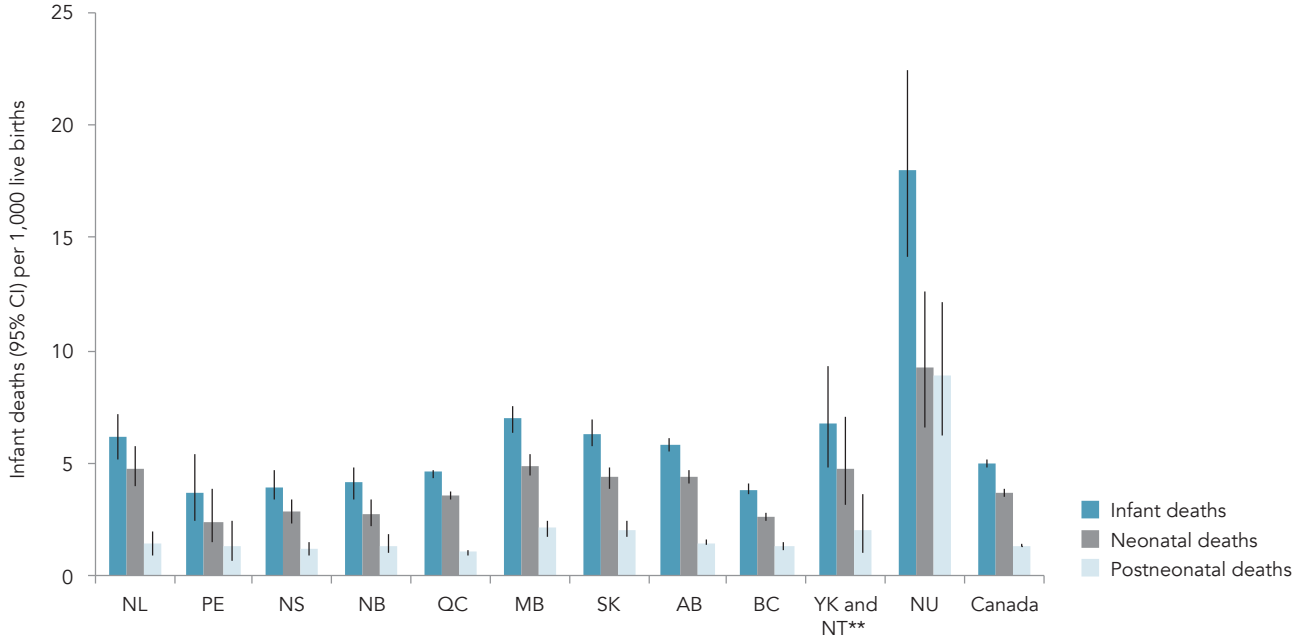

Source: Statistics Canada, Vital Statistics, Birth-Death linked file

† 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.

Data from Ontario were excluded because of data quality concerns.

**FIGURE 11A.2**

CRUDE MORTALITY RATES, BY PROVINCE/TERRITORY, CANADA (EXCLUDING ONTARIO), 2007–2011




Source: Statistics Canada, Vital Statistics

Data from Ontario were excluded because of data quality concerns.

** Combined due to low cell counts

CI = confidence interval

**FIGURE 11A.3A**

PROPORTION (%) OF INFANT DEATHS BY CAUSE, CANADA (EXCLUDING ONTARIO), 2007–2011

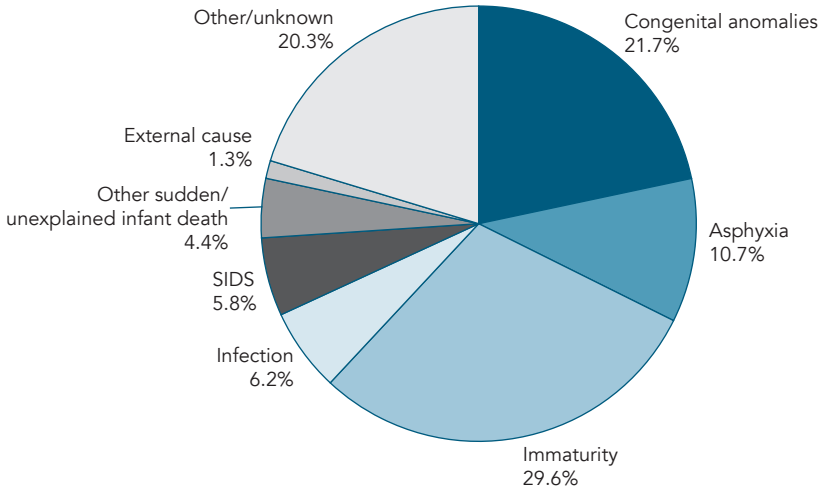


**FIGURE 11A.3B**

PROPORTION (%) OF NEONATAL DEATHS BY CAUSE, CANADA (EXCLUDING ONTARIO), 2007–2011

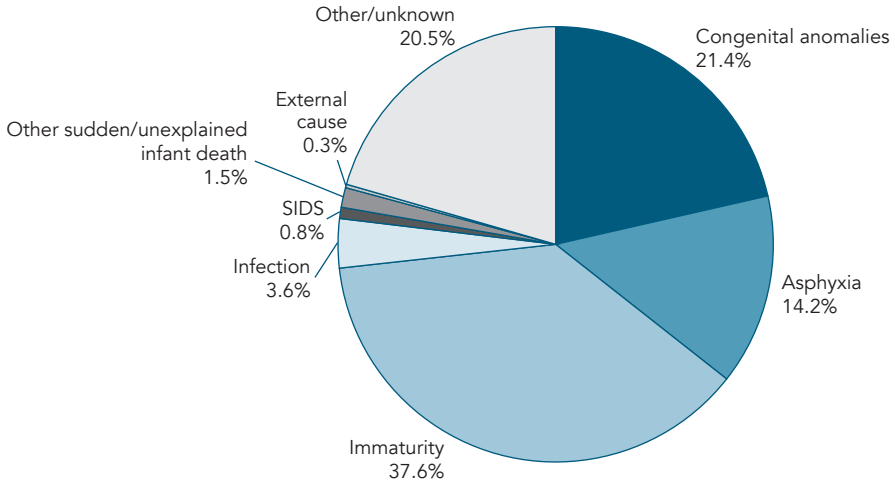
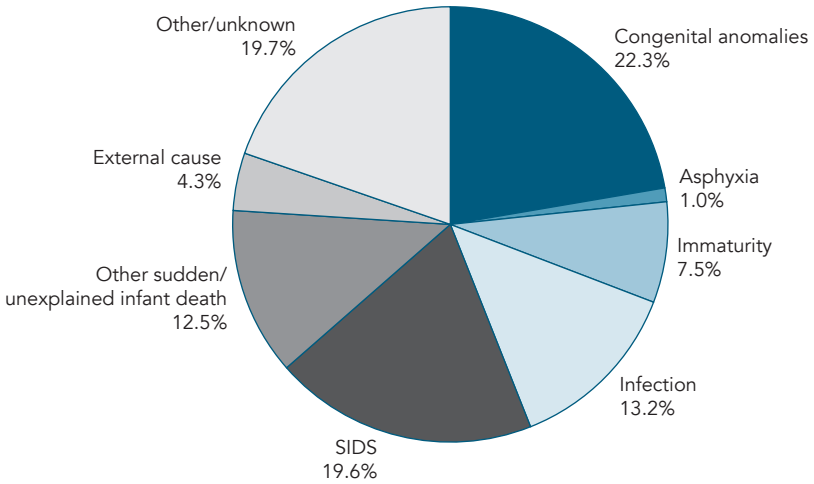



**FIGURE 11A.3C**

PROPORTION (%) OF POSTNEONATAL DEATHS BY CAUSE, CANADA (EXCLUDING ONTARIO), 2007–2011




Source: Statistics Canada, Vital Statistics

Data from Ontario were excluded because of data quality concerns.

## LIMITATION

Vital statistics data have been found to be affected by regional variations in birth registration, particularly for extremely small, immature newborns.[3–5]

## REFERENCES


1. Public Health Agency of Canada. Canadian Perinatal Health Report, 2008 Edition. Ottawa, 2008.
2. Cole S, Hartford RB, Bergsjø P, McCarthy B. International Collaborative Effort (ICE) on birth weight, plurality, perinatal, and infant mortality III: a method of grouping underlying causes of infant death to aid international comparisons. Acta Obstet Gynecol Scand 1989;68(2):113–117.
3. 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(8):1047–1052.
4. Joseph KS, Allen A, Kramer MS, Cyr M, Fair M. Changes in the registration of stillbirths <500 g in Canada, 1985–1995. Paediatr Perinat Epidemiol 1999;13(3):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(1):14–22.

CHAPTER 11B

# NEONATAL MORTALITY RATE

Between 2005 and 2014, the neonatal mortality rates fluctuated between 3.5 (95% CI: 3.3–3.7) and 4.0 (95% CI: 3.8–4.3) per 1,000 live births. Immaturity, congenital anomalies and asphyxia were the leading causes of neonatal deaths.

## DEFINITION

Neonatal mortality rate is defined as the number of deaths among infants <28 days of age per 1,000 live births.

## DATA SOURCES

Rates of neonatal mortality were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Cause-specific fetal death rates were calculated using the International Statistical Classification of Diseases, 10th Revision.[1] Data from Quebec were excluded because they do not contribute to DAD.

## RESULTS

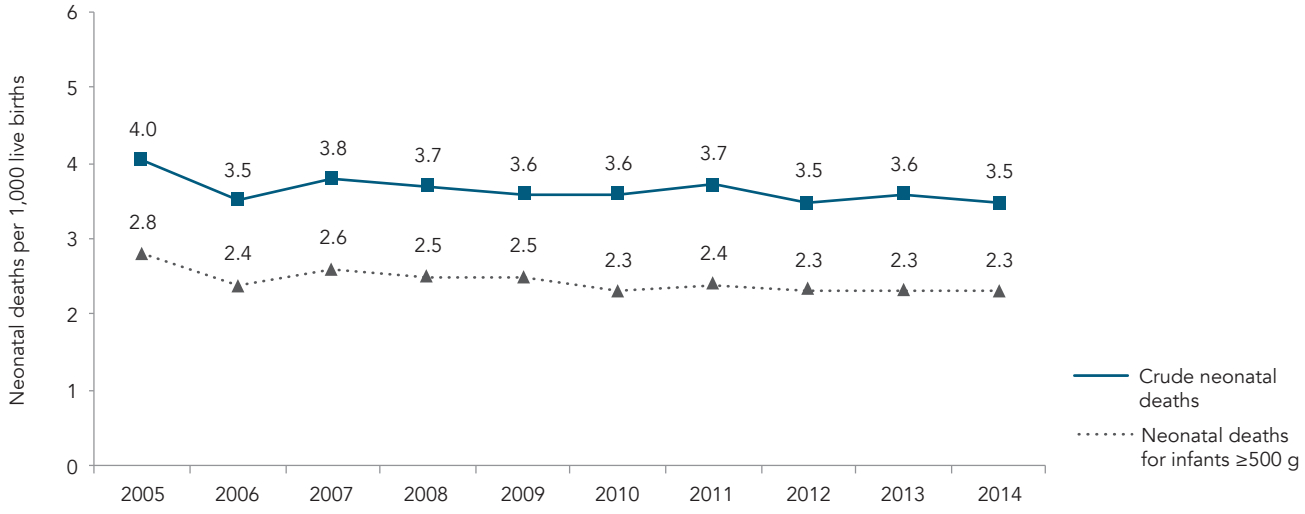
Between 2005 and 2014, the crude neonatal mortality rates fluctuated between 3.5 (95% CI: 3.3–3.7) and 4.0 (95% CI: 3.8–4.3) per 1,000 live births (Figure 11B.1).

The neonatal mortality rate among live births ≥500 g fluctuated between 2.3 (95% CI: 2.1–2.5) and 2.8 (95% CI: 2.6–3.0) per 1,000 live births between 2005 and 2014 (Figure 11B.1).

In 2005–2014, the neonatal mortality rate ranged from 2.3 (95% CI: 1.3–3.7) per 1,000 live births in Prince Edward Island to 8.5 (95% CI: 5.9–11.7) per 1,000 live births in Nunavut (Figure 11B.2).

**FIGURE 11B.1**

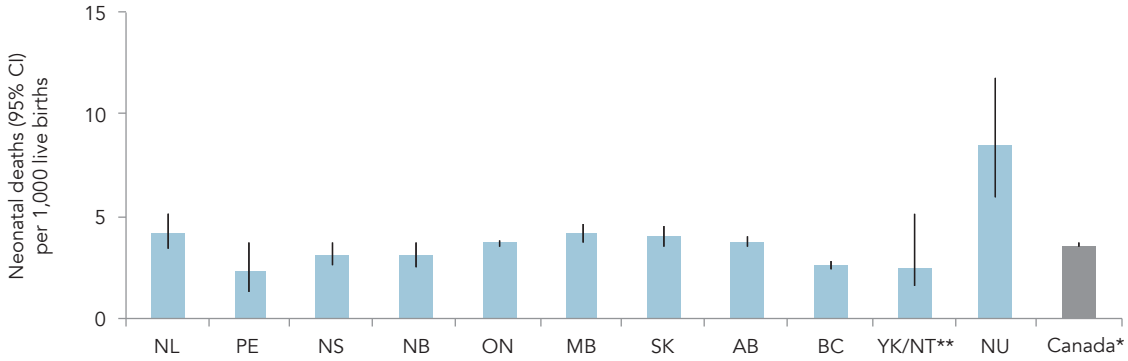
NEONATAL MORTALITY IN CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 11B.2**

NEONATAL MORTALITY RATES BY PROVINCE AND TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

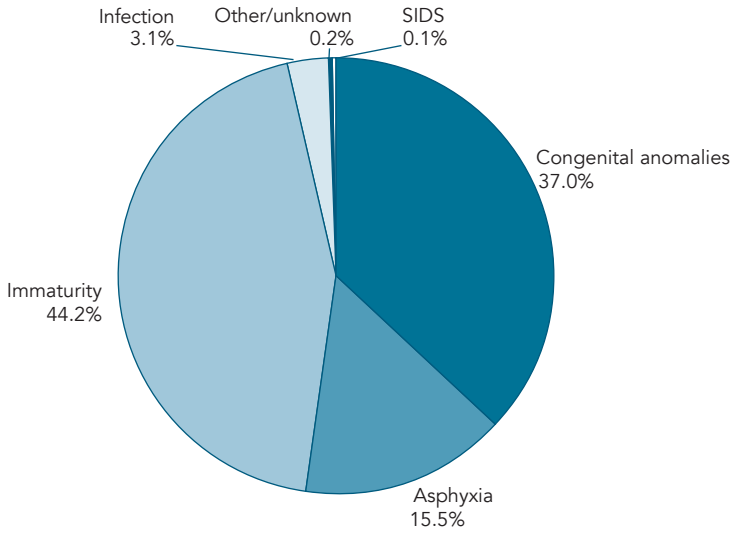
** Combined due to low cell counts

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 11B.3**

PROPORTION (%) OF NEONATAL DEATHS BY CAUSE, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

The leading causes of neonatal death (Figure 11B.3) were immaturity (42.9%), congenital anomalies (37.3%) and asphyxia (16.2%).

## LIMITATIONS

Data from CIHI-DAD are not directly comparable to infant mortality measures based on vital statistics data as they come from a different data source, and span a different time period.

See Appendix B for general limitations using CIHI-DAD.

## REFERENCE

1. World Health Organization. (1992). International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). Geneva: WHO.

CHAPTER 12

# BIRTH PREVALENCE OF CONGENITAL ANOMALIES

The prevalence at birth of congenital anomalies decreased from 402.1 (95% CI: 394.5–409.7) to 377.5 (95% CI: 370.4–384.6) per 10,000 total births between 2005 and 2007 then increased to 430.5 (95% CI: 423.0–438.1) per 10,000 total births in 2014.

## DEFINITION

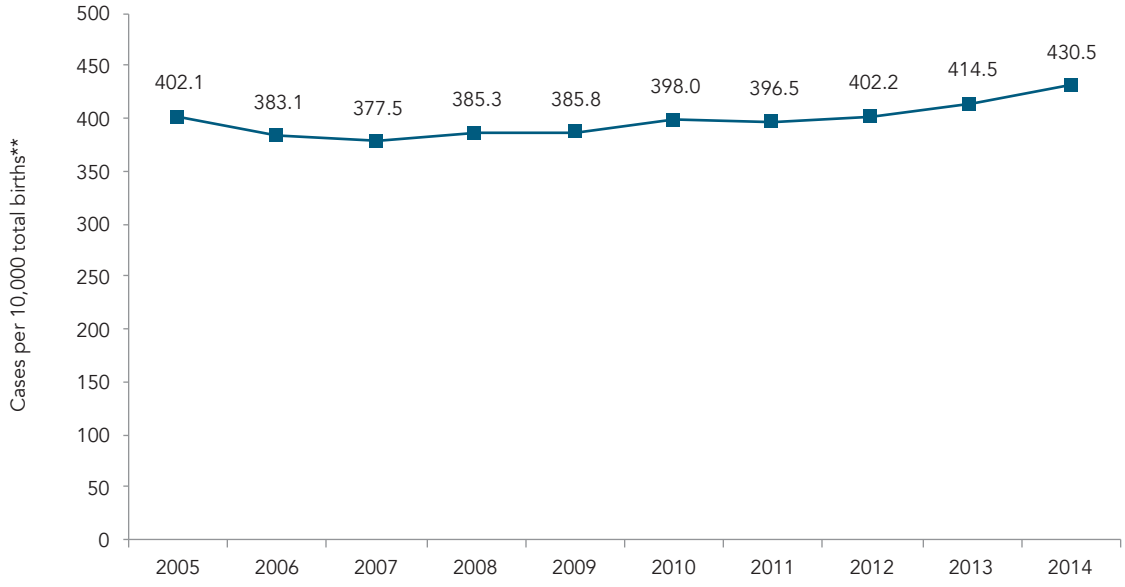
Congenital anomalies, birth defects and congenital malformations are synonymous terms that describe an abnormality of structure or function present at birth.[1] However, some congenital anomalies may not be diagnosed until months or years after birth. The prevalence of congenital anomalies at birth is defined as the number of live-born or stillborn births diagnosed with at least one anomaly, expressed as a proportion of the total number of live births and stillbirths. In addition to overall congenital anomaly rates, the birth prevalence rates of three of the anomalies most commonly recognized prenatally or at birth, namely Down syndrome, neural tube defects (NTDs) and orofacial clefts, are presented. Information on neural tube defects and orofacial clefts lack precise data on whether these defects are isolated or occurring in a recognized or unrecognized pattern of multiple malformations.

## DATA SOURCE

Congenital anomaly prevalence rates were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data from Quebec were excluded because they do not contribute to DAD. Provincial and territorial rates were based on province or territory of maternal residence.

**FIGURE 12.1**

BIRTH PREVALENCE OF CONGENITAL ANOMALIES, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)

** Includes live births and stillbirths

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

## RESULTS

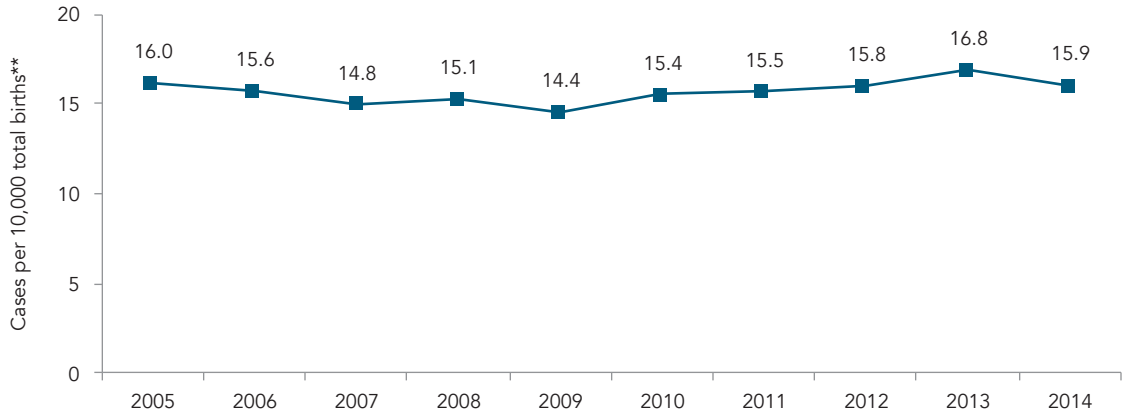
The prevalence at birth of congenital anomalies decreased from 402.1 (95% CI: 394.5–409.7) to 377.5 (95% CI: 370.4–384.6) per 10,000 total births between 2005 and 2007 then increased to 430.5 (95% CI: 423.0–438.1) per 10,000 total births between 2007 and 2014 (Figure 12.1).

Between 2005 and 2014, the prevalence at birth of Down syndrome fluctuated between 14.4 (95% CI: 13.1–15.8) and 16.8 (95% CI: 15.3–18.3) per 10,000 total births. It was 15.9 (95% CI: 14.5–17.4) per 10,000 total births in 2014 (Figure 12.2). Provincial/territorial rates ranged from 12.1 (95% CI: 6.4–20.7) per 10,000 total births in Yukon and Northwest Territories, to 17.9 (95% CI: 9.8–30.0) in Nunavut (Figure 12.3). The prevalence at birth of neural tube defects (NTD) increased from 4.9 (95% CI: 4.1–5.8) to 5.7 (95% CI: 4.8–6.6) per 10,000 total births between 2005 and 2010, decreased to 4.4 (95% CI: 3.6–5.2) per 10,000 total births between 2010 and 2013, and increased again to 5.7 (95% CI: 4.8–6.6) per 10,000 total births in 2014. The rate of spina bifida fluctuated between 2.8 (95% CI: 2.2–3.5) and 3.2 (95% CI: 2.6–3.9) per 10,000 total births between 2005 and 2008, increased steadily to 3.8 (95% CI: 3.1–4.6) per 10,000 total births in 2011, decreased to 2.6 (95% CI: 2.0–3.2) per 10,000 total births in 2013 and increased to 3.6 (95% CI: 2.9–4.4) per 10,000 total births in 2014. The rate of anencephaly and similar anomalies fluctuated between 0.9 (95% CI: 0.6–1.4) and 1.6 (95% CI: 1.2–2.1) per 10,000 total births between 2005 and 2014 (Figure 12.4). Provincial/territorial rates of all NTD ranged from 3.3 (95% CI: 2.1–4.9) per 10,000 total births in New Brunswick, to 7.8 (95% CI: 3.9–14.0) in Prince Edward Island. Provincial/territorial rates of spina bifida ranged from 2.3 (95% CI: 1.3–3.7) per 10,000 total births in New Brunswick, to 7.1 (95% CI: 3.4–13.1) in Prince Edward Island (Figure 12.5).

The rate of cleft lip with or without cleft palate fluctuated from 9.5 (95% CI: 8.3–10.7) to 10.4 (95% CI: 9.2–11.6) per 10,000 total births between 2005 and 2009, and then fluctuated from 9.9 (95% CI: 8.8–11.1) to 10.2 (95% CI: 9.0–11.4) per 10,000 total births between 2010 and 2014. The rate of cleft lip with or without cleft palate was 10.2 (95% CI: 9.0–11.4) per 10,000 total births in 2014. The rate of cleft palate fluctuated between 6.5 (95% CI: 5.6–7.5) and 7.5 (95% CI: 6.5–8.6) per 10,000 total births between 2005 and 2008, decreased to 5.6 (95% CI: 4.8–6.5) per 10,000 total births in 2009, and fluctuated between 5.8 (95% CI: 5.0–6.8) and 6.6 (95% CI: 5.7–7.6) per 10,000 births between 2010 and 2014. The rate of cleft palate was 5.8 (95% CI: 5.0–6.8) per 10,000 total births in 2014 (Figure 12.6). Nunavut had the highest rate of cleft lip with or without cleft palate 17.9 (95% CI 9.8–30.0) per 10,000 total births, while Manitoba had the highest rate of cleft palate 9.1 (95% CI 7.6–10.7) per 10,000 total births (Figure 12.7).

**FIGURE 12.2**

BIRTH PREVALENCE OF DOWN SYNDROME, CANADA (EXCLUDING QUEBEC), 2005–2014



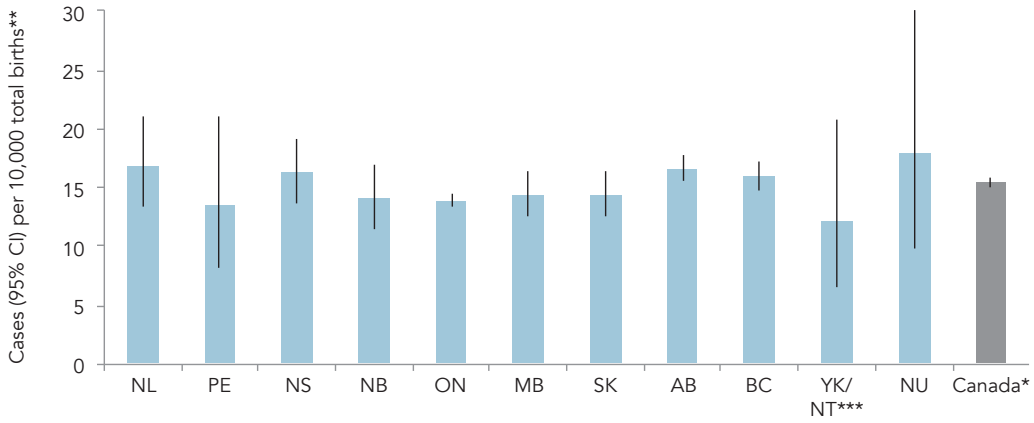

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)

** Includes live births and stillbirths

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 12.3**

BIRTH PREVALENCE OF DOWN SYNDROME, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** Includes live births and stillbirths

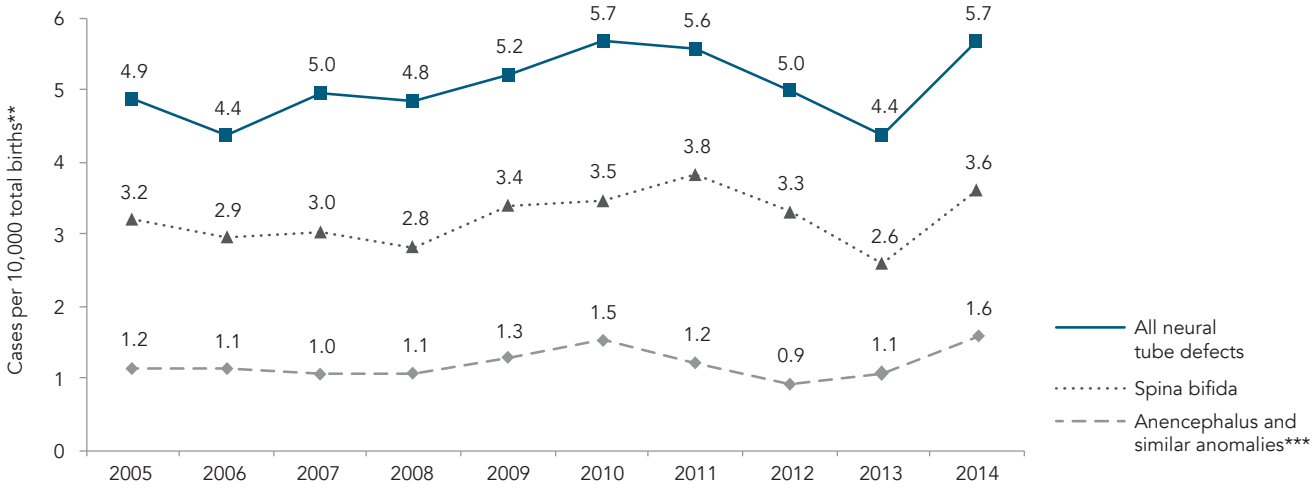
***Combined due to low cell counts

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 12.4**

BIRTH PREVALENCE OF NEURAL TUBE DEFECTS, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)

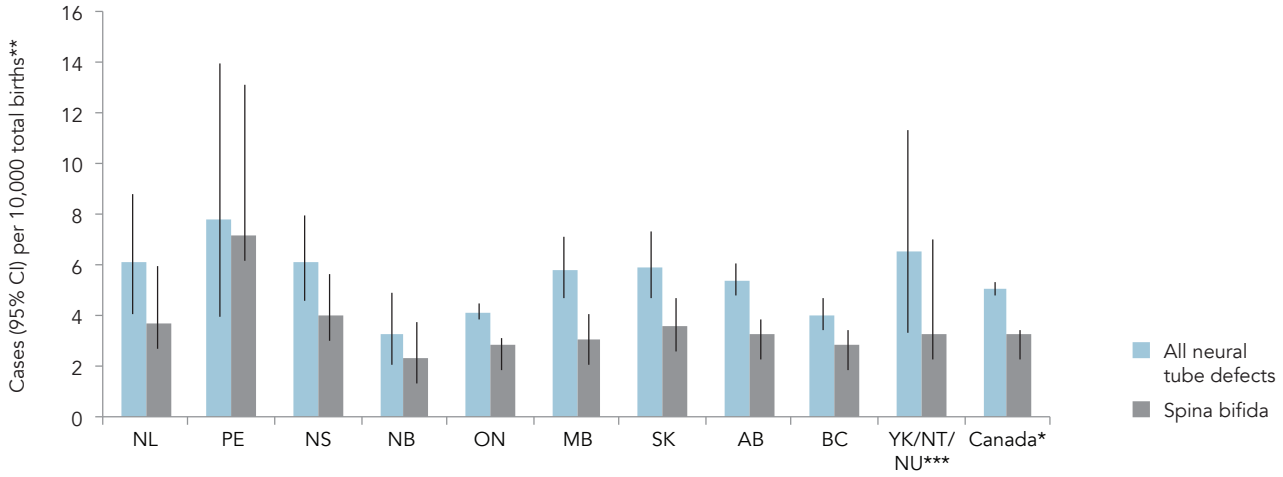
** Includes live births and stillbirths

***Anencephalus and similar anomalies include craniochischisis, anencephaly and other neural tube defects.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 12.5**

BIRTH PREVALENCE OF NEURAL TUBE DEFECTS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** Includes live births and stillbirths

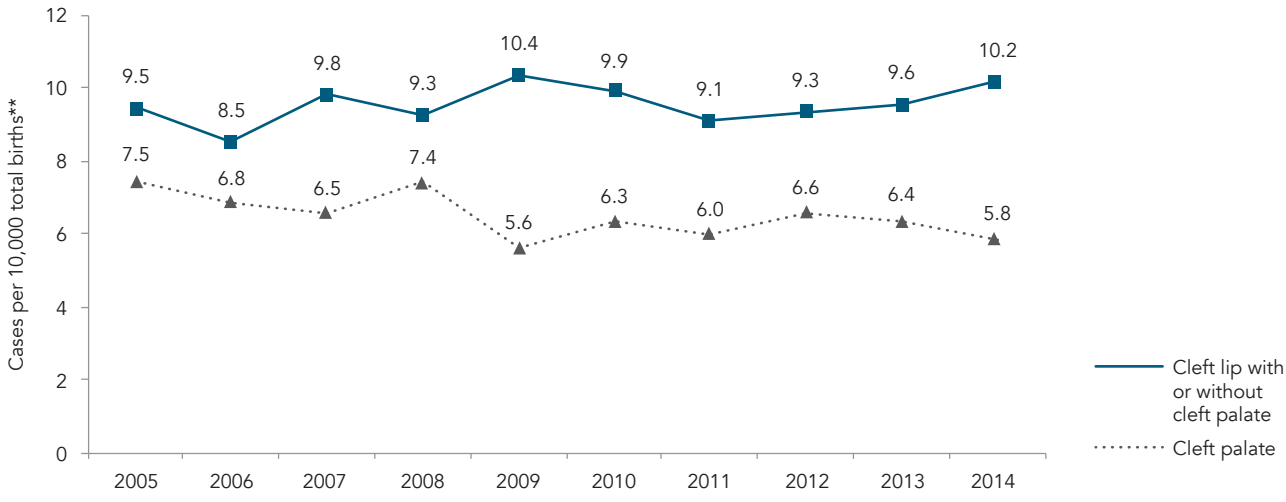
***Combined due to low cell counts

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

**FIGURE 12.6**

BIRTH PREVALENCE OF CLEFT PALATE AND CLEFT LIP WITH/WITHOUT CLEFT PALATE, CANADA (EXCLUDING QUEBEC), 2005–2014



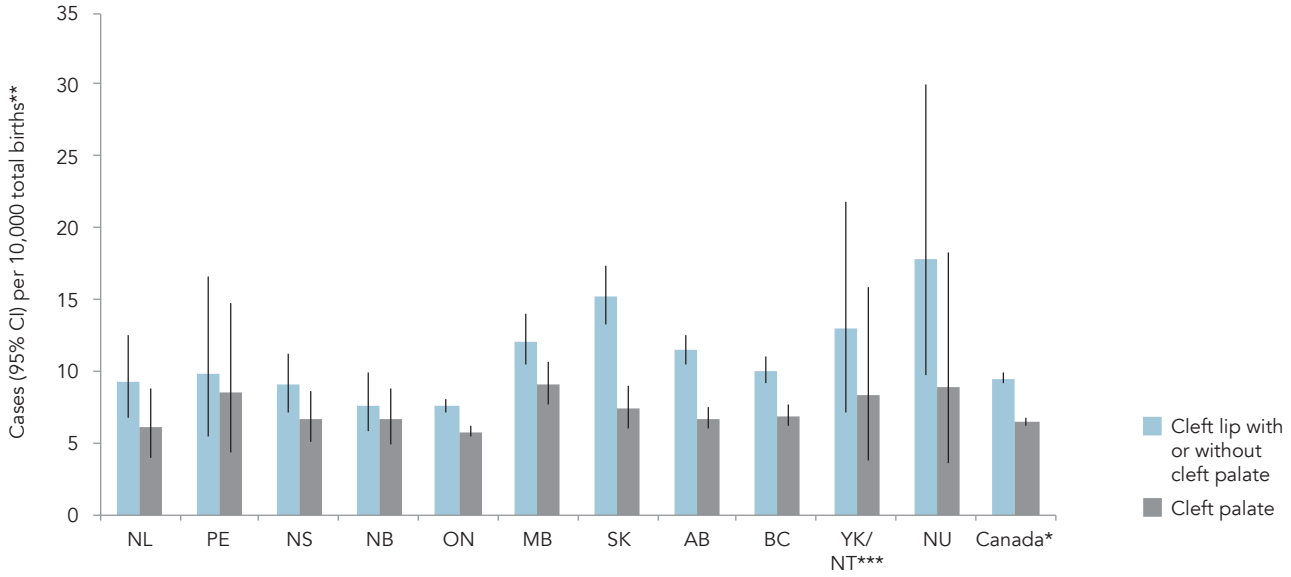

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)

** Includes live births and stillbirths

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 12.7**

BIRTH PREVALENCE OF CLEFT PALATE AND CLEFT LIP WITH OR WITHOUT CLEFT PALATE, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2005–2014




Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** Includes live births and stillbirths

***Combined due to low cell counts

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

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 early pregnancy terminations. The DAD captures the majority of natural stillbirths and terminations of pregnancy, but terminations outside hospital and 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] with those identified by the DAD[3] clearly indicate that hospitalization data are incomplete. A further limitation to the information on NTD and orofacial clefts presented here is the lack of precise data on what proportion of these defects are isolated compared to those occurring in a recognized or unrecognized pattern of multiple malformations.

Please refer to Appendix B for general data limitations using CIHI-DAD.

## REFERENCES

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CHAPTER 13

# MULTIPLE BIRTH RATE

The rates of multiple births fluctuated from 3.1 (95% CI: 3.1–3.2) to 3.4 (95% CI: 3.4–3.5) per 100 total births between 2005 and 2014. The rate of multiple births was 3.3 per 100 total births in 2014.

## 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 total births (live births and stillbirths).

## DATA SOURCE

Multiple birth rates were calculated using the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD). Data includes live births and stillbirths and excludes unknown plurality. Data from Quebec were excluded because they do not contribute to the DAD.

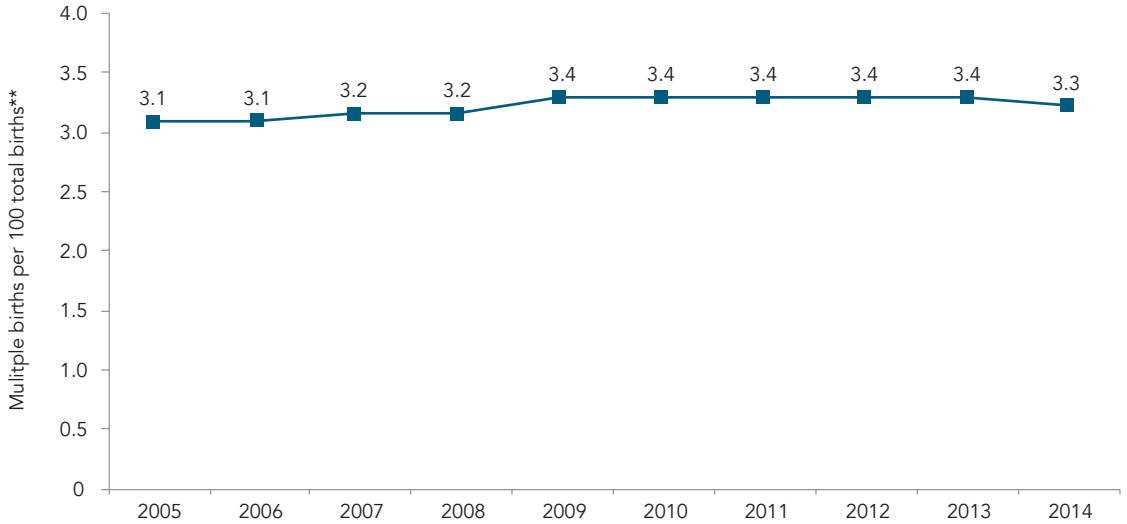
## RESULTS

Between 2005 and 2014, the rates of multiple births fluctuated between 3.1 (95% CI: 3.1–3.2) per 100 total births and 3.4 (95% CI: 3.4–3.5) per 100 total births. The rate of multiple births was 3.3 (95% CI: 3.3–3.4) per 100 total births in 2014 (Figure 13.1).

Between 2005 and 2014, rates of multiple births varied across provinces and territories. Nunavut had the lowest multiple birth rate at 2.0 (95% CI: 1.6–2.5) per 100 total births, while Ontario had the highest rate at 3.6 (95% CI: 3.6–3.6) per 100 total births (Figure 13.2).

**FIGURE 13.1**

RATE OF MULTIPLE BIRTH, CANADA (EXCLUDING QUEBEC), 2005–2014



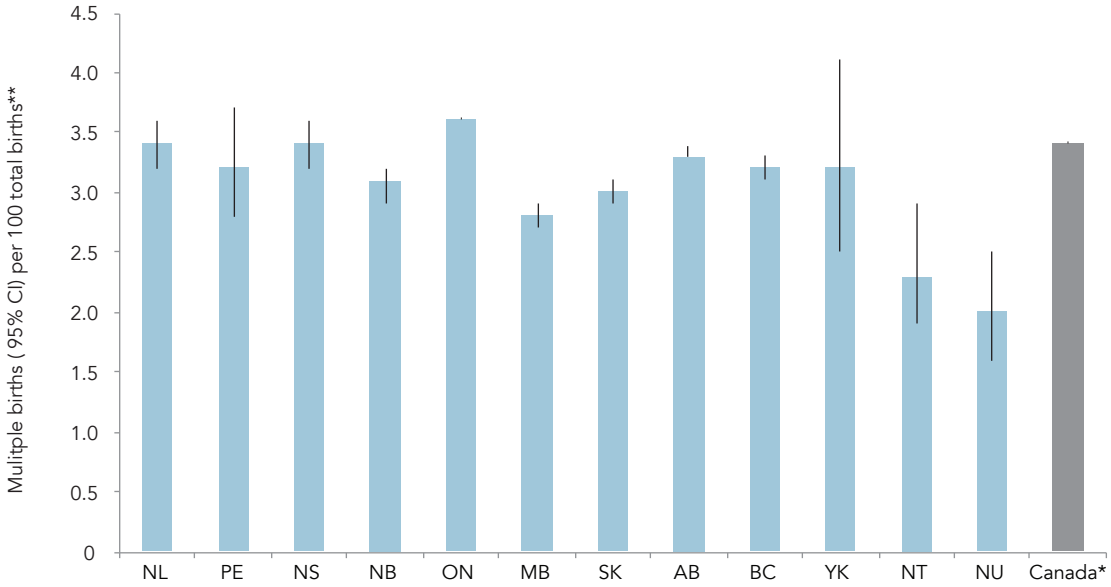

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

** Includes live births and stillbirths, excludes unknown plurality

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**FIGURE 13.2**

RATE OF MULTIPLE BIRTH BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014




Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data for unknown provinces and territories

** Includes live births and stillbirths

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

## LIMITATIONS

Data on multiple births in Canada were obtained from CIHI-DAD (excluding Quebec). Data may be subject to transcribing errors. There is limited information on the use of assisted reproductive technologies (ART), and therefore multiple gestations conceived through ART cannot be distinguished from those conceived spontaneously. This limits interpreting any temporal trends in multiple birth rates.

Please refer to appendix B for general data limitations using CIHI-DAD.

# APPENDIX A: DATA TABLES

## CHAPTER 1: RATE OF LIVE BIRTHS TO TEENAGE MOTHERS

**TABLE 1.1**

AGE-SPECIFIC LIVE BIRTH RATES, FEMALES AGED 10–14, 15–17 AND 18–19 YEARS, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| | 10–14 | | | 15–17 | | | 18–19 | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Number of females** | Number of live births | Rate of live births per 1,000 females (95% CI) | Number of females** | Number of live births | Rate of live births per 1,000 females (95% CI) | Number of females** | Number of live births | Rate of live births per 1,000 females (95% CI) |
| 2005 | 800,317 | 112 | 0.1 (0.1–0.2) | 497,362 | 3,819 | 7.7 (7.4–7.9) | 332,242 | 8,459 | 25.5 (24.9–26.0) |
| 2006 | 792,381 | 113 | 0.1 (0.1–0.2) | 508,711 | 3,973 | 7.8 (7.6–8.1) | 332,795 | 8,950 | 26.9 (26.3–27.4) |
| 2007 | 781,092 | 117 | 0.1 (0.1–0.2) | 509,553 | 4,272 | 8.4 (8.1–8.6) | 338,119 | 9,201 | 27.2 (26.7–27.8) |
| 2008 | 770,344 | 123 | 0.2 (0.1–0.2) | 503,758 | 4,174 | 8.3 (8.0–8.5) | 348,831 | 9,392 | 26.9 (26.4–27.5) |
| 2009 | 759,444 | 110 | 0.1 (0.1–0.2) | 499,679 | 4,120 | 8.2 (8.0–8.5) | 352,624 | 9,109 | 25.8 (25.3–26.4) |
| 2010 | 747,818 | 88 | 0.1 (0.1–0.1) | 497,944 | 3,849 | 7.7 (7.5–8.0) | 350,312 | 8,646 | 24.7 (24.2–25.2) |
| 2011 | 732,955 | 81 | 0.1 (0.1–0.1) | 497,137 | 3,448 | 6.9 (6.7–7.2) | 349,066 | 8,044 | 23.0 (22.5–23.5) |
| 2012 | 723,413 | 77 | 0.1 (0.1–0.1) | 489,635 | 3,313 | 6.8 (6.5–7.0) | 349,083 | 7,613 | 21.8 (21.3–22.3) |
| 2013 | 716,641 | 61 | 0.1 (0.1–0.1) | 478,837 | 2,913 | 6.1 (5.9–6.3) | 349,730 | 6,954 | 19.9 (19.4–20.4) |
| 2014 | 715,328 | 62 | 0.1 (0.1–0.1) | 467,652 | 2,457 | 5.3 (5.0–5.5) | 350,525 | 6,510 | 18.6 (18.1–19.0) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** CANSIM Table 051-0001 (number of women by age group).
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 1.2

PROPORTION (%) OF LIVE BIRTHS, BY MATERNAL AGE, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| | 10–14 | | 15–17 | | 18–19 | | |
|---|---|---|---|---|---|---|---|
| Year | Number of live births | Proportion (%) of total live births | Number of live births | Proportion (%) of total live births | Number of live births | Proportion (%) of total live births | Total number of live births** |
| 2005 | 112 | 0.04 | 3,819 | 1.4 | 8,459 | 3.2 | 266,874 |
| 2006 | 113 | 0.04 | 3,973 | 1.5 | 8,950 | 3.3 | 273,101 |
| 2007 | 117 | 0.04 | 4,272 | 1.5 | 9,201 | 3.2 | 283,328 |
| 2008 | 123 | 0.04 | 4,174 | 1.4 | 9,392 | 3.3 | 288,519 |
| 2009 | 110 | 0.04 | 4,120 | 1.4 | 9,109 | 3.1 | 289,639 |
| 2010 | 88 | 0.03 | 3,849 | 1.3 | 8,646 | 3.0 | 285,215 |
| 2011 | 81 | 0.03 | 3,448 | 1.2 | 8,044 | 2.8 | 284,599 |
| 2012 | 77 | 0.03 | 3,313 | 1.2 | 7,613 | 2.6 | 287,294 |
| 2013 | 61 | 0.02 | 2,913 | 1.0 | 6,954 | 2.4 | 285,170 |
| 2014 | 62 | 0.02 | 2,457 | 0.9 | 6,510 | 2.3 | 288,369 |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** Excludes live births to mothers aged 50 years and over, and those with unknown maternal age.
Data for Quebec were excluded because they do not contribute to CIHI-DAD.

## TABLE 1.3

AGE-SPECIFIC LIVE BIRTH RATES, FEMALES AGED 10–17 AND 18–19 YEARS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| | 10–17 | | | 18–19 | | |
|---|---|---|---|---|---|---|
| Province/territory | Number of females** | Number of live births | Rate of live births per 1,000 females per year (95% CI) | Number of females** | Number of live births | Rate of live births per 1,000 females per year (95% CI) |
| Newfoundland and Labrador | 108,493 | 373 | 3.4 (3.1–3.8) | 29,978 | 868 | 29.0 (27.1–30.9) |
| Prince Edward Island | 33,331 | 80 | 2.4 (1.9–3.0) | 9,618 | 236 | 24.5 (21.5–27.8) |
| Nova Scotia | 197,011 | 695 | 3.5 (3.3–3.8) | 58,460 | 1,641 | 28.1 (26.7–29.4) |
| New Brunswick | 157,293 | 604 | 3.8 (3.5–4.2) | 45,513 | 1,510 | 33.2 (31.6–34.9) |
| Ontario | 3,094,165 | 5,764 | 1.9 (1.8–1.9) | 905,165 | 14,278 | 15.8 (15.5–16.0) |
| Manitoba | 318,640 | 1,926 | 6.0 (5.8–6.3) | 88,827 | 3,910 | 44.0 (42.7–45.4) |
| Saskatchewan | 265,827 | 1,861 | 7.0 (6.7–7.3) | 71,908 | 3,667 | 51.0 (49.4–52.6) |
| Alberta | 896,854 | 2,845 | 3.2 (3.1–3.3) | 248,850 | 6,576 | 26.4 (25.8–27.1) |
| British Columbia | 963,543 | 1,594 | 1.7 (1.6–1.7) | 281,307 | 3,876 | 13.8 (13.4–14.2) |
| Yukon | 7,997 | 22 | 2.8 (1.7–4.2) | 2,236 | 66 | 29.5 (22.9–37.4) |
| Northwest Territories | 11,707 | 108 | 9.2 (7.6–11.1) | 3,561 | 256 | 71.9 (63.6–80.9) |
| Nunavut | 12,499 | 335 | 26.8 (24.0–29.8) | 3,293 | 423 | 128.5 (117.2–140.4) |
| **Canada*** | **6,067,360** | **16,349** | **2.7 (2.7–2.7)** | **1,748,716** | **37,767** | **21.6 (21.4–21.8)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
* Includes data from unknown provinces and territories
** CANSIM Table 051-0001 (number of women by age group)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 1.4**

PROPORTION (%) OF LIVE BIRTHS TO MOTHERS AGED 10–17 AND 18–19 YEARS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| | 10–17 | | 18–19 | | |
|---|---|---|---|---|---|
| Province/territory | Number of live births | Proportion (%) of total live births | Number of live births | Proportion (%) of total live births | Total number of live births** |
| Newfoundland and Labrador | 373 | 1.7 | 868 | 3.8 | 22,558 |
| Prince Edward Island | 80 | 1.2 | 236 | 3.4 | 6,953 |
| Nova Scotia | 695 | 1.6 | 1,641 | 3.9 | 42,445 |
| New Brunswick | 604 | 1.7 | 1,510 | 4.4 | 34,638 |
| Ontario | 5,764 | 0.9 | 14,278 | 2.1 | 672,111 |
| Manitoba | 1,926 | 2.4 | 3,910 | 4.9 | 79,267 |
| Saskatchewan | 1,861 | 2.6 | 3,667 | 5.1 | 72,587 |
| Alberta | 2,845 | 1.1 | 6,576 | 2.6 | 256,037 |
| British Columbia | 1,594 | 0.8 | 3,876 | 1.8 | 210,252 |
| Yukon | 22 | 1.1 | 66 | 3.3 | 2,020 |
| Northwest Territories | 108 | 3.0 | 256 | 7.1 | 3,601 |
| Nunavut | 335 | 8.4 | 423 | 10.6 | 3,985 |
| **Canada*** | **16,349** | **1.1** | **37,767** | **2.6** | **1,430,647** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** Excludes live births to mothers aged 50 years and over, and those with unknown maternal age

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

# CHAPTER 2: RATE OF LIVE BIRTHS TO OLDER MOTHERS

## TABLE 2.1

AGE-SPECIFIC LIVE BIRTH RATES, FEMALES AGED 35–39, 40–44 AND 45–49 YEARS, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| | 35–39 | | | 40–44 | | | 45–49 | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Number of females** | Number of live births | Rate of live births per 1,000 females (95% CI) | Number of females** | Number of live births | Rate of live births per 1,000 females (95% CI) | Number of females** | Number of live births | Rate of live births per 1,000 females (95% CI) |
| 2005 | 902,282 | 39,875 | 44.2 (43.8–44.6) | 1,049,786 | 7,845 | 7.5 (7.3–7.6) | 990,836 | 317 | 0.3 (0.3–0.4) |
| 2006 | 897,064 | 41,801 | 46.6 (46.2–47.0) | 1,034,856 | 7,928 | 7.7 (7.5–7.8) | 1,011,010 | 347 | 0.3 (0.3–0.4) |
| 2007 | 895,786 | 44,085 | 49.2 (48.8–49.7) | 1,008,685 | 8,223 | 8.2 (8.0–8.3) | 1,028,184 | 410 | 0.4 (0.4–0.4) |
| 2008 | 896,281 | 45,264 | 50.5 (50.0–51.0) | 977,738 | 8,509 | 8.7 (8.5–8.9) | 1,047,128 | 446 | 0.4 (0.4–0.5) |
| 2009 | 893,471 | 45,354 | 50.8 (50.3–51.2) | 950,119 | 8,938 | 9.4 (9.2–9.6) | 1,061,962 | 496 | 0.5 (0.4–0.5) |
| 2010 | 891,274 | 45,841 | 51.4 (51.0–51.9) | 931,137 | 9,375 | 10.1 (9.9–10.3) | 1,062,488 | 473 | 0.4 (0.4–0.5) |
| 2011 | 884,822 | 45,819 | 51.8 (51.3–52.2) | 930,048 | 9,500 | 10.2 (10.0–10.4) | 1,040,936 | 578 | 0.6 (0.5–0.6) |
| 2012 | 890,122 | 47,020 | 52.8 (52.4–53.3) | 931,018 | 9,915 | 10.6 (10.4–10.9) | 1,017,393 | 544 | 0.5 (0.5–0.6) |
| 2013 | 898,047 | 47,366 | 52.7 (52.3–53.2) | 929,584 | 9,840 | 10.6 (10.4–10.8) | 988,972 | 585 | 0.6 (0.5–0.6) |
| 2014 | 911,094 | 48,806 | 53.6 (53.1–54.0) | 924,924 | 9,927 | 10.7 (10.5–10.9) | 964,485 | 613 | 0.6 (0.6–0.7) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** CANSIM Table 051-0001 (number of women by age group).
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 2.2

PROPORTION (%) OF LIVE BIRTHS, BY MATERNAL AGE, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| | 35–39 | | 40–44 | | 45–49 | | |
|---|---|---|---|---|---|---|---|
| Year | Number of live births | Proportion (%) of total live births | Number of live births | Proportion (%) of total live births | Number of live births | Proportion (%) of total live births | Total number of live births** |
| 2005 | 39,875 | 14.9 | 7,845 | 2.9 | 317 | 0.1 | 266,874 |
| 2006 | 41,801 | 15.3 | 7,928 | 2.9 | 347 | 0.1 | 273,101 |
| 2007 | 44,085 | 15.6 | 8,223 | 2.9 | 410 | 0.1 | 283,328 |
| 2008 | 45,264 | 15.7 | 8,509 | 2.9 | 446 | 0.2 | 288,519 |
| 2009 | 45,354 | 15.7 | 8,938 | 3.1 | 496 | 0.2 | 289,639 |
| 2010 | 45,841 | 16.1 | 9,375 | 3.3 | 473 | 0.2 | 285,215 |
| 2011 | 45,819 | 16.1 | 9,500 | 3.3 | 578 | 0.2 | 284,599 |
| 2012 | 47,020 | 16.4 | 9,915 | 3.5 | 544 | 0.2 | 287,294 |
| 2013 | 47,366 | 16.6 | 9,840 | 3.5 | 585 | 0.2 | 285,170 |
| 2014 | 48,806 | 16.9 | 9,927 | 3.4 | 613 | 0.2 | 288,369 |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** Excludes live births to mothers aged 50 years and over, and those with unknown maternal age.
Data for Quebec were excluded because they do not contribute to CIHI-DAD.

**TABLE 2.3**

AGE-SPECIFIC LIVE BIRTH RATES, FEMALES AGED 35–39 AND 40–49 YEARS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| | 35–39 | | | 40–49 | | |
|---|---|---|---|---|---|---|
| Province/territory | Number of females** | Number of live births | Rate of live births per 1,000 females per year (95% CI) | Number of females** | Number of live births | Rate of live births per 1,000 females per year (95% CI) |
| Newfoundland and Labrador | 87,322 | 2,956 | 33.9 (32.7–35.1) | 203,577 | 487 | 2.4 (2.2–2.6) |
| Prince Edward Island | 22,397 | 909 | 40.6 (38.0–43.3) | 52,730 | 160 | 3.0 (2.6–3.5) |
| Nova Scotia | 149,634 | 5,856 | 39.1 (38.2–40.1) | 346,682 | 1,120 | 3.2 (3.0–3.4) |
| New Brunswick | 122,741 | 3,766 | 30.7 (29.7–31.7) | 280,552 | 624 | 2.2 (2.1–2.4) |
| Ontario | 2,267,435 | 122,653 | 54.1 (53.8–54.4) | 5,009,887 | 27,652 | 5.5 (5.5–5.6) |
| Manitoba | 200,725 | 9,832 | 49.0 (48.0–49.9) | 419,416 | 1,920 | 4.6 (4.4–4.8) |
| Saskatchewan | 161,699 | 7,370 | 45.6 (44.6–46.6) | 339,621 | 1,348 | 4.0 (3.8–4.2) |
| Alberta | 695,599 | 36,770 | 52.9 (52.3–53.4) | 1,350,841 | 7,359 | 5.4 (5.3–5.6) |
| British Columbia | 747,602 | 39,909 | 53.4 (52.9–53.9) | 1,678,140 | 9,467 | 5.6 (5.5–5.8) |
| Yukon | 6,851 | 392 | 57.2 (51.8–63.0) | 14,141 | 75 | 5.3 (4.2–6.6) |
| Northwest Territories | 8,140 | 417 | 51.2 (46.5–56.2) | 15,647 | 87 | 5.6 (4.5–6.9) |
| Nunavut | 5,214 | 263 | 50.4 (44.7–56.7) | 9,751 | 47 | 4.8 (3.5–6.4) |
| **Canada*** | **4,475,359** | **234,852** | **52.5 (52.3–52.7)** | **9,720,985** | **51,350** | **5.3 (5.2–5.3)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
* Includes data from unknown provinces and territories
** CANSIM Table 051-0001 (number of women by age group)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 2.4**

PROPORTION (%) OF LIVE BIRTHS TO MOTHERS AGED 35–39 AND 40–49 YEARS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| | 35–39 | | 40–49 | | |
|---|---|---|---|---|---|
| Province/territory | Number of live births | Proportion (%) of total live births | Number of live births | Proportion (%) of total live births | Total number of live births** |
| Newfoundland and Labrador | 2,956 | 13.1 | 487 | 2.2 | 22,558 |
| Prince Edward Island | 909 | 13.1 | 160 | 2.3 | 6,953 |
| Nova Scotia | 5,856 | 13.8 | 1,120 | 2.6 | 42,445 |
| New Brunswick | 3,766 | 10.9 | 624 | 1.8 | 34,638 |
| Ontario | 122,653 | 18.2 | 27,652 | 4.1 | 672,111 |
| Manitoba | 9,832 | 12.4 | 1,920 | 2.4 | 79,267 |
| Saskatchewan | 7,370 | 10.2 | 1,348 | 1.9 | 72,587 |
| Alberta | 36,770 | 14.4 | 7,359 | 2.9 | 256,037 |
| British Columbia | 39,909 | 19.0 | 9,467 | 4.5 | 210,252 |
| Yukon | 392 | 19.4 | 75 | 3.7 | 2,020 |
| Northwest Territories | 417 | 11.6 | 87 | 2.4 | 3,601 |
| Nunavut | 263 | 6.6 | 47 | 1.2 | 3,985 |
| **Canada*** | **234,852** | **16.4** | **51,350** | **3.6** | **1,430,647** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data from unknown provinces and territories

** Excludes live births to mothers aged 50 years and over, and those with unknown maternal age.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

# CHAPTER 3: RATE OF CESAREAN DELIVERY

**TABLE 3.1**

RATES OF CESAREAN DELIVERY, PRIMARY AND REPEAT CESAREAN DELIVERY BY FISCAL YEAR, CANADA (EXCLUDING QUEBEC), 2005/2006 TO 2014/2015

| Fiscal year | Number of hospital deliveries | Number of cesarean deliveries | Rate of cesarean deliveries per 100 hospital deliveries (95% CI) | Number of hospital deliveries without a previous cesarean delivery | Number of primary cesarean deliveries | Rate of primary cesarean deliveries per 100 hospital deliveries without a previous cesarean delivery (95% CI) | Number of hospital deliveries with previous cesarean delivery | Number of repeat cesarean deliveries | Rate of repeat cesarean deliveries per 100 hospital deliveries with previous cesarean delivery (95% CI) |
|---|---|---|---|---|---|---|---|---|---|
| 2005/2006 | 265,880 | 72,542 | 27.3 (27.1–27.5) | 233,140 | 45,871 | 19.7 (19.5–19.8) | 32,740 | 26,671 | 81.5 (81.0–81.9) |
| 2006/2007 | 273,786 | 74,744 | 27.3 (27.1–27.5) | 239,870 | 46,926 | 19.6 (19.4–19.7) | 33,916 | 27,818 | 82.0 (81.6–82.4) |
| 2007/2008 | 284,573 | 78,952 | 27.7 (27.6–27.9) | 248,198 | 49,077 | 19.8 (19.6–19.9) | 36,375 | 29,875 | 82.1 (81.7–82.5) |
| 2008/2009 | 286,079 | 80,198 | 28.0 (27.9–28.2) | 248,598 | 49,435 | 19.9 (19.7–20.0) | 37,481 | 30,763 | 82.1 (81.7–82.5) |
| 2009/2010 | 287,622 | 80,145 | 27.9 (27.7–28.0) | 249,704 | 49,173 | 19.7 (19.5–19.8) | 37,918 | 30,972 | 81.7 (81.3–82.1) |
| 2010/2011 | 282,438 | 79,207 | 28.0 (27.9–28.2) | 244,390 | 48,090 | 19.7 (19.5–19.8) | 38,048 | 31,117 | 81.8 (81.4–82.2) |
| 2011/2012 | 284,296 | 79,968 | 28.1 (28.0–28.3) | 245,778 | 48,565 | 19.8 (19.6–19.9) | 38,518 | 31,403 | 81.5 (81.1–81.9) |
| 2012/2013 | 285,406 | 80,614 | 28.2 (28.1–28.4) | 246,413 | 49,034 | 19.9 (19.7–20.1) | 38,993 | 31,580 | 81.0 (80.6–81.4) |
| 2013/2014 | 283,431 | 79,996 | 28.2 (28.1–28.4) | 243,901 | 48,042 | 19.7 (19.5–19.9) | 39,530 | 31,954 | 80.8 (80.4–81.2) |
| 2014/2015 | 286,281 | 81,230 | 28.4 (28.2–28.5) | 245,843 | 48,698 | 19.8 (19.7–20.0) | 40,438 | 32,532 | 80.4 (80.1–80.8) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 3.2**

RATE OF CESAREAN DELIVERY BY PROVINCE/TERRITORY OF OCCURRENCE, CANADA (EXCLUDING QUEBEC), 2014/2015 FISCAL YEAR

| Province/territory | Number of hospital deliveries | Number of cesarean deliveries | Rate of cesarean deliveries per 100 hospital deliveries (95% CI) |
|---|---|---|---|
| Newfoundland and Labrador | 4,465 | 1,332 | 29.8 (28.5–31.2) |
| Prince Edward Island | 1,353 | 399 | 29.5 (27.1–31.9) |
| Nova Scotia | 8,394 | 2,257 | 26.9 (25.9–27.8) |
| New Brunswick | 6,844 | 1,881 | 27.5 (26.4–28.5) |
| Ontario | 136,120 | 38,101 | 28.0 (27.8–28.2) |
| Manitoba | 16,513 | 3,692 | 22.4 (21.7–23.0) |
| Saskatchewan | 15,287 | 3,500 | 22.9 (22.2–23.6) |
| Alberta | 53,516 | 15,634 | 29.2 (28.8–29.6) |
| British Columbia | 42,245 | 14,204 | 33.6 (33.2–34.1) |
| Yukon | 398 | 78 | 19.6 (15.7–23.5) |
| Northwest Territories | 744 | 111 | 14.9 (12.4–17.5) |
| Nunavut | 402 | 41 | 10.2 (7.2–13.2) |
| **Canada** | **286,281** | **81,230** | **28.4 (28.2–28.5)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# CHAPTER 4: SEVERE MATERNAL MORBIDITY RATE

**TABLE 4.1**

RATE OF SEVERE MATERNAL MORBIDITY, BY FISCAL YEAR, CANADA (EXCLUDING QUEBEC), 2005/2006 TO 2014/2015

| Fiscal Year | Number of hospital deliveries | Number of cases of severe maternal morbidity | Rate of severe maternal morbidity per 1,000 hospital deliveries (95% CI) | Number of cases of severe maternal morbidity excluding blood transfusions without comorbidity | Rate of severe maternal morbidity excluding blood transfusions without comorbidity per 1,000 hospital deliveries (95% CI) |
|---|---|---|---|---|---|
| 2005/2006 | 265,880 | 3,712 | 14.0 (13.5–14.4) | 3,288 | 12.4 (11.9–12.8) |
| 2006/2007 | 273,786 | 3,595 | 13.1 (12.7–13.6) | 3,117 | 11.4 (11.0–11.8) |
| 2007/2008 | 284,573 | 3,958 | 13.9 (13.5–14.3) | 3,398 | 11.9 (11.5–12.3) |
| 2008/2009 | 286,079 | 4,247 | 14.8 (14.4–15.3) | 3,639 | 12.7 (12.3–13.1) |
| 2009/2010 | 287,622 | 4,181 | 14.5 (14.1–15.0) | 3,517 | 12.2 (11.8–12.6) |
| 2010/2011 | 282,438 | 4,336 | 15.4 (14.9–15.8) | 3,677 | 13.0 (12.6–13.4) |
| 2011/2012 | 284,296 | 4,484 | 15.8 (15.3–16.2) | 3,830 | 13.5 (13.0–13.9) |
| 2012/2013 | 285,406 | 4,680 | 16.4 (15.9–16.9) | 4,028 | 14.1 (13.7–14.5) |
| 2013/2014 | 283,431 | 4,577 | 16.1 (15.7–16.6) | 3,921 | 13.8 (13.4–14.3) |
| 2014/2015 | 286,281 | 4,058 | 14.2 (13.7–14.6) | 3,533 | 12.3 (11.9–12.7) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 4.2**

RATES OF SEVERE MATERNAL MORBIDITY, BY PROVINCE/TERRITORY OF OCCURRENCE, CANADA (EXCLUDING QUEBEC), 2010/2011 TO 2014/2015

| Province/territory | Number of deliveries | Number of cases of severe maternal morbidity | Rate of severe maternal morbidity per 1,000 hospital deliveries (95% CI) | Number of cases of severe maternal morbidity excluding blood transfusions without comorbidity | Rate of severe maternal morbidity excluding blood transfusions without comorbidity per 1,000 hospital deliveries (95% CI) |
|---|---|---|---|---|---|
| Newfoundland and Labrador | 22,479 | 510 | 22.7 (20.7–24.6) | 369 | 16.4 (14.8–18.1) |
| Prince Edward Island | 6,755 | 93 | 13.8 (11.0–16.5) | 82 | 12.1 (9.5–14.8) |
| Nova Scotia | 42,758 | 566 | 13.2 (12.2–14.3) | 479 | 11.2 (10.2–12.2) |
| New Brunswick | 35,049 | 579 | 16.5 (15.2–17.9) | 451 | 12.9 (11.7–14.0) |
| Ontario | 687,068 | 10,303 | 15.0 (14.7–15.3) | 8,690 | 12.6 (12.4–12.9) |
| Manitoba | 81,182 | 1,387 | 17.1 (16.2–18.0) | 1,190 | 14.7 (13.8–15.5) |
| Saskatchewan | 73,566 | 1,400 | 19.0 (18.0–20.0) | 1,157 | 15.7 (14.8–16.6) |
| Alberta | 254,557 | 4,317 | 17.0 (16.5–17.5) | 3,804 | 14.9 (14.5–15.4) |
| British Columbia | 210,709 | 2,810 | 13.3 (12.8–13.8) | 2,619 | 12.4 (12.0–12.9) |
| Yukon | 1,962 | 56 | 28.5 (21.2–35.9) | 52 | 26.5 (19.4–33.6) |
| Northwest Territories | 3,794 | 43 | 11.3 (8.0–14.7) | 36 | 9.5 (6.4–12.6) |
| Nunavut | 1,973 | 71 | 36.0 (27.8–44.2) | 60 | 30.4 (22.8–38.0) |
| **Canada** | **1,421,852** | **22,135** | **15.6 (15.4–15.8)** | **18,989** | **13.4 (13.2–13.5)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 4.3**

RATES OF SEVERE MATERNAL MORBIDITY, BY CAUSE, CANADA (EXCLUDING QUEBEC), 2010/2011 TO 2014/2015

| Maternal Morbidity | Number of deliveries | Number of cases | Rate of severe maternal morbidity per 100,000 hospital deliveries (95% CI) |
|---|---|---|---|
| Blood transfusion | 1,421,852 | 11,184 | 786.6 (772.1–801.1) |
| Blood transfusion with comorbidity | 1,421,852 | 8,038 | 565.3 (553.0–577.6) |
| Postpartum hemorrhage and blood transfusion | 1,421,852 | 6,881 | 483.9 (472.5–495.4) |
| Cardiac arrest/failure, myocardial infarction or pulmonary edema including ICD-10 O75.4 (other complications of obstetric surgery and procedures) | 1,421,852 | 1,992 | 140.1 (134.0–146.2) |
| Embolization or ligation of pelvic vessels or suturing of uterus and postpartum hemorrhage | 1,421,852 | 2,101 | 147.8 (141.5–154.1) |
| Hysterectomy | 1,421,852 | 1,778 | 125.0 (119.2–130.9) |
| Uterine rupture during labour | 1,421,852 | 1,179 | 82.9 (78.2–87.7) |
| Puerperal sepsis | 1,421,852 | 1,024 | 72.0 (67.6–76.4) |
| Repair of bladder, urethra, or intestine | 1,421,852 | 978 | 68.8 (64.5–73.1) |
| Eclampsia | 1,421,852 | 721 | 50.7 (47.0–54.4) |
| Postpartum hemorrhage and hysterectomy | 1,421,852 | 732 | 51.5 (47.8–55.2) |
| Placenta previa with hemorrhage and blood transfusion | 1,421,852 | 658 | 46.3 (42.7–49.8) |
| Cardiac arrest/failure, myocardial infarction or pulmonary oedema excluding ICD-10 O75.4 (other complications of obstetric surgery and procedures) | 1,421,852 | 561 | 39.5 (36.2–42.7) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# CHAPTER 5: PREGNANCY-RELATED MORTALITY RATE

## TABLE 5.1

PREGNANCY-RELATED MORTALITY RATE, BY FISCAL YEAR, CANADA (EXCLUDING QUEBEC), 1999/2000 TO 2014/2015

| Fiscal Year | Number of hospital deliveries | Number of pregnancy-related deaths | Rate of pregnancy-related deaths per 100,000 hospital deliveries (95% CI) |
|---|---|---|---|
| 1999/2000–2000/2001 | 490,147 | 42 | 8.6 (6.0–11.2) |
| 2001/2002–2002/2003 | 487,537 | 58 | 11.9 (8.8–15.0) |
| 2003/2004–2004/2005 | 511,720 | 42 | 8.2 (5.7–10.7) |
| 2005/2006–2006/2007 | 539,988 | 48 | 8.9 (6.4–11.4) |
| 2007/2008–2008/2009 | 571,348 | 50 | 8.8 (6.3–11.2) |
| 2009/2010–2010/2011 | 570,633 | 35 | 6.1 (4.1–8.2) |
| 2011/2012–2012/2013 | 570,141 | 29 | 5.1 (3.2–6.9) |
| 2013/2014–2014/2015 | 570,075 | 42 | 7.4 (5.1–9.6) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/2005.
CI = confidence interval

## TABLE 5.2

MOST COMMON DIAGNOSTIC CATEGORIES ASSOCIATED WITH PREGNANCY-RELATED DEATHS, CANADA (EXCLUDING QUEBEC), 2002/2003 TO 2014/2015

| Diagnosis | Number of pregnancy-related deaths | Rate of pregnancy-related deaths per 100,000 hospital deliveries (95% CI) |
|---|---|---|
| Diseases of the circulatory system | 89 | 2.5 (2.0–3.1) |
| Other indirect causes | 78 | 2.2 (1.7–2.7) |
| Postpartum hemorrhage | 49 | 1.4 (1.0–1.8) |
| Hypertension complicating pregnancy, childbirth and the puerperium | 42 | 1.2 (0.8–1.6) |
| Obstetric embolism | 39 | 1.1 (0.8–1.5) |
| Major puerperal infection | 27 | 0.8 (0.5–1.1) |
| Ectopic and molar pregnancy/abortive outcome | 26 | 0.7 (0.5–1.1) |
| Antepartum hemorrhage, abruptio placentae, and placenta previa | 21 | 0.6 (0.3–0.9) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/2005.
Note: total deaths = 371; total deliveries = 3,576,649
CI = confidence interval

**TABLE 5.3**

PREGNANCY-RELATED MORTALITY, BY PROVINCE/TERRITORY OF OCCURRENCE, CANADA (EXCLUDING QUEBEC), 1999/2000 TO 2014/2015

| Province/territory | Number of hospital deliveries | Number of pregnancy-related deaths | Rate of pregnancy-related deaths per 100,000 hospital deliveries (95% CI) |
|---|---|---|---|
| Newfoundland and Labrador | 73,718 | 9 | 12.2 (4.2–20.2) |
| Prince Edward Island | ** | ** | 18.3 (0.4–36.3) |
| Nova Scotia | 139,072 | 8 | 5.8 (1.8–9.7) |
| New Brunswick | ** | ** | 4.4 (0.5–8.2) |
| Ontario | 2,180,855 | 196 | 9.0 (7.7–10.2) |
| Manitoba | 171,507 | 10 | 5.8 (2.2–9.4) |
| Saskatchewan | 211,626 | 15 | 7.1 (3.5–10.7) |
| Alberta | 717,273 | 49 | 6.8 (4.9–8.7) |
| British Columbia | 657,872 | 51 | 7.8 (5.6–9.9) |
| Yukon | 5,708 | 0 | 0.0 (0.0–0.0) |
| Northwest Territories | ** | ** | 8.2 (0.0–24.2) |
| Nunavut | ** | ** | 18.0 (0.0–53.4) |
| **Canada** | **4,311,589** | **349** | **8.1 (7.2–8.9)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

** Number suppressed for privacy reasons (cell size <5).

Data for Quebec were excluded because they do not contribute to CIHI-DAD. Manitoba data, which were incomplete for earlier years, were included from 2004/2005. There were no recorded pregnancy-related deaths in the Yukon in this time period.

CI = confidence interval

# CHAPTER 6: PRETERM BIRTH RATE

## TABLE 6.1

RATE OF PRETERM BIRTH, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| Year | Number of live births** | Number of preterm births <32 weeks | Rate of preterm births <32 weeks per 100 live births (95% CI) | Number of preterm births 32–36 weeks | Rate of preterm births 32–36 weeks per 100 live births (95% CI) | Number of preterm births <37 weeks | Rate of preterm births <37 weeks per 100 live births (95% CI) |
|---|---|---|---|---|---|---|---|
| 2005 | 265,686 | 3,411 | 1.3 (1.2–1.3) | 18,198 | 6.8 (6.8–6.9) | 21,609 | 8.1 (8.0–8.2) |
| 2006 | 273,335 | 3,410 | 1.2 (1.2–1.3) | 19,109 | 7.0 (6.9–7.1) | 22,519 | 8.2 (8.1–8.3) |
| 2007 | 283,731 | 3,521 | 1.2 (1.2–1.3) | 19,480 | 6.9 (6.8–7.0) | 23,001 | 8.1 (8.0–8.2) |
| 2008 | 288,353 | 3,631 | 1.3 (1.2–1.3) | 20,162 | 7.0 (6.9–7.1) | 23,793 | 8.3 (8.2–8.4) |
| 2009 | 289,982 | 3,651 | 1.3 (1.2–1.3) | 20,087 | 6.9 (6.8–7.0) | 23,738 | 8.2 (8.1–8.3) |
| 2010 | 285,509 | 3,656 | 1.3 (1.2–1.3) | 19,524 | 6.8 (6.7–6.9) | 23,180 | 8.1 (8.0–8.2) |
| 2011 | 284,890 | 3,485 | 1.2 (1.2–1.3) | 19,362 | 6.8 (6.7–6.9) | 22,847 | 8.0 (7.9–8.1) |
| 2012 | 287,402 | 3,572 | 1.2 (1.2–1.3) | 19,951 | 6.9 (6.8–7.0) | 23,523 | 8.2 (8.1–8.3) |
| 2013 | 285,236 | 3,580 | 1.3 (1.2–1.3) | 19,772 | 6.9 (6.8–7.0) | 23,352 | 8.2 (8.1–8.3) |
| 2014 | 288,286 | 3,472 | 1.2 (1.2–1.2) | 19,750 | 6.9 (6.8–6.9) | 23,222 | 8.1 (8.0–8.2) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** Excludes live births with unknown gestational age
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 6.2

RATE OF PRETERM BIRTH, BY PLURALITY, CANADA (EXCLUDING QUEBEC), 2014

| Plurality | Number of live births** | Number of preterm birth <32 weeks | Rate of preterm birth <32 weeks per 100 live births (95% CI) | Number of preterm birth 32–36 weeks | Rate of preterm birth 32–36 weeks per 100 live births (95% CI) | Number of preterm birth <37 weeks | Rate of preterm birth <37 weeks per 100 live births (95% CI) |
|---|---|---|---|---|---|---|---|
| Singletons | 278,607 | 2,518 | 0.9 (0.9–0.9) | 15,122 | 5.4 (5.3–5.5) | 17,640 | 6.3 (6.2–6.4) |
| Twins | 9,422 | 855 | 9.1 (8.5–9.7) | 4,486 | 47.6 (46.6–48.6) | 5,341 | 56.7 (55.7–57.7) |
| Triplets+ | 257 | 99 | 38.5 (32.5–44.8) | 142 | 55.3 (48.9–61.4) | 241 | 93.8 (90.1–96.4) |
| All live births | 288,286 | 3,472 | 1.2 (1.2–1.2) | 19,750 | 6.9 (6.8–6.9) | 23,222 | 8.1 (8.0–8.2) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** Excludes live births with unknown gestational age
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 6.3**

RATE OF PRETERM BIRTH, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| Province/territory | Number of live births** | Number of preterm births <32 weeks | Rate of preterm births <32 weeks per 100 live births (95% CI) | Number of preterm births 32–36 weeks | Rate of preterm births 32–36 weeks per 100 live births (95% CI) | Number of preterm births <37 weeks | Rate of preterm births <37 weeks per 100 live births (95% CI) |
|---|---|---|---|---|---|---|---|
| Newfoundland and Labrador | 22,645 | 314 | 1.4 (1.2–1.5) | 1,598 | 7.1 (6.7–7.4) | 1,912 | 8.4 (8.1–8.8) |
| Prince Edward Island | 6,968 | 80 | 1.1 (0.9–1.4) | 395 | 5.7 (5.1–6.2) | 475 | 6.8 (6.2–7.4) |
| Nova Scotia | 42,346 | 511 | 1.2 (1.1–1.3) | 2,612 | 6.2 (5.9–6.4) | 3,123 | 7.4 (7.1–7.6) |
| New Brunswick | 34,567 | 336 | 1.0 (0.9–1.1) | 2,283 | 6.6 (6.3–6.9) | 2619 | 7.6 (7.3–7.9) |
| Ontario | 687,076 | 8,708 | 1.3 (1.2–1.3) | 47,304 | 6.9 (6.8–6.9) | 56,012 | 8.2 (8.1–8.2) |
| Manitoba | 78,627 | 915 | 1.2 (1.1–1.2) | 5,257 | 6.7 (6.5–6.9) | 6,172 | 7.8 (7.7–8.0) |
| Saskatchewan | 72,681 | 875 | 1.2 (1.1–1.3) | 4,717 | 6.5 (6.3–6.7) | 5,592 | 7.7 (7.5–7.9) |
| Alberta | 256,712 | 3,473 | 1.4 (1.3–1.4) | 18,775 | 7.3 (7.2–7.4) | 22,248 | 8.7 (8.6–8.8) |
| British Columbia | 212,135 | 2,301 | 1.1 (1.0–1.1) | 14,135 | 6.7 (6.6–6.8) | 16,436 | 7.7 (7.6–7.9) |
| Yukon | 1,971 | 10 | 0.5 (0.2–0.9) | 131 | 6.6 (5.6–7.8) | 141 | 7.2 (6.1–8.4) |
| Northwest Territories | 3,382 | 37 | 1.1 (0.8–1.5) | 184 | 5.4 (4.7–6.3) | 221 | 6.5 (5.7–7.4) |
| Nunavut | 3,973 | 81 | 2.0 (1.6–2.5) | 390 | 9.8 (8.9–10.8) | 471 | 11.9 (10.9–12.9) |
| **Canada*** | **1,431,323** | **17,765** | **1.2 (1.2–1.3)** | **98,359** | **6.9 (6.8–6.9)** | **116,124** | **8.1 (8.1–8.2)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

* Includes data for unknown provinces and territories

** Excludes live births with unknown gestational age.

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

# CHAPTER 7: POST-TERM BIRTH RATE

## TABLE 7.1

RATE OF POST-TERM BIRTH, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| Year | Number of live births** | Number of post-term births ≥42 weeks | Rate of post-term births 42 weeks or more per 100 live births (95% CI) |
|---|---|---|---|
| 2005 | 265,686 | 1,233 | 0.5 (0.4–0.5) |
| 2006 | 273,335 | 1,241 | 0.5 (0.4–0.5) |
| 2007 | 283,731 | 1,334 | 0.5 (0.4–0.5) |
| 2008 | 288,353 | 1,213 | 0.4 (0.4–0.4) |
| 2009 | 289,982 | 1,240 | 0.4 (0.4–0.5) |
| 2010 | 285,509 | 1,192 | 0.4 (0.4–0.4) |
| 2011 | 284,890 | 1,058 | 0.4 (0.3–0.4) |
| 2012 | 287,402 | 973 | 0.3 (0.3–0.4) |
| 2013 | 285,236 | 1,074 | 0.4 (0.4–0.4) |
| 2014 | 288,286 | 1,001 | 0.3 (0.3–0.4) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** Excludes live births with unknown gestational age
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 7.2

RATE OF POST-TERM BIRTH, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| Province/territory | Number of live births** | Number of post-term births ≥42 weeks | Rate of post-term births 42 weeks or more per 100 live births (95% CI ) |
|---|---|---|---|
| Newfoundland and Labrador | 22,645 | 64 | 0.3 (0.2–0.4) |
| Prince Edward Island | 6,968 | 16 | 0.2 (0.1–0.4) |
| Nova Scotia | 42,346 | 137 | 0.3 (0.3–0.4) |
| New Brunswick | 34,567 | 151 | 0.4 (0.4–0.5) |
| Ontario | 687,076 | 1,764 | 0.3 (0.2–0.3) |
| Manitoba | 78,627 | 1,073 | 1.4 (1.3–1.4) |
| Saskatchewan | 72,681 | 320 | 0.4 (0.4–0.5) |
| Alberta | 256,712 | 598 | 0.2 (0.2–0.3) |
| British Columbia | 212,135 | 1,059 | 0.5 (0.5–0.5) |
| Yukon | 1,971 | 29 | 1.5 (1.0–2.1) |
| Northwest Territories | 3,382 | 27 | 0.8 (0.5–1.2) |
| Nunavut | 3,973 | 5 | 0.1 (0.0–0.3) |
| **Canada*** | **1,431,323** | **5,298** | **0.4 (0.4–0.4)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
* Includes data for unknown provinces and territories
** Excludes live births with unknown gestational age.
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# CHAPTER 8: SMALL-FOR-GESTATIONAL-AGE BIRTH RATE

## TABLE 8.1

RATE OF SMALL-FOR-GESTATIONAL-AGE (SGA), BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| Year | Number of singleton live births** | Number of SGA singleton live births | Rate of SGA live births per 100 singleton live births (95% CI) |
|---|---|---|---|
| 2005 | 257,456 | 21,675 | 8.4 (8.3–8.5) |
| 2006 | 264,829 | 22,364 | 8.4 (8.3–8.6) |
| 2007 | 274,677 | 23,019 | 8.4 (8.3–8.5) |
| 2008 | 279,214 | 22,917 | 8.2 (8.1–8.3) |
| 2009 | 279,944 | 23,888 | 8.5 (8.4–8.6) |
| 2010 | 275,559 | 23,942 | 8.7 (8.6–8.8) |
| 2011 | 274,964 | 24,132 | 8.8 (8.7–8.9) |
| 2012 | 277,327 | 24,429 | 8.8 (8.7–8.9) |
| 2013 | 275,167 | 24,754 | 9.0 (8.9–9.1) |
| 2014 | 278,395 | 25,288 | 9.1 (9.0–9.2) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** 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.
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 8.2

RATE OF SMALL-FOR-GESTATIONAL-AGE (SGA), BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| Province/territory | Number of singleton live births** | Number of SGA singleton live births | Rate of SGA live births per 100 singleton live births (95% CI) |
|---|---|---|---|
| Newfoundland and Labrador | 21,860 | 1,587 | 7.3 (6.9–7.6) |
| Prince Edward Island | 6,749 | 440 | 6.5 (5.9–7.1) |
| Nova Scotia | 40,895 | 3,446 | 8.4 (8.2–8.7) |
| New Brunswick | 33,504 | 2,790 | 8.3 (8.0–8.6) |
| Ontario | 661,789 | 61,355 | 9.3 (9.2–9.3) |
| Manitoba | 76,367 | 6,017 | 7.9 (7.7–8.1) |
| Saskatchewan | 70,457 | 5,407 | 7.7 (7.5–7.9) |
| Alberta | 247,858 | 23,779 | 9.6 (9.5–9.7) |
| British Columbia | 204,904 | 16,320 | 8.0 (7.8–8.1) |
| Yukon | 1,915 | 101 | 5.3 (4.3–6.4) |
| Northwest Territories | 3,301 | 190 | 5.8 (5.0–6.6) |
| Nunavut | 3,892 | 242 | 6.2 (5.5–7.0) |
| **Canada*** | **1,381,412** | **122,545** | **8.9 (8.8–8.9)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
* Includes data from unknown provinces and territories
** 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.
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# CHAPTER 9: LARGE-FOR-GESTATIONAL-AGE BIRTH RATE

## TABLE 9.1

RATE OF LARGE-FOR-GESTATIONAL-AGE (LGA), BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| Year | Number of singleton live births** | Number of LGA singleton live births | Rate of LGA live births per 100 singleton live births (95% CI) |
|---|---|---|---|
| 2005 | 257,456 | 29,882 | 11.6 (11.5–11.7) |
| 2006 | 264,829 | 30,131 | 11.4 (11.3–11.5) |
| 2007 | 274,677 | 30,956 | 11.3 (11.2–11.4) |
| 2008 | 279,214 | 32,565 | 11.7 (11.5–11.8) |
| 2009 | 279,944 | 30,688 | 11.0 (10.8–11.1) |
| 2010 | 275,559 | 29,782 | 10.8 (10.7–10.9) |
| 2011 | 274,964 | 29,073 | 10.6 (10.5–10.7) |
| 2012 | 277,327 | 29,699 | 10.7 (10.6–10.8) |
| 2013 | 275,167 | 28,906 | 10.5 (10.4–10.6) |
| 2014 | 278,395 | 28,373 | 10.2 (10.1–10.3) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** 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 Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 9.2

RATE OF LARGE-FOR-GESTATIONAL-AGE (LGA), BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| Province/territory | Number of singleton live births** | Number of LGA singleton live births | Rate of LGA live births per 100 singleton live births (95% CI) |
|---|---|---|---|
| Newfoundland and Labrador | 21,860 | 3,081 | 14.1 (13.6–14.6) |
| Prince Edward Island | 6,749 | 917 | 13.6 (12.8–14.4) |
| Nova Scotia | 40,895 | 4,894 | 12.0 (11.7–12.3) |
| New Brunswick | 33,504 | 3,937 | 11.8 (11.4–12.1) |
| Ontario | 661,789 | 67,813 | 10.2 (10.2–10.3) |
| Manitoba | 76,367 | 10,013 | 13.1 (12.9–13.4) |
| Saskatchewan | 70,457 | 8,972 | 12.7 (12.5–13.0) |
| Alberta | 247,858 | 22,462 | 9.1 (8.9–9.2) |
| British Columbia | 204,904 | 21,742 | 10.6 (10.5–10.7) |
| Yukon | 1,915 | 255 | 13.3 (11.8–14.9) |
| Northwest Territories | 3,301 | 571 | 17.3 (16.0–18.6) |
| Nunavut | 3,892 | 516 | 13.3 (12.2–14.4) |
| **Canada*** | **1,381,412** | **145,833** | **10.6 (10.5–10.6)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
* Includes data from unknown provinces and territories
** 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 Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# CHAPTER 10: FETAL MORTALITY RATE

## TABLE 10.1

FETAL MORTALITY RATE, CANADA (EXCLUDING QUEBEC), 2005–2014

| | ≥500 g or ≥20 weeks | | | ≥500 g† | | | ≥1,000 g*** | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) |
| 2005 | 269,585 | 2,068 | 7.7 (7.3–8.0) | 268,377 | 1,197 | 4.5 (4.2–4.7) | 267,188 | 886 | 3.3 (3.1–3.5) |
| 2006 | 275,783 | 2,055 | 7.5 (7.1–7.8) | 274,656 | 1,226 | 4.5 (4.2–4.7) | 273,499 | 879 | 3.2 (3.0–3.4) |
| 2007 | 286,149 | 2,227 | 7.8 (7.5–8.1) | 284,930 | 1,338 | 4.7 (4.4–5.0) | 283,668 | 965 | 3.4 (3.2–3.6) |
| 2008 | 290,774 | 2,266 | 7.8 (7.5–8.1) | 289,506 | 1,311 | 4.5 (4.3–4.8) | 288,266 | 946 | 3.3 (3.1–3.5) |
| 2009 | 292,359 | 2,244 | 7.7 (7.4–8.0) | 291,080 | 1,266 | 4.3 (4.1–4.6) | 289,800 | 900 | 3.1 (2.9–3.3) |
| 2010 | 287,882 | 2,280 | 7.9 (7.6–8.3) | 286,549 | 1,285 | 4.5 (4.2–4.7) | 285,306 | 937 | 3.3 (3.1–3.5) |
| 2011 | 287,298 | 2,301 | 8.0 (7.7–8.3) | 285,961 | 1,299 | 4.5 (4.3–4.8) | 284,698 | 937 | 3.3 (3.1–3.5) |
| 2012 | 289,846 | 2,207 | 7.6 (7.3–7.9) | 288,527 | 1,222 | 4.2 (4.0–4.5) | 287,300 | 891 | 3.1 (2.9–3.3) |
| 2013 | 287,753 | 2,239 | 7.8 (7.5–8.1) | 286,327 | 1,185 | 4.1 (3.9–4.4) | 285,099 | 831 | 2.9 (2.7–3.1) |
| 2014 | 291,113 | 2,367 | 8.1 (7.8–8.5) | 289,694 | 1,273 | 4.4 (4.2–4.6) | 288,428 | 900 | 3.1 (2.9–3.3) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown
** Includes live births and stillbirths
*** Includes fetal deaths with a gestational age ≥28 weeks if birth weight is unknown
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 10.2

FETAL MORTALITY, BY PLURALITY, CANADA (EXCLUDING QUEBEC), 2014

| | ≥500 g or ≥20 weeks | | | ≥500 g† | | |
|---|---|---|---|---|---|---|
| Plurality | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) |
| All | 291,113 | 2,367 | 8.1 (7.8–8.5) | 289,694 | 1,273 | 4.4 (4.2–4.6) |
| Singletons | 280,398 | 1,335 | 4.8 (4.5–5.0) | 279,821 | 998 | 3.6 (3.3–3.8) |
| Mulitples | 9,816 | 133 | 13.5 (11.4–16.0) | 9,664 | 66 | 6.8 (5.3–8.7) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown
** Includes live births and stillbirths
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 10.3**

FETAL MORTALITY RATE, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| | ≥500 g or ≥20 weeks | | | ≥500 g† | | | ≥1,000 g*** | | |
|---|---|---|---|---|---|---|---|---|---|
| Province/territory | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) |
| Newfoundland and Labrador | 22,782 | 128 | 5.6 (4.7–6.7) | 22,692 | 81 | 3.6 (2.8–4.4) | 22,615 | 72 | 3.2 (2.5–4.0) |
| Prince Edward Island | 6,998 | 30 | 4.3 (2.9–6.1) | 6,987 | 24 | 3.4 (2.2–5.1) | 6,963 | 19 | 2.7 (1.6–4.3) |
| Nova Scotia | 43,172 | 345 | 8.0 (7.2–8.9) | 42,960 | 191 | 4.4 (3.8–5.1) | 42,784 | 131 | 3.1 (2.6–3.6) |
| New Brunswick | 34,796 | 221 | 6.4 (5.5–7.2) | 34,707 | 153 | 4.4 (3.7–5.2) | 34,597 | 112 | 3.2 (2.7–3.9) |
| Ontario | 690,898 | 3,651 | 5.3 (5.1–5.5) | 688,625 | 2,218 | 3.2 (3.1–3.4) | 685,738 | 1,594 | 2.3 (2.2–2.4) |
| Manitoba | 79,539 | 541 | 6.8 (6.2–7.4) | 79,301 | 381 | 4.8 (4.3–5.3) | 79,008 | 311 | 3.9 (3.5–4.4) |
| Saskatchewan | 73,204 | 488 | 6.7 (6.1–7.3) | 72,947 | 317 | 4.3 (3.9–4.9) | 72,669 | 266 | 3.7 (3.2–4.1) |
| Alberta | 257,819 | 1,067 | 4.1 (3.9–4.4) | 257,063 | 675 | 2.6 (2.4–2.8) | 255,962 | 449 | 1.8 (1.6–1.9) |
| British Columbia | 213,141 | 965 | 4.5 (4.2–4.8) | 212,547 | 538 | 2.5 (2.3–2.8) | 211,868 | 384 | 1.8 (1.6–2.0) |
| Yukon | 1,981 | 10 | 5.0 (2.4–9.3) | 1,977 | 6 | 3.0 (1.1–6.6) | 1,973 | 5 | 2.5 (0.8–5.9) |
| Northwest Territories | 3,406 | 22 | 6.5 (4.1–9.8) | 3,392 | 11 | 3.2 (1.6–5.8) | 3,377 | 7 | 2.1 (0.8–4.3) |
| Nunavut | 3,998 | 24 | 6.0 (3.8–8.9) | 3,987 | 21 | 5.3 (3.3–8.0) | 3,967 | 19 | 4.8 (2.9–7.5) |
| **Canada*** | **1,443,892** | **11,394** | **7.9 (7.7–8.0)** | **1,437,058** | **6,264** | **4.4 (4.3–4.5)** | **1,430,831** | **4,496** | **3.1 (3.1–3.2)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)

† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown

* Includes data from unknown provinces and territories

** Includes live births and stillbirths

*** Includes fetal deaths with a gestational age ≥28 weeks if birth weight is unknown

Data for Quebec were excluded because they do not contribute to CIHI-DAD.

CI = confidence interval

## TABLE 10.4

MORTALITY RATE IN FETUSES ≥500 G† BY TYPE, CANADA (EXCLUDING QUEBEC), 2005–2014

| | | Stillbirth | | Pregnancy termination | | All | |
|---|---|---|---|---|---|---|---|
| Year | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) |
| 2005 | 268,377 | 1,075 | 4.0 (3.8–4.3) | 122 | 0.5 (0.4–0.5) | 1,197 | 4.5 (4.2–4.7) |
| 2006 | 274,656 | 1,093 | 4.0 (3.7–4.2) | 133 | 0.5 (0.4–0.6) | 1,226 | 4.5 (4.2–4.7) |
| 2007 | 284,930 | 1,195 | 4.2 (4.0–4.4) | 143 | 0.5 (0.4–0.6) | 1,338 | 4.7 (4.4–5.0) |
| 2008 | 289,506 | 1,137 | 3.9 (3.7–4.2) | 174 | 0.6 (0.5–0.7) | 1,311 | 4.5 (4.3–4.8) |
| 2009 | 291,080 | 1,107 | 3.8 (3.6–4.0) | 159 | 0.5 (0.5–0.6) | 1,266 | 4.3 (4.1–4.6) |
| 2010 | 286,549 | 1,113 | 3.9 (3.7–4.1) | 172 | 0.6 (0.5–0.7) | 1,285 | 4.5 (4.2–4.7) |
| 2011 | 285,961 | 1,138 | 4.0 (3.8–4.2) | 161 | 0.6 (0.5–0.7) | 1,299 | 4.5 (4.3–4.8) |
| 2012 | 288,527 | 1,059 | 3.7 (3.5–3.9) | 163 | 0.6 (0.5–0.7) | 1,222 | 4.2 (4.0–4.5) |
| 2013 | 286,327 | 1,025 | 3.6 (3.4–3.8) | 160 | 0.6 (0.5–0.7) | 1,185 | 4.1 (3.9–4.4) |
| 2014 | 289,694 | 1,091 | 3.8 (3.5–4.0) | 182 | 0.6 (0.5–0.7) | 1,273 | 4.4 (4.2–4.6) |

Source: Canadian Institute for Health Information-Discharge Abstract Database, newborn linked records
† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown
** Includes live births and stillbirths
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 10.5

MORTALITY RATE IN FETUSES ≥500 G† (EXCLUDING TERMINATION OF PREGNANCIES) BY CAUSE, CANADA (EXCLUDING QUEBEC), 2005–2014

| | | Maternal complication | | Placenta/cord/ membrane | | Congenital anomalies | | Intrauterine hypoxia/ asphyxia | | Other or unspecified causes | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Number of total births** | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) | Number of fetal deaths | Rate of fetal deaths per 1,000 total births (95% CI) |
| 2005 | 268,377 | 34 | 0.1 (0.1–0.2) | 312 | 1.2 (1.0–1.3) | 64 | 0.2 (0.2–0.3) | 62 | 0.2 (0.2–0.3) | 603 | 2.2 (2.1–2.4) |
| 2006 | 274,656 | 28 | 0.1 (0.1–0.1) | 298 | 1.1 (1.0–1.2) | 70 | 0.3 (0.2–0.3) | 36 | 0.1 (0.1–0.2) | 661 | 2.4 (2.2–2.6) |
| 2007 | 284,930 | 28 | 0.1 (0.1–0.1) | 305 | 1.1 (1.0–1.2) | 92 | 0.3 (0.3–0.4) | 52 | 0.2 (0.1–0.2) | 718 | 2.5 (2.3–2.7) |
| 2008 | 289,506 | 31 | 0.1 (0.1–0.2) | 288 | 1.0 (0.9–1.1) | 74 | 0.3 (0.2–0.3) | 41 | 0.1 (0.1–0.2) | 703 | 2.4 (2.3–2.6) |
| 2009 | 291,080 | 34 | 0.1 (0.1–0.2) | 253 | 0.9 (0.8–1.0) | 79 | 0.3 (0.2–0.3) | 33 | 0.1 (0.1–0.2) | 708 | 2.4 (2.3–2.6) |
| 2010 | 286,549 | 35 | 0.1 (0.1–0.2) | 272 | 0.9 (0.8–1.1) | 68 | 0.2 (0.2–0.3) | 26 | 0.1 (0.1–0.1) | 712 | 2.5 (2.3–2.7) |
| 2011 | 285,961 | 21 | 0.1 (0.0–0.1) | 262 | 0.9 (0.8–1.0) | 74 | 0.3 (0.2–0.3) | 35 | 0.1 (0.1–0.2) | 746 | 2.6 (2.4–2.8) |
| 2012 | 288,527 | 21 | 0.1 (0.0–0.1) | 241 | 0.8 (0.7–0.9) | 68 | 0.2 (0.2–0.3) | 22 | 0.1 (0.0–0.1) | 707 | 2.5 (2.3–2.6) |
| 2013 | 286,327 | 31 | 0.1 (0.1–0.2) | 211 | 0.7 (0.6–0.8) | 86 | 0.3 (0.2–0.4) | 19 | 0.1 (0.0–0.1) | 678 | 2.4 (2.2–2.6) |
| 2014 | 289,694 | 36 | 0.1 (0.1–0.2) | 213 | 0.7 (0.6–0.8) | 81 | 0.3 (0.2–0.3) | 42 | 0.1 (0.1–0.2) | 719 | 2.5 (2.3–2.7) |

Source: Canadian Institute for Health Information-Discharge Abstract Database, newborn linked records
† Includes fetal deaths with a gestational age ≥22 weeks if birth weight is unknown
** Includes live births and stillbirths
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# CHAPTER 11A: INFANT MORTALITY RATE

**TABLE 11A.1A**

RATES OF CRUDE INFANT, NEONATAL AND POSTNEONATAL DEATHS, BY YEAR, CANADA (EXCLUDING ONTARIO), 2002–2011

| Year | Number of live births | Number of neonatal deaths | Rate of neonatal deaths per 1,000 live births (95% CI) | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) | Number of neonatal survivors | Number of post-neonatal deaths | Rate of postneonatal deaths per 1,000 neonatal survivors (95% CI) |
|---|---|---|---|---|---|---|---|---|
| 2002 | 200,270 | 757 | 3.8 (3.5–4.1) | 1,081 | 5.4 (5.1–5.7) | 199,513 | 324 | 1.6 (1.5–1.8) |
| 2003 | 204,273 | 781 | 3.8 (3.6–4.1) | 1,073 | 5.3 (4.9–5.6) | 203,492 | 292 | 1.4 (1.3–1.6) |
| 2004 | 204,515 | 766 | 3.7 (3.5–4.0) | 1,039 | 5.1 (4.8–5.4) | 203,749 | 273 | 1.3 (1.2–1.5) |
| 2005 | 208,416 | 819 | 3.9 (3.7–4.2) | 1,118 | 5.4 (5.1–5.7) | 207,597 | 299 | 1.4 (1.3–1.6) |
| 2006 | 219,016 | 804 | 3.7 (3.4–3.9) | 1,096 | 5.0 (4.7–5.3) | 218,212 | 292 | 1.3 (1.2–1.5) |
| 2007 | 229,427 | 836 | 3.6 (3.4–3.9) | 1,158 | 5.0 (4.8–5.3) | 228,591 | 322 | 1.4 (1.3–1.6) |
| 2008 | 237,094 | 830 | 3.5 (3.3–3.7) | 1,154 | 4.9 (4.6–5.2) | 236,264 | 324 | 1.4 (1.2–1.5) |
| 2009 | 240,486 | 863 | 3.6 (3.4–3.8) | 1,167 | 4.9 (4.6–5.1) | 239,623 | 304 | 1.3 (1.1–1.4) |
| 2010 | 237,581 | 918 | 3.9 (3.6–4.1) | 1,207 | 5.1 (4.8–5.4) | 236,663 | 289 | 1.2 (1.1–1.4) |
| 2011 | 237,501 | 860 | 3.6 (3.4–3.9) | 1,185 | 5.0 (4.7–5.3) | 236,641 | 325 | 1.4 (1.2–1.5) |

Source: Statistics Canada, Vital Statistics
Data from Ontario were excluded because of data quality concerns.
CI = confidence interval

**TABLE 11A.1B**

RATES OF INFANT, NEONATAL AND POSTNEONATAL DEATHS (FOR BIRTHS ≥500 G†), BY YEAR, CANADA (EXCLUDING ONTARIO), 2001–2010

| Year | Number of live births | Number of neonatal deaths | Rate of neonatal deaths per 1,000 live births (95% CI) | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) | Number of neonatal survivors | Number of post-neonatal deaths | Rate of postneonatal deaths per 1,000 neonatal survivors (95% CI) |
|---|---|---|---|---|---|---|---|---|
| 2001 | 201,845 | 548 | 2.7 (2.5–3.0) | 849 | 4.2 (3.9–4.5) | 201,297 | 301 | 1.5 (1.3–1.7) |
| 2002 | 200,069 | 540 | 2.7 (2.5–2.9) | 842 | 4.2 (3.9–4.5) | 199,529 | 301 | 1.5 (1.3–1.7) |
| 2003 | 204,036 | 499 | 2.4 (2.2–2.7) | 758 | 3.7 (3.5–4.0) | 203,537 | 259 | 1.3 (1.1–1.4) |
| 2004 | 204,254 | 507 | 2.5 (2.3–2.7) | 783 | 3.8 (3.6–4.1) | 203,747 | 276 | 1.4 (1.2–1.5) |
| 2005 | 208,157 | 561 | 2.7 (2.5–2.9) | 843 | 4.0 (3.8–4.3) | 207,596 | 282 | 1.4 (1.2–1.5) |
| 2006 | 218,766 | 559 | 2.6 (2.3–2.8) | 885 | 4.0 (3.8–4.3) | 218,207 | 326 | 1.5 (1.3–1.7) |
| 2007 | 229,172 | 582 | 2.5 (2.3–2.8) | 886 | 3.9 (3.6–4.1) | 228,590 | 304 | 1.3 (1.2–1.5) |
| 2008 | 236,827 | 566 | 2.4 (2.2–2.6) | 907 | 3.8 (3.6–4.1) | 236,261 | 341 | 1.4 (1.3–1.6) |
| 2009 | 240,256 | 630 | 2.6 (2.4–2.8) | 909 | 3.8 (3.5–4.0) | 239,626 | 279 | 1.2 (1.0–1.3) |
| 2010 | 237,268 | 616 | 2.6 (2.4–2.8) | 923 | 3.9 (3.6–4.1) | 236,652 | 307 | 1.3 (1.2–1.5) |

Source: Statistics Canada, Vital Statistics, Birth-Death linked file

† 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.

Data from Ontario were excluded because of data quality concerns.

CI = confidence interval

## TABLE 11A.2

RATES OF CRUDE INFANT, NEONATAL AND POSTNEONATAL DEATHS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING ONTARIO), 2007–2011

| Province/territory | Number of live births | Number of neonatal deaths | Rate of neonatal deaths per 1,000 live births (95% CI) | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) | Number of neonatal survivors | Number of post-neonatal deaths | Rate of postneonatal deaths per 1,000 neonatal survivors (95% CI) |
|---|---|---|---|---|---|---|---|---|
| Newfoundland and Labrador | 23,744 | 112 | 4.7 (3.9–5.7) | 144 | 6.1 (5.1–7.1) | 23,632 | 32 | 1.4 (0.9–1.9) |
| Prince Edward Island | 7,168 | 17 | 2.4 (1.4–3.8) | 26 | 3.6 (2.4–5.3) | 7,151 | 9 | 1.3 (0.6–2.4) |
| Nova Scotia | 44,778 | 125 | 2.8 (2.3–3.3) | 176 | 3.9 (3.4–4.6) | 44,653 | 51 | 1.1 (0.9–1.5) |
| New Brunswick | 36,418 | 100 | 2.7 (2.2–3.3) | 148 | 4.1 (3.4–4.8) | 36,318 | 48 | 1.3 (1.0–1.8) |
| Quebec | 438,123 | 1,538 | 3.5 (3.3–3.7) | 1,986 | 4.5 (4.3–4.7) | 436,585 | 448 | 1.0 (0.9–1.1) |
| Manitoba | 78,106 | 379 | 4.9 (4.4–5.4) | 538 | 6.9 (6.3–7.5) | 77,727 | 159 | 2.0 (1.7–2.4) |
| Saskatchewan | 69,791 | 300 | 4.3 (3.8–4.8) | 439 | 6.3 (5.7–6.9) | 69,491 | 139 | 2.0 (1.7–2.4) |
| Alberta | 253,492 | 1,101 | 4.3 (4.1–4.6) | 1,463 | 5.8 (5.5–6.1) | 252,391 | 362 | 1.4 (1.3–1.6) |
| British Columbia | 220,857 | 571 | 2.6 (2.4–2.8) | 840 | 3.8 (3.6–4.1) | 220,286 | 269 | 1.2 (1.1–1.4) |
| Yukon and Northwest Territories** | 5,471 | 26 | 4.8 (3.1–7.0) | 37 | 6.8 (4.8–9.3) | 5,445 | 11 | 2.0 (1.0–3.6) |
| Nunavut | 4,141 | 38 | 9.2 (6.5–12.6) | 74 | 17.9 (14.1–22.4) | 4,103 | 36 | 8.8 (6.2–12.1) |
| **Canada** | **1,182,089** | **4,307** | **3.6 (3.5–3.8)** | **5,871** | **5.0 (4.8–5.1)** | **1,177,782** | **1,564** | **1.3 (1.3–1.4)** |

Source: Statistics Canada, Vital Statistics
** Combined due to low cell counts
Data from Ontario were excluded because of data quality concerns.
CI = confidence interval

## TABLE 11A.3

CAUSES OF INFANT DEATH, CANADA (EXCLUDING ONTARIO), 2007–2011

| Causes | Number of neonatal deaths | Proportion (%) of deaths among all neonatal deaths | Number of infant deaths | Proportion (%) of deaths among all infant deaths | Number of postneonatal deaths | Proportion (%) of deaths among all postneonatal deaths |
|---|---|---|---|---|---|---|
| Congenital anomalies | 923 | 21.4 | 1,272 | 21.7 | 349 | 22.3 |
| Asphyxia | 611 | 14.2 | 627 | 10.7 | 16 | 1.0 |
| Immaturity | 1,621 | 37.6 | 1,738 | 29.6 | 117 | 7.5 |
| Infection | 157 | 3.6 | 363 | 6.2 | 206 | 13.2 |
| SIDS | 36 | 0.8 | 342 | 5.8 | 306 | 19.6 |
| Other sudden/ unexplained infant death | 63 | 1.5 | 258 | 4.4 | 195 | 12.5 |
| External cause | 11 | 0.3 | 78 | 1.3 | 67 | 4.3 |
| Other/unknown | 885 | 20.5 | 1,193 | 20.3 | 308 | 19.7 |
| Total | 4,307 | 100.0 | 5,871 | 100.0 | 1,564 | 100.0 |

Source: Statistics Canada, Vital Statistics
Data from Ontario were excluded because of data quality concerns.

**TABLE 11A.4**

CAUSE-SPECIFIC RATES OF INFANT DEATH, BY YEAR, CANADA (EXCLUDING ONTARIO), 2007–2011

| | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Causes | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) | Number of infant deaths | Rate of infant deaths per 1,000 live births (95% CI) |
| Congenital anomalies | 258 | 1.1 (1.0–1.3) | 237 | 1.0 (0.9–1.1) | 254 | 1.1 (0.9–1.2) | 265 | 1.1 (1.0–1.3) | 258 | 1.1 (1.0–1.2) |
| Asphyxia | 130 | 0.6 (0.5–0.7) | 129 | 0.5 (0.5–0.6) | 121 | 0.5 (0.4–0.6) | 135 | 0.6 (0.5–0.7) | 112 | 0.5 (0.4–0.6) |
| Immaturity | 342 | 1.5 (1.3–1.7) | 325 | 1.4 (1.2–1.5) | 332 | 1.4 (1.2–1.5) | 379 | 1.6 (1.4–1.8) | 360 | 1.5 (1.4–1.7) |
| Infection | 81 | 0.4 (0.3–0.4) | 77 | 0.3 (0.3–0.4) | 78 | 0.3 (0.3–0.4) | 67 | 0.3 (0.2–0.4) | 60 | 0.3 (0.2–0.3) |
| SIDS | 79 | 0.3 (0.3–0.4) | 71 | 0.3 (0.2–0.4) | 73 | 0.3 (0.2–0.4) | 56 | 0.2 (0.2–0.3) | 63 | 0.3 (0.2–0.3) |
| Other sudden/ unexplained infant death | 38 | 0.2 (0.1–0.2) | 50 | 0.2 (0.2–0.3) | 42 | 0.2 (0.1–0.2) | 46 | 0.2 (0.1–0.3) | 82 | 0.3 (0.3–0.4) |
| External cause | 16 | 0.1 (0.0–0.1) | 14 | 0.1 (0.0–0.1) | 17 | 0.1 (0.0–0.1) | 17 | 0.1 (0.0–0.1) | 14 | 0.1 (0.0–0.1) |
| Other/ unknown | 214 | 0.9 (0.8–1.1) | 251 | 1.1 (0.9–1.2) | 250 | 1.0 (0.9–1.2) | 242 | 1.0 (0.9–1.2) | 236 | 1.0 (0.9–1.1) |
| Total | 1,158 | 5.0 (4.8–5.3) | 1,154 | 4.9 (4.6–5.2) | 1,167 | 4.9 (4.6–5.1) | 1,207 | 5.1 (4.8–5.4) | 1,185 | 5.0 (4.7–5.3) |
| Number of live births | 229,427 | | 237,094 | | 240,486 | | 237,581 | | 237,501 | |

Source: Statistics Canada, Vital Statistics
Data from Ontario were excluded because of data quality concerns.
CI = confidence interval

# CHAPTER 11B: NEONATAL MORTALITY RATE

## TABLE 11B.1

RATE OF NEONATAL DEATHS, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| | Crude neonatal deaths | | | Neonatal deaths for infants ≥500 g | | |
|---|---|---|---|---|---|---|
| Year | Number of live births | Number of neonatal deaths | Rate of neonatal deaths per 1,000 live births (95% CI) | Number of live births | Number of neonatal deaths | Rate of neonatal deaths per 1,000 live births (95% CI) |
| 2005 | 268,879 | 1,083 | 4.0 (3.8–4.3) | 268,517 | 740 | 2.8 (2.6–3.0) |
| 2006 | 275,044 | 962 | 3.5 (3.3–3.7) | 274,718 | 650 | 2.4 (2.2–2.6) |
| 2007 | 285,179 | 1,079 | 3.8 (3.6–4.0) | 284,818 | 727 | 2.6 (2.4–2.7) |
| 2008 | 290,246 | 1,071 | 3.7 (3.5–3.9) | 289,895 | 731 | 2.5 (2.3–2.7) |
| 2009 | 291,456 | 1,041 | 3.6 (3.4–3.8) | 291,132 | 728 | 2.5 (2.3–2.7) |
| 2010 | 286,990 | 1,030 | 3.6 (3.4–3.8) | 286,604 | 657 | 2.3 (2.1–2.5) |
| 2011 | 286,480 | 1,065 | 3.7 (3.5–3.9) | 286,099 | 698 | 2.4 (2.3–2.6) |
| 2012 | 289,291 | 1,009 | 3.5 (3.3–3.7) | 288,929 | 659 | 2.3 (2.1–2.5) |
| 2013 | 287,170 | 1,026 | 3.6 (3.4–3.8) | 286,780 | 657 | 2.3 (2.1–2.5) |
| 2014 | 290,434 | 1,010 | 3.5 (3.3–3.7) | 290,089 | 680 | 2.3 (2.2–2.5) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 11B.2

RATE OF CRUDE NEONATAL DEATHS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| Province/territory | Number of live births | Number of neonatal deaths | Rate of neonatal deaths per 1,000 live births (95% CI) |
|---|---|---|---|
| Newfoundland and Labrador | 22,774 | 95 | 4.2 (3.4–5.1) |
| Prince Edward Island | 7,003 | 16 | 2.3 (1.3–3.7) |
| Nova Scotia | 43,007 | 133 | 3.1 (2.6–3.7) |
| New Brunswick | 34,751 | 105 | 3.0 (2.5–3.7) |
| Ontario | 690,259 | 2,528 | 3.7 (3.5–3.8) |
| Manitoba | 79,588 | 329 | 4.1 (3.7–4.6) |
| Saskatchewan | 73,284 | 291 | 4.0 (3.5–4.5) |
| Alberta | 257,874 | 964 | 3.7 (3.5–4.0) |
| British Columbia | 213,563 | 551 | 2.6 (2.4–2.8) |
| Yukon/Northwest Territories* | 5,416 | 14 | 2.6 (1.4–4.3) |
| Nunavut | 4,136 | 35 | 8.5 (5.9–11.7) |
| **Canada** | **1,440,365** | **5,140** | **3.6 (3.5–3.7)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
* Combined due to low cell counts
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 11B.3**

CAUSES OF NEONATAL DEATH, CANADA (EXCLUDING QUEBEC), 2005–2014

| Causes | Number of neonatal deaths | Proportion (%) of deaths among all neonatal deaths |
|---|---|---|
| Congenital anomalies | 1,900 | 37.0 |
| Asphyxia | 795 | 15.5 |
| Immaturity | 2,270 | 44.2 |
| Infection | 157 | 3.1 |
| SIDS | 7 | 0.1 |
| Other sudden/unexplained infant death/external cause | 11 | 0.21 |
| Total | 5,140 | 100.0 |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
Data for Quebec were excluded because they do not contribute to CIHI-DAD.

# CHAPTER 12: BIRTH PREVALENCE OF CONGENITAL ANOMALIES

## TABLE 12.1

BIRTH PREVALENCE OF CONGENITAL ANOMALIES, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| Year | Number of total births** | Number of cases | Rate per 10,000 total births (95% CI) |
|---|---|---|---|
| 2005 | 269,530 | 10,837 | 402.1 (394.5–409.7) |
| 2006 | 275,737 | 10,564 | 383.1 (375.8–390.5) |
| 2007 | 286,098 | 10,799 | 377.5 (370.4–384.6) |
| 2008 | 290,725 | 11,203 | 385.3 (378.2–392.5) |
| 2009 | 292,339 | 11,279 | 385.8 (378.7–393.0) |
| 2010 | 287,865 | 11,457 | 398.0 (390.7–405.4) |
| 2011 | 287,283 | 11,392 | 396.5 (389.3–403.9) |
| 2012 | 289,899 | 11,659 | 402.2 (394.9–409.5) |
| 2013 | 287,749 | 11,927 | 414.5 (407.1–422.0) |
| 2014 | 291,117 | 12,533 | 430.5 (423.0–438.1) |

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)
** Includes live births and stillbirths
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 12.2

RATE OF DOWN SYNDROME, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| Year | Number of total births** | Number of cases | Rate per 10,000 total births (95% CI) |
|---|---|---|---|
| 2005 | 269,530 | 432 | 16.0 (14.6–17.6) |
| 2006 | 275,737 | 430 | 15.6 (14.2–17.1) |
| 2007 | 286,098 | 423 | 14.8 (13.4–16.3) |
| 2008 | 290,725 | 439 | 15.1 (13.7–16.6) |
| 2009 | 292,339 | 421 | 14.4 (13.1–15.8) |
| 2010 | 287,865 | 442 | 15.4 (14.0–16.9) |
| 2011 | 287,283 | 445 | 15.5 (14.1–17.0) |
| 2012 | 289,899 | 459 | 15.8 (14.4–17.4) |
| 2013 | 287,749 | 482 | 16.8 (15.3–18.3) |
| 2014 | 291,117 | 463 | 15.9 (14.5–17.4) |

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)
** Includes live births and stillbirths
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 12.3

RATE OF DOWN SYNDROME, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2005–2014

| Province/territory | Number of total births** | Number of cases | Rate per 10,000 total births (95% CI) |
|---|---|---|---|
| Newfoundland and Labrador | 46,056 | 78 | 16.9 (13.4–21.1) |
| Prince Edward Island | 14,091 | 19 | 13.5 (8.1–21.1) |
| Nova Scotia | 87,115 | 142 | 16.3 (13.7–19.2) |
| New Brunswick | 70,079 | 98 | 14.0 (11.4–17.0) |
| Ontario | 1,391,817 | 1,939 | 13.9 (13.3–14.6) |
| Manitoba | 154,063 | 221 | 14.3 (12.5–16.4) |
| Saskatchewan | 138,378 | 199 | 14.4 (12.5–16.5) |
| Alberta | 493,970 | 819 | 16.6 (15.5–17.8) |
| British Columbia | 424,283 | 675 | 15.9 (14.7–17.2) |
| Yukon/Northwest Territories*** | 10,731 | 13 | 12.1 (6.4–20.7) |
| Nunavut | 7,829 | 14 | 17.9 (9.8–30.0) |
| **Canada*** | **2,858,342** | **4,436** | **15.5 (15.1–16.0)** |

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)
* Includes data from unknown provinces and territories
** Includes live births and stillbirths
***Combined due to low cell counts
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 12.4

RATE OF NEURAL TUBE DEFECTS, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| | | All neural tube defects | | Spina bifida | | Anencephalus and similar anomalies*** | |
|---|---|---|---|---|---|---|---|
| Year | Number of total births** | Number of cases | Rate per 10,000 total births (95% CI) | Number of cases | Rate per 10,000 total births (95% CI) | Number of cases | Rate per 10,000 total births (95% CI) |
| 2005 | 269,530 | 131 | 4.9 (4.1–5.8) | 86 | 3.2 (2.6–3.9) | 31 | 1.2 (0.8–1.6) |
| 2006 | 275,737 | 120 | 4.4 (3.6–5.2) | 81 | 2.9 (2.3–3.7) | 31 | 1.1 (0.8–1.6) |
| 2007 | 286,098 | 142 | 5.0 (4.2–5.9) | 87 | 3.0 (2.4–3.8) | 30 | 1.0 (0.7–1.5) |
| 2008 | 290,725 | 141 | 4.8 (4.1–5.7) | 82 | 2.8 (2.2–3.5) | 31 | 1.1 (0.7–1.5) |
| 2009 | 292,339 | 152 | 5.2 (4.4–6.1) | 99 | 3.4 (2.8–4.1) | 37 | 1.3 (0.9–1.7) |
| 2010 | 287,865 | 163 | 5.7 (4.8–6.6) | 100 | 3.5 (2.8–4.2) | 44 | 1.5 (1.1–2.1) |
| 2011 | 287,283 | 160 | 5.6 (4.7–6.5) | 110 | 3.8 (3.1–4.6) | 35 | 1.2 (0.8–1.7) |
| 2012 | 289,899 | 144 | 5.0 (4.2–5.8) | 96 | 3.3 (2.7–4.0) | 27 | 0.9 (0.6–1.4) |
| 2013 | 287,749 | 126 | 4.4 (3.6–5.2) | 74 | 2.6 (2.0–3.2) | 31 | 1.1 (0.7–1.5) |
| 2014 | 291,117 | 165 | 5.7 (4.8–6.6) | 105 | 3.6 (2.9–4.4) | 46 | 1.6 (1.2–2.1) |

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)
** Includes live births and stillbirths
***Anencephalus and similar anomalies include craniochischisis, anencephaly and other neural tube defects
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 12.5

RATE OF NEURAL TUBE DEFECTS, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2005–2014

| | | All neural tube defects | | Spina bifida | |
|---|---|---|---|---|---|
| Province/territory | Number of total births** | Number of cases | Rate per 10,000 total births (95% CI) | Number of cases | Rate per 10,000 total births (95% CI) |
| Newfoundland and Labrador | 46,056 | 28 | 6.1 (4.0–8.8) | 17 | 3.7 (2.1–5.9) |
| Prince Edward Island | 14,091 | 11 | 7.8 (3.9–14.0) | 10 | 7.1 (3.4–13.1) |
| Nova Scotia | 87,115 | 53 | 6.1 (4.6–8.0) | 35 | 4.0 (2.8–5.6) |
| New Brunswick | 70,079 | 23 | 3.3 (2.1–4.9) | 16 | 2.3 (1.3–3.7) |
| Ontario | 1,391,817 | 576 | 4.1 (3.8–4.5) | 396 | 2.8 (2.6–3.1) |
| Manitoba | 154,063 | 89 | 5.8 (4.6–7.1) | 47 | 3.1 (2.2–4.1) |
| Saskatchewan | 138,378 | 82 | 5.9 (4.7–7.4) | 49 | 3.5 (2.6–4.7) |
| Alberta | 493,970 | 267 | 5.4 (4.8–6.1) | 161 | 3.3 (2.8–3.8) |
| British Columbia | 424,283 | 170 | 4.0 (3.4–4.7) | 120 | 2.8 (2.3–3.4) |
| Yukon/Northwest Territories/Nunavut*** | 18,560 | 12 | 6.5 (3.3–11.3) | 6 | 3.2 (1.2–7.0) |
| **Canada*** | **2,858,342** | **1,444** | **5.1 (4.8–5.3)** | **920** | **3.2 (3.0–3.4)** |

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)
* Includes data from unknown provinces and territories
** Includes live births and stillbirths
*** Combined due to low cell counts
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 12.6

RATE OF CLEFT PALATE AND CLEFT LIP WITH OR WITHOUT CLEFT PALATE, BY YEAR, CANADA (EXCLUDING QUEBEC), 2005–2014

| | | Cleft palate | | Cleft lip with or without cleft palate | |
|---|---|---|---|---|---|
| Year | Number of total births** | Number of cases | Rate per 10,000 total births (95% CI) | Number of cases | Rate per 10,000 total births (95% CI) |
| 2005 | 269,530 | 201 | 7.5 (6.5–8.6) | 255 | 9.5 (8.3–10.7) |
| 2006 | 275,737 | 188 | 6.8 (5.9–7.9) | 235 | 8.5 (7.5–9.7) |
| 2007 | 286,098 | 187 | 6.5 (5.6–7.5) | 281 | 9.8 (8.7–11.0) |
| 2008 | 290,725 | 215 | 7.4 (6.4–8.5) | 269 | 9.3 (8.2–10.4) |
| 2009 | 292,339 | 164 | 5.6 (4.8–6.5) | 303 | 10.4 (9.2–11.6) |
| 2010 | 287,865 | 182 | 6.3 (5.4–7.3) | 284 | 9.9 (8.8–11.1) |
| 2011 | 287,283 | 171 | 6.0 (5.1–6.9) | 261 | 9.1 (8.0–10.3) |
| 2012 | 289,899 | 190 | 6.6 (5.7–7.6) | 271 | 9.3 (8.3–10.5) |
| 2013 | 287,749 | 183 | 6.4 (5.5–7.4) | 275 | 9.6 (8.5–10.8) |
| 2014 | 291,117 | 170 | 5.8 (5.0–6.8) | 296 | 10.2 (9.0–11.4) |

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)
** Includes live births and stillbirths
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

**TABLE 12.7**

RATE OF CLEFT PALATE AND CLEFT LIP WITH OR WITHOUT CLEFT PALATE, BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2005–2014

| | | Cleft palate | | Cleft lip with or without cleft palate | |
|---|---|---|---|---|---|
| Province/territory | Number of total births** | Number of cases | Rate per 10,000 total births (95% CI) | Number of cases | Rate per 10,000 total births (95% CI) |
| Newfoundland and Labrador | 46,056 | 28 | 6.1 (4.0–8.8) | 43 | 9.3 (6.8–12.6) |
| Prince Edward Island | 14,091 | 12 | 8.5 (4.4–14.9) | 14 | 9.9 (5.4–16.7) |
| Nova Scotia | 87,115 | 58 | 6.7 (5.1–8.6) | 79 | 9.1 (7.2–11.3) |
| New Brunswick | 70,079 | 47 | 6.7 (4.9–8.9) | 54 | 7.7 (5.8–10.1) |
| Ontario | 1,391,817 | 808 | 5.8 (5.4–6.2) | 1,070 | 7.7 (7.2–8.2) |
| Manitoba | 154,063 | 140 | 9.1 (7.6–10.7) | 187 | 12.1 (10.5–14.0) |
| Saskatchewan | 138,378 | 102 | 7.4 (6.0–8.9) | 211 | 15.2 (13.3–17.5) |
| Alberta | 493,970 | 333 | 6.7 (6.0–7.5) | 569 | 11.5 (10.6–12.5) |
| British Columbia | 424,283 | 294 | 6.9 (6.2–7.8) | 427 | 10.1 (9.1–11.1) |
| Yukon/ Northwest Territories*** | 10,731 | 9 | 8.4 (3.8–15.9) | 14 | 13.0 (7.1–21.9) |
| Nunavut | 7,829 | 7 | 8.9 (3.6–18.4) | 14 | 17.9 (9.8–30.0) |
| **Canada*** | **2,858,342** | **1,851** | **6.5 (6.2–6.8)** | **2,730** | **9.6 (9.2–9.9)** |

Source: Canadian Institute for Health Information- Discharge Abstract Database (CIHI-DAD)
* Includes data from unknown provinces and territories
** Includes live births and stillbirths
*** Combined due to low cell counts
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# CHAPTER 13: MULTIPLE BIRTH RATE

## TABLE 13.1

RATE OF MULTIPLE BIRTH, CANADA (EXCLUDING QUEBEC), 2005–2014

| Year | Number of total births** | Number of multiple births | Rate of multiple births per 100 total births (95% CI) |
|---|---|---|---|
| 2005 | 268,632 | 8,403 | 3.1 (3.1–3.2) |
| 2006 | 274,864 | 8,515 | 3.1 (3.0–3.2) |
| 2007 | 285,230 | 9,095 | 3.2 (3.1–3.3) |
| 2008 | 290,389 | 9,259 | 3.2 (3.1–3.3) |
| 2009 | 291,451 | 9,798 | 3.4 (3.3–3.4) |
| 2010 | 286,983 | 9,680 | 3.4 (3.3–3.4) |
| 2011 | 286,405 | 9,668 | 3.4 (3.3–3.4) |
| 2012 | 288,892 | 9,837 | 3.4 (3.3–3.5) |
| 2013 | 286,787 | 9,859 | 3.4 (3.4–3.5) |
| 2014 | 290,078 | 9,705 | 3.3 (3.3–3.4) |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
** Includes live births and stillbirths, excludes unknown plurality
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

## TABLE 13.2

RATE OF MULTIPLE BIRTH BY PROVINCE/TERRITORY, CANADA (EXCLUDING QUEBEC), 2010–2014

| Province/territory | Number of total births** | Number of multiple births | Rate of multiple births per 100 total births (95% CI) |
|---|---|---|---|
| Newfoundland and Labrador | 22,696 | 768 | 3.4 (3.2–3.6) |
| Prince Edward Island | 6,984 | 225 | 3.2 (2.8–3.7) |
| Nova Scotia | 42,669 | 1,455 | 3.4 (3.2–3.6) |
| New Brunswick | 34,820 | 1,065 | 3.1 (2.9–3.2) |
| Ontario | 676,239 | 24,372 | 3.6 (3.6–3.6) |
| Manitoba | 79,827 | 2,228 | 2.8 (2.7–2.9) |
| Saskatchewan | 73,067 | 2,208 | 3.0 (2.9–3.1) |
| Alberta | 257,468 | 8,611 | 3.3 (3.3–3.4) |
| British Columbia | 211,326 | 6,783 | 3.2 (3.1–3.3) |
| Yukon | 2,031 | 66 | 3.2 (2.5–4.1) |
| Northwest Territories | 3,624 | 84 | 2.3 (1.9–2.9) |
| Nunavut | 4,021 | 82 | 2.0 (1.6–2.5) |
| **Canada*** | **1,439,145** | **48,749** | **3.4 (3.4–3.4)** |

Source: Canadian Institute for Health Information-Discharge Abstract Database (CIHI-DAD)
* Includes data for unknown provinces and territories
** Includes live births and stillbirths
Data for Quebec were excluded because they do not contribute to CIHI-DAD.
CI = confidence interval

# APPENDIX B: DATA SOURCE

## DATA SOURCE

The Canadian Institute for Health Information (CIHI) maintains the Discharge Abstract Database (DAD), which captures hospital separation information—transfer, discharge or death—from the majority of Canada's acute care hospitals. The DAD is an electronic database that includes information on inpatient acute, chronic and rehabilitation care and day surgery, accounting for about 80% of all hospital inpatient discharges in Canada. The DAD contains considerable data on each hospitalization, including demographic and residence information, length of stay, most responsible diagnosis, secondary and co-morbid diagnoses, and procedures performed during the hospitalization. Beginning in 2001/2002, the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems for diagnoses (ICD-10-CA) and the Canadian Classification of Health Interventions for procedures (CCI) were gradually adopted by most jurisdictions. ICD-10-CA is an enhanced version of ICD-10 developed by CIHI for morbidity classification in Canada. Most women in Canada give birth in hospitals (98.3%), therefore the data contained within the database captures most deliveries in Canada except Quebec, and is the largest available source for diagnoses of newborn and maternal health conditions and conducting congenital anomaly surveillance activities.

## LIMITATIONS OF THE CIHI-DAD

There are limitations with using the CIHI-DAD for perinatal surveillance which include, but are not restricted to: the use of ICD codes (i.e. changed from ICD-9 to ICD 10; unconfirmed diagnosis); the lack of data on maternal prenatal exposures and risk factors (i.e. obesity); improvements in data quality are needed for complicated diagnoses; accuracy is likely to be lower for codes other than the primary or most responsible diagnosis. Further the CIHI- DAD does not capture home births, which account for approximately 1.6% of total births in Canada.[1]

There are limitations with using the CIHI-DAD for congenital anomalies surveillance which include, but are not restricted to: the use of ICD codes (i.e. changing from ICD-9 to ICD 10; unconfirmed diagnosis); the failure to capture congenital anomalies diagnosed after birth during an out-patient health care visit; the inability of completely eliminate duplication of readmission records; the lack of complete information on pregnancy terminations for fetal anomalies, which is an essential component of congenital anomalies surveillance; and the lack of data on maternal prenatal exposures and risk factors. Previously, data were based on an ascertainment period for cases with congenital anomalies of one year after birth. As of the fiscal year 2000/2001, new data access regulations made it impossible to ascertain such cases later than 30 days after birth. Despite these limitations, the DAD remains the best available source of data for national surveillance of congenital anomalies and efforts are being made to address these limitations.

## REFERENCE

1. Statistics Canada. Table 102–4516—Live births and fetal deaths (stillbirths), by place of birth (hospital and non-hospital), Canada, provinces and territories, annual, CANSIM (database). (accessed: September 2016).