

## TECHNICAL NOTES

# Reproductive Health Snapshot

This Snapshot captures reproductive health indicators using hospital deliveries and births, reported by calendar year of discharge for 35 Public Health Units (PHU), 14 Local Health Integration Networks (LHIN), and other geographic comparators in Ontario for the calendar years 2003 to 2018.

## Adapted from:

APHEO Reproductive Health Indicators ([apheo.ca/temporary-core-indicators-table](http://apheo.ca/temporary-core-indicators-table))

OECD sex ratio at birth indicator: ([stats.oecd.org/glossary/detail.asp?ID=2447](http://stats.oecd.org/glossary/detail.asp?ID=2447))

## Specific indicators:

### Crude birth rate

- Numerator: All live births
- Denominator: per 1,000 total population
- Measures included: Overall crude rate

### Pregnancy rate (2006 – 2017 only)

- Numerator: Pregnancies include live births, stillbirths and therapeutic abortions.
- Denominator: per 1,000 females of reproductive age (15 to 49)
- Measures included: Overall rate (15 to 49), teen pregnancy rate (15 to 19), age-specific rates (20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49)

### Fertility rates

- Numerator: All pregnancies resulting in live births for females 15–49 years of age,
- Denominator: per 1,000 females of reproductive age (15 to 49)
- Measures included: Overall rate (i.e., General fertility rate–females 15–49), teen fertility rate (females 15–19), age-specific rates (20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49)

### Preterm birth rate

- Numerator: All live births with gestational age less than 37 weeks
- Denominator: per 100 live births
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

**Small for gestational age**

- Numerator: All live singleton births with birth weights less than the 10th percentile of birth weights with the same sex and same gestational age in weeks according to the standard Kramer reference population<sup>1</sup>
- Denominator: Per 100 live singleton births
- Includes only births with gestational ages from 22–43 weeks
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

**Large for gestational age**

- Numerator: All live singleton births with birth weights greater than the 90th percentile of birth weights with the same sex and same gestational age in weeks according to the standard Kramer reference population<sup>1</sup>
- Denominator: per 100 live singleton births
- Includes only births with gestational ages from 22–43 weeks
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

**Low birth weight rate**

- Numerator: All live births with birth weight less than 2500g
- Denominator: per 100 live births with a valid weight
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

**Full-term low birth weight rate**

- Numerator: All live full-term singleton births with a birth weight less than 2500g and gestational age greater than or equal to 37 weeks
- Denominator: per 100 live full-term singleton births with a valid weight
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

**High birth weight rate**

- Numerator: All live births with birth weight greater than or equal to 4500g
- Denominator: per 100 live full-term births with a valid weight
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

**Multiple live birth rate**

- Numerator: All multiple live births
- Denominator: per 100 live births
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

**Stillbirth rate**

- All stillborn births
- Denominator: per 1,000 births
- Measures included: Crude rate (both sexes), crude rate (males), crude rate (females)

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<sup>1</sup> Kramer MS, Platt RW, Wen SW, Joseph KS, Allen A, Abrahamowicz M, et al. A new and improved population-based Canadian reference for birth weight for gestational age. *Pediatrics*. 2001; 108(2).

### **Average age of mother at birth**

- Average age of all women who gave birth (live births only)
- Measures included: Overall average age, average age at birth of first infant (previous live births=0)\*

\*Age at birth of first infant should be interpreted with caution in 2006. See “Limitations” section

### **Sex ratio at birth**

- Numerator: Number of males born alive
- Denominator: per 100 females born alive
- Measures included: Overall sex ratio (live births)

## **Metrics included:**

- Rates
- 95% confidence intervals
- Statistical significance compared to Ontario (for rates, confidence interval around the difference between the health unit rate and the Ontario rate does not include zero; for average age, confidence intervals for PHU and Ontario do not overlap)
- Numerator
- Denominator

## **Geographic comparisons included:**

- Ontario
- Ontario minus Toronto
- Snapshots peer groups (based on Statistics Canada peer groups). For more information on Statistics Canada peer group methodology see: [Health region peer groups – working paper, 2018](#). Table 1 shows the mapping between the peer groupings used in Snapshots and the nationally defined 2018 Statistics Canada peer groups:

**Table 1. Mapping between Snapshots Peer Groups and Statistics Canada 2018 Peer Groups**

**Mainly urban centres with moderate population density (Statistics Canada peer group B)**

Durham Region Health Department  
Halton Region Public Health  
City of Hamilton Public Health Services  
Middlesex-London Health Unit  
Ottawa Public Health  
Region of Waterloo Public Health and Emergency Services  
Windsor-Essex County Health Unit

**Sparsely populated urban-rural mix (Statistics Canada peer group C)**

Algoma Public Health  
Brant County Health Unit  
Chatham-Kent Public Health  
Eastern Ontario Health Unit  
Haliburton, Kawartha, Pine Ridge District Health Unit  
Hastings Prince Edward Public Health  
Kingston, Frontenac and Lennox & Addington Public Health  
Lambton Public Health  
Niagara Region Public Health  
North Bay Parry Sound District Health Unit  
Porcupine Health Unit  
Peterborough Public Health  
Public Health Sudbury & Districts  
Thunder Bay District Health Unit  
Timiskaming Health Unit

**Mainly rural (Statistics Canada peer group D)**

Grey Bruce Health Unit  
Haldimand-Norfolk Health Unit  
Huron County Health Unit  
Leeds, Grenville & Lanark District Health Unit  
Northwestern Health Unit  
Perth District Health Unit  
Renfrew County and District Health Unit  
Simcoe Muskoka District Health Unit  
Southwestern Public Health  
Wellington-Dufferin-Guelph Public Health

**Largest population centres with high population density (Statistics Canada peer groups G & H)**

Toronto Public Health  
Peel Public Health  
York Region Public Health

## Exclusion criteria:

Records without a valid gender have been excluded from sex specific crude rates. Records without a valid weight (weight=0) have been excluded from calculation of low birth rates, high birth rates, small for gestational age and large for gestational age.

## Other methodological notes:

Population estimates were not available for 2018. PHU and LHIN rates for 2018 were calculated using 2018 population projections.

Elgin St. Thomas Public Health and Oxford County Public Health & Emergency Services merged to form Southwestern Public Health in 2018. In this Snapshot, case counts and population counts for the two public health units were summed to calculate rates for Southwestern Public Health.

## Limitations:

Hospitalization data excludes births which occur outside of hospital which are thought to represent 2% of all births. Small and large for gestational age rates did not account for maternal ethnicity, though this may strongly influence infant's birth weight. For the indicator average age of mother at birth, the measure average age at first birth, includes information from 2006–18. However, 2006 data should be interpreted with caution because of high missingness for the field previous number of live births in 2006 (23% missing). Missingness is less than 1% of births for 2007–18.

## Data sources:

### Hospitalization

- Original source: Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD)
- Distributed by: Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO
- Inpatient Discharges, 2006-2014, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: February 25, 2016
- Inpatient Discharges, 2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: November 9, 2016
- Inpatient Discharges, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: December 2, 2017
- Inpatient Discharges, 2017, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: January 3, 2019
- Inpatient Discharges, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: December 4, 2019

### **Therapeutic abortions**

- Original source: Hospital TAs: Canadian Institute for Health Information (CIHI), Clinic TAs: Ontario MOHLTC, Private Physician Office (PPO) TAs: Ontario MOHLTC
- Distributed by: Ontario Ministry of Health and Long-Term Care (MOHLTC): IntelliHEALTH ONTARIO (IntelliHEALTH)
- Hospital and Medical Services Data, 2006-2017, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: December 6, 2019

### **Denominator (2006–2016)**

#### **Population estimates**

Original source: Statistics Canada

- Distributed by: Ontario Ministry of Health and Long-Term Care Health Analytics Branch
- Population Estimates, 2006-2017, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: November 26, 2019 (PHU); November 29, 2019 (LHIN).

#### **Population projections (2018)**

Original source: Ontario, Ministry of Finance

- Population projections, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted: November 26, 2019 (PHU); November 29, 2019 (LHIN).

## **Suggested citation:**

#### **Generic citation format:**

Author. Content tool: Title of indicator. Place of publication: Publisher; copyright year [last updated date; date of access]. Available from: insert URL to page being referenced.

#### **Example citation:**

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Reproductive health Snapshot: crude birth rate, 2018 [Internet]. Toronto, ON: Queen's Printer for Ontario; c2020 [updated 2020 Jan 31; cited 2020 Feb 8]. Available from:

[publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Reproductive-Health.aspx](https://publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Reproductive-Health.aspx)