

# HEALTH SURVEILLANCE INDICATORS: PRETERM BIRTHS



## Public Health Relevance

Preterm birth, defined as a birth before 37 completed weeks of pregnancy, is the leading cause of death among newborns and infants in industrialized countries. Preterm birth is also associated with higher risks of long term health problems, such as cerebral palsy, hearing loss, and intellectual disabilities.

Known risk factors for preterm birth include multiple birth pregnancies (i.e., twins, triplets, etc.), history of preterm birth, certain infections during pregnancy, chronic health problems in the mother, as well as smoking, alcohol use and illicit drug use during pregnancy.

## Highlights

1. The preterm birth rate in Toronto remained stable from 2006 to 2013.
2. The preterm birth rate for Toronto was not significantly different from the rest of Ontario or the rest of the GTA.
3. The preterm birth rate varied across Toronto neighbourhoods.
4. The majority of preterm babies in Toronto were moderate or late preterm.
5. The preterm birth rate was significantly higher for babies from multiple births than for singleton births in Toronto.

## Trends Over Time

The preterm birth rate in Toronto remained stable from 2006 to 2013.

Figure 1 shows the preterm birth rate (number of preterm births per 100 live births) in Toronto from 2006 to 2013. The preterm birth rate remained relatively stable during this eight year period. On average, approximately eight of every hundred babies were born preterm each year. The preterm birth rate in 2013 was 8.2%.

**Figure 1: Preterm Birth Rate, Toronto, 2006 to 2013**



Data Source: see Data Notes.

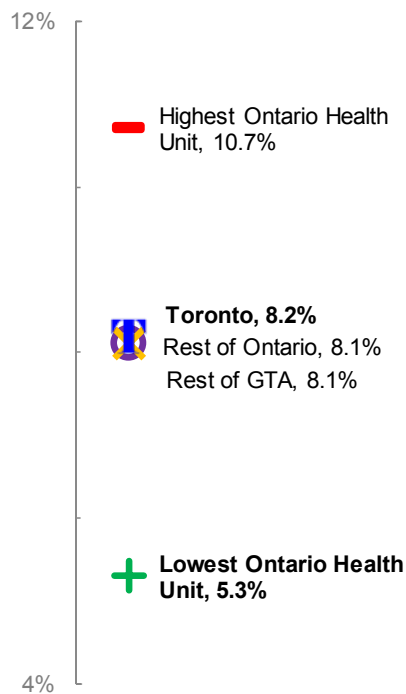
## Regional Comparisons

The preterm birth rate for Toronto was not significantly different from the rest of Ontario or rest of GTA.

Figure 2 shows the preterm birth rate for Toronto in 2013, compared to the rest of Ontario (Ontario excluding Toronto), the rest of the Greater Toronto Area (GTA excluding Toronto) and the Ontario health units with the highest and lowest rates.

The preterm birth rate for Toronto was not significantly different from the rest of Ontario or the rest of the GTA. Toronto rate ranked 16<sup>th</sup> of the 36 health units in Ontario with the first ranked health unit having the highest rate.

**Figure 2: Preterm Birth Rate, Toronto Compared to Other Selected Regions in Ontario, 2013**



Data Source: see Data Notes.

# Neighbourhood Comparisons

The preterm birth rate varied across Toronto neighbourhoods.

Map 1 shows preterm birth rate by Toronto neighbourhood for 2009 to 2013 combined. The preterm birth rate varied across Toronto neighbourhoods. The lowest neighbourhood rate was 4.5% while the highest neighbourhood rate was 11.7%.

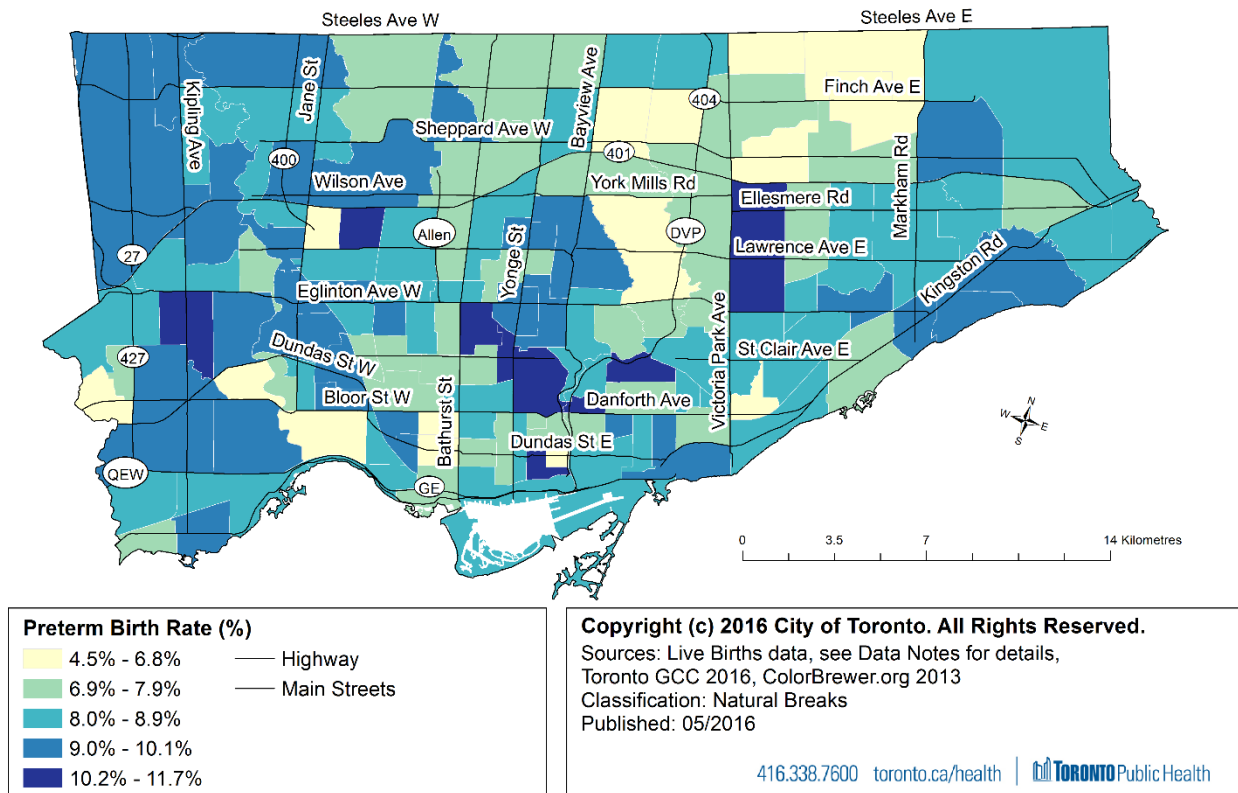
Some neighbourhoods with significantly higher preterm birth rates than the city overall included:

- Black Creek
- Moss Park
- Mount Olive-Silverstone-Jamestown
- Wexford/Maryvale
- Yonge-St. Clair

Some neighbourhoods with significantly lower preterm birth rates than the city overall included:

- Agincourt North
- Don Valley Village
- Milliken
- Steeles
- Tam O'Shanter-Sullivan
- Trinity-Bellwoods

**Map 1: Preterm Birth Rate, by Neighbourhood, Toronto, 2009 to 2013 Combined**



## Socio-demographics

The majority of preterm babies in Toronto were moderate or late preterm. The preterm birth rate was significantly higher for babies from multiple births than for singleton births.

Just under 2,500 Toronto babies were born preterm in 2013. Tables 1, 2, and 3 show the distribution of these babies and the preterm birth rate by selected birth characteristics for Toronto in 2013.

There was a significant difference in the preterm birth rate between sexes with a higher rate in male babies than in female babies.

The preterm birth rate was significantly higher for multiple births than for singleton births. Although babies from multiple births are at higher risk for preterm birth, these babies represented less than a quarter (23%) of all preterm babies in 2013; the majority of preterm babies were singletons (77%).

The vast majority (84%) of preterm babies were born between 32 and 36 weeks (moderate or late preterm).

**Table 1: Distribution of Preterm Births and Preterm Birth Rate by Sex, Toronto, 2013**

Newborn Sex	Preterm Births	Total Births	Preterm Birth Rate
Female	1,110	14,833	7.5%
Male	1,362	15,498	8.8% <sup>H</sup>

<sup>H</sup> Significantly higher than the preterm birth rate for female newborns.  
Data Source: see Data Notes.

**Table 2: Distribution of Preterm Births and Preterm Birth Rate by Birth Type, Toronto, 2013**

Birth Type	Preterm Births	Total Births	Preterm Birth Rate
Singleton	1,897	29,262	6.5%
Multiple	578	1,072	53.9% <sup>H</sup>

<sup>H</sup> Significantly higher for preterm birth rate for singletons.  
Data Source: see Data Notes.

**Table 3: Distribution of Preterm Births by Gestational Age, Toronto, 2013**

<b>Gestational Age</b>	<b>PretermBirths</b>
Less than 28 weeks (extremely preterm)	190
28 to less than 32 weeks (very preterm)	211
32 to less than 37 weeks (moderate/late preterm)	2,074

Data Source: see Data Notes.

Table 4 shows the preterm birth rate by income quintile for 2009 to 2013 combined. Quintile 1 contains the areas in Toronto with the highest percent of people living below the low income measure (LIM), making it the lowest income quintile. Quintile 5 contains the areas in Toronto with the lowest percent of people living below the LIM, making it the highest income quintile.

The preterm birth rate in the second lowest income quintile (Quintile 2) was significantly lower than the rate in the highest income Quintile (Quintile 5). Other than for Quintile 2, there were no significant differences in the preterm birth rate across income quintiles.

**Table 4: Preterm Birth Rate, by Income Quintile, Toronto, 2009 to 2013 Combined**

<b>Income Quintile</b>	<b>Preterm Birth Rate</b>
Quintile 1 (Lowest)	8.3%
Quintile 2	7.8% <sup>L</sup>
Quintile 3	8.5%
Quintile 4	8.3%
Quintile 5 (Highest)	8.6%

<sup>L</sup> Significantly lower than Quintile 5, the highest income group.

Data Source: see Data Notes.

# Data Notes

## Notes

- Significant differences were estimated using overlapping confidence intervals. Although this method is conservative ( $\alpha < 0.01$ ) and most appropriate when comparing mutually exclusive groups, it was chosen as an objective means of making conclusions on population-based data. Also note that the multiple comparisons performed in the analysis were not taken into consideration when choosing the level of significance to test.
- Time trend analysis is based on data from the most recent 10 year period. When there are fewer than 10 years of data, analysis begins with the earliest available year of complete and reliable data. The number of years available for reporting is determined by the frequency of data collection.
- Map 1 is based on five years of data combined in order to obtain sufficient number of preterm births for analysis at the neighbourhood level. By combining multiple years of data, changes over time in and between geographical areas may be hidden.
- Toronto is compared to Ontario excluding Toronto and to the Greater Toronto Area (GTA) excluding Toronto because Toronto comprises such a large proportion of these two areas. Excluding Toronto therefore results in more meaningful comparisons.
- Totals from Tables 1, 2, and 3 may not match the overall total because analyses excluded birth records with missing information. Similarly, Table 4, the income quintile analysis, excluded birth records that could not be linked to a Toronto census tract.

## Definitions

**Income Quintiles:** Five groups, each containing approximately 20% of the population. They were created by ranking Toronto's census tracts based on the percent of residents living below the Statistics Canada after-tax Low Income Measure (LIM), using the 2010 income tax filer data. Quintile 1 includes the census tracts with the highest percent of people living below the LIM and is therefore the lowest income quintile. Quintile 5 includes the census tracts with the lowest percent of people living below the LIM, making it the highest income quintile. LIM is an income level set at 50% of the median family income in Canada in a given year, adjusted for household size.

**Preterm Birth** is defined as a live birth that occurs at less than 37 completed weeks of gestation. Gestational age can be estimated by two methods: 1) using the first day of the mother's last menstrual period (LMP), which assumes a menstrual cycle of 28 days and ovulations occurring on the 14th day; or 2) using early ultrasound measurements. Ultrasound dating is the more accurate method for women with irregular cycles. In the data source used for current analysis, gestational age is recorded in completed weeks and represents the attending physician's best interpretation of all clinical data, which takes into account both the ultrasound- and LMP-based estimates.

## Sources

**Income data:** Statistics Canada - Table F-18 annual income estimates for census families and individuals (T1 Family File), 2012. Used in:

- Table 4

**Preterm Births,** Inpatient Discharges 2006 to 2013, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: May 2015. Used in:

- Figures 1 and 2
- Tables 1, 2, 3, and 4
- Map 1

Health Surveillance Indicator: Preterm Births

Category: Reproductive Health

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This indicator report is part of a series that informs the ongoing assessment of Toronto's health status. For a full list of the indicators, please go to: [www.toronto.ca/health](http://www.toronto.ca/health)