

COMMUNITY HEALTH STATUS RESOURCE
11. Healthy Pregnancy

TECHNICAL APPENDIX

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Methods Overview

The Healthy Pregnancy topic includes population health indicators spanning preconception to pregnancy. The indicators are divided into four main sections: 1) preconception and prenatal care, 2) maternal health, 2) prenatal substance exposure, and 4) pregnancy and fertility rates.

The Better Outcomes Registry and Network (BORN) is a database that was established in 2009 to collect and disseminate clinical data from all pregnancies and births in Ontario. BORN is funded by the Ontario Ministry of Health and Long-Term Care (MOHLTC) and administered by the Children's Hospital of Eastern Ontario (CHEO). Data for Middlesex-London are available in BORN from April 2012 onward.

11.1. Preconception and Prenatal Care

11.1.1. FOLIC ACID USE PRIOR TO PREGNANCY

Indicator definition:

The percentage of women who gave birth (live or still) reported taking folic acid prior to pregnancy.¹

$$\text{Folic acid use prior to pregnancy} = \frac{\text{Number of women who gave birth (live or still) who reported taking folic acid prior to pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London and Ontario data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 19, 2018.

Peer Group A data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen’s Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Folic Acid Usage	Pre-conception only, Preconception and during pregnancy

$$\text{FA use prior to pregnancy} = \frac{\text{"Folic Acid Usage" = "Pre-conception only" AND "Preconception and during pregnancy"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"})} \times 100\%$$

*Includes women who reported any folic acid use prior to pregnancy (including those who continued use during pregnancy).

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.
- Proportions based on counts less than six (6) are suppressed in accordance with the Data Sharing Agreement.² The next smallest cell is also suppressed when a total is reported (i.e., residual suppression).

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada's *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Folic acid supplementation [Internet]. 2013 [cited 2018 Oct 19]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/alcohol-and-substance-exposure-during-pregnancy-v1.1.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.1.2. FOLIC ACID USE PRIOR TO AND DURING PREGNANCY

Indicator definition:

The percentage of women who gave birth (live or still) who reported taking folic acid prior to and during pregnancy.¹

$$\text{Folic acid use prior to and during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who reported taking folic acid prior to and during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London and Ontario data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 19, 2018.

Peer Group A data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Folic Acid Usage	Preconception and during pregnancy

$$\text{FA use prior to and during pregnancy} = \frac{\text{"Folic Acid Usage" = "Pre-conception and during pregnancy"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"})} \times 100\%$$

*Excludes women who did report any use during pregnancy (i.e., use only reported prior to pregnancy). Therefore, the percentage will be lower than for the “Folic acid use prior to pregnancy” measure.

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.
- Proportions based on counts less than six (6) are suppressed in accordance with the Data Sharing Agreement.² The next smallest cell is also suppressed when a total is reported (i.e., residual suppression).

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Folic acid supplementation [Internet]. 2013 [cited 2018 Oct 19]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/alcohol-and-substance-exposure-during-pregnancy-v1.1.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.1.3. ATTENDED AN ANTENATAL VISIT DURING THE FIRST TRIMESTER

Indicator definition:

The percentage of women who gave birth (live or still) who attending an antenatal visit with a healthcare provider (a physician or midwife) during the first trimester of pregnancy (up to 12 weeks of gestation).

$$\text{Antenatal visit with HCP during 1st trimester} = \frac{\text{Number of women who gave birth (live or still) who reported attending an antenatal visit with a healthcare provider during the first trimester}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario data (2013 to 2017)

Distribution of first trimester visit, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	First Trimester Visit	(none)

$$\text{First trimester visit with HCP} = \frac{\text{"First Trimester Visit" = "Yes"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).¹
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).²
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.³

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
2. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
3. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.2. Maternal Health

11.2.1. ANY MENTAL HEALTH CONCERN

Indicator definition:

The percentage of women who gave birth (live or still) who experienced any mental health concern during pregnancy (includes anxiety, depression, history of postpartum depression, addiction, bipolar disorder, schizophrenia, or other).¹

$$\text{Any mental health concern during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who experienced any mental health concern during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario data (2013 to 2017)

Frequency of mental health concerns during pregnancy, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Peer Group A data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen’s Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Mental health concern	(none)

$$\text{Mental health concern} = \frac{\text{"Mental health concern"} = \text{"Grand total"} - \text{"Missing data"} - \text{"None"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"}))} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada's *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. *Maternal mental health* [Internet]. 2017 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/maternal-mental-health-2.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.2.2. MATERNAL DEPRESSION

Indicator definition:

The percentage of women who gave birth (live or still) who experienced depression during pregnancy.¹

$$\text{Depression during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who experienced depression during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario data (2013 to 2017)

Frequency of mental health concerns during pregnancy, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Ontario data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Depression	Yes

$$\text{Depression} = \frac{\text{"Depression" = "Yes"}}{(\text{"# of pregnancies – Women Who Gave Birth"}) - (\text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. *Maternal mental health* [Internet]. 2017 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/maternal-mental-health-2.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.2.3. MATERNAL ANXIETY

Indicator definition:

The percentage of women who gave birth (live or still) who experienced anxiety during pregnancy.¹

$$\text{Anxiety during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who experienced anxiety during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario data (2013 to 2017)

Frequency of mental health concerns during pregnancy, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Ontario data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen’s Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Anxiety	Yes

$$\text{Anxiety} = \frac{\text{"Anxiety" = "Yes"}}{(\text{"# of pregnancies – Women Who Gave Birth"}) - (\text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Maternal age groups

- Mother’s age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. *Maternal mental health* [Internet]. 2017 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/maternal-mental-health-2.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.2.4. HISTORY OF POSTPARTUM DEPRESSION

Indicator definition:

The percentage of women who gave birth (live or still) who previously had a history of postpartum depression.¹

$$\text{History of postpartum depression} = \frac{\text{Number of women who gave birth (live or still) who had a history of postpartum depression}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	History of Post Partum Depression	(none)
	Parity	Parity 1, Parity 2, Parity 3-4, Parity ≥5, Missing data

$$\text{History of PPD} = \frac{(\text{"History of Post Partum Depression"}) \text{ AND } (\text{"Parity"} = \text{"Parity 1"}, \text{"Parity 2"}, \text{"Parity 3-4"}, \text{"Parity } \geq 5\text{"}, \text{Missing data})}{(\text{"# of pregnancies – Women Who Gave Birth"} - \text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.
- Proportions based on counts less than six (6) are suppressed in accordance with the Data Sharing Agreement.² The next smallest cell is also suppressed when a total is reported (i.e., residual suppression).

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. *Maternal mental health* [Internet]. 2017 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/maternal-mental-health-2.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.2.5. GESTATIONAL WEIGHT GAIN (GWG) WITHIN THE RECOMMENDED RANGE

Indicator definition:

The percentage of women who gave birth (live or still) with gestational weight gain (GWG) within the recommended range.¹

$$\text{GWG within recommended range} = \frac{\text{Number of women who gave birth with GWG within the recommended range}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

For singleton pregnancies:

Pre-pregnancy Body Mass Index (BMI)	Gestational weight gain
<18.5 (underweight)	12.5–18.0kg or 28.0–40.0lbs
18.5–24.9 (normal weight)	11.5–16.0kg or 25.0–35.0lbs
25.0–29.9 (overweight)	7.0–11.5kg or 15.0–25.0lbs
30.0–34.9 (obese)	5.0–9.0kg or 11.0–20.0lbs

For twin pregnancies:

Pre-pregnancy Body Mass Index (BMI)	Gestational weight gain
18.5–24.9 (normal weight)	17.0–25.0kg or 37.0–54.0lbs
25.0–29.9 (overweight)	14.0–23.0kg or 31.0–50.0lbs
30.0–34.9 (obese)	11.0–19.0kg or 25.0–42.0lbs

Data sources:

Middlesex-London data (2014 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 22, 2018.

Ontario data (2014 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- The gestational weight gain indicator is not in the standard Public Health Reports in BORN; the data is only available using the Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2014, 2015, 2016, 2017
	Maternal Weight Gain Recommended Group	Within
	Num of fetuses	Singleton, Twins, Missing data
	Maternal BMI Group 01 Lev 1	Underweight, Normal, Overweight, Obese class I, Missing data

$$\text{GWG within range} = \frac{\text{"Maternal Weight Gain Recommended Group"} = \text{"Within"} \\ \text{AND "Num of fetuses"} = \text{"Singleton", "Twins", "Missing data"} \\ \text{AND "Maternal BMI Group 01 Lev 1"} = \text{"Underweight", "Normal", "Overweight",} \\ \text{"Obese class I", "Missing data"}}{(\text{"\# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"})} \times 100\%$$

- The recommended amount of gestational weight gain for women with non-obese pre-pregnancy BMIs is based on the 2010 Society of Obstetricians and Gynaecologists of Canada (SOGC) guidelines.² The recommended amount of gestational weight gain for all other pregnancies (i.e., obese and multiple gestation) is based on the United States Institute of Medicine 2009 guidelines.³
- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).⁴
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).⁵
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁶

Maternal age groups

- Mother’s age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Data from 2013 has been omitted due to the large proportion of missing data (51%). BORN Ontario recommends not reporting data if the proportion of missing data is 30% or more.⁷
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Gestational weight gain [Internet]. 2016 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/maternal-mental-health-2.pdf>
2. Society of Obstetricians and Gynaecologists of Canada. Clinical practice guideline: Obesity in pregnancy [Internet]. J Obstet Gynaecol Can. 2010 Feb [cited 2018 Dec 21];32(2):165–73. Available from: <http://sogc.org/wp-content/uploads/2013/01/gui239ECPG1002.pdf>
3. Institute of Medicine. Weight gain during pregnancy: Reexamining the guidelines [Internet]. Washington, D.C.: The National Academies Press; 2009 [cited 2018 Dec 21]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK32813/>
4. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide->

born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf

5. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
6. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>
7. Morrison PD. Using BORN data to understand maternal and newborn health outcomes [Internet]. Ottawa, ON: Better Outcomes Registry & Network. 2015 May [cited 2018 Dec 21]. Available from: https://www.bornontario.ca/assets/documents/provincialrounds/BORN%20Data%20to%20Understand%20Maternal%20%20Newborn%20Health%20Outcomes_May%202015.pdf

11.2.6. GESTATIONAL WEIGHT GAIN (GWG) GREATER THAN THE RECOMMENDED RANGE

Indicator definition:

The percentage of women who gave birth (live or still) with gestational weight gain greater than the recommended range.¹

$$\text{GWG greater than recommended range} = \frac{\text{Number of women who gave birth with GWG greater than the recommended range}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

For singleton pregnancies:

Pre-pregnancy Body Mass Index (BMI)	Gestational weight gain
<18.5 (underweight)	>18.0kg or >40.0lbs
18.5–24.9 (normal weight)	>16.0kg or >35.0lbs
25.0–29.9 (overweight)	>11.5kg or >25.0lbs
30.0–34.9 (obese)	>9.0kg or >20.0lbs

For twin pregnancies:

Pre-pregnancy Body Mass Index (BMI)	Gestational weight gain
18.5–24.9 (normal weight)	>25.0kg or >54.0lbs
25.0–29.9 (overweight)	>23.0kg or >50.0lbs
30.0–34.9 (obese)	>19.0kg or >42.0lbs

Data sources:

Middlesex-London data (2014 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 22, 2018.

Ontario data (2014 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- The gestational weight gain indicator is not in the standard Public Health Reports in BORN; the data is only available using the Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2014, 2015, 2016, 2017
	Maternal Weight Gain Recommended Group	Above
	Num of fetuses	Singleton, Twins, Missing data
	Maternal BMI Group 01 Lev 1	Underweight, Normal, Overweight, Obese class I, Missing data

$$\text{GWG above range} = \frac{\text{"Maternal Weight Gain Recommended Group" = "Above"} \\ \text{AND "Num of fetuses" = "Singleton", "Twins", "Missing data"} \\ \text{AND "Maternal BMI Group 01 Lev 1" = "Underweight", "Normal Overweight",} \\ \text{"Obese class I", "Missing data"}}{(\text{"# of pregnancies – Women Who Gave Birth"}) - (\text{"Missing data"})} \times 100\%$$

- The recommended amount of gestational weight gain for women with non-obese pre-pregnancy BMIs is based on the 2010 Society of Obstetricians and Gynaecologists of Canada (SOGC) guidelines.² The recommended amount of gestational weight gain for all other pregnancies (i.e., obese and multiple gestation) is based on the United States Institute of Medicine 2009 guidelines.³
- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).⁴
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).⁵
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁶

Maternal age groups

- Mother’s age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Data from 2013 has been omitted due to the large proportion of missing data (51%). BORN Ontario recommends not reporting data if the proportion of missing data is 30% or more.⁷
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Gestational weight gain [Internet]. 2016 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/maternal-mental-health-2.pdf>
2. Society of Obstetricians and Gynaecologists of Canada. Clinical practice guideline: Obesity in pregnancy [Internet]. J Obstet Gynaecol Can. 2010 Feb [cited 2018 Dec 21];32(2):165–73. Available from: <http://sogc.org/wp-content/uploads/2013/01/gui239ECPG1002.pdf>
3. Institute of Medicine. Weight gain during pregnancy: Reexamining the guidelines [Internet]. Washington, D.C.: The National Academies Press; 2009 [cited 2018 Dec 21]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK32813/>
4. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide->

born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf

5. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
6. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>
7. Morrison PD. Using BORN data to understand maternal and newborn health outcomes [Internet]. Ottawa, ON: Better Outcomes Registry & Network. 2015 May [cited 2018 Dec 21]. Available from: https://www.bornontario.ca/assets/documents/provincialrounds/BORN%20Data%20to%20Understand%20Maternal%20%20Newborn%20Health%20Outcomes_May%202015.pdf

11.2.7. GESTATIONAL WEIGHT GAIN (GWG) LESS THAN THE RECOMMENDED RANGE

Indicator definition:

The percentage of women who gave birth (live or still) with gestational weight gain (GWG) less than the recommended range.¹

$$\text{GWG less than recommended range} = \frac{\text{Number of women who gave birth with GWG less than the recommended range}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

For singleton pregnancies:

Pre-pregnancy Body Mass Index (BMI)	Gestational weight gain
<18.5 (underweight)	<12.5kg or <28.0lbs
18.5–24.9 (normal weight)	<11.5kg or <25.0lbs
25.0–29.9 (overweight)	<7.0kg or <15.0lbs
30.0–34.9 (obese)	<5.0kg or <11.0lbs

For twin pregnancies:

Pre-pregnancy Body Mass Index (BMI)	Gestational weight gain
18.5–24.9 (normal weight)	<17.0kg or <37.0lbs
25.0–29.9 (overweight)	<14.0kg or <31.0lbs
30.0–34.9 (obese)	<11.0kg or <25.0lbs

Data sources:

Middlesex-London data (2014 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 22, 2018.

Ontario data (2014 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- The gestational weight gain indicator is not in the standard Public Health Reports in BORN; the data is only available using the Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2014, 2015, 2016, 2017
	Maternal Weight Gain Recommended Group	Below
	Num of fetuses	Singleton, Twins, Missing data
	Maternal BMI Group 01 Lev 1	Underweight, Normal, Overweight, Obese class I, Missing data

$$\text{GWG below range} = \frac{\text{"Maternal Weight Gain Recommended Group" = "Below"} \\ \text{AND "Num of fetuses" = "Singleton", "Twins", "Missing data"} \\ \text{AND "Maternal BMI Group 01 Lev 1" = "Underweight", "Normal", "Overweight",} \\ \text{"Obese class I", "Missing data"}}{(\text{"\# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"}))} \times 100\%$$

- The recommended amount of gestational weight gain for women with non-obese pre-pregnancy BMIs is based on the 2010 Society of Obstetricians and Gynaecologists of Canada (SOGC) guidelines.² The recommended amount of gestational weight gain for all other pregnancies (i.e., obese and multiple gestation) is based on the United States Institute of Medicine 2009 guidelines.³
- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).⁴
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).⁵
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁶

Maternal age groups

- Mother’s age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Data from 2013 has been omitted due to the large proportion of missing data (51%). BORN Ontario recommends not reporting data if the proportion of missing data is 30% or more.⁷
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Gestational weight gain [Internet]. 2016 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/maternal-mental-health-2.pdf>
2. Society of Obstetricians and Gynaecologists of Canada. Clinical practice guideline: Obesity in pregnancy [Internet]. J Obstet Gynaecol Can. 2010 Feb [cited 2018 Dec 21];32(2):165–73. Available from: <http://sogc.org/wp-content/uploads/2013/01/gui239ECPG1002.pdf>
3. Institute of Medicine. Weight gain during pregnancy: Reexamining the guidelines [Internet]. Washington, D.C.: The National Academies Press; 2009 [cited 2018 Dec 21]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK32813/>
4. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide->

born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf

5. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
6. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>
7. Morrison PD. Using BORN data to understand maternal and newborn health outcomes [Internet]. Ottawa, ON: Better Outcomes Registry & Network. 2015 May [cited 2018 Dec 21]. Available from: https://www.bornontario.ca/assets/documents/provincialrounds/BORN%20Data%20to%20Understand%20Maternal%20%20Newborn%20Health%20Outcomes_May%202015.pdf

11.3. Prenatal Substance Exposure

11.3.1. ALCOHOL EXPOSURE DURING PREGNANCY

Indicator definition:

The percentage of women who gave birth (live or still) who reported any alcohol exposure during pregnancy.¹

$$\text{Any alcohol exposure during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who reported any alcohol exposure during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 19, 2018.

Ontario data (2013 to 2017)

Frequency of alcohol exposure in pregnancy, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Peer Group A data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen’s Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Any Alcohol	(none)

$$\text{Any alcohol during pregnancy} = \frac{\text{"Any Alcohol" = "Yes"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.
- Proportions based on counts less than six (6) are suppressed in accordance with the Data Sharing Agreement.² The next smallest cell is also suppressed when a total is reported (i.e., residual suppression).

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada's *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Classification of exposure is based on self-reported data and is subject to recall bias.
- For Middlesex-London, the urban and rural subpopulations may not add to 100% due to missing postal code data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Alcohol and substance exposures during pregnancy [Internet]. 2017 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/alcohol-and-substance-exposure-during-pregnancy-v1.1.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.3.2. SMOKING DURING PREGNANCY

Indicator definition:

The percentage of women who gave birth (live or still) who reported smoking cigarettes at admission for birth.¹

$$\text{Smoking cigarettes during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who reported smoking cigarettes at admission for birth}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 19, 2018.

Ontario data (2013 to 2017)

Maternal smoking at time of newborn's birth, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Peer Group A data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Any Smoking At Admission	(none)

$$\text{Any smoking at admission} = \frac{\text{"Any Smoking At Admission" = "Yes"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - \text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Maternal age groups

- Mother's age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Classification of exposure is based on self-reported data and is subject to recall bias.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Smoking during pregnancy [Internet]. 2013 [cited 2018 Oct 4]. Available from: <http://core.apheo.ca/index.php?pid=149>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.3.3. DRUG EXPOSURE DURING PREGNANCY

Indicator definition:

The percentage of women who gave birth (live or still) who reported any drug exposure during pregnancy.¹

$$\text{Any drug exposure during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who reported any drug exposure during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario data (2013 to 2017)

Frequency of drug and substance exposures during pregnancy, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Peer Group A data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen’s Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Any Drug	(none)

$$\text{Any drug during pregnancy} = \frac{\text{"Any Drug" = "Yes"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"}))} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.
- Proportions based on counts less than six (6) are suppressed in accordance with the Data Sharing Agreement.² The next smallest cell is also suppressed when a total is reported (i.e., residual suppression).

Maternal age groups

- Mother’s age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Classification of exposure is based on self-reported data and is subject to recall bias.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. *Alcohol and substance exposures during pregnancy* [Internet]. 2017 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/alcohol-and-substance-exposure-during-pregnancy-v1.1.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.3.4. CANNABIS EXPOSURE DURING PREGNANCY

Indicator definition:

The percentage of women who gave birth (live or still) who reported any cannabis exposure during pregnancy.

$$\text{Any cannabis exposure during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who reported any cannabis exposure during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario data (2013 to 2017)

Frequency of drug and substance exposures during pregnancy, by public health unit and province: PHU – Pregnancy, BORN Information System, BORN Ontario. Information accessed on October 15, 2018.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Pregnancy Exposure Drug and Substance	Marijuana

$$\text{Any cannabis during pregnancy} = \frac{\text{"Pregnancy Exposure Drug and Substance" = "Marijuana"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - \text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).¹
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.
- Proportions based on counts less than six (6) are suppressed in accordance with the Data Sharing Agreement.¹ The next smallest cell is also suppressed when a total is reported (i.e., residual suppression).

Maternal age groups

- Mother’s age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.²

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Classification of exposure is based on self-reported data and is subject to recall bias.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
2. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.3.5. ALCOHOL OR DRUG EXPOSURE DURING PREGNANCY

Indicator definition:

The percentage of women who gave birth (live or still) who reported any alcohol or drug exposure during pregnancy.¹

$$\text{Any alcohol or drug exposure during pregnancy} = \frac{\text{Number of women who gave birth (live or still) who reported any alcohol or drug exposure during pregnancy}}{\text{Number of women who gave birth (live or still)}} \times 100\%$$

Data sources:

Middlesex-London data (2013 to 2017)

BORN Public Health Cube, BORN Information System, BORN Ontario. Information accessed on October 21, 2018.

Ontario and Peer Group A data (2013 to 2016)

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot [Internet]. Toronto, ON: Queen’s Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2018 Nov 14]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx.

Methodological notes:

- In the BORN Public Health Cube:

Cube element	Name	Filters
Measure	# of pregnancies – Women Who Gave Birth	(not applicable)
Dimensions	Newborn DOB Calendar Year	2013, 2014, 2015, 2016, 2017
	Any Drug or Alcohol	(none)

$$\text{Any alcohol or drug exposure} = \frac{\text{"Any Drug or Alcohol" = "Yes"}}{(\text{"# of pregnancies – Women Who Gave Birth"} - (\text{"Missing data"})} \times 100\%$$

- Data from First Nations communities are not included in the BORN public health data cube (to honour First Nations Ownership, Control, Access and Possession (OCAP) principles, BORN Ontario has removed all records from the BORN data cube with postal codes that are linked to First Nations communities).²
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.
- Proportions based on counts less than six (6) are suppressed in accordance with the Data Sharing Agreement.² The next smallest cell is also suppressed when a total is reported (i.e., residual suppression).

Maternal age groups

- Mother’s age is recorded at time of delivery.
- Age categories: <20, 20–24, 25–29, 30–34, 35–39, 40+.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).³
- The Middlesex-London population was classified as “urban” or “rural” using Statistics Canada’s *Population Centre and Rural Area Classification 2016*.⁴

Limitations:

- Births to Ontario mothers that occur out-of-province are not included in the data.
- Classification of exposure is based on self-reported data and is subject to recall bias.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Alcohol and substance exposures during pregnancy [Internet]. 2017 [cited 2018 Oct 4]. Available from: <https://www.apheo.ca/upload/membership/document/2017-10/alcohol-and-substance-exposure-during-pregnancy-v1.1.pdf>
2. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Public Health Working Group. Using BORN Ontario Data for Public Health Surveillance: User Guide for Epidemiologists & Data Analysts – BORN Public Health Analytics Cube [Internet]. Version 1.5. 2017 [Cited 2019 Apr 8]. Available from: <https://www.apheo.ca/upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf#upload/membership/document/2017-02/born-user-guide-born-public-health-analytical-cube-final-version-1.5-feb-2017.pdf>
3. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
4. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.4. Pregnancy and Fertility

11.4.1. TOTAL PREGNANCY RATE

Indicator definition:

The ratio of pregnancies per 1,000 females of reproductive age (15 to 49 years of age).¹

$$\text{Total pregnancy rate} = \frac{\text{Total number of pregnancies among females of reproductive age (15 to 49 years of age)}}{\text{Total number of females 15 to 49}} \times 1,000$$

Where: Pregnancies = (live births) + (still births or deliveries) + (therapeutic abortions)

Data sources:

Discharge Abstract Database (DAD), Date Extracted: Oct 4, 2018; Therapeutic abortions, Date Extracted: Sept 25, 2018; Population Estimates, Date Extracted: May 11, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario.

Methodological notes:

- Pregnancies include live births, still births (or deliveries), and therapeutic abortions.
 - Includes live births of any birth weight. A live birth is not necessarily a viable birth.
 - A therapeutic abortion is the deliberate termination of a pregnancy resulting in the death of the fetus or embryo.
- Includes mothers that reside in Ontario and gave birth in Ontario.
- Age of mother is recorded at time of event (i.e., birth, stillbirth or therapeutic abortion). A woman who becomes pregnant at 19 but who delivers as age 20, is recorded as a 20-year-old.
- A mother's residence is recorded at time of event: birth, stillbirth or therapeutic abortion. An area may have a high pregnancy rate as a result of pregnant women moving to that area to have their babies.
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).²

Limitations:

- Does not include mothers who gave birth outside of a hospital (i.e., home, midwifery practice group).
- Births to Ontario mothers that occur out-of-province are not included in the data.
- Excludes comparisons by urban/rural status since the smallest unit of geography available for therapeutic abortion data is municipality; comparison by urban/rural status requires an associated postal code or dissemination area.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Pregnancy rate [Internet]. 2017 [cited 2018 Oct 4]. Available from: <http://core.apheo.ca/index.php?pid=139>

2. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>

11.4.2. AGE-SPECIFIC PREGNANCY RATE

Indicator definition:

The ratio of pregnancies per 1,000 females in a given 5-year age group.¹

$$\text{Age-specific pregnancy rate} = \frac{\text{Total number of pregnancies among females in a given 5-year age group}}{\text{Total number of females in a given 5-year age group}} \times 1,000$$

Where: Pregnancies = (live births) + (still births or deliveries) + (therapeutic abortions)

Data sources:

Discharge Abstract Database (DAD), Date Extracted: Oct 4, 2018; Therapeutic abortions, Date Extracted: Sept 25, 2018; Population Estimates, Date Extracted: May 11, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario.

Methodological notes:

- Pregnancies include live births, still births (or deliveries), and therapeutic abortions.
 - Includes live births of any birth weight. A live birth is not necessarily a viable birth.
 - A therapeutic abortion is the deliberate termination of a pregnancy resulting in the death of the fetus or embryo.
- Includes mothers that reside in Ontario and gave birth in Ontario.
- A mother's residence is recorded at time of event: birth, stillbirth or therapeutic abortion. An area may have a high pregnancy rate as a result of pregnant women moving to that area to have their babies.
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Maternal age groups

- Age of mother is recorded at time of event (i.e., birth, stillbirth or therapeutic abortion). A woman who becomes pregnant at 19 but who delivers as age 20, is recorded as a 20-year-old.
- Age categories: 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).²

Limitations:

- Does not include mothers who gave birth outside of a hospital (i.e., home, midwifery practice group).
- Births to Ontario mothers that occur out-of-province are not included in the data.
- Excludes comparisons by urban/rural status since the smallest unit of geography available for therapeutic abortion data is municipality; comparison by urban/rural status requires an associated postal code or dissemination area.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Pregnancy rate [Internet]. 2017 [cited 2018 Oct 4]. Available from: <http://core.apheo.ca/index.php?pid=139>

2. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>

11.4.3. TEEN PREGNANCY RATE

Indicator definition:

The ratio of pregnancies per 1,000 females age 15 to 19.¹

$$\text{Teen pregnancy rate} = \frac{\text{Total number of pregnancies among females age 15 to 19}}{\text{Total number of females age 15 to 19}} \times 1,000$$

Where: pregnancies = (live births) + (still births or deliveries) + (therapeutic abortions)

Data sources:

Discharge Abstract Database (DAD), Date Extracted: Oct 4, 2018; Therapeutic abortions, Date Extracted: Sept 25, 2018; Population Estimates, Date Extracted: May 11, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario.

Methodological notes:

- Pregnancies include live births, still births (or deliveries), and therapeutic abortions.
 - Includes live births of any birth weight. A live birth is not necessarily a viable birth.
 - A therapeutic abortion is the deliberate termination of a pregnancy resulting in the death of the fetus or embryo.
- Includes mothers that reside in Ontario and gave birth in Ontario.
- Age of mother is recorded at time of event (i.e., birth, stillbirth or therapeutic abortion). A woman who becomes pregnant at 19 but who delivers as age 20, is recorded as a 20-year-old.
- A mother's residence is recorded at time of event: birth, stillbirth or therapeutic abortion. An area may have a high pregnancy rate as a result of pregnant women moving to that area to have their babies.
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).²

Limitations:

- Does not include mothers who gave birth outside of a hospital (i.e., home, midwifery practice group).
- Births to Ontario mothers that occur out-of-province are not included in the data.
- Excludes comparisons by urban/rural status since the smallest unit of geography available for therapeutic abortion data is municipality; comparison by urban/rural status requires an associated postal code or dissemination area.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Pregnancy rate [Internet]. 2017 [cited 2018 Oct 4]. Available from: <http://core.apheo.ca/index.php?pid=139>
2. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>

11.4.4. GENERAL FERTILITY RATE

Indicator definition:

The ratio of live births during a given period to the female population age 15 to 49.¹

$$\text{General fertility rate} = \frac{\text{Total number of live births to females age 15 to 49}}{\text{Total number of females age 15 to 49}} \times 1,000$$

Data sources:

Discharge Abstract Database (DAD), Date Extracted: Oct 4, 2018 & Population Estimates, Date Extracted: May 11, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario.

Methodological notes:

- Excludes stillbirths.
- Includes all live births. A live birth is not necessarily a viable birth. Includes births of any birth weight.
- Includes mothers that reside in Ontario and gave birth in Ontario.
- Age of mother is recorded at time of event (i.e., birth). A woman who becomes pregnant at 19 but who delivers as age 20, is recorded as a 20-year-old.
- A mother's residence is recorded at time of event (i.e., birth). An area may have a high pregnancy rate as a result of pregnant women moving to that area to have their babies.
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).²
- The Middlesex-London population was classified as "urban" or "rural" using Statistics Canada's *Population Centre and Rural Area Classification 2016*.³

Limitations:

- Does not include mothers who gave birth outside of a hospital (i.e., home, midwifery practice group).
- Births to Ontario mothers that occur out-of-province are not included in the data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Fertility rates [Internet]. 2017 [cited 2018 Oct 4]. Available from: <http://core.apheo.ca/index.php?pid=136>
2. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>
3. Statistics Canada. Population Centre and Rural Area Classification 2016 [Internet]. 2017 [cited 2019 Apr 11]. Available from: <https://www.statcan.gc.ca/eng/subjects/standard/pcrac/2016/introduction>

11.4.5. AGE-SPECIFIC FERTILITY RATE

Indicator definition:

The ratio of live births during a given period to the female population in a given 5-year age group.¹

$$\text{Age-specific fertility rate} = \frac{\text{Total number of live births to females in a given 5-year age group}}{\text{Total number of females in a given 5-year age group}} \times 1,000$$

Data sources:

Discharge Abstract Database (DAD), Date Extracted: Oct 4, 2018 & Population Estimates, Date Extracted: May 11, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario.

Methodological notes:

- Excludes stillbirths.
- Includes all live births. A live birth is not necessarily a viable birth. Includes births of any birth weight.
- Includes mothers that reside in Ontario and gave birth in Ontario.
- A mother's residence is recorded at time of event (i.e., birth). An area may have a high pregnancy rate as a result of pregnant women moving to that area to have their babies.
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Maternal age groups

- Age of mother is recorded at time of event (i.e., birth). A woman who becomes pregnant at 19 but who delivers as age 20, is recorded as a 20-year-old.
- Age categories: 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).²

Limitations:

- Does not include mothers who gave birth outside of a hospital (i.e., home, midwifery practice group).
- Births to Ontario mothers that occur out-of-province are not included in the data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Fertility rates [Internet]. 2017 [cited 2018 Oct 4]. Available from: <http://core.apheo.ca/index.php?pid=136>
2. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>

11.4.6. TOTAL FERTILITY RATE

Indicator definition:

The average number of children that would be born per female if all females lived to the end of the childbearing years and bore children according to the age-specific fertility rates for that area and period of time.¹

$$\text{Total fertility rate} = \frac{(\sum \text{AFR})k}{1000}$$

Where:

$$\text{Age-specific fertility rate (AFR)} = \frac{\text{Total number of live births to females in a given 5-year age group}}{\text{Total number of females in a given 5-year age group}} \times 1,000$$

k = the number of years in each age group (i.e., k = 5 for 5-year age groups, e.g. 15 to 19)

Data sources:

Discharge Abstract Database (DAD), Date Extracted: Oct 4, 2018 & Population Estimates, Date Extracted: May 11, 2018, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario.

Methodological notes:

- Excludes stillbirths.
- Includes all live births. A live birth is not necessarily a viable birth. Includes births of any birth weight.
- Includes mothers that reside in Ontario and gave birth in Ontario.
- Age of mother is recorded at time of event (i.e., birth). A woman who becomes pregnant at 19 but who delivers as age 20, is recorded as a 20-year-old.
- A mother's residence is recorded at time of event (i.e., birth). An area may have a high pregnancy rate as a result of pregnant women moving to that area to have their babies.
- 95% confidence interval calculated using a Poisson approximation of the binomial distribution.

Geographic comparisons

- Ontario (includes Middlesex-London).
- Peer Group A (includes Middlesex-London).²

Limitations:

- Does not include mothers who gave birth outside of a hospital (i.e., home, midwifery practice group).
- Births to Ontario mothers that occur out-of-province are not included in the data.

References:

1. Association of Public Health Epidemiologists in Ontario (APHEO) BORN Reproductive Health Sub-Group. Total fertility rate [Internet]. 2017 [cited 2018 Oct 4]. Available from: <http://core.apheo.ca/index.php?pid=137>
2. Statistics Canada. 82-402-X Table 6 Health regions 2015 by peer group [Internet]. 2015 [cited 2018 Dec 19]. Available from: <https://www150.statcan.gc.ca/n1/pub/82-402-x/2015002/app-ann/ap-antbl08-eng.htm>