Healthy Growth and Development

Health Status by Program Area

Population Health Assessment
Southwestern Public Health
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Contents

The data presented in this report may differ slightly from previous reports; data in the report titled Understanding our Communities' Health was age-standardized to compare local data to Ontario whereas the data presented in this report is not age-standardized and focuses on local differences between subgroups of the population.

Summary

This report is intended to complement the 2019 health status report titled Understanding our Communities' Health, which aimed to provide a high-level overview of the current health status of people residing in the Southwestern Public Health (SWPH) region.[1] This report includes many of the same indicators, but highlights differences by sociodemographic characteristics such as age, sex, income and education, where possible. These indicators were chosen based on the data needs of SWPH's Healthy Growth & Development team. The information included in this report may assist in program planning and be used to increase community awareness of health issues. The data may be used to develop other knowledge translation products as needed. The overarching trends for each topic are summarized below.

Reproductive Health

- Younger mothers were less likely to take folic acid supplementation prior to and during pregnancy and had lower rates of exclusive breastfeeding at entry to service.
- The proportion of women who gained more weight than recommended during pregnancy was higher in Elgin St. Thomas and Oxford County compared to Ontario in 2016.
- The preterm birth rate was higher among women that reported smoking, gestational diabetes and hypertensive disorder during pregnancy compared to the overall preterm birth rate between 2013 and 2017.
- The proportion of women reporting anxiety and depression during pregnancy has increased since 2013.

Child Health

- A higher percentage of boys than girls consistently scored as vulnerable across all domains of the Early Development Instrument; this finding was consistent over time.
- Risk factors for healthy childhood development in Elgin St. Thomas and Oxford County include a parent or partner with a mental illness, single parent mothers and no designated primary care provider for the mother and/or infant. In Elgin St. Thomas, the proportion of families reporting concerns about money to pay for basic needs was higher than Oxford County and Ontario.

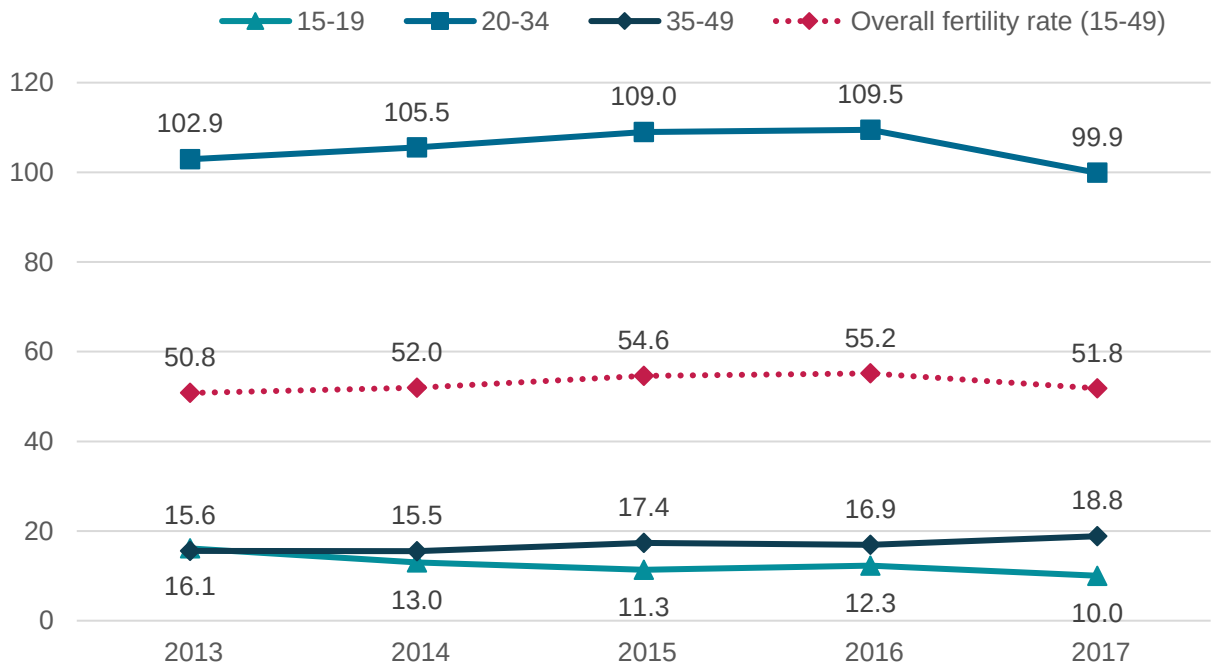
Healthy Growth and Development

Pregnancy

Fertility Rate

The overall fertility rate and the fertility rate for women aged 20-34 were relatively stable from 2013 to 2017 (Figure 1). The adolescent fertility rate, referring to women aged 15-19 years, decreased over time from 16.1 live births per 1,000 women in 2013 to 10.0 live births per 1,000 women in 2017. Conversely, the fertility rate among women aged 35-49 appeared to be increasing over time.

Figure 1. Age-specific fertility rates (per 1,000 women) by age group, Southwestern Public Health, 2013-2017

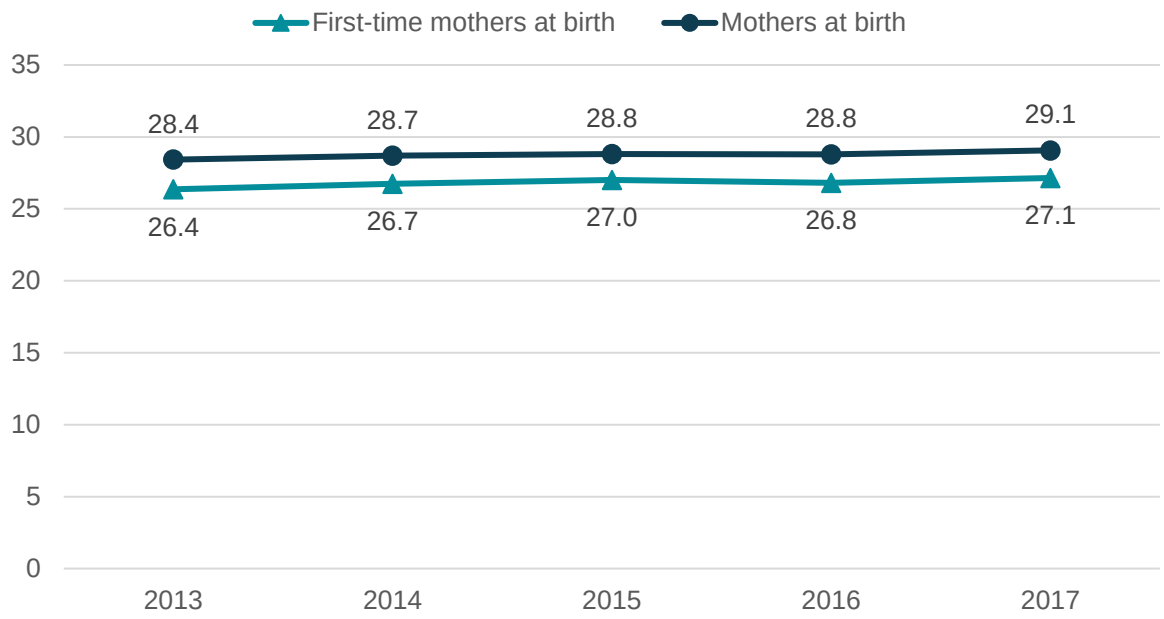


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019 & Population Estimates (2013-2016), IntelliHEALTH ONTARIO, Ministry of Health and Long-Term Care, Date Extracted: August 8, 2018 & Population Projections (2017), IntelliHEALTH ONTARIO, Ministry of Health and Long-Term Care, Date Extracted: August 8, 2018.

Age of Mother at Birth

The average age of first-time mothers was 26.8 years and the average age of mothers at birth was 28.7 years from 2013 to 2017 combined. These numbers remained relatively stable over time (Figure 2).

Figure 2. Average age of mothers at birth, Southwestern Public Health, 2013-2017

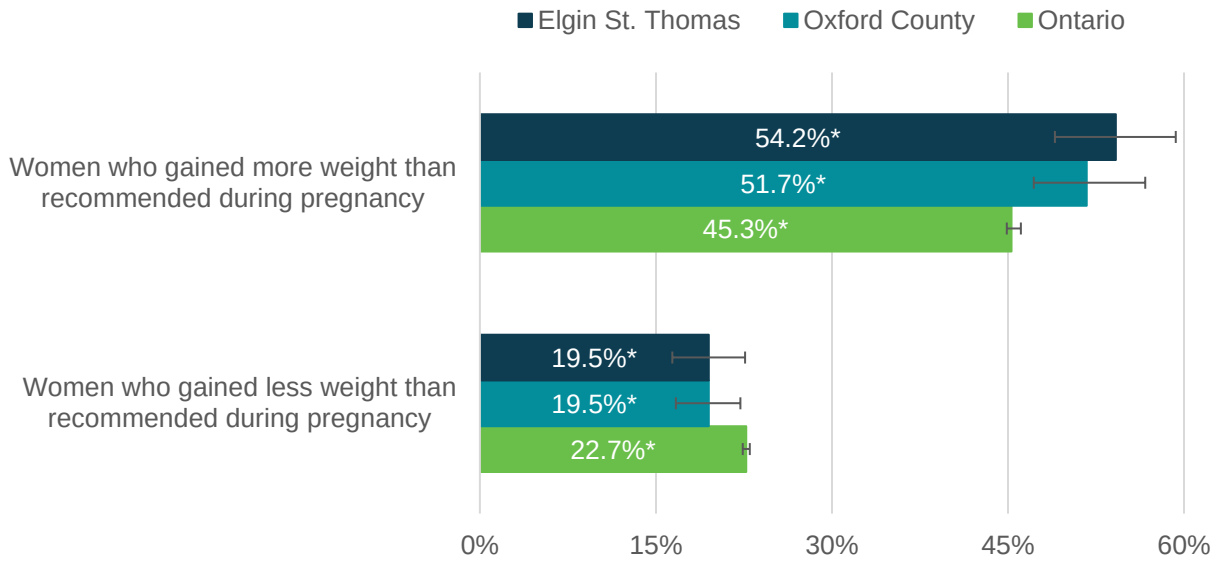


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019

Weight Gain During Pregnancy

The recommended weight gain during pregnancy[a] varies based on several factors such as pre-pregnancy BMI[b] and singleton versus multiple pregnancy. For example, the recommended total weight gain for singleton pregnancies where pre-pregnancy BMI is between 18.5 kg/m^2 and 24.9 kg/m^2 is 25 to 35 lbs and where pre-pregnancy BMI is greater than 30 kg/m^2 is 11 to 20 lbs.[2] The proportion of women who gained more weight than recommended during pregnancy was higher in Elgin St. Thomas (54.2%) and Oxford County (51.7%) compared to Ontario (45.3%) in 2016. Conversely, the proportion of women who gained less weight than recommended during pregnancy was lower in Elgin St. Thomas (19.5%) and Oxford County (19.5%) compared to Ontario (22.7%; Figure 3).

Figure 3. Proportion of women who gained more or less weight than recommended during pregnancy, Elgin St. Thomas, Oxford County and Ontario, 2016



***** Interpret with caution due to 5 to <30% total missing rate

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Maternal health Snapshot: Women who gained less weight or more weight than recommended during pregnancy–overall per cent 2016 [Internet]. Toronto, ON: Queen's Printer for Ontario; c2018 [updated 2018 Oct 12; cited 2019 March 7]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx

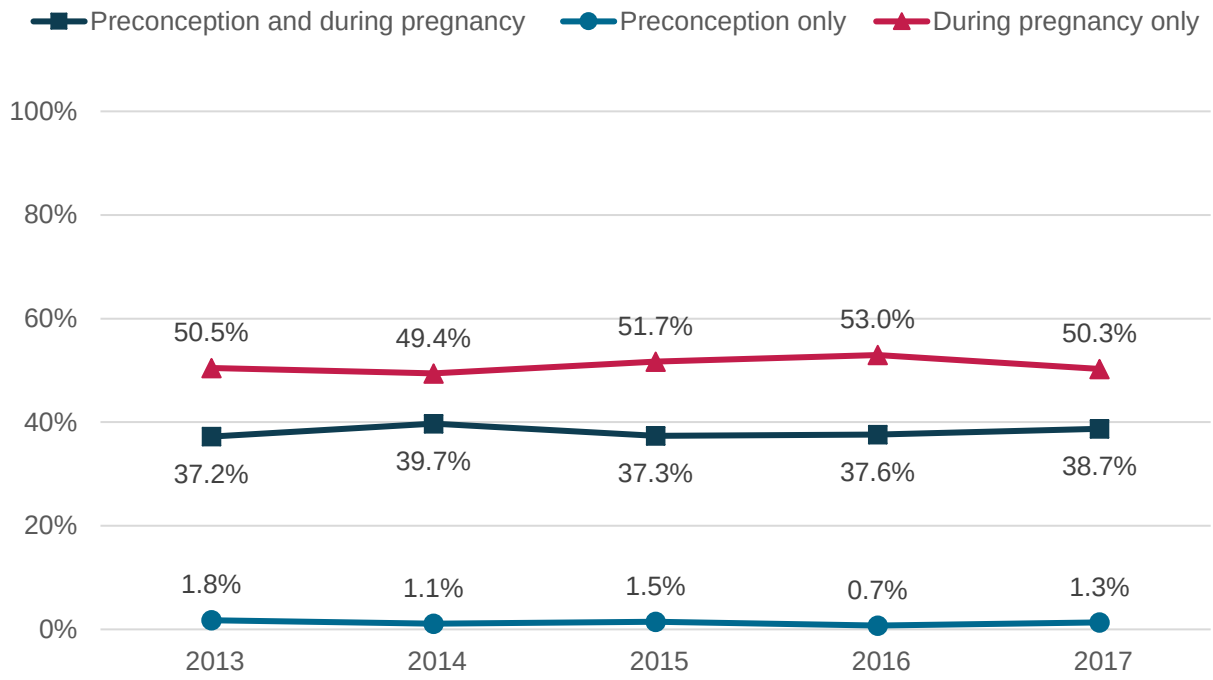
[a] BORN uses the gestational weight gain recommendations of the Society of Obstetricians and Gynaecologists (2011) for singleton, non-obese pregnancies and the Institute of Medicine/Health Canada recommendations (2009) for all other pregnancies.

[b] BMI is a measure used at the population level to assess weight, however there are limitations to its use. Body mass index should only be used to assess weight, not health, at the population level, and is not intended to assess weight or health at an individual level. There are many other factors that should be considered when assessing health including nutrition, physical activity, blood pressure, smoking and blood work results.

Folic Acid Usage

BORN Information System documents the number of women that reported taking folic acid supplements prior to pregnancy only, during pregnancy only or both prior to and during pregnancy. These are mutually exclusive categories, meaning that women that took supplements “during pregnancy only” would not be included in the “both prior to and during pregnancy” category. The proportion of women taking folic acid supplementation prior to and during pregnancy remained relatively stable from 2013 to 2017 (Figure 4). A small proportion of women reported taking folic acid supplements prior to pregnancy only (i.e., not during pregnancy as well).

Figure 4. Proportion of women taking a folic acid supplement prior to, during and prior to and during pregnancy, Southwestern Public Health, 2013-2017

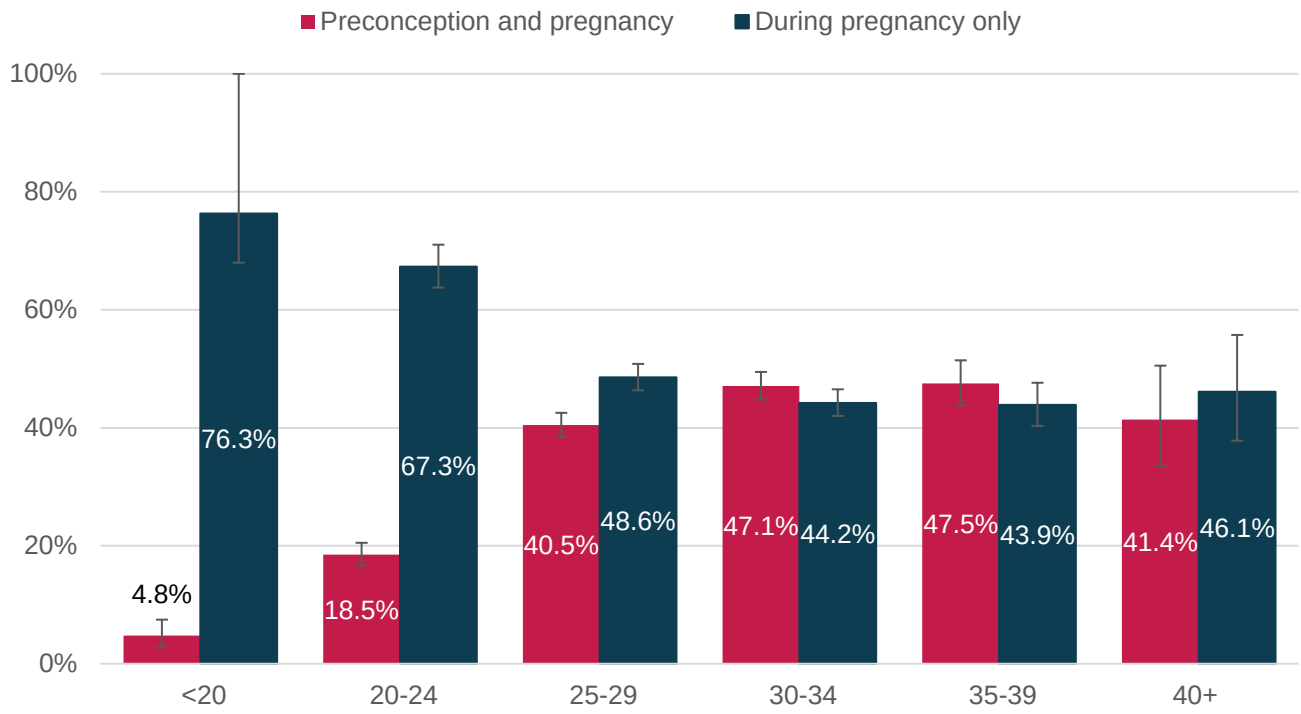


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Overall, the proportion of women taking folic acid supplements prior to and during pregnancy increased with maternal age. The proportion of women taking a folic acid supplement prior to and during pregnancy was lowest among women under 20 years of age (4.8%), followed by women aged 20-24 years. This is because most of these women (76.3% of women aged less than 20 years and 67.3% of women aged 20-24 years) reported taking supplements during pregnancy only (Figure 5).

Among women over 25 years, the proportion of women taking folic acid supplements prior to and during pregnancy was similar to the proportion taking folic acid supplements during pregnancy only.

Figure 5. Proportion of women taking a folic acid supplement prior to and during pregnancy and during pregnancy only by maternal age group, Southwestern Public Health, 2013-2017 (combined)

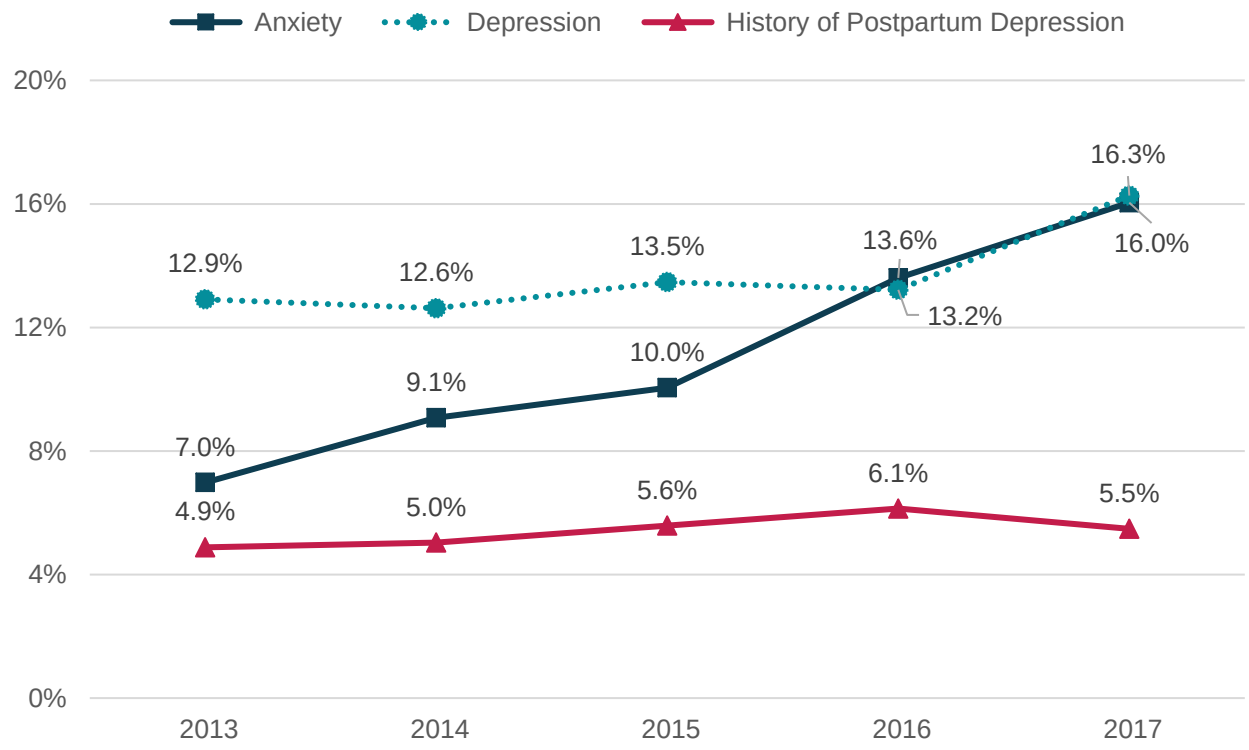


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Maternal Mental Health and Substance Use

The proportion of women reporting anxiety and depression during pregnancy has increased since 2013 (Figure 6). This may be due to increased awareness of mental health over time, reduced stigma, more health care professionals assessing mental health concerns during prenatal visits or an increase in the underlying burden. The proportion of women reporting a history of postpartum depression remained stable over time.

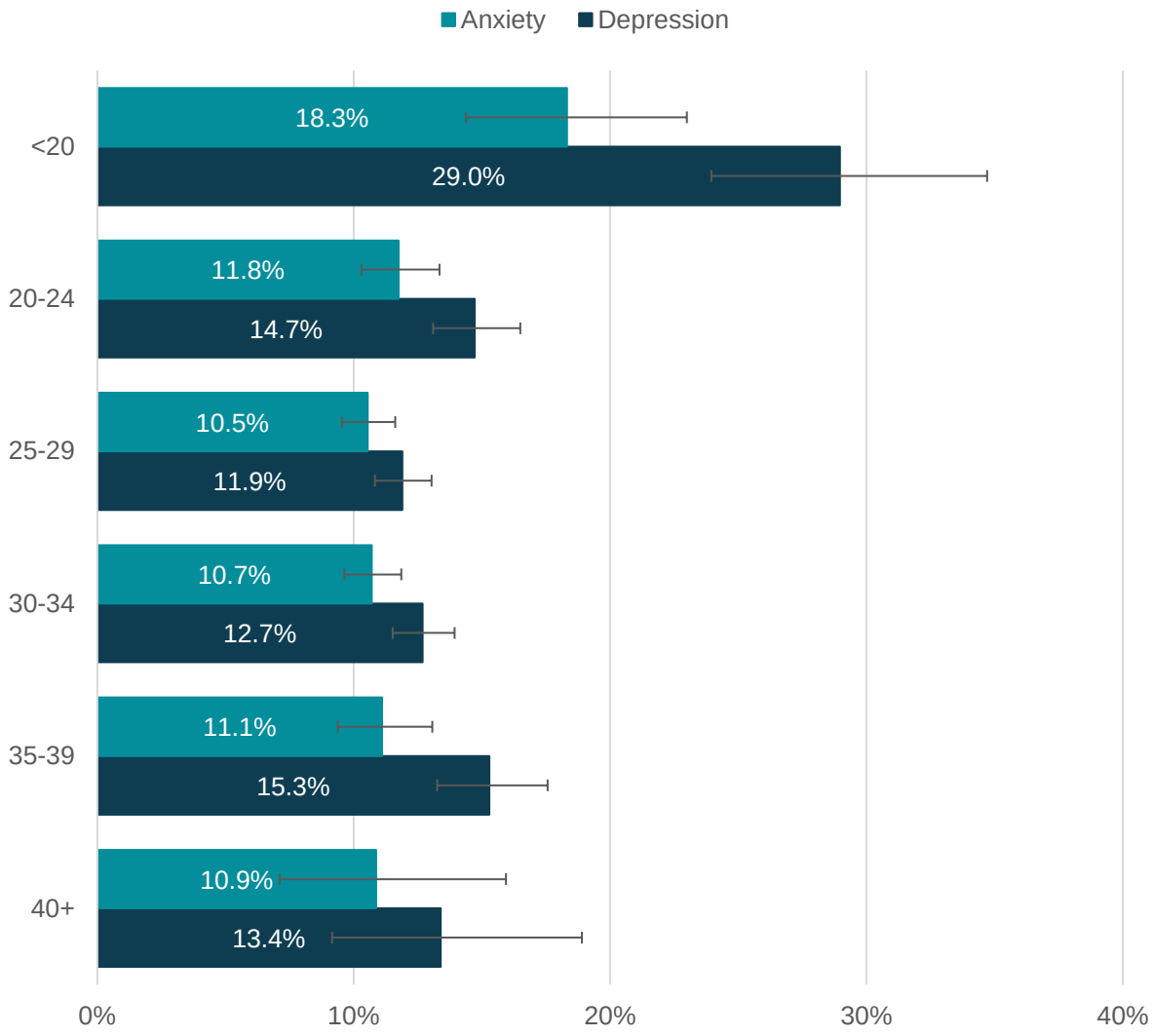
Figure 6. Proportion of women reporting anxiety, depression and history of postpartum depression during pregnancy, Southwestern Public Health, 2013-2017



Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Younger women, particularly those aged less than 20 years of age, reported more anxiety and depression during pregnancy: 18.3% of women under 20 years of age reported anxiety during pregnancy and 29.0% of women under 20 years reported depression (Figure 7). A similar proportion of women reported anxiety and depression among the remaining age groups.

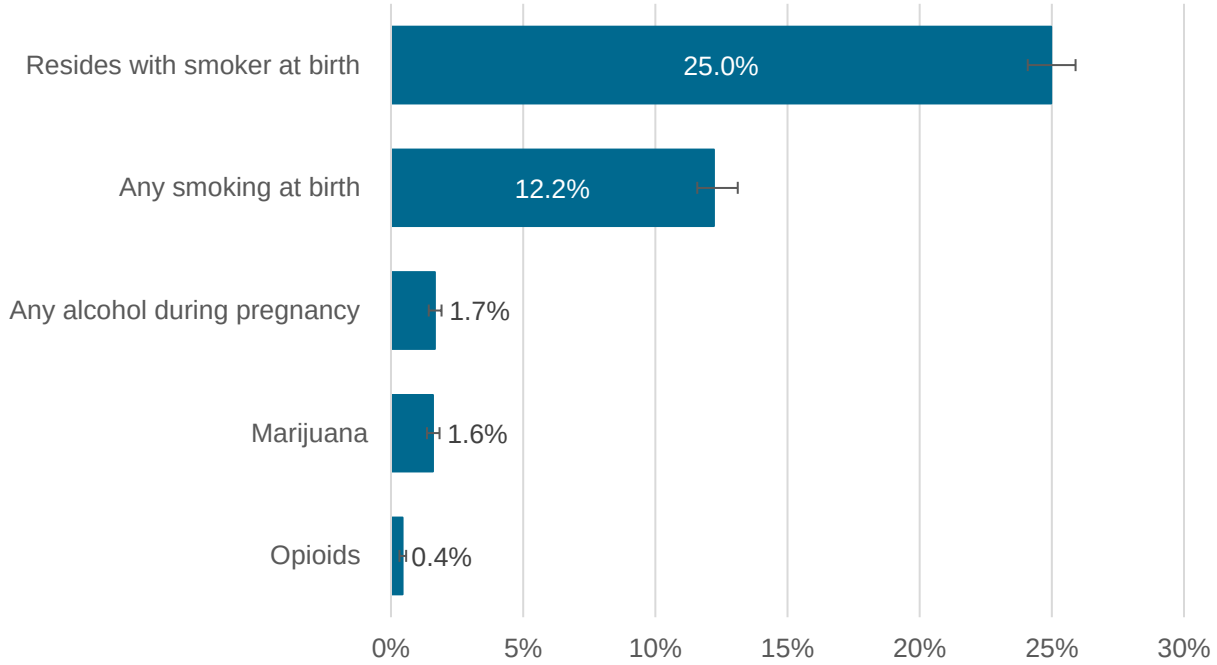
Figure 7. Proportion of women reporting anxiety and depression during pregnancy by maternal age group, Southwestern Public Health, 2013-2017 (combined)



Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

From 2013 to 2017, 12.2% of women reported any smoking cigarettes at the time of birth and 25.0% reported residing with a smoker at birth (Figure 8). A small proportion of women reported drinking any alcohol (1.7%), smoking marijuana (1.6%) or using opioids (0.4%) during pregnancy. These estimates may be lower than the true proportion due to the stigma associated with substance use during pregnancy and the data being self-reported.

Figure 8. Proportion of mothers reporting substance use exposures, Southwestern Public Health, 2013-2017 (combined)

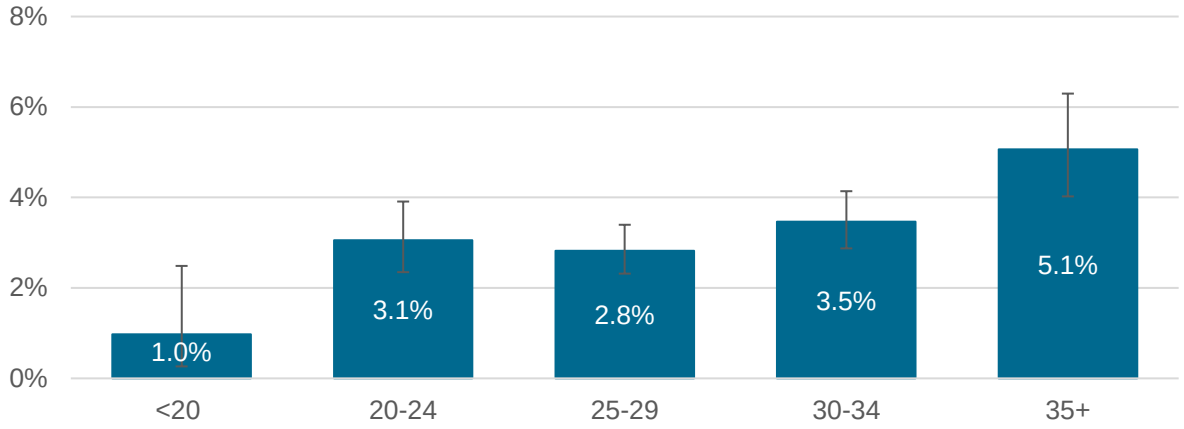


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Birth

The live birth rate in the SWPH region was 10.8 births per 1,000 population in 2017. The multiple live birth rate in the SWPH region was about 3.3% (95% CI: 2.9%-3.6%) between 2013 and 2017. From 2013 to 2017 combined, the multiple birth rate among women aged 35 and over (5.1%) was higher compared to women aged 29 and younger (Figure 9). This difference may be because older women have a higher chance of multiple pregnancy or an increased use of assisted reproductive technologies, such as in-vitro fertilization, which increases the likelihood of multiple births.[3]

Figure 9. Multiple live birth rate by maternal age group, Southwestern Public Health, 2013-2017 (combined)

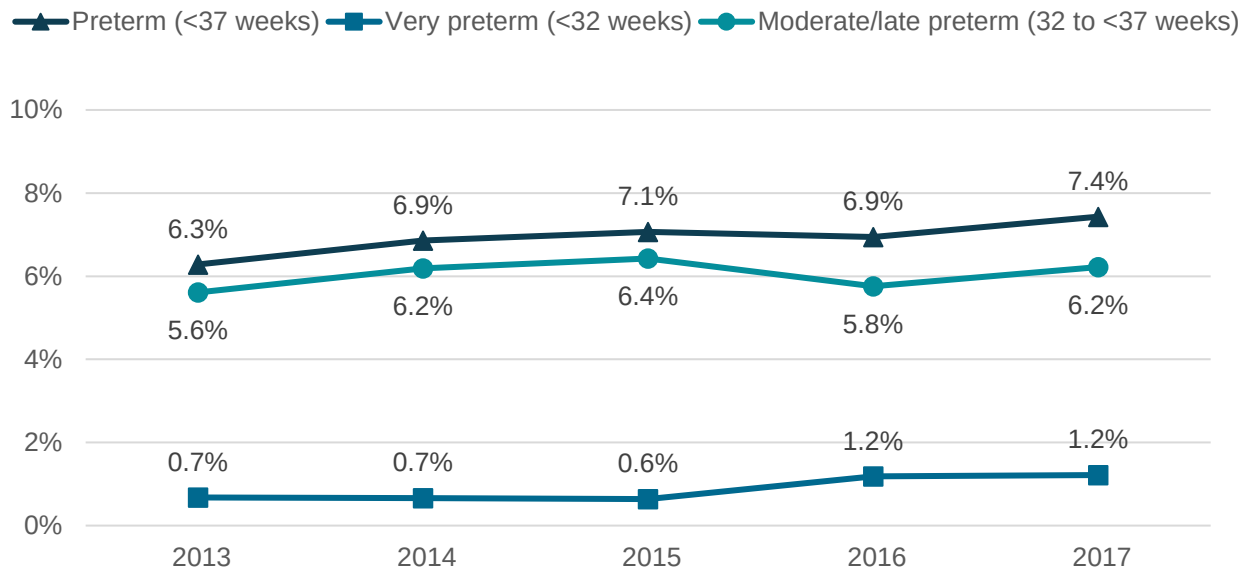


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Preterm births

Overall, the preterm birth rate in the SWPH region was 6.9% (95% CI: 6.4%-7.4%) from 2013 to 2017 combined. The rate of preterm births in the SWPH region has remained relatively stable since 2013 (Figure 10).

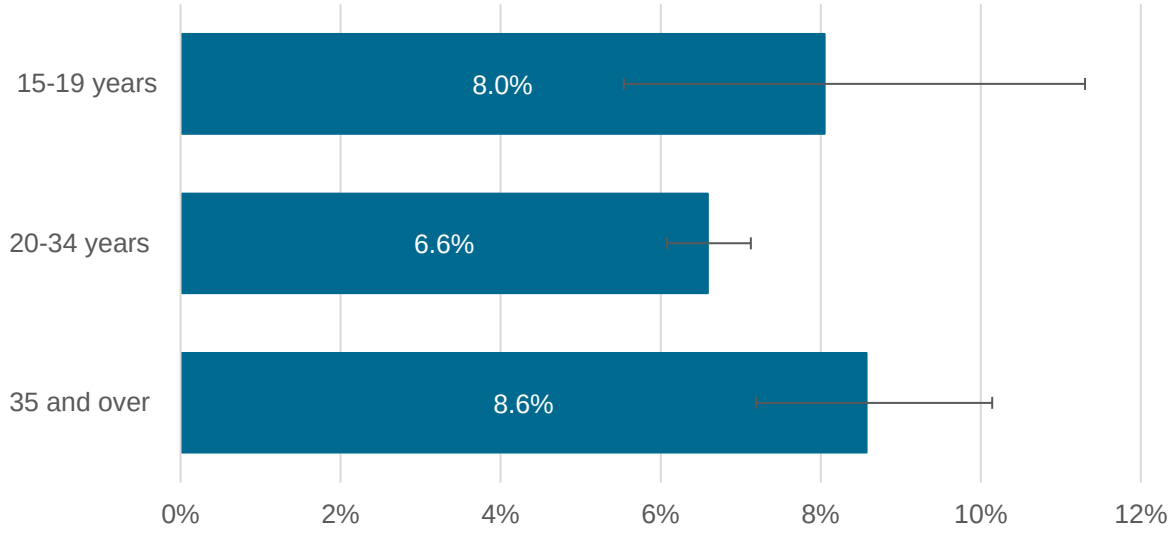
Figure 10. Rate of preterm births, Southwestern Public Health, 2013-2017



Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

When looking at preterm birth rate by maternal age, women older than 35 years have a slightly higher preterm birth rate when compared to women aged 20-34 years (Figure 11). The preterm birth rate among teenage mothers (aged 15 to 19 years) was not statistically significantly different to mothers older than 20 years.

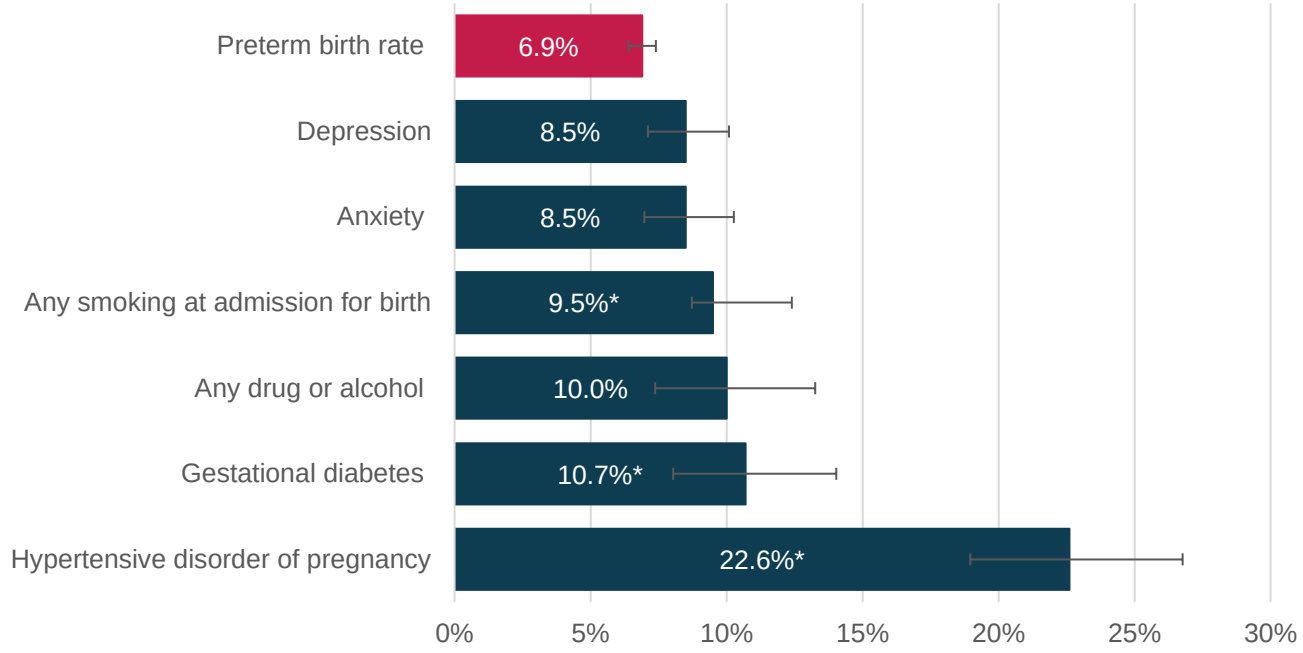
Figure 11. Rate of preterm births by maternal age group, Southwestern Public Health, 2013-2017 (combined)



Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

The preterm birth rate among women that reported any smoking at admission for birth (9.5%) was higher than the overall preterm birth rate (6.9%) between 2013 and 2017 combined (Figure 12). When looking at medical risk factors, the preterm birth rate was higher among women that reported gestational diabetes (10.7%) and hypertensive disorder of pregnancy (22.6%) compared to the overall preterm birth rate between 2013 and 2017 (Figure 12). The preterm birth rate among the remaining maternal risk factors was similar to that of the overall preterm birth rate of 6.9%.

Figure 12. Preterm birth rate by maternal risk factors, Southwestern Public Health, 2013-2017 (combined)



Note: the overall preterm birth rate from 2013 to 2017 (combined) is highlighted in red.

*indicates a statistically significant difference from the overall preterm birth rate.

Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Birth Weights

The low birth weight (LBW) rate of all live births less than 2,500 g in the SWPH region from 2013 to 2017 was 5.1% (95% CI: 4.7%-5.6%). The LBW rate for singleton full-time live births from 2013 to 2017 was 1.4% (95% CI: 1.2%-1.7%).

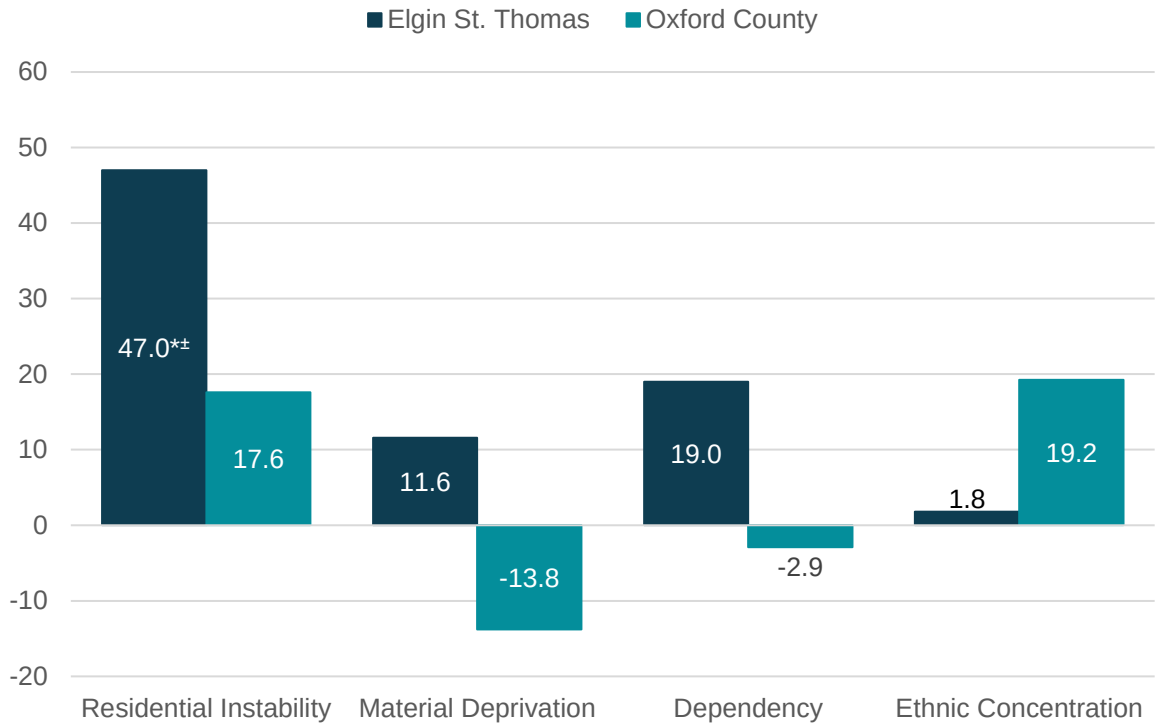
Impact of Marginalization

Low birth weight differed by levels of marginalization in Elgin St. Thomas. Marginalization was measured using the 2011 Ontario Marginalization Index (ON-Marg), which measures four dimensions of health inequity: residential instability, material deprivation, dependency and ethnic concentration.

- **Residential instability** includes measures of housing, age and marital status to identify areas with more people who do not own houses, who move frequently and who live alone. Someone with high residential instability has difficulty, or is at risk of having difficulty, staying in a home for long periods of time.
- **Material deprivation** includes measures of lone-parent families, low income and poor housing conditions. Someone with high material deprivation cannot afford basic resources and services such as housing, food and clothing.
- **Dependency** considers the overall per cent of seniors in the population, the dependency ratio (i.e., ratio of people aged 0 to 14 years and 65 years and older compared to people aged 15 to 64 years) and the employment rate. A community with high dependency has fewer people participating in the labour market.
- **Ethnic concentration:** measures the proportion of the population identifying as recent immigrants and visible minority immigrants. Research has shown that recent immigrants tend to have better health than Canadian-born people, but this effect diminishes over time the longer one lives in Canada.[4] On the other hand, visible minorities may experience poorer health due to experiences of discrimination.[5] A community with high ethnic concentration may have more people at risk of poor health and discrimination over a long-term period.

If each socioeconomic group experienced the rate of the least disadvantaged group in terms of residential instability, there could be a reduction of 47 singleton live births less than 2,500 g and the LBW rate could be reduced by 78.3% (95% CI: 37.6%-93.0%) (Figures 13, Figure 14). LBW did not differ by other levels of marginalization in Elgin St. Thomas and Oxford County (i.e., there is no definitive reduction in the number of LBW babies or LBW rate if each socioeconomic group experienced the rate of the least disadvantaged group in terms of material deprivation, ethnic concentration and dependency).

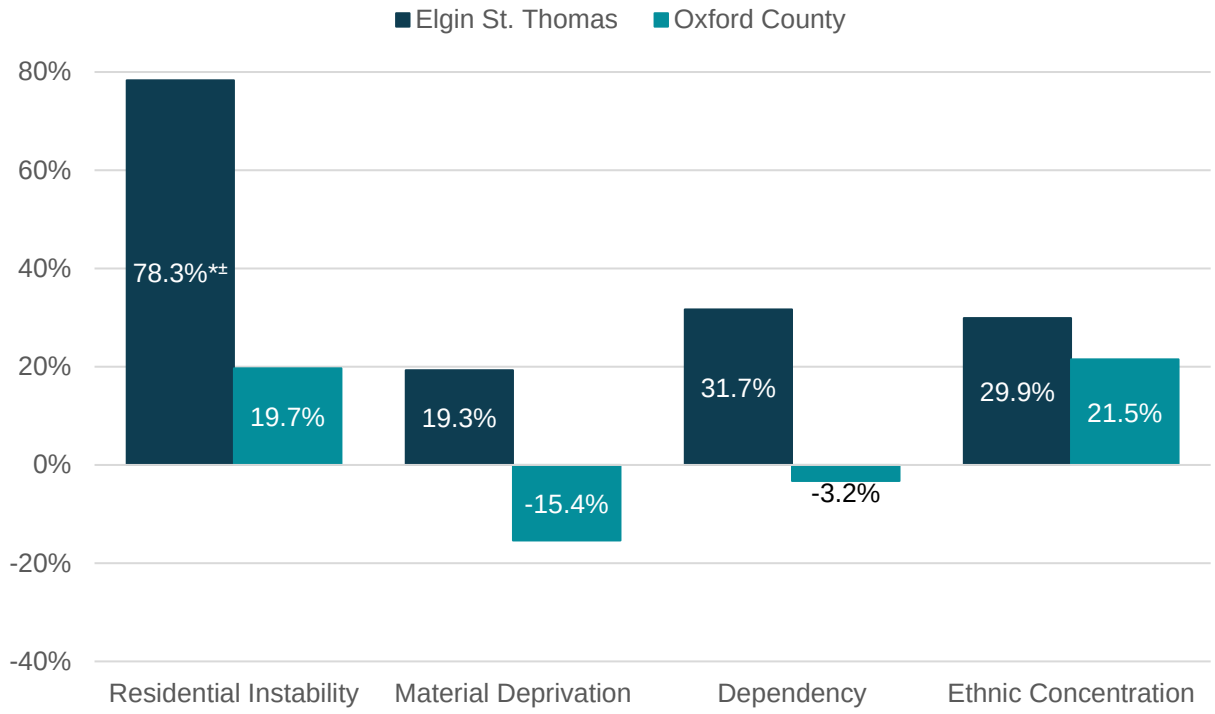
Figure 13. Projected reduction in the number of singleton live births less than 2,500 g if each socioeconomic group experienced the rate of the least disadvantaged group, Elgin St. Thomas and Oxford County, 2011-2012



***Statistically significantly inequality between the ON-Marg quintiles (least marginalized to most marginalized)
± Statistically significantly different from Ontario

Source: Public Health Ontario. Snapshots: Elgin St. Thomas Public Health & Oxford County Public Health & Emergency Services: Health Inequities in Singleton Low Birth Weight 2011-12. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 May 9 [cited 2019 March 7]. Available from: http://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Low-Birth-WeightInequities.aspx

Figure 14. Projected reduction in the rate of singleton live births less than 2,500 g if each socioeconomic group experienced the rate of the least disadvantaged group, Elgin St. Thomas and Oxford County, 2011-2012



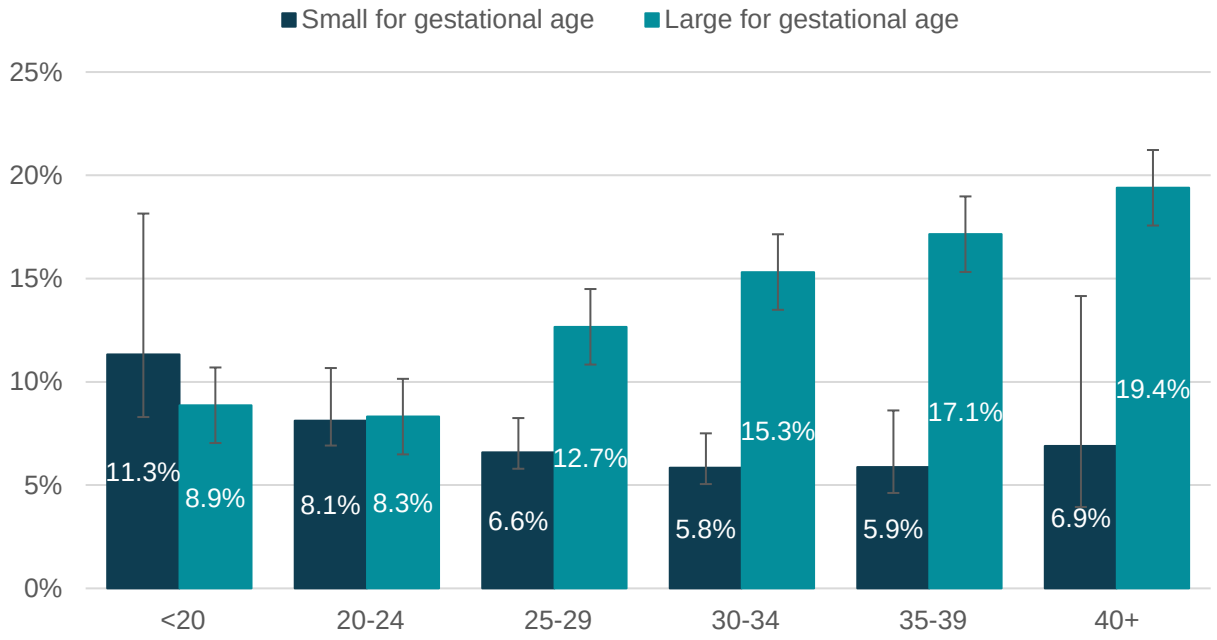
*****Statistically significantly inequality between the ON-Marg quintiles (least marginalized to most marginalized)
± Statistically significantly different from Ontario

Source: Public Health Ontario. Snapshots: Elgin St. Thomas Public Health & Oxford County Public Health & Emergency Services: Health Inequities in Singleton Low Birth Weight 2011-12. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 May 9 [cited 2019 March 7]. Available from: http://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Low-Birth-WeightInequities.aspx

Small and Large for Gestational Age

While low birth weight is determined by an overarching cut-off, small for gestational age (SGA) births are singletons weighing less than 90% of babies of the same sex and gestational age (from 22 to 43 weeks) in the same Canadian cohort. Therefore, an infant can be considered low birth weight but not small for gestational age. The proportion of singleton live births that were small or large for gestational age varied by maternal age. A higher proportion of infants born to mothers under 24 years of age were SGA compared to infants born to mothers aged 30-34 years (Figure 15). The proportion of infants considered large for gestational age (LGA) appeared to be increasing with maternal age. For example, the proportion of large for gestational age infants was higher among mothers older 30 years compared to mothers aged younger than 30 years (Figure 15).

Figure 15. Proportion of births that are small or large for gestational age by maternal age group, singleton live births, Southwestern Public Health, 2013-2017 (combined)

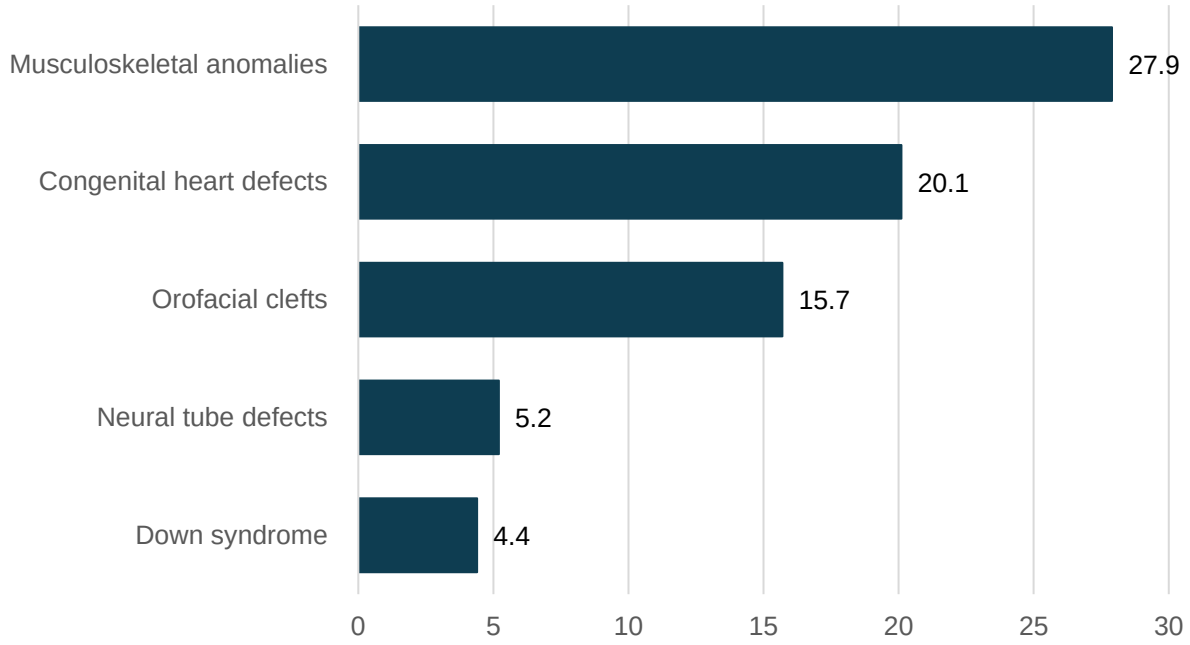


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Congenital Anomalies

Congenital anomalies were rare. Musculoskeletal anomalies (such as missing fingers and/or toes, extra fingers and/or toes and connected areas between fingers and/or toes) were the most common congenital anomalies in the SWPH region (reported for 27.9 births per 10,000). The next most common congenital anomaly was congenital heart defects (which include septal defects, coarctation of the aorta and pulmonary valve stenosis), which was reported for 20.1 births per 10,000 (Figure 16).

Figure 16. Crude rate of top five most common congenital anomalies (per 10,000 births), Southwestern Public Health, 2013-2017 (combined)

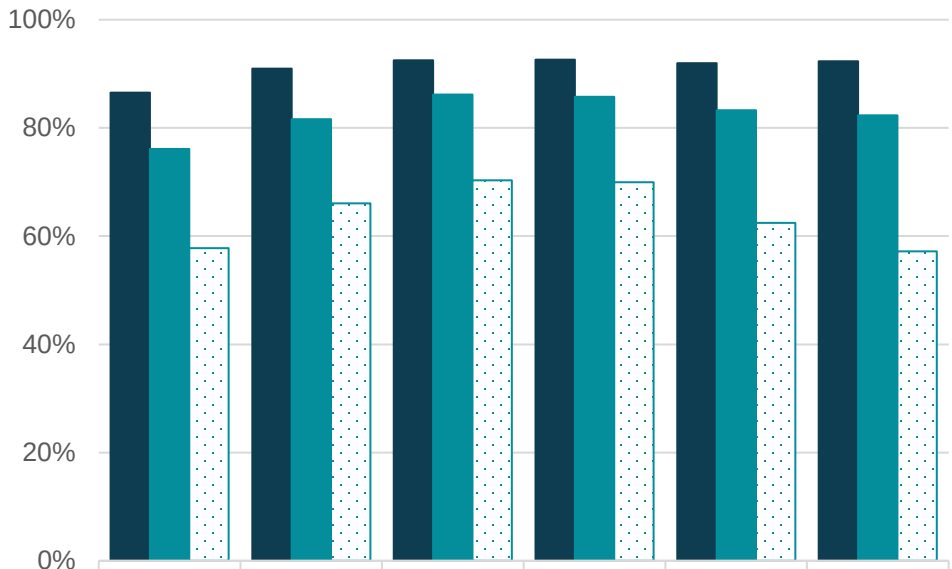


Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

Infant Feeding

Overall, the proportion of pregnant women who reported that they intended to breastfeed and engaged in any breastfeeding at entry to public health service was similar across maternal age groups (Figure 17).[c] Exclusive breastfeeding at entry to service differed by maternal age, with younger and older mothers reporting lower rates of exclusive breastfeeding at entry to service. For example, the proportion of mothers aged less than 20 years reporting exclusive breastfeeding (57.8%) was lower compared to mothers aged 25-29 and 30-34 years (70.3% and 70.0%, respectively; Figure 17). The proportion of mothers older than 40 years reporting exclusive breastfeeding (57.2%) was lower than the proportion of mothers aged 25-29 years (70.3%).

Figure 17. Intention to breastfeed* during pregnancy or at birth and breastfeeding at entry to public health service by maternal age group, Southwestern Public Health, 2013-2017 (combined)



	<20	20-24	25-29	30-34	35-39	40+
Intention to breastfeed	86.5%	91.0%	92.5%	92.6%	92.0%	92.3%
Entry to service (any)	76.1%	81.6%	86.2%	85.8%	83.2%	82.3%
Entry to service (exclusive)	57.8%	66.1%	70.3%	70.0%	62.5%	57.2%

Source: BORN Information System (2013-2017), Date Extracted: January 10, 2019.

*Intention to breastfeed (exclusively or in combination with formula)

[c] More detailed infant feeding information will be presented in separate reports.

Childhood Development

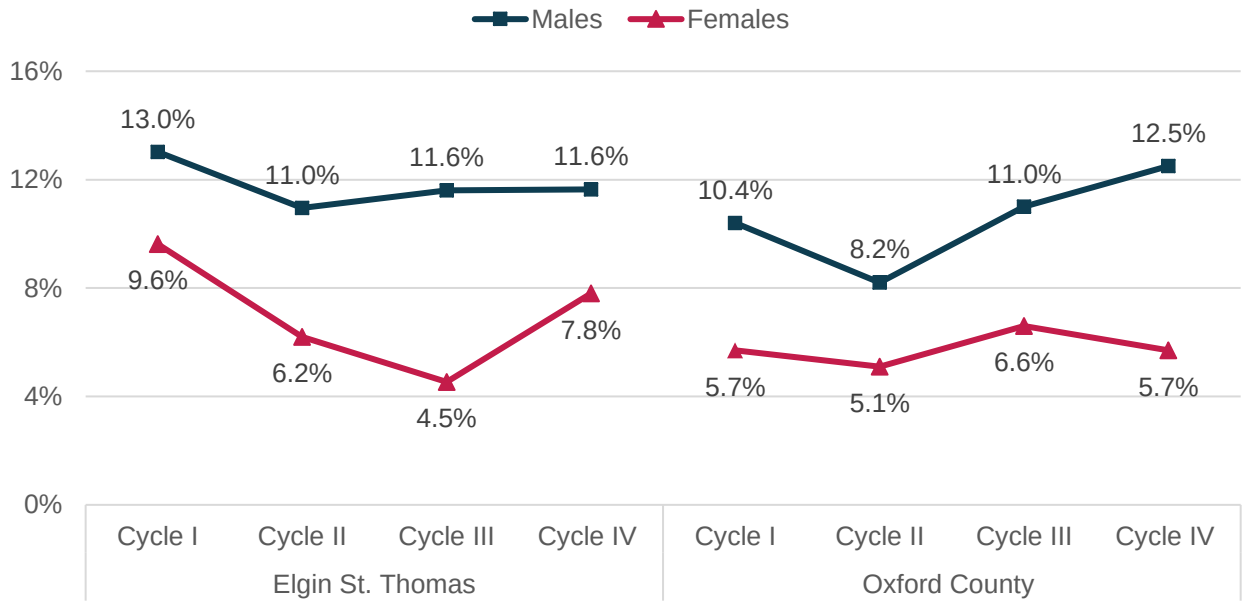
Early Development Instrument

A higher percentage of boys scored as vulnerable[d] compared to girls consistently across all domains and over time. This trend was seen in both Elgin St. Thomas and Oxford County (Figure 18). The percentage of children (both boys and girls) scoring as vulnerable appeared to remain relatively stable over time in two domains, (1) communication skills and general knowledge and (2) language and cognitive development. The percentage of children (both boys and girls) scoring as vulnerable increased over time in three domains, (1) emotional maturity, (2) physical health and well-being and (3) social competence.

Figure 18. Per cent of children scoring as vulnerable on the Early Development Instrument (EDI) by sex and domain, Elgin St. Thomas and Oxford County, Cycle I (2008/2009) – Cycle IV (2014/2015)

Communication Skills and General Knowledge

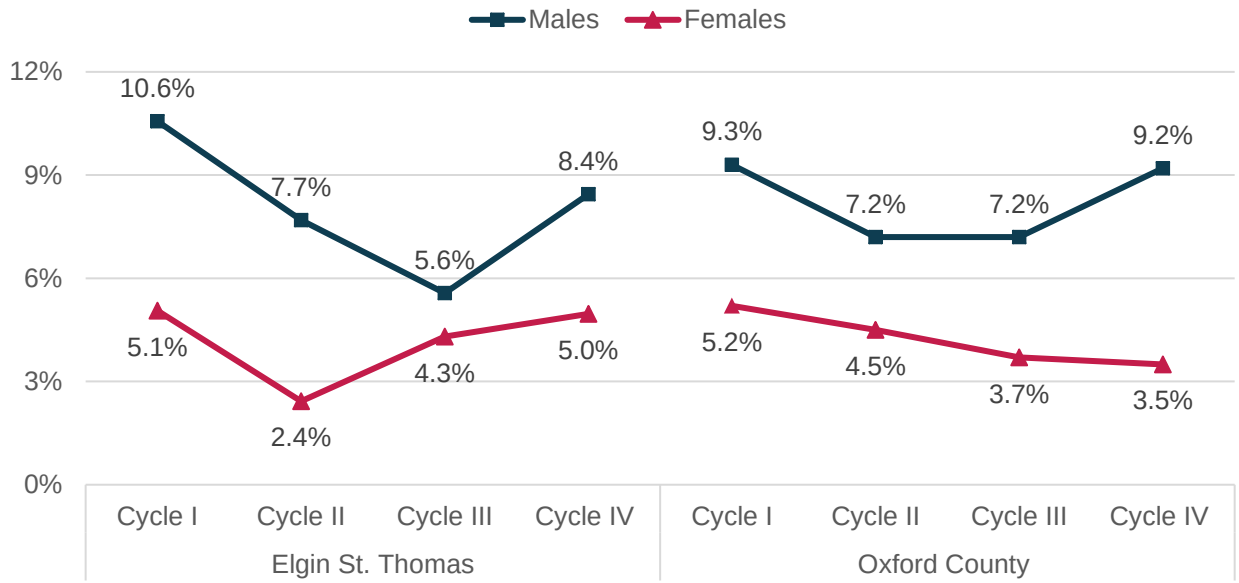
Includes questions about ability to tell stories to other children and adults, articulation and understanding others



[d] Children are categorized as vulnerable based on the Ontario baseline for Early Development Instrument (EDI) scores (determined by the first province-wide cycle completed between 2004 to 2006). Children with EDI scores below the 10th percentile (i.e., have a score that is lower than 90% of the children completing the EDI) are vulnerable.

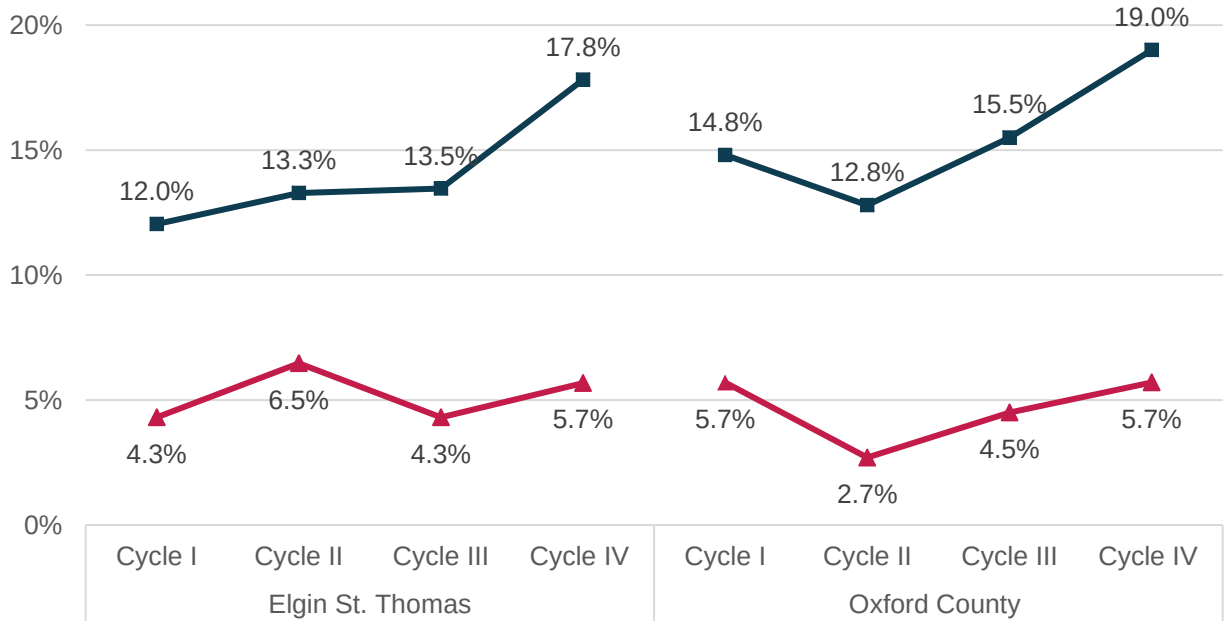
Language and Cognitive Development

Includes questions about interest in books, reading, writing and basic math as well as ability to read and write simple sentences and complex words, count and recognize numbers and shapes



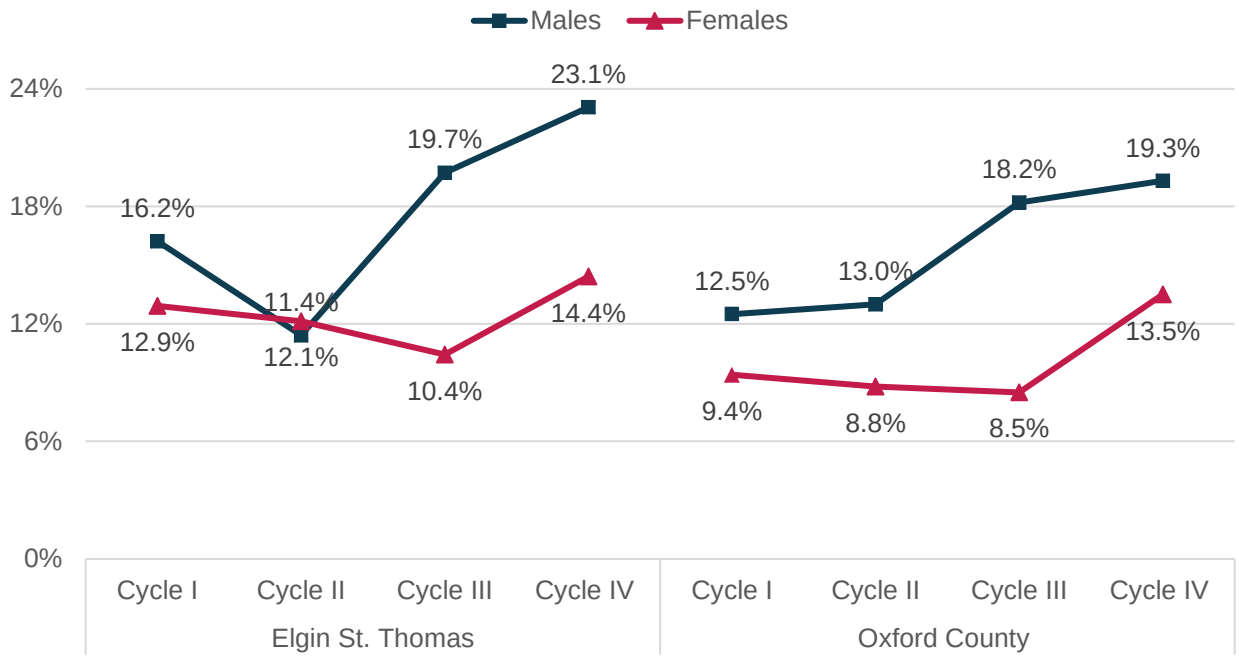
Emotional Maturity

Includes questions about aggressive, anxious or impulsive behaviour as well as concentration and helping others



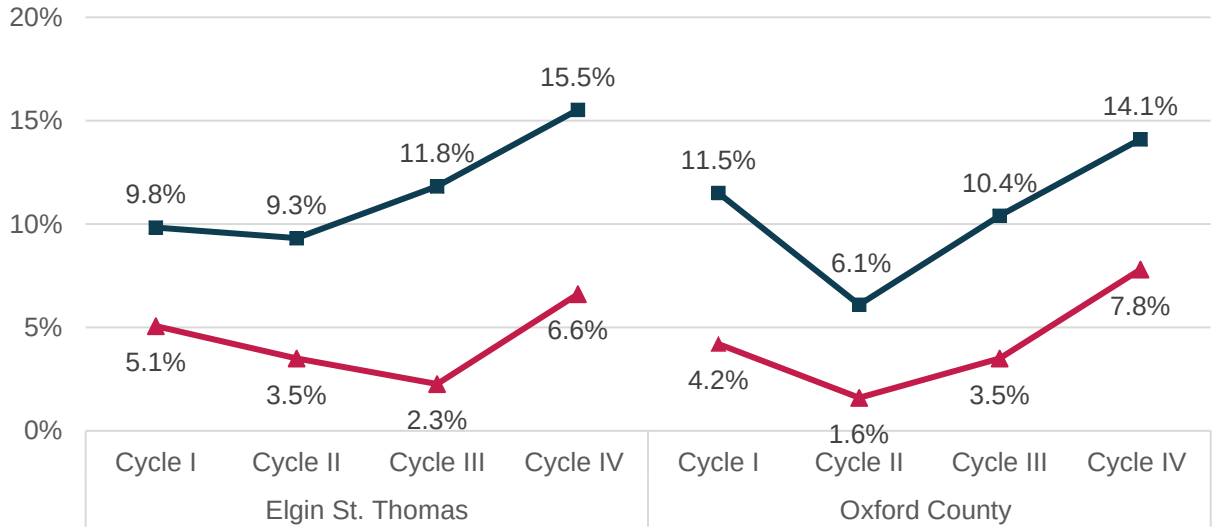
Physical Health and Well-being

Includes questions about being physically ready for school (e.g., not tired or hungry), independence and motor skills



Social Competence

Includes questions about getting along with others and helping others, respectfulness to adults, self-confidence and self-control, ability to follow class routines and ability to adjust to changes



Source: Lyons D. The Early Development Instrument in Oxford County: a summary of cycles 1 to 4. Woodstock, ON: Oxford EarlyON Child and Family Centre, Oxford Community Child Care; 2018 Early Development Instrument, St. Thomas & Elgin County, 2005/2006, 2008/2009, 2011/2012 & 2014/2015, Offord Centre for Child Studies, McMaster University. Summary data provided by Children's Services, St. Thomas-Elgin Social Services.

Risk Factors for Healthy Child Development

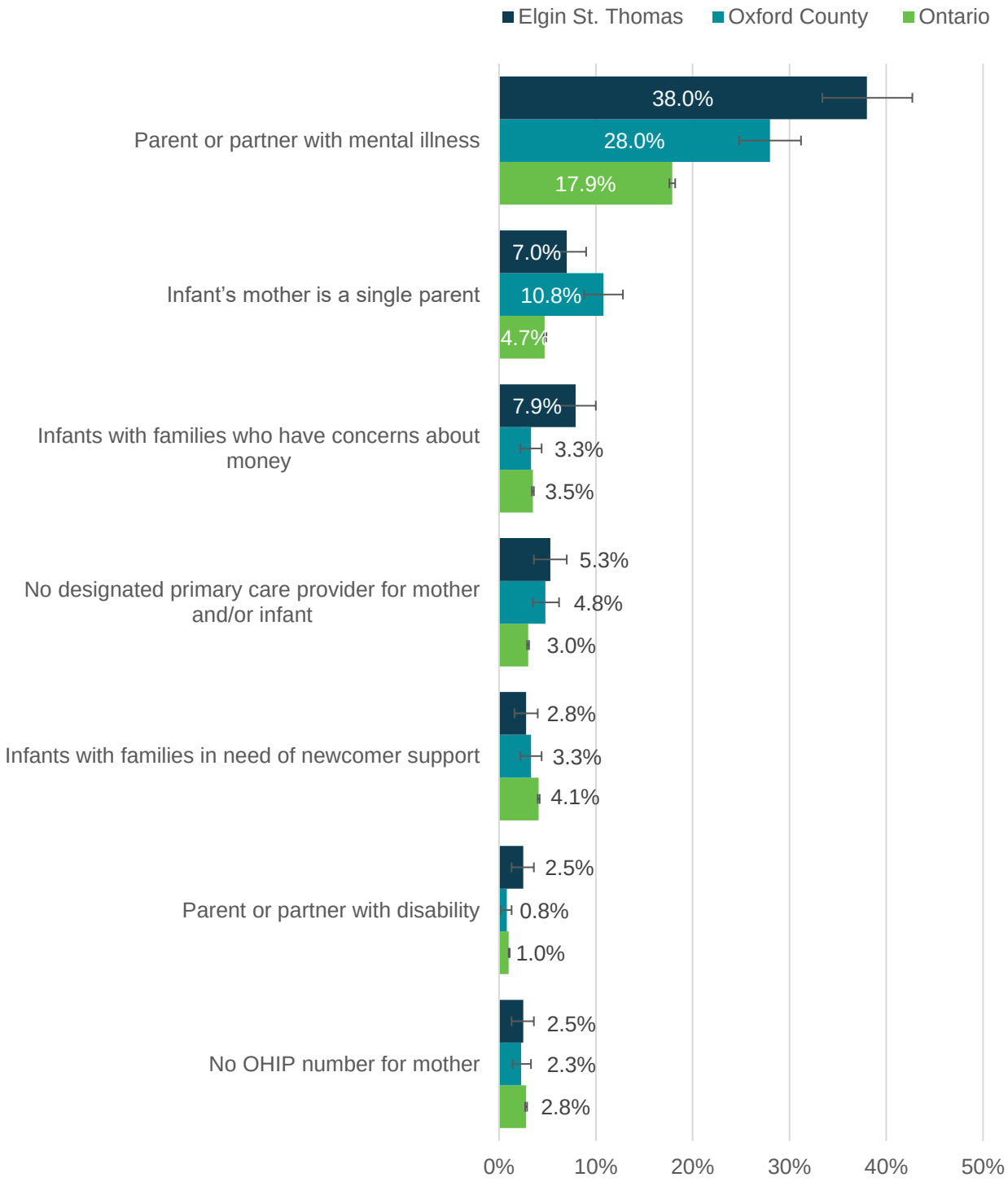
The most commonly reported risk factor for healthy child development was a parent or partner with a mental illness. Of the families that completed the Healthy Babies Healthy Children (HBHC) screen, the proportion of families reporting a parent or partner with a history of depression, anxiety or other mental illness was higher in Elgin St. Thomas (38.0%) compared to Oxford County (28.0%), with both regions reporting a higher proportion compared to Ontario (17.9%) (Figure 19).

In 2017, Elgin St. Thomas and Oxford County both reported a higher proportion of single parent mothers[e] (7.0% and 10.8%, respectively) compared to Ontario (4.7%). There was no statistically significant difference between Elgin St. Thomas and Oxford County (Figure 19). In Elgin St. Thomas, 7.9% of families who completed the HBHC screen reported concerns about money to pay for housing/rent and family's food, clothing, utilities and other basic necessities. This was higher than in Oxford County (3.3%) and Ontario (3.5%), which were similar to each other (Figure 19).

Among those that completed the HBHC screen, a higher proportion of mothers in Elgin St. Thomas and Oxford County reported that they had no designated primary care provider for the mother and/or infant (5.3% and 4.8%, respectively) compared to Ontario (3.0%) (Figure 19). The remaining risk factors on the HBHC screen were similar among all three areas.

[e] Includes mothers without partners and mothers who have a partner but have lived with them for less than one year.

Figure 19. Per cent of families reporting risk factors for healthy child development, Elgin St. Thomas, Oxford County and Ontario, 2017

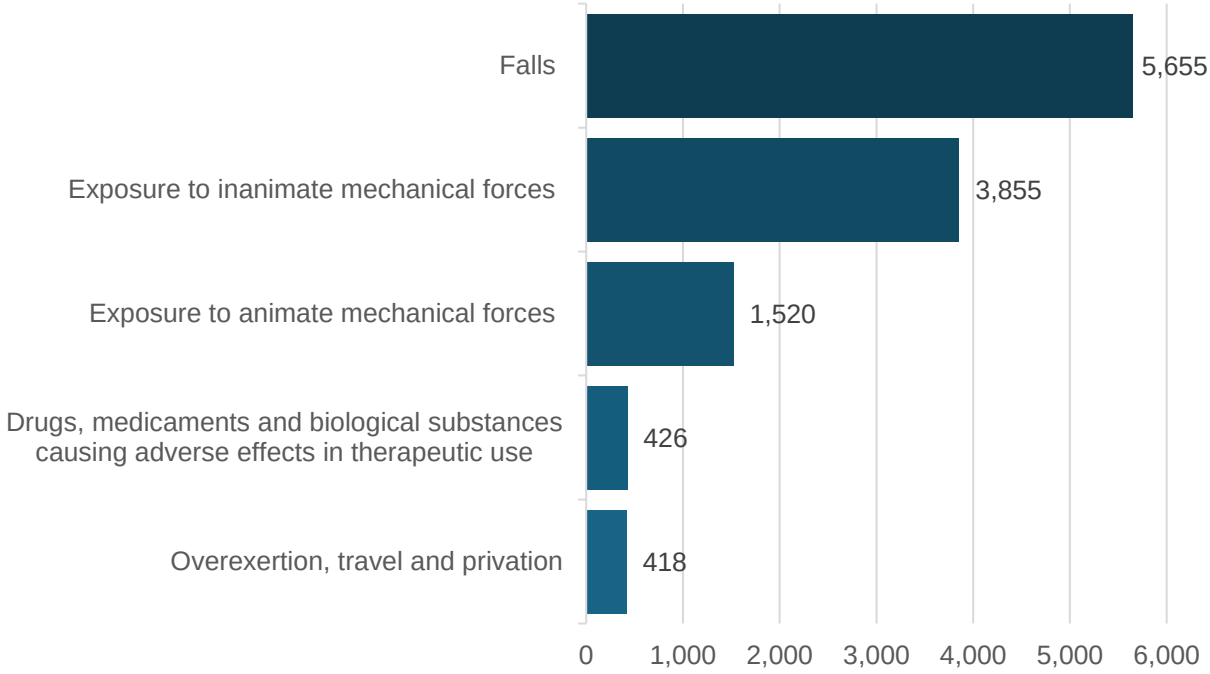


Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Risk factors for healthy child development snapshot [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [updated 2018 Oct 12; cited 2019 Feb 15]. Available from: publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Maternal-health.aspx

Childhood Injuries

Between 2013 and 2017, the leading cause of emergency department (ED) visits due to injuries among children six years and under was due to falls. This was followed by exposure to inanimate mechanical forces, which included being struck by thrown objects, sports equipment as well as contact with sharp glass, knives or machinery (Figure 20). Exposure to animate mechanical forces included being hit, kicked, or scratched by another person (excluding assault), bumping into another person in sports or non-sports and animal bites.

Figure 20. Top five causes of emergency department visits (number) among children six years and under, 2013-2017 (combined)



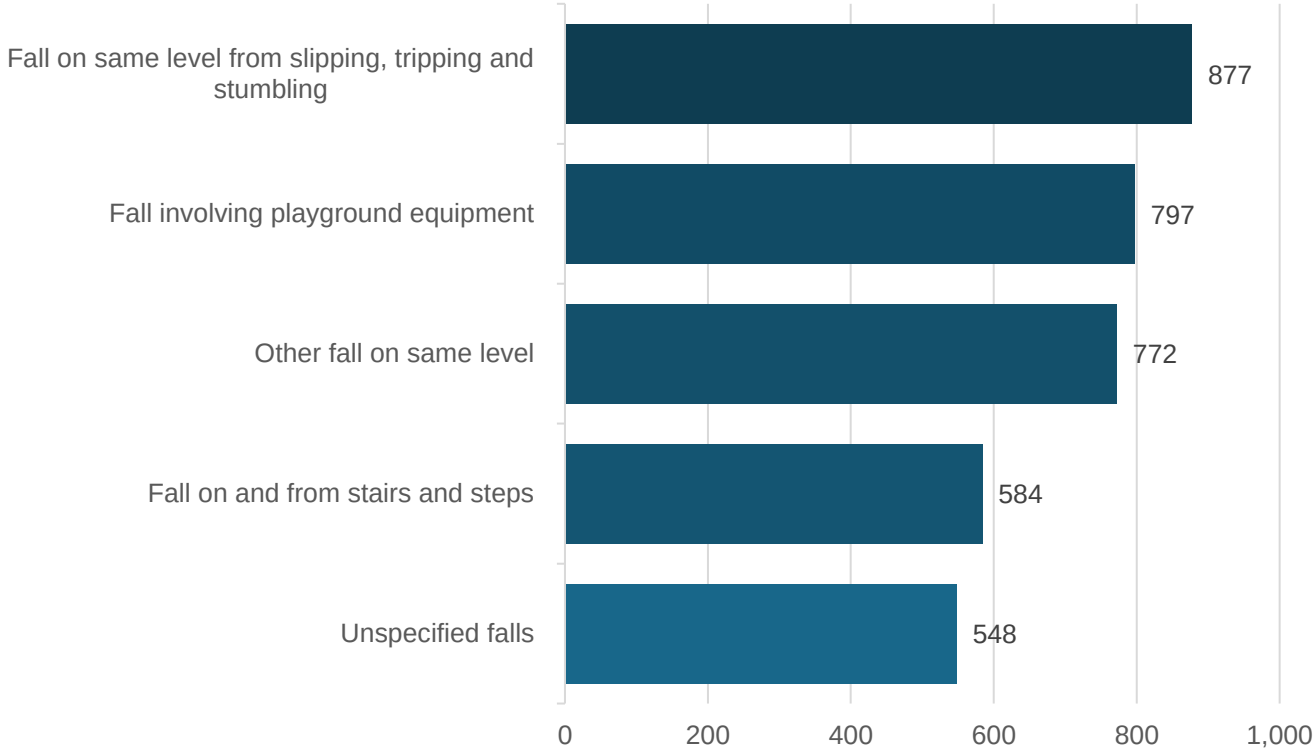
Note: Drugs, medicaments and biological substances causing adverse effects in therapeutic use does not include accidental overdose of drug or wrong drug given or taken in error. Overexertion, travel and privation does not include neglect by others.

Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 5, 2019.

Falls

Between 2013 and 2017, the leading cause of ED visits for falls among children six years and under was due to a fall on the same level from slipping, tripping and stumbling. This was followed by falls involving playground equipment (Figure 21).

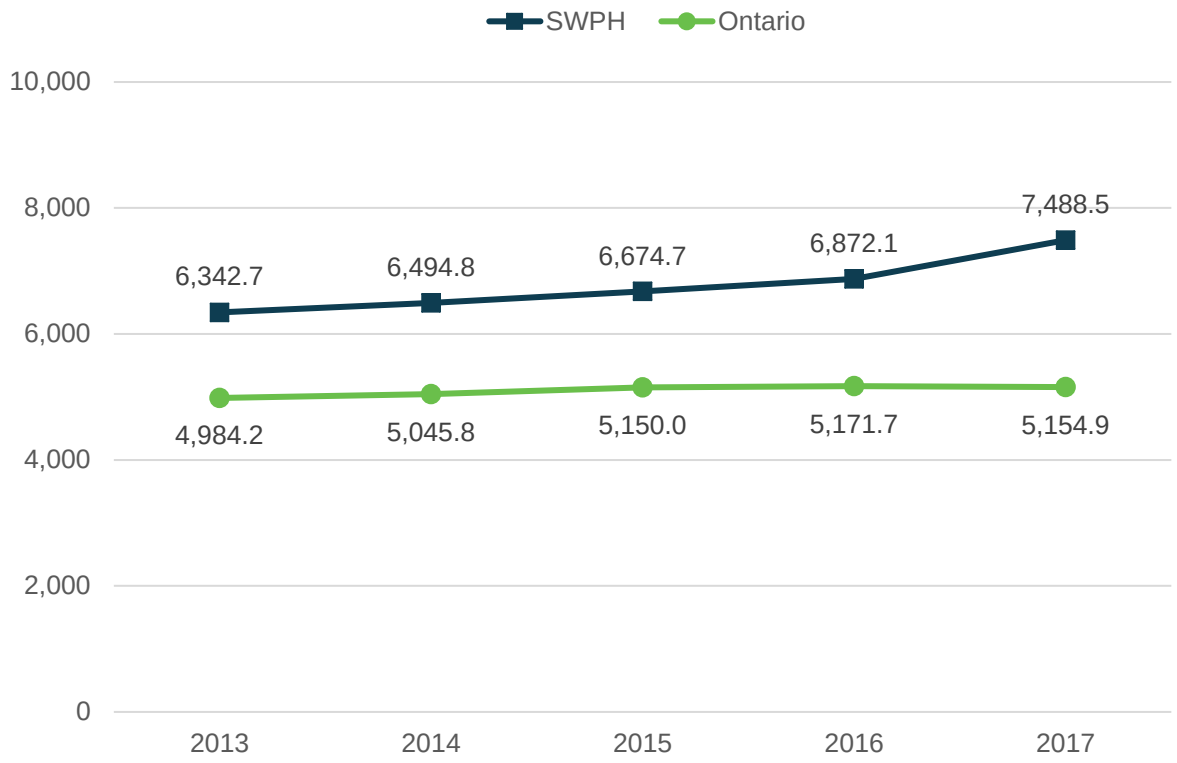
Figure 21. Top five causes of emergency department visits due to falls (number) among children six years and under, 2013-2017 (combined)



Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 5, 2019.

The rates of ED visits due to falls in the SWPH region among children aged six years and under were higher than Ontario from 2013 to 2017 (Figure 22). While the rates in Ontario have remained stable, the rates of emergency department visits due to falls in the SWPH region have increased over time since 2013. This may be due to a true increase in the rate or increased use of emergency departments.

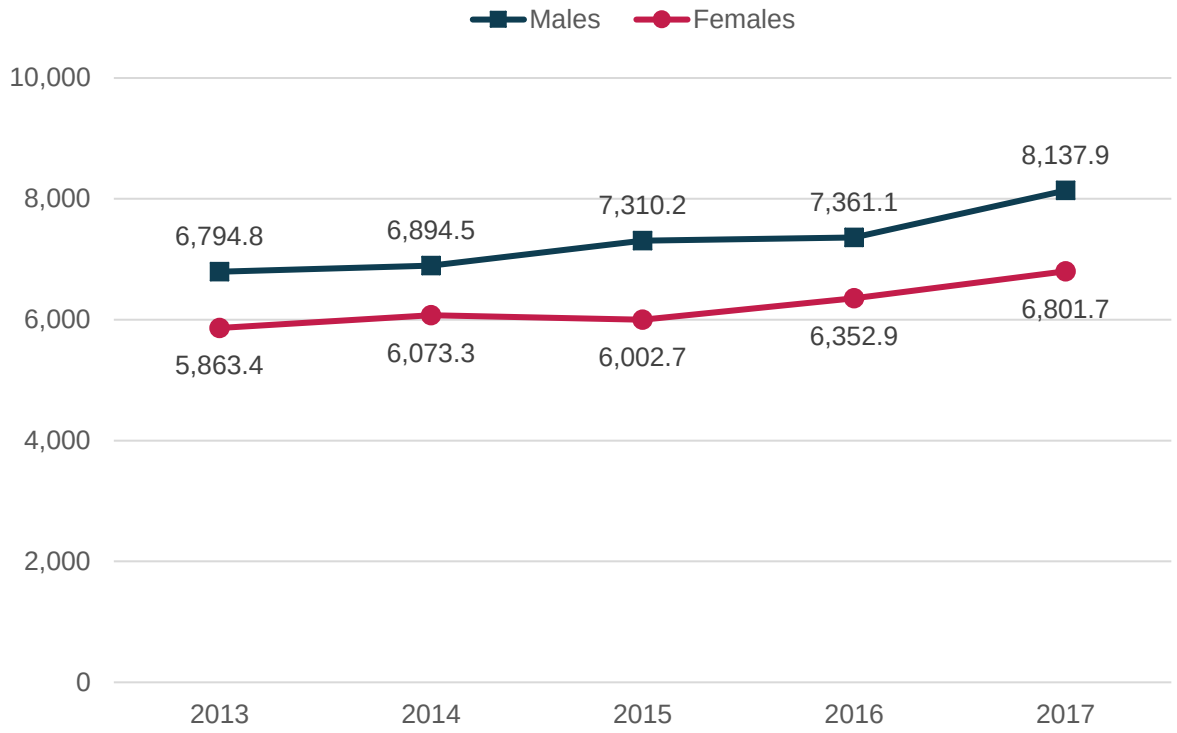
Figure 22. Crude rate (per 100,000 population) of emergency department visits due to falls among children aged six years and under, Southwestern Public Health and Ontario, 2013-2017



Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 5, 2019 & Population Estimates (2012-2016), IntelliHEALTH ONTARIO, Ministry of Health and Long-Term Care, Date Extracted: March 19, 2019.

Overall, the rates of ED visits due to falls among children in the SWPH region were higher among males compared to females between 2013 and 2017 (Figure 23). The rates among males increased slightly during this time whereas the rates among females remained relatively stable. Although both rates appear to be increasing, a statistically significant increase was only seen in the rates among males.

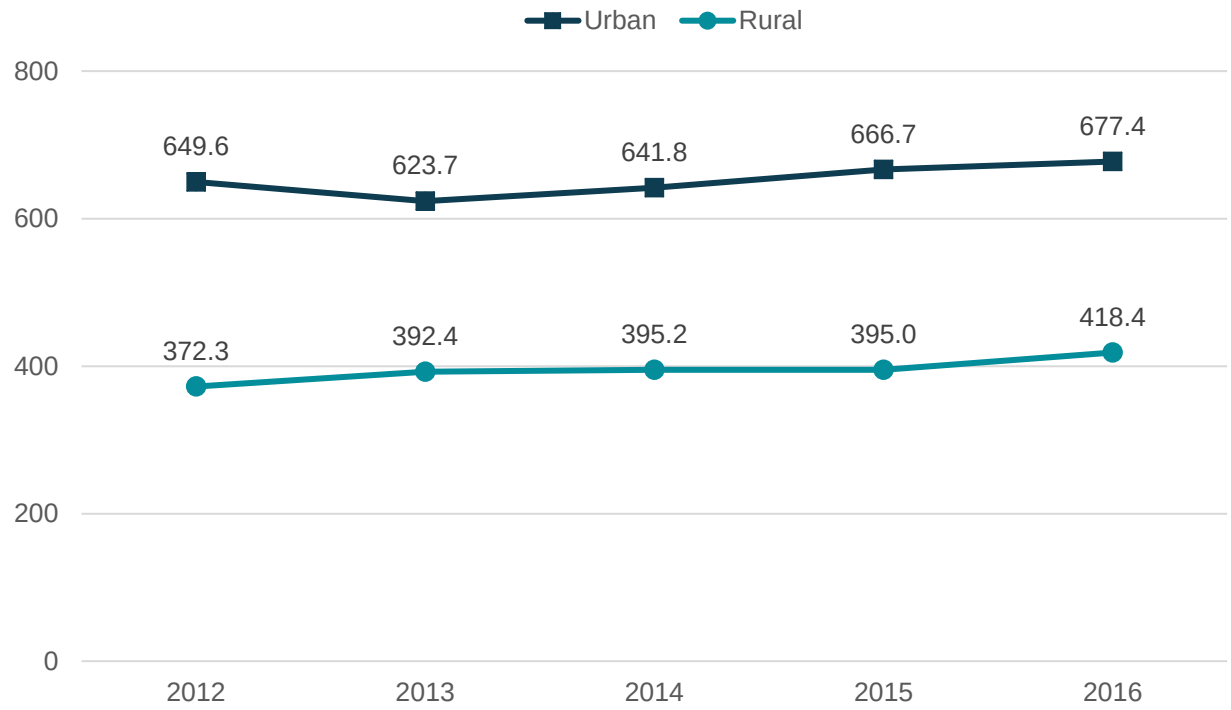
Figure 23. Crude rate (per 100,000 population) of emergency department visits due to falls among children aged six years and under by sex, Southwestern Public Health, 2013-2017



Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 5, 2019 & Population Estimates (2012-2016), IntelliHEALTH ONTARIO, Ministry of Health and Long-Term Care, Date Extracted: March 19, 2019.

The rates of ED visits due to falls in the SWPH region were relatively stable over time among people living in the urban and rural areas. However, the rate was consistently higher among urban (i.e., Aylmer, St. Thomas, Woodstock, Ingersoll, Tillsonburg) residents compared to rural residents (i.e., Bayham, Blanford-Blenheim, Central Elgin, Dutton-Dunwich, East Zorra-Tavistock, Malahide, Norwich, Southwold, Southwest-Oxford, West Elgin and Zorra; Figure 24).

Figure 24. Crude rate (per 100,000 population) of emergency department visits due to falls among children aged six year and under by urban versus rural area of residence, Southwestern Public Health, 2012-2016



Source: Ambulatory Emergency External Cause (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 5, 2019 & Population Estimates (2012-2016), IntelliHEALTH ONTARIO, Ministry of Health and Long-Term Care, Date Extracted: March 19, 2019.

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Appendix A: Technical Notes

This section summarizes information from a variety of data sources available to Public Health. The methods used, and geography presented depends on the data source described below.

Better Outcomes Registry & Network (BORN) Information System

The BORN information system collects data about pregnancy, birth and childhood in Ontario. Data regarding resident pregnancies and births (i.e. individuals who reside in the SWPH region regardless of where they gave birth) were used to calculate fertility and pregnancy rate, folic acid supplementation, mental health concerns and substance use during pregnancy and preterm and multiple birth rate. This does not include data for people living on First Nations reserves out of respect to the Ownership, Control, Access and Possession (OCAP) guidelines released by the First Nations Information Governance Centre. In addition to this, neonatal intensive care unit (NICU) admission data from Sunnybrook, Mount Sinai or London Health Sciences is not available.

Early Development Instrument (EDI)

The EDI is a validated questionnaire developed at the Offord Centre for Child Studies at McMaster University. It is completed by kindergarten teachers in the second half of the school year and measures children's ability to meet age-appropriate developmental expectations in five domains. Children can be categorized as vulnerable, at risk or on track based on the Ontario baseline for EDI scores (determined by the first province-wide cycle completed between 2004-2006). Children with EDI scores below the 10th percentile (i.e., have a score that is lower than 90% of the children completing the EDI) are vulnerable. The EDI data was provided by the Oxford EarlyON Child and Family Centre, Oxford Community Child Care and St. Thomas-Elgin Social Services, Children's Services.

National Ambulatory Care Reporting System (NACRS)

NACRS contains demographic, administrative and clinical data about unscheduled emergency department visits. The data submitted by emergency departments is validated by CIHI and released to public health units on a quarterly basis through IntelliHEALTH ONTARIO. NACRS can also be used to obtain information about inpatients that were admitted from the emergency room to critical care units/operating rooms, other units within a hospital or to another acute care facility. This information was used to report the rate of emergency department visits for falls among children. Table 1 outlines the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA) codes included for emergency department visits due to falls among children aged six years and under.

Table 1. ICD-10-CA codes included for emergency department visits due to falls among children aged six years and under

Code	Description
W00-W19	**Falls**
W00	Fall on same level involving ice and snow
W01	Fall on same level from slipping, tripping and stumbling
W02	Fall involving skates, skis, sport boards and in-line skates
W03	Other fall on same level due to collision with, or pushing by, another person
W04	Fall while being carried or supported by other persons
W05	Fall involving wheelchair and other types of walking devices
W06	Fall involving bed
W07	Fall involving chair
W08	Fall involving other furniture
W09	Fall involving playground equipment
W10	Fall on and from stairs and steps
W11	Fall on and from ladder
W12	Fall on and from scaffolding
W13	Fall from, out of or through building or structure
W14	Fall from tree
W15	Fall from cliff
W16	Diving or jumping into water causing injury other than drowning or submersion
W17	Other fall from one level to another
W18	Other fall on same level
W19	Unspecified fall

Ontario Marginalization Index (ON-Marg)

Public Health Ontario used the ON-Marg to demonstrate how health equity impacts low birth weight. The number of singleton live births less than 2,500g was obtained from the Discharge Abstract Database (DAD). The ON-Marg measures four concepts of health equity: residential instability, material deprivation, dependency and ethnic concentration. The 2011 version that was used to link health equity to health outcomes used data sources that differed from previous versions of the ON-Marg as well as the 2016 ON-Marg, which used Census data exclusively. Data sources were modified in 2011 due to data quality concerns with using the National Household Survey (Table 2). The ON-Marg technical document outlines the methods in more detail, including how the four indicators were created.[6]

Table 2. ON-Marg indicators, measures and data sources, 2011[6]

Indicator	Measures	Data source
Residential instability	% living alone	2011 Census short form
	% population not 5 to 15 years old	2011 Census short form
	average number of persons per dwelling	2011 Census short form
	% single, divorced or widowed	2011 Census short form
	% living in multi-unit dwellings	Municipal Property Assessment Corporation
	% dwellings not owned	Municipal Property Assessment Corporation
	% residential mobility	Registered Persons Database
Material deprivation	% lone-parent families	2011 Census short form
	% income from government transfers	Tax filer (T1 Family File)
	% below the low-income measure	Tax filer (T1 Family File)
	% houses in fair or poor condition	Municipal Property Assessment Corporation
Dependency	% seniors (65+ years)	2011 Census short form
	dependency ratio	2011 Census short form
	employment rate	Tax filer (T1 Family File)
Ethnic concentration	% recent immigrants	Immigration, Refugees and Citizenship Canada
	% visible minority immigrants	Immigration, Refugees and Citizenship Canada

Quintiles for each ON-Marg concept were based on local cut-offs to define the level of marginalization based on local population characteristics. Each quintile contains 20% of all dissemination areas within Elgin St. Thomas and Oxford County as separate geographies. Dissemination areas contain 400 to 700 people and are the smallest stable, standard geographic area reported by Statistics Canada. The presented rates were age-standardized using the 2011 Canadian population to account for differences in the age structure of populations (i.e., the effects that age structure can have on rates of health outcomes).

Population Estimates and Projections

Population estimates and projections were used as the denominator to calculate rates. Population estimates are produced by the demography division of Statistics Canada. The Ministry of Finance produces population projections for the 30-year period following each census, both of which are made available to health units through IntelliHEALTH ONTARIO.

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