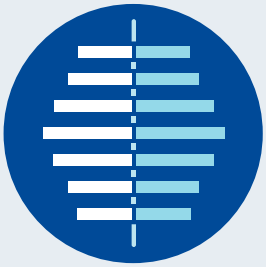


Reproductive Health Status Report of Huron and Perth Counties 2024

Huron Perth Public Health

Huron Perth Public Health, Reproductive Health Status Report of Huron and Perth Counties. Stratford, Ontario, December 2024

Authors

Erica Clark, *epidemiologist*

Jill Sloan, *public health nurse*

Acknowledgements

Cathie Alexander, *program admin. assistant | graphic designer*

Shannon Edmonstone, *public health nutritionist*

Ashley Furtney, *public health nurse*

Lauren Hayward, *physician consultant*

Katherine Horst, *communications coordinator*

Miriam Klassen, *medical officer of health and CEO*

Justin Liu, *health information analyst*

Amy MacDonald, *public health dietitian*

Rita Marshall, *communications manager*

Karen Mason, *graphic designer*

Sarah Merkel, *public health promoter*

Laura O'Rourke, *public health promoter*

Donna Parsons, *public health nurse*

Tanya Sangster, *program director*

Renate Van Dorp, *epidemiologist*

Angela Willert, *manager*

Special acknowledgement to Lindsay Mallott, *public health promoter*

September 2025

Table of Contents

Table of Contents, *cont'd*

Executive Summary

The Reproductive Health Status Report of Huron and Perth Counties provides a snapshot of maternal and infant health and well-being in Huron and Perth counties.

Early life experiences are linked to mental and physical health outcomes across the life course. Because of the critical foundation laid by these early life experiences, it's vital that Public Health and community partners focus on interventions, services and supports that promote and strengthen protective factors for the infant, toddler and their families beginning during preconception, pregnancy, and after birth.[1, 2, 3]

This report is intended to provide data to inform the development of healthy public policies, and programs and services along this continuum.

Note: *For the purposes of this report, the term woman/women/mother refers to people who were assigned female at birth, recognizing that a person's gender identity may differ from their anatomical, physiological or genetic assignment. This aligns with the indicators and data sources used in this report.*

Population Demographics

The number of females of reproductive age (15 to 49 years) in Huron Perth has increased and is projected to continue increasing through 2030; however, the increase in numbers is proportionate to an increase in the entire population. This means that while there may be more females needing reproductive health programs in Huron Perth in the future, the demand for other programs will also be increasing. In particular, growth in the 65 years and older demographic is projected to continue to outpace growth in the proportion of females 15 to 49 years in Huron Perth.

Social and Structural Determinants of Health

The social and structural determinants of health, which include the social, political, economic, and environmental conditions where Huron Perth residents live, learn, work, and play, can have an important role in reproductive health and health outcomes. It is important to keep the social and structural determinants of health in mind when interpreting data throughout this report and when planning reproductive health programs and services.

Fertility & Pregnancy

Fertility rates (the ratio of live births to females 15 to 49 years in a population during a given time period) in Huron Perth are higher than Ontario. Huron Perth fertility rates have been increasing over time, while Ontario fertility rates have been declining. Although higher than Ontario, fertility rates are still too low in some Huron Perth municipalities to maintain their populations without immigration.

Total pregnancy rates (the number of pregnancies, including live birth, stillbirths and therapeutic abortions, occurring among women 15 to 49 years in an area) in Huron Perth were significantly higher than Ontario in all years, with the exception of 2013 when there was no difference between Huron Perth

and Ontario, and it increased from 2013 to 2021. Huron Perth females also tend to be pregnant at a younger age (20 to 34 years) compared to Ontario. Pregnancy rates for 15-19 years were similar between Huron Perth and Ontario.

The therapeutic abortion rate in Huron Perth was lower than Ontario from 2013 to 2021. The trend over time shows the therapeutic abortion rates in both Huron Perth and Ontario decreased.

Healthy Pregnancies

From 2013 to 2021, pregnant women in Huron Perth were more likely to attend prenatal classes and consume folic acid supplements during pregnancy, compared to Ontario. Only half of those who consumed a folic acid supplement during pregnancy also took it preconceptionally. Pregnant women in Huron Perth were also more likely to report experiencing one or more mental health concerns during pregnancy (especially depression and/or anxiety), and to self-report smoking, alcohol exposure, and substance exposure (including cannabis) during pregnancy. However, smoking during pregnancy has been decreasing in Huron Perth and Ontario. Half of the pregnant women in Huron Perth gained more weight than recommended during pregnancy.

Birth

Compared to Ontario, pregnant women in Huron Perth were more likely to have a registered midwife or family physician attend their childbirth as opposed to other healthcare providers; they were also more likely to have a home birth.

Spontaneous vaginal labour is the most common type of birth for pregnant women giving birth in Huron Perth and Ontario. The proportion of spontaneous vaginal labour births is declining while vaginal induced labour, planned caesarean section and unplanned caesarean section births are increasing.

Birth Outcomes

There was a steady increase in the number of live births between 2013 and 2021 in Huron Perth. In 2013, there were 1,533 live births and in 2021, there were 1,687.

Women giving birth were likely to be younger in Huron Perth than Ontario. In addition, they were more likely to have had at least two prior births compared to women in Ontario, who were more likely to have had one or no prior births. Huron and Perth had a lower proportion of women aged 35 and over who gave birth compared to Ontario, although the number of women in this age group giving birth is increasing.

Most pregnancies in Huron Perth were singleton pregnancies, consistent with Ontario. Multiple birth rates were similar to Ontario.

Stillbirth rates in Huron and Perth are similar to Ontario. Huron Perth has a lower rate of small for gestational age babies and a higher rate of large for gestational age babies than Ontario. More than 90 per cent of births in Huron Perth are term births (between 37 and 41 weeks gestation). Compared to Ontario, Huron Perth has a significantly lower percentage of preterm births (before 37 weeks gestation) and similar percentages of term and post term births (after 42 weeks gestation).

Infant Health Outcomes

Infant mortality rates are similar in Huron and Perth compared to Ontario. In Huron and Perth, there has been a significant decrease in the number of pregnant women indicating their intention to exclusively breastfeed their infant(s). However, from 2018 to 2021, pregnant women in Huron Perth were more likely to report they intended to breastfeed exclusively compared to Ontario.

Considerations and Conclusion

This report provides a snapshot of maternal and infant health and well-being in Huron and Perth Counties.

While many indicators of healthy pregnancies and births suggest that overall, Huron and Perth mothers and infants are doing well compared to Ontario, there are some areas that indicate ongoing challenges or needs, and/or opportunities to improve what currently exists. This report includes some considerations for these areas, but it is not an exhaustive list; rather the considerations mentioned are meant to inform the conversation around the questions, "so what?" or "what could this mean for Huron and Perth?"

Demographics

Considerations for Huron and Perth municipalities include:

Consider the systems in place to attract people of reproductive age (likely due to immigration) into the area to both replace the jobs of some of the baby boomers once they retire and to support seniors as they age. Over the next few decades, Huron Perth's aging population will require more support (e.g., community paramedicine, medical, homecare, recreation and social programs) which means more people are required to manage this support. The systems can include things such as: safe and affordable housing options, transportation, childcare, reproductive healthcare, access to family doctors, and supports for newcomers.

Social and Structural Determinants of Health

Considerations for Huron Perth municipalities, healthcare providers, community services and supports and decision-makers include:

- Keep the social and structural determinants of health in mind when planning reproductive health programs and services. "The most effective interventions occur at the population health level, by responding to such issues as food insecurity, affordable housing and a living wage. This requires the creation of stronger social safety nets for families and healthy public policy and environments supportive of healthy lifestyles."[2]
- Improve collection of sociodemographic data in Huron and Perth Counties.
- Incorporate indicators in data collection to inform inequities experienced by individuals, groups and populations in Huron and Perth Counties.
- Collect experiential data from individuals, groups and populations focused on informing strategies to improve health inequities.
- Ensure an environment that is culturally safe, reflective of equity, diversity and inclusivity, and trauma informed, in the provision of reproductive, maternal and newborn care.

Fertility and Pregnancy

Considerations for healthcare providers and community services and supports include:

- Continue to provide preconception, prenatal, birth and early childhood supports and services.
- Ensure individuals in their reproductive years have the information they need to make an informed decision about choosing to delay childbearing, including possible challenges (e.g., declining fertility), increased risks (e.g., miscarriage) and personal factors (e.g., chronic medical conditions).[4]
- Provide care that is trauma informed.

Folic Acid Supplementation

Considerations for healthcare providers include:

- Assess if women of childbearing age are taking a multivitamin with folic acid. Identifying why women of childbearing age are not taking a folic acid supplement could help improve supplementation rates.
- Continue to recommend all women of childbearing age take 0.4 mg of folic acid daily.

Gestational Weight Gain

Considerations for healthcare providers include:

- Provide weight-inclusive and weight neutral care by highlighting the importance of improving healthy behaviours to establish a stable preconception and interconception weight instead of recommending weight loss, or to ensure a healthy weight gain in pregnant women instead of weight control.[4,5]
- Provide individualized counselling and support that is client centred and considers the various factors that may be influencing weight gain during pregnancy such as access to foods, opportunities for physical activity, family and partner support, cultural norms and beliefs, and socioeconomic status.[6,7]
- Ensure women are aware of the increased risks to maternal and newborn health associated with a low (<18.5kg/m^2) or high (30-34.9 kg/m^2) pre-pregnancy BMI, as well as the recommendations regarding weight gain during pregnancy.[2, 6] Although there are increased risks, reassure pregnant women with a BMI over 25 kg/m2 that they are likely to have healthy pregnancy outcomes, even if they require additional interventions during pregnancy, labour, and birth.[7]

Maternal Mental Health

Considerations for Huron Perth municipalities, healthcare providers, and community services and supports include:

- Address protective factors for maternal (caregiver) mental health at community/society and structural levels, as well as at the individual/family levels. For example: interventions and programs that focus on positive social connection and support, enhance access to mental health services, decrease stigma and discrimination for those seeking help, and strengthen parenting skills, capacity and resilience.[7,10,11]
- Strengthen comprehensive approach to perinatal mental healthcare to include: mental health screening, trauma-informed and culturally safe care, awareness of social and structural health inequities and their potential impacts on individuals, such as parents experiencing high stress due to

challenging life situations (e.g., precarious finances or housing or safety conditions, lack of a social network) and referring the family to the appropriate services.[7, 12] More can be found in Tackling Health Inequities: Ontario's Social Determinants of Health Framework from the Huron Perth & Area Ontario Health Team.

- Initiate conversations with individuals and families prenatally about any concerns they may have regarding social isolation and loneliness, their need and interests for social connectedness, and make appropriate referrals or link families to community services and supports in Huron and Perth Counties.[4]

Delivering Healthcare Provider

Considerations for municipalities and decision-makers include:

- Continue to recruit healthcare providers particularly those providers that support and care for women in reproductive years and that require prenatal care, such as Obstetricians and midwives.

Prenatal Classes

Considerations for healthcare providers include:

- Continue to promote prenatal education from reliable, evidence-informed sources that are low or no cost to ensure accessibility.

Substance Use

Considerations for healthcare providers and substance and mental health community services and supports include:

- Continue to focus on supporting pregnant women, and their support persons, with harm reduction messaging, as well as education on the harmful effects substance use has on the unborn child and the pregnant woman. This also identifies the need to support those in reproductive years with education about the negative impacts of substance use so to limit substance use during pregnancy. A broader focus on effective health promotion strategies (e.g., policy support, upstream protective factors and advocacy at a local, provincial and federal level) in program planning as a multi-pronged approach needed to support the reduction of substance use harms in this population.[13]
- Address the impacts of using multiple substances preconceptionally, prenatally and postpartum.
- During prenatal appointments, encourage positive health behaviours and work with individuals to reduce potentially harmful substance use.[4]
- Mental health and substance use often go hand in hand. A humanistic and compassionate person-centred approach is needed during pregnancy "where the health and medical aspects of the use or addiction are considered, as well as the psychosocial factors."[4, 14]

Intention to Breastfeed

Considerations for healthcare providers and community services and supports include:

- Incorporate infant feeding decision making in prenatal conversations with families.
- Ensure healthcare and service providers who support families during the prenatal and postpartum periods have the education and skills to share information about the importance of breastfeeding and to help families make an informed decision about infant feeding. Offer opportunities for families to access free or low-cost credible information about breastfeeding, for example online prenatal classes or classes specifically for breastfeeding.
- Use inclusive language, for example, breastfeeding/chestfeeding.

1 Ministry of Health and Long-term Care. Healthy Growth and Development Guideline, 2018 [Internet]. Queen's Printer of Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Healthy_Growth_and_Development_Guideline_2018.pdf

2 Public Health Agency of Canada. Chapter 1: Family-centred maternity and newborn care in Canada: Underlying philosophy and principles [Internet]. 2017 [cited 2024 Apr 17]. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-1.html

3 Hunt G, et al. Chapter 5: Postpartum Care [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 21]. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-5.html

4 Shaw E, et al. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

5 Nagpal TS, Prapavessis H, Campbell CG, De Vrijer B, Giroux I, Mottola MF. Are pre-pregnancy weight fluctuations and adherence to prenatal nutrition and exercise recommendations related to excessive gestational weight gain? J Behav Med. 2020 Dec;43(6):1047–55

6 Health Canada. Prenatal Nutrition Guidelines for Health Professionals: Gestational Weight Gain [Internet]. 2010 [cited 2024 Mar 8]. Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/healthy-weights/prenatal-guidelines-professionals-gestational-weight-gain.html

7 Wagner B, et al. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

8 Moola S, et al. Chapter 4: Care during labour and birth [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-4.html

9 Chapter 9: Epilogue [Internet]. Ottawa, ON: Public Health Agency of Canada; 2022 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-9.html

10 Public Health Agency of Canada. From risk to resilience: An equity approach to COVID-19 – The Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2020 [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 Oct [cited 2024 Jun 7]. Available from: https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html

11 Dagher RK, Linares DE. A Critical Review on the Complex Interplay between Social Determinants of Health and Maternal and Infant Mortality. Children. 2022 Mar 10;9(3):394

12 Registered Nurses' Association of Ontario. Assessment and interventions for perinatal depression. 2nd Edition [Internet]. Toronto, ON: Registered Nurses' Association of Ontario; 2018. Available from: https://rnao.ca/bpg/guidelines/assessment-and-interventions-perinatal-depression

13 Chief Medical Officer of Health of Ontario. 2023 Annual Report of the Chief Medical Officer of Health of Ontario to the Legislative Assembly of Ontario – Balancing Act An All-of-Society Approach to Substance Use and Harms [Internet]. King's Printer for Ontario; 2024.
Available from: https://www.ontario.ca/files/2024-04/moh-cmoh-annual-report-2023-en-2024-04-02.pdf

14 Mead A, Ryan D, Paquette V, Smith E, Joshi P, Tanella C, et al. Best Practice Guidelines for Mental Health Disorders in the Perinatal Period: Substance Use Disorders [Internet]. Vancouver, B.C.: BC Reproductive Mental Health Program; 2023 [cited 2024 Feb 29]. Available from: http://www.perinatalservicesbc.ca/Documents/Resources/HealthPromotion/Best_Practice_Guideline_Mental_Health_Disorders_in_the_Perinatal_Period.pdf

Introduction

The Reproductive Health Status Report of Huron and Perth Counties provides a snapshot of maternal and infant health and well-being in Huron and Perth Counties.

The purpose is to provide data on selected reproductive health indicators in order to[1]:

- Identify current and emerging conditions, challenges and opportunities in the reproductive health of Huron and Perth residents.
- Influence and inform healthcare providers, community service providers and decision-makers in the development of local healthy public policy and its programs and services to align with the identified needs of the local population, including priority populations. Priority populations are groups that experience or are at risk of experiencing worse health outcomes than others in the general population. Priority populations include equity-deserving populations that experience structural barriers to health.
- Inform the allocation of resources to reflect public health priorities and reallocated, as feasible, to reflect emergent public health priorities.
- Ensure relevant community partners and healthcare providers have reproductive health information, including information on health inequities, necessary for planning, delivering, and monitoring health services that are responsive to population health needs.

This report also serves to fulfill the surveillance and health status reporting requirement of the Health Unit under the Ontario Public Health Standards, 2018.

Note: *For the purposes of this report, the term woman/women/mother refers to people who were assigned female at birth, recognizing that a person's gender identity may differ from their anatomical, physiological or genetic assignment. This aligns with the indicators and data sources used in this report.*

Reproductive Health and Healthy Growth and Development

According to the United Nations,

> ***"Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes."***[2]

Healthy child development is a key determinant of health, with strong evidence linking early life experiences to mental and physical health outcomes throughout the life course.[3] Because of the critical foundation laid by these early life experiences, it's vital that public health and community partners focus on interventions, services and supports that promote and strengthen protective factors for the infant, toddler and their families beginning during preconception, pregnancy, and after birth.[3,4,5] Investments in early childhood development can strongly influence population health.[3]

Coronavirus Pandemic Emergency

This report includes data during the time period of the global COVID-19 pandemic emergency. Many Public Health programs and supports were significantly impacted between March 2020, when the pandemic was declared, and March 2022 (considered the acute pandemic phase), in order to respond to this unprecedented event. Most public health programs and services were paused, reduced, or modified to allow for the redirection of resources towards the COVID-19 response.[6]

According to the Chief Public Health Officer of Canada's report, Creating the Conditions for Resilient Communities: A Public Health Approach to Emergencies (2023), measures/restrictions to protect health during the COVID-19 pandemic created challenges/barriers to maternal and child health; these included family separation, and disruption of important social and cultural practices. They may also have impacted the conditions that influence general health and well-being, such as education, income, housing, food security, and access to healthcare; and may have impacted other factors such as healthy behaviours (e.g., decrease in physical activity), discrimination and family and gender-based violence.[7]

Presentation of the Results

Report structure

This report is divided into five major sections. Each section of the report begins with definitions of the indicators and types of rates presented, an explanation of why it is important, what the Huron Perth data tells us, the data sources used in that section of the report and any limitations, and all of the data for that indicator.

The five sections of this report include:

Population Demographics and Social and Structural Determinants of Health

Preconception and demographics of Huron and Perth Counties, and social and structural determinants of health.

Fertility and pregnancy

Fertility, pregnancy, and therapeutic abortion rates.

Healthy pregnancy

Folic acid supplementation, maternal mental health, substance use during pregnancy, pre-pregnancy body mass index and gestational weight gain, and prenatal class attendance.

Birth

Birth location, delivering healthcare provider, type of birth and delivery, live birth rate and parent age, still birth rate, and multiple births.

Infant health

Gestational age, birth weight including large for gestational age and small for gestational age, infant mortality rates and intention to breastfeed exclusively.

1 Ministry of Health and Long-term Care. Ontario Public Health Standards: Requirements for Programs, Services, and Accountability [Internet]. Queen's Printer for Ontario; 2021. Available from: https://files.ontario.ca/moh-ontario-public-health-standards-en-2021.pdf

2 Sexual and Reproductive Health and Research (SRH). Critical considerations and actions for achieving universal access to sexual and reproductive health in the context of universal health coverage through a primary healthcare approach [Internet]. World Health Organization; 2022 [cited 2024 Feb 21]. Available from: https://www.who.int/publications-detail-redirect/9789240052659

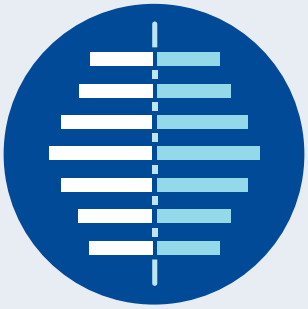
3 Ministry of Health and Long-term Care. Healthy Growth and Development Guideline, 2018 [Internet]. Queen's Printer of Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Healthy_Growth_and_Development_Guideline_2018.pdf

4 Public Health Agency of Canada. Chapter 1: Family-centred maternity and newborn care in Canada: Underlying philosophy and principles [Internet]. 2017 [cited 2024 Apr 17]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-1.html

5 Hunt G. Chapter 5: Postpartum Care [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 21]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-5.html

6 Huron Perth Public Health. Non-COVID Programs and Services Report: March 2020 - March 2022 [Internet]. Available from: https://www.hpph.ca/media/tsbhxryj/non-covid-programs-services-report_mar-2020-mar2022.pdf

7 Full report: The Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2023 [Internet]. 2023 [cited 2024 Mar 14]. Available from: https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/state-public-health-canada-2023.html



Population Demographics
Social and Structural Determinants of Health

Population Demographics

What Is It?

Demographics is the statistical study of populations over time, for example at the age and sex of people living somewhere over several years. For this report, we are interested in females of reproductive age (15 to 49 years) living in Huron County and Perth County. It is important to look at what has been happening over the last 10 years and to consider what the population in Huron and Perth Counties may look like in the next 10 years.

Why Is It Important?

Understanding the age structure of a population can provide insight into the population's health needs. For instance, populations with a larger proportion of young adults and young families may require more reproductive health resources compared to older populations. Knowing whether Huron and Perth's population is increasing can also help healthcare providers, community services and decision-makers, anticipate whether changes in resources and services will be required to meet the reproductive health needs of a growing population.

In particular, it is helpful to look at the population of females of reproductive age in Huron and Perth. This is because good maternal and infant health is impacted by the health of the individual before pregnancy, called preconception health, as well as during, and after pregnancy. The health choices that people make before pregnancy are important as they can impact their chances of becoming pregnant, and affect health during pregnancy as well as the future health of their baby.[1,2] Knowing where in Huron and Perth females of reproductive age live is therefore important for informing the planning of programs and services related to preconception health, as well as healthy pregnancies and births.

What Does It Tell Us?

The number of females of reproductive age (15 to 49 years) in Huron Perth has increased and is projected to continue increasing through 2030, however, the increase in numbers is proportionate to an increase in the entire population. This means that while there may be more females needing reproductive health programs in Huron Perth in the future, the demand for other programs will also be increasing. In particular, growth in the 65 years and older demographic is projected to continue to outpace growth in the proportion of females 15 to 49 years in Huron Perth.

Data sources

Statistics Canada. 2022. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released July 13, 2022. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed July 26, 2022).

Population Estimates County Municipal (Statistics Canada)

Ministry of Finance Population Projections by County from CY2015 - CY2041, based on the CY2020 Census. Accessed Aug 11, 2022.

Limitations

Census 2021 data quality is high. Population demographic data is on the short-form census, which had a high response rate in Huron and Perth Counties; 97.8 per cent and 98.9 per cent respectively.

Population estimates are produced by Statistics Canada Demography Division. Population estimates between census years are calculated by applying growth rates by age and sex to the census divisions and census subdivisions after adjusting for net undercoverage. Undercoverage is missing information from people who do not complete the census. Population estimates between census years are not exact but do provide good estimates of a region's population distribution.

Population projections are calculated by the Ontario Ministry of Finance. The calculation makes a number of assumptions about the likely number of births, deaths, and migrations (into and out of the area) an area is likely to experience. Several projections are made to show low, medium, and high population growth scenarios. The medium growth projection was used in this report.

Population Distribution and Trends

Population pyramids describe the age and sex of a population. The shape of a pyramid can indicate what is happening with a population over time. A pyramid shape indicates the population is younger with a higher birth rate and is growing in size. A rectangular shape indicates a stable population size over time. A shape that is wider at the top with a narrow base indicates the population is older, has a lower birth rate, and has a shrinking population size.

In Figure 1, Ontario's population pyramid indicates it has a relatively stable population size while Huron Perth has an older population.

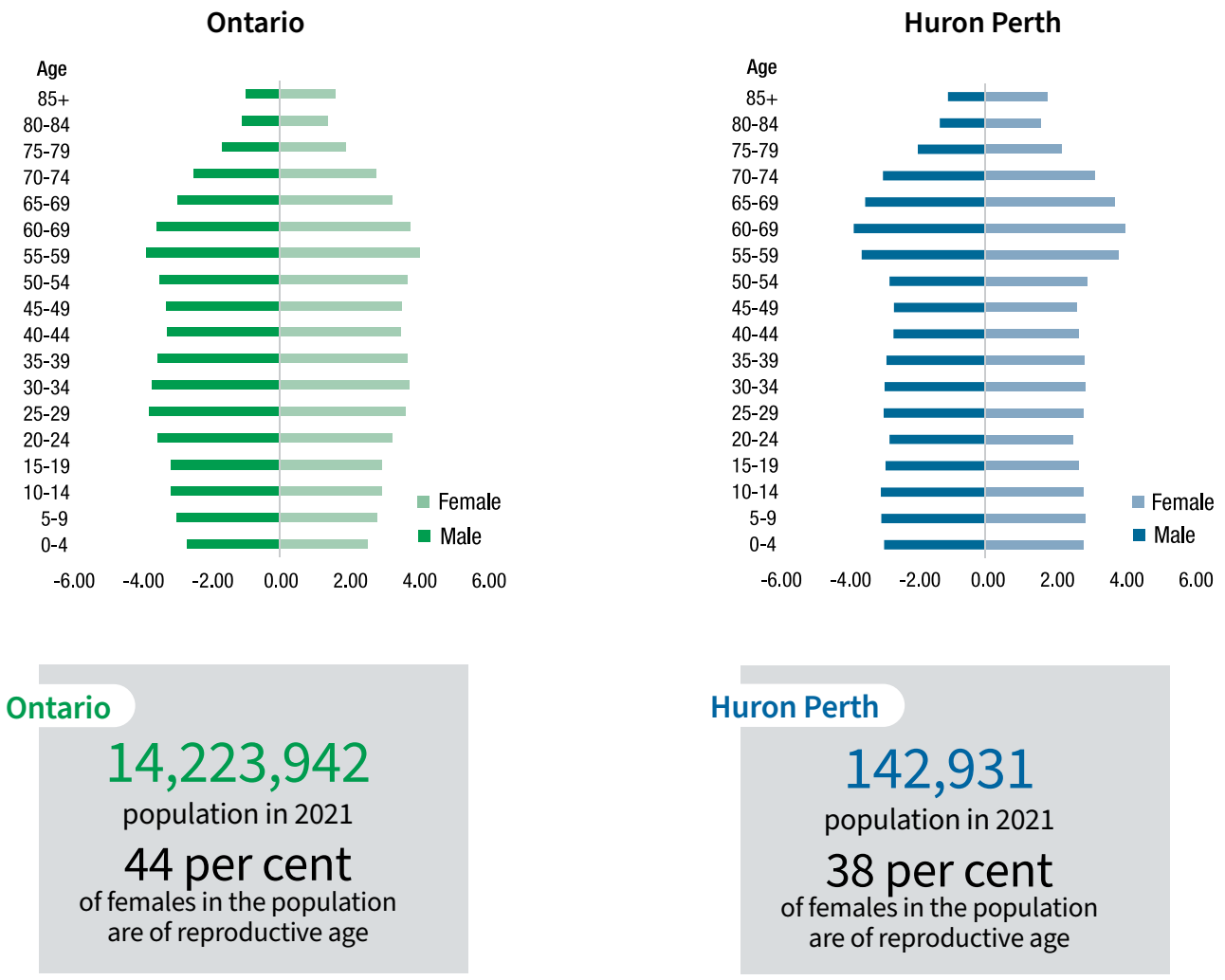


Figure 1 2021 Population pyramids by age and sex, Ontario and Huron Perth

Data source: Statistics Canada. 2022. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released July 13, 2022. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed July 26, 2022).

After several years of decline, the number of Huron Perth women of reproductive age (15 to 49 years) has increased and is projected to continue increasing though it is accompanied by a similar increase in the entire population in Huron Perth. Figures 2 and 3 show that the number of Huron Perth women of reproductive age declined from 2008 to 2016 while the total population remained relatively stable. From 2017 onwards, the number of reproductive aged women and the total Huron Perth population increased and is projected to continue increasing. Figure 4 shows that while the number of reproductive aged women in the Huron Perth population has increased, their percentage of the entire population has remained relatively stable and that is projected to continue from 2023 to 2030. In contrast, the aging Huron Perth population is reflected in the steady increase in percentage of seniors 65 years and older that is projected to continue from 2023 to 2030.

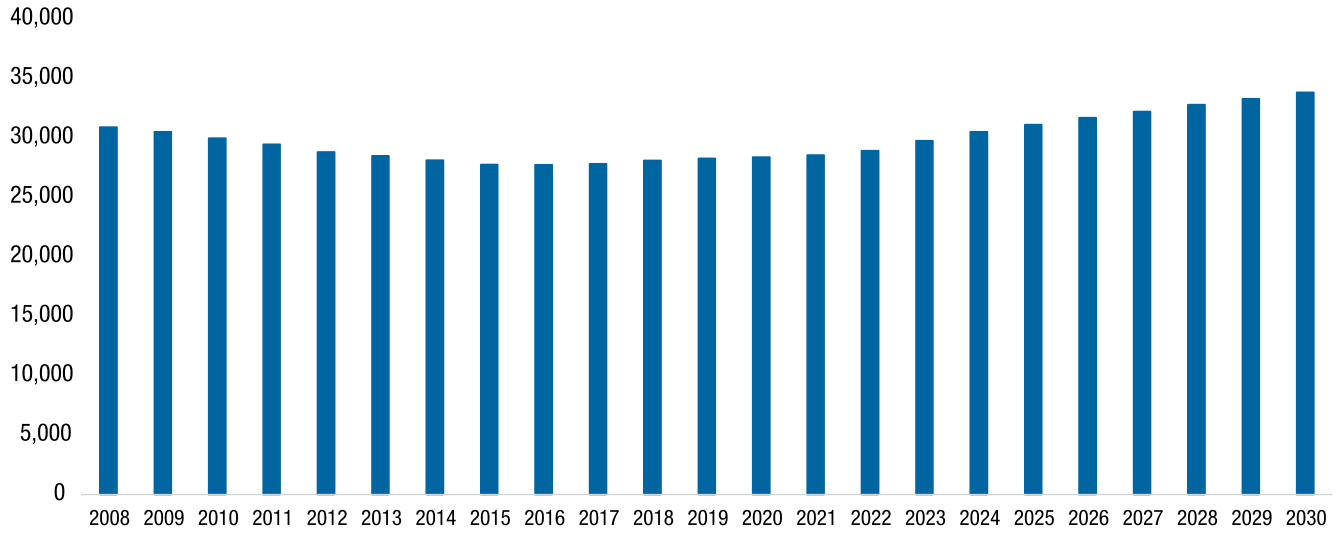


Figure 2 Number of females 15-49 years old in Huron Perth by year, population estimates 2008-2022 and population projections 2023-2030

Data sources: (1) Population Estimates County Municipal, Statistics Canada. Extracted Sep 4, 2024. (2) Ministry of Finance Population Projections by County from CY2023 - CY2030, based on the CY2020 Census. Extracted Sep 4, 2024

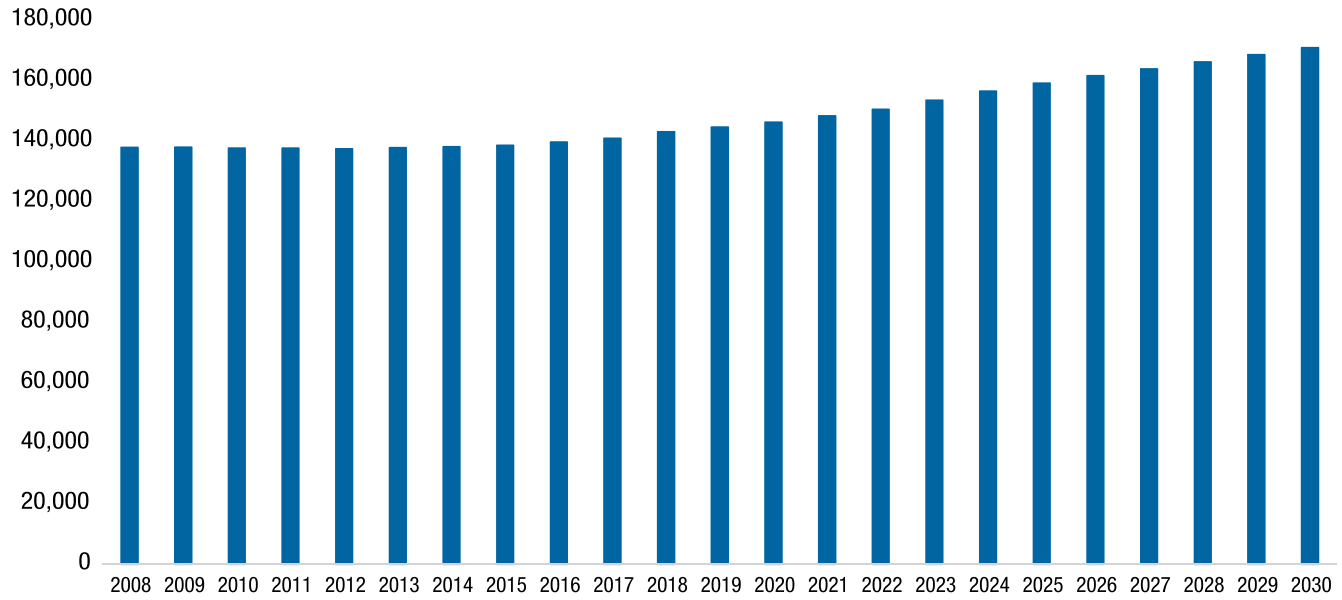


Figure 3 Total population of Huron Perth by year, population estimates 2008-2022 and population projections 2023-2030

Data sources: (1) Population Estimates County Municipal, Statistics Canada. Extracted Sep 4, 2024. (2) Ministry of Finance Population Projections by County from CY2023 - CY2030, based on the CY2020 Census. Extracted Sep 4, 2024

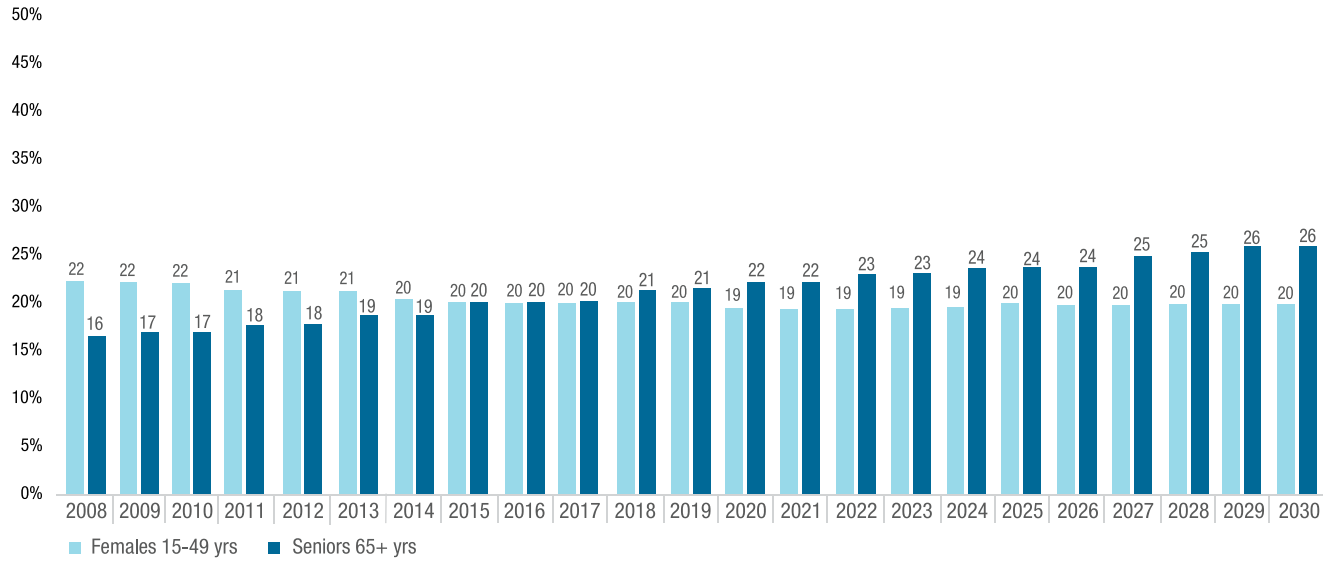


Figure 4 Percentage of females 15-49 years and seniors 65+ years in the Huron Perth population by year, population estimates 2008-2022 and population projections 2023-2030

Data sources: (1) Population Estimates County Municipal, Statistics Canada. Extracted Sep 4, 2024. (2) Ministry of Finance Population Projections by County from CY2023 - CY2030, based on the CY2020 Census. Extracted Sep 4, 2024

There are regional differences in population distribution that need to be considered when planning where preconception and reproductive services are located. The Lake Huron shoreline and Anabaptist communities influence population distribution in Huron Perth.

Municipalities along the Lake Huron shoreline have a higher proportion of seniors than inland municipalities. Figure 5 contrasts a shoreline municipality, the Town of Goderich, with an inland municipality, the Town of St. Marys. This indicates that the need for reproductive health programs is higher outside of shoreline communities, and that trend is likely to continue.

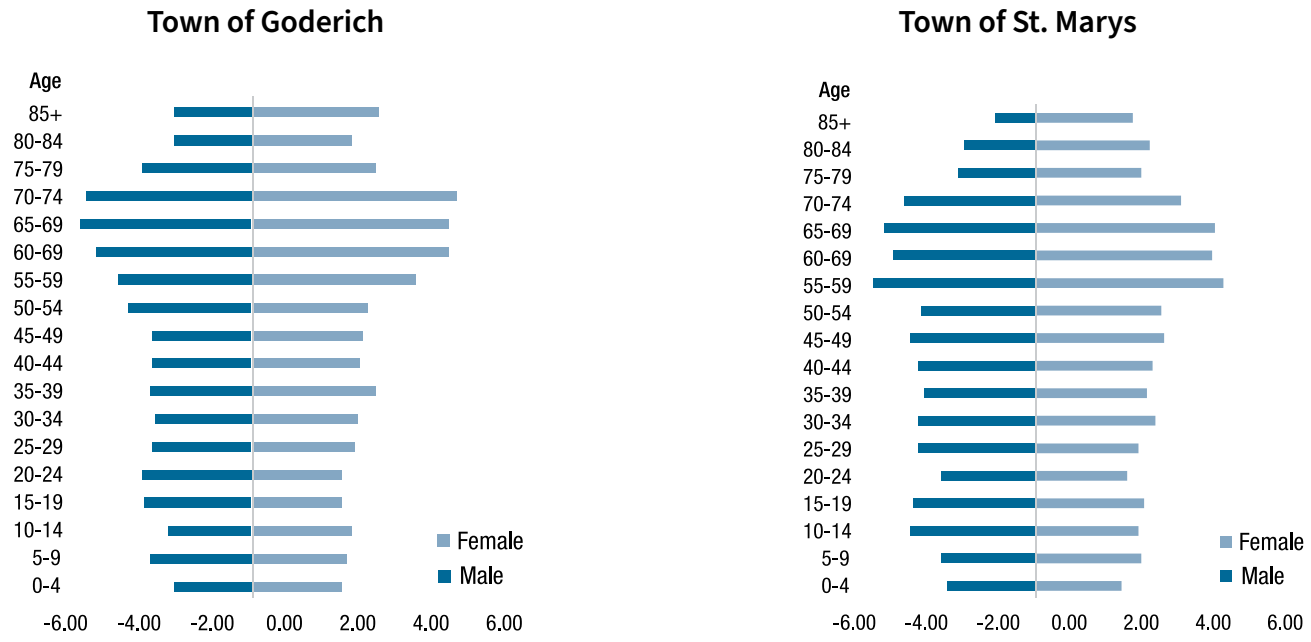


Figure 5 2021 Population pyramids for Town of Goderich and Town of St. Marys

Data source: Statistics Canada. 2022. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released July 13, 2022. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed July 26, 2022).

An additional consideration in planning reproductive programs based on population distribution is the location of Anabaptist communities in Huron Perth. This population has a higher rate of fertility and pregnancy and has unique cultural needs. Reproductive health programs for Anabaptist communities are not addressed in this report.

1 Shaw E. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

2 Ministry of Health and Long-term Care. Healthy Growth and Development Guideline, 2018 [Internet]. Queen's Printer of Ontario; 2018. Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Healthy_Growth_and_Development_Guideline_2018.pdf

Social and Structural Determinants of Health

What Is It?

Health is shaped by a broad range of personal, social, economic, and environmental factors that create the conditions in which people live, learn, work, and age. The social determinants of health (SDoH) are the social and economic factors that influence people's health such as income, education, early childhood development, employment, health services, social support networks and housing.[1–3] The intersection of the social determinants of health causes these conditions to shift and change over time and across the life span, impacting the health of individuals, groups, and communities in different ways. Structural determinants of health are the interrelated social, economic, and political policies/frameworks (i.e., cultural norms, practices, institutions, etc.) that influence the distribution of power and resources, resulting in health inequities.[4] These result in differences or variations in health status between groups. Because they have the potential to be changed by social action, these are called health inequities.

Why Is It Important?

Many women and their families continue to face multiple barriers to optimal health and maternal and infant outcomes related to social determinants of health. Income, education, employment, immigrant status, and access to healthcare are just a few examples of social and structural determinants shown to be related to disparities in maternal and infant health.[5–7]

Having an understanding of the prevalence of some of these social and structural determinants of health in Huron and Perth's population is important for a number of reasons. It can help provide a better understanding of the context behind the facts and figures presented throughout this report. It can provide insight into the extent to which Huron and Perth mothers may be more at risk of experiencing worse health outcomes due to disparities in the social and structural determinants of health.

Local data on the social and structural determinants of health for pregnant women are limited in some ways, for example with regard to race demographics. Such data limitations can result in overlooking distinct needs..

For many reproductive health indicators, it is not possible to assess the extent of socioeconomic inequities in Huron and Perth. This section of the report instead provides an overview of the prevalence of available sociodemographic indicators for females of reproductive age identified in the literature shown to be related to disparities in reproductive health outcomes. Because the data presented are for all females of reproductive age, it is important to keep in mind that the data presented may not reflect the prevalence of these risk factors among pregnant women.

What Does It Tell Us?

The percentage of Huron Perth women living with low incomes, as measured by the living wage, has remained high through the economic turmoil of the COVID-19 pandemic and accompanying inflation.

The percentage of women 25 to 64 years in Huron Perth with a postsecondary education is increasing along with Ontario. The gap between postsecondary education levels among Huron Perth women and Ontario has remained the same over the last 15 years.

There is a gender gap in the employment participation rate in both Huron and Perth Counties, with a higher percentage of men than women employed. Personal and family responsibilities were identified as the main reason for being out of the workforce; childcare identified as the biggest reason women working part time couldn't work full time.[8]

In the 2021 Census, 1.2 per cent of all Huron Perth women reported they had immigrated to Canada since 2011.

As many as one in 20 (about 5 per cent) of all women in Huron Perth may have difficulty understanding English resources and programming.

More women of reproductive years reported that they had a regular healthcare provider in Huron Perth than Ontario from 2015 to 2018; the percentage for Huron Perth and Ontario was similar in 2019 to 2020.

Data sources

Statistics Canada 2011 CCHS Microdata File User Guide published June 2012

Statistics Canada 2012 CCHS Microdata File User Guide published June 2013

Statistics Canada 2013 CCHS Microdata File User Guide published June 2014

Statistics Canada 2014 CCHS Microdata File User Guide published June 2015

Statistics Canada 2015 CCHS Microdata File User Guide published March 2017

Statistics Canada 2016 CCHS Microdata File User Guide published September 2017

Statistics Canada 2017 CCHS Microdata File User Guide published June 2018

Statistics Canada 2018 CCHS Microdata File User Guide published June 2019

Statistics Canada 2019 CCHS Microdata File User Guide published April 2020

Statistics Canada 2020 CCHS Microdata File User Guide published April 2022

Statistics Canada. 2007. 2006 Community Profiles. 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13 2007. https://www12.statcan.gc.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E

Statistics Canada. 2013. National Household Survey Profile. 2011 National Household Survey. Statistics Canada Catalogue no. 99-004-XWE. Ottawa. Released June 26 2013. http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/prof/index.cfm?Lang=E

Statistics Canada. 2017. Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29 2017. http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

Statistics Canada. 2022. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released July 13, 2022. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed July 26, 2022).

Statistics Canada (2022). Consumer Price Index Data Visualization Tool, modified 2022-12-21, https://www150.statcan.gc.ca/n1/pub/71-607-x/2018016/cpilg-ipcgl-eng.htm

Limitations

Census 2021 data quality is high. The short-form census had a high response rate in Huron and Perth Counties; 97.8 per cent and 98.9 per cent respectively. The long-form census also had a high response rate in Huron and Perth Counties; 96.6 per cent and 97.8 per cent respectively. Household income data is on the long form census.

Census 2016 data quality is high. The short-form census had a high response rate in Huron and Perth Counties; 95.0 per cent and 96.1 per cent respectively. The long-form census also had a high response rate in Huron and Perth Counties; 93.6 per cent and 96.3 per cent respectively.

Census 2011 data quality is high. The 2011 census had a response rate of 97.2 per cent in Ontario.

Data quality for the 2011 National Household Survey is moderate. Response rate in Huron census division was 68.1 per cent and response rate in the Perth census division was 72.6 per cent. Income, education and labour force status is on the 2011 National Household Survey. Data from the 2011 National Household Survey is vulnerable to non-response bias; those who voluntarily completed the survey may have been different from those who did not.

Canadian Community Health Survey data quality is moderate and has been declining. The COVID-19 pandemic disrupted data collection in 2020 resulting in a much lower response rate for that year. Response rate for the Ontario data used in Table 1 ranges from a high of 69.4 per cent in 2011 to a low of 25.5 per cent in 2020.

Table 1 Response rate for Canadian Community Health Survey by year and region

Year	Ontario	Year	Ontario
2011	69.4%	2016	57.5%
2012	66.0%	2017	61.2%
2013	65.8%	2018	57.8%
2014	63.0%	2019	52.2%
2015	55.7%	2020	25.5%

Data source: Canadian Community Health Survey (CCHS) annual component user guide microdata file, Statistics Canada, 2011-2020.

Income

What does the research tell us?

Research has shown that even in countries with universal healthcare like Canada, income-related disparities in reproductive health and birth outcomes exist.[5] Low income has been associated with higher rates of pregnancy complications such as intrauterine growth restriction, as well as higher rates of poor infant health outcomes such as preterm births, small for gestational age, and delayed cognitive development.[6,9,10]

Several risk factors for these conditions may be more common among women living with low income, including stressful life events, inadequate nutrition due to food insecurity, material deprivation, inadequate prenatal care, and increased rates of smoking, substance use or alcohol consumption during pregnancy.[6,10,11]

Huron Perth data

The percentage of Huron Perth women living with low incomes, as measured by the living wage, has remained high through the economic turmoil of the COVID-19 pandemic and accompanying inflation *(see Figure 1)*. The United Way of Perth-Huron Social Research and Planning Council (SRPC) has been estimating what the living wage is for Huron Perth since 2015. During that time, the living wage has risen 26 per cent from $16.47 per hour in 2015 to $20.70 per hour in 2022. In contrast, the minimum wage in Ontario was increased to $15.50 an hour October 1, 2022. The 2022 living wage for Huron Perth is 34 per cent higher than the Ontario minimum wage and it's estimated that 45 per cent of residents, in our region, over the age of 15 made less than a living wage as of 2020.[8] There was a drop in the percentage of households making less than a living wage in 2020 that was likely due to distribution of the temporary COVID-19 Emergency and Recovery Benefit (CERB). Even if the CERB were still available in 2022, it would not be enough to offset the impact of recent inflation. Figure 1 shows that even if Huron Perth households still had 2020 income levels (which included the CERB), the percentage of households making less than the 2022 living wage would be similar to pre-pandemic levels. In 2022, with high inflation and the loss of CERB, financial stressors increased.

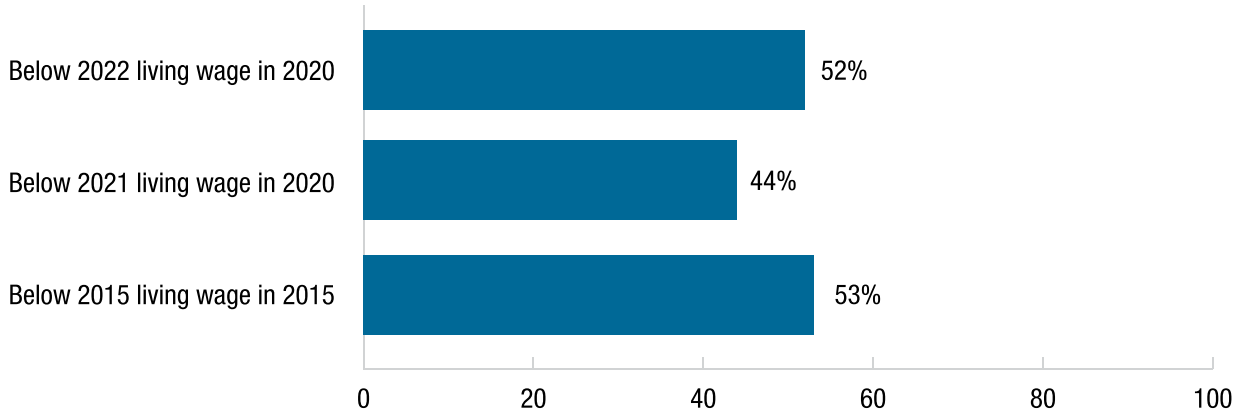


Figure 1 Estimated percentage of Huron Perth households with less than a living wage

Data source: Social Research & Planning Council of the Perth-Huron United Way Living Wage calculation for 2015, 2018, 2021 and 2022. Statistics Canada 2016 and 2021 Census Profile.

Figure 2 also shows the impact the CERB had on the percentage of families living in poverty in Huron Perth and Ontario. Households in Huron Perth making less than the after-tax low income measure do not have sufficient income to cover basic necessities. Basic necessities include food, housing, utilities, clothing, and transportation. Part of the 2020 decrease in low income households was due to CERB, which ended in 2021.

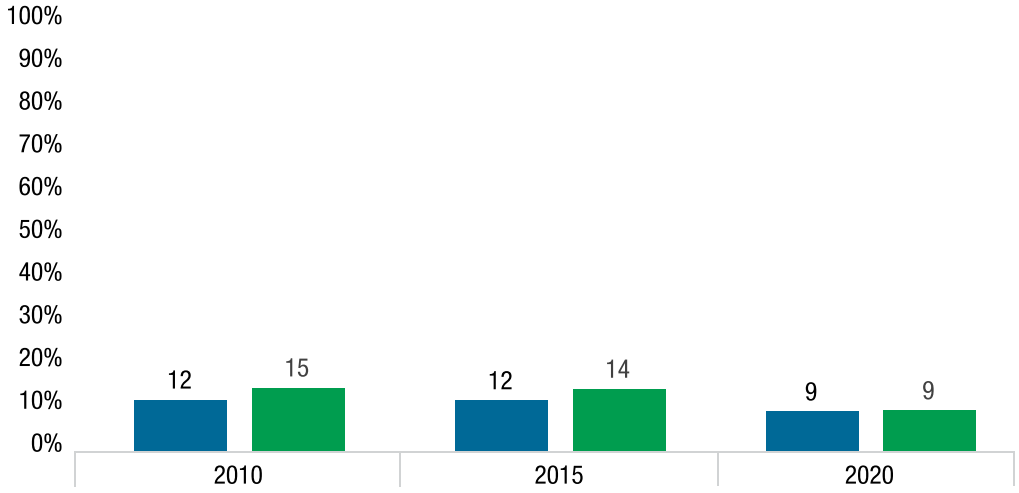


Figure 2 Percentage of women 18-64 years with annual after-tax income below the after-tax low income measure

Data source: Statistics Canada 2011 National Household Survey and 2015 and 2021 Census Profile

Statistics Canada has noted that recent wage increases have not kept pace with inflation particularly for the lower wage sectors, such as accommodation and food services.[12] The December 2021 inflation rate is the highest Ontario has seen since December 1991.[13] The living wage can be used to better understand the impact inflation is having on Huron Perth women.

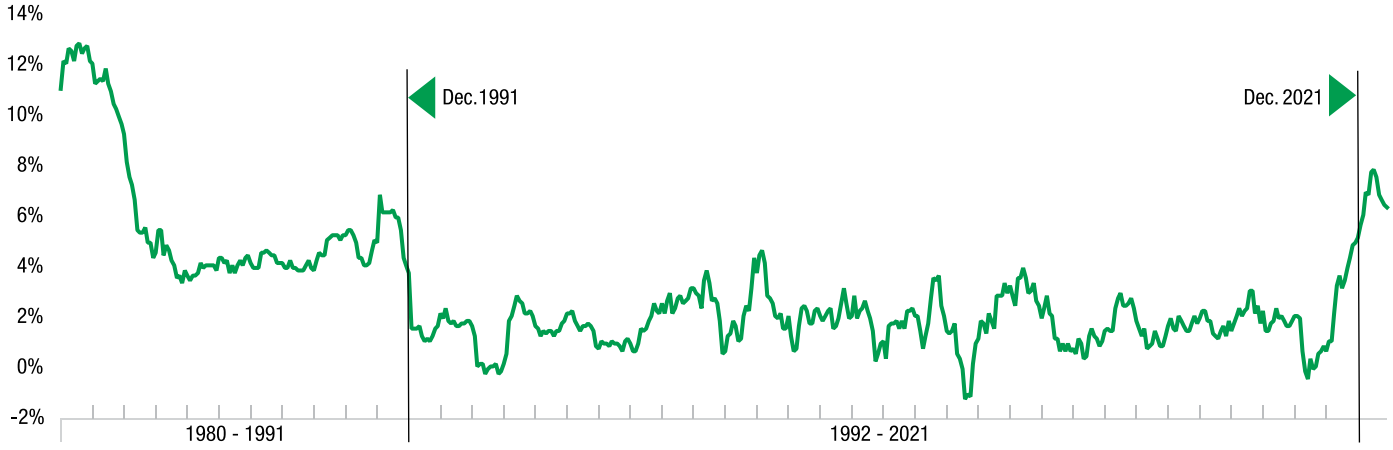


Figure 3 Ontario inflation rate. 12-month per cent change in consumer price index, Dec 1980 to Nov 2022

Data Source: Statistics Canada (2022). Consumer Price Index Data Visualization Tool, modified 2022-12-21, https://www150.statcan.gc.ca/n1/pub/71-607-x/2018016/cpilg-ipcgl-eng.htm

Education

What does the research say?

An increased risk of some perinatal outcomes, such as small for gestational age infants and preterm birth, has been linked to low maternal education attainment.[6,14–16] People with higher education tend to be healthier than those with lower educational attainment.[11] Women with a higher education may be more likely to look for, understand, and follow advice about optimal health during pregnancy.[14] Further, they are more likely to have the resources to follow the advice, e.g., access, and finances, to buy nutritious food.

Huron Perth data

According to data from the Census and 2011 National Household Survey the percentage of women 25 to 64 years with a postsecondary certificate, diploma or degree has been increasing in Huron Perth and Ontario. The gap between postsecondary education levels among Huron Perth women and Ontario has remained the same over the last 15 years *(Figure 4 - 2006-2021)*. The 2021 census indicates a similar trend is occurring in Canada with Canadian-born young adults (25 to 34 years) with a bachelor's degree or higher on the rise from 2016 to 2021. The increase was larger among Canadian-born young women. In Canada, women remained more likely than men to have a bachelor's degree or higher; for example, 39.7 per cent of Canadian-born young women (25 to 34 years) had a degree in 2021, compared with 25.7 per cent of Canadian-born young men.

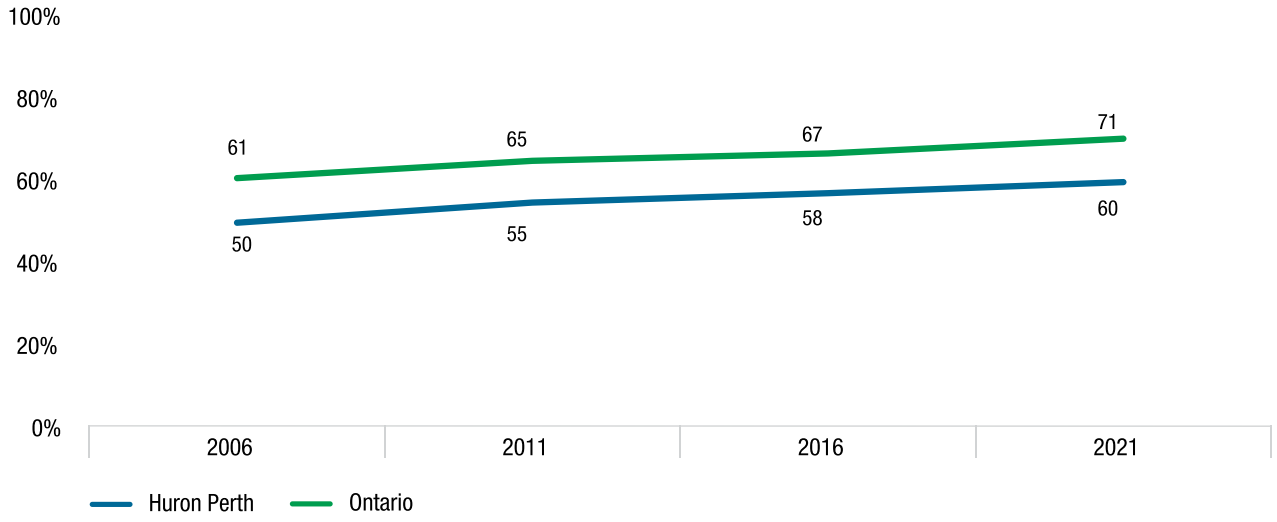


Figure 4 Percentage of women 25-64 years with a postsecondary certificate, diploma or degree

Data source: Statistics Canada 2011 National Household Survey and 2006, 2015 and 2021 Census Profile

Employment

What does the research say?

Employment is a significant contributor to overall quality of life. Together, income, financial security and employment directly impact one's ability to afford essentials such as adequate housing, food, energy, and transportation. Emotional, physical, social, and mental well-being is connected to access to these critical rights and factors.[8, 17]

Huron Perth data

After remaining steady for several years, women's labour force participation decreased, and unemployment increased during the 2020 COVID-19 pandemic. While the workforce in Canada rebounded following the COVID-19 pandemic, reports indicate pre-existing workforce gaps persist between men and women. Within Perth, the employment participation rate for men is 72 per cent and for women it is 60.8 per cent. A similar trend is evident in Huron, with a participation rate of 66 per cent for men and 55.9 per cent for women. During the pandemic, more than 1.6 million women in Canada left the workforce as they were more likely to work in sectors that were directly impacted by COVID-19, such as education, childcare, service, and tourism. Among women who are not working, the main reasons they report being out of the workforce are personal and family responsibilities. Women working part-time reported that childcare was the biggest reason they could not work fulltime.[8]

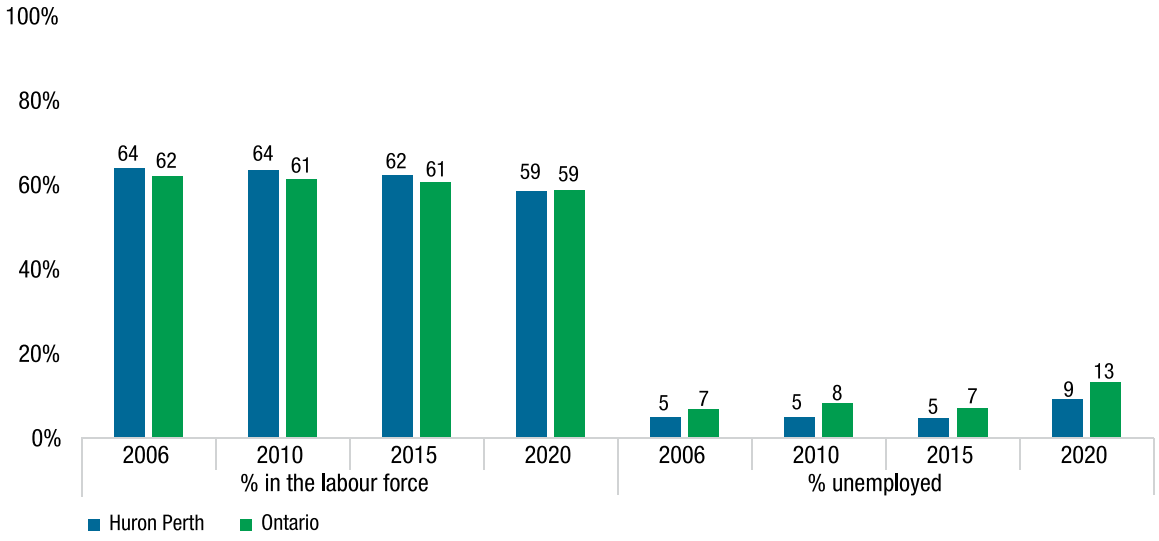


Figure 5 Labour force status for women 15 years and older

Data source: Statistics Canada 2011 National Household Survey and 2006, 2016 and 2021 Census Profile

Immigration

What does the research say?

The relationships between immigrant status and maternal and infant health outcomes are complex.[5,18–20] Studies have found that inequities in reproductive health outcomes, such as low birth weight and preterm births, tend to vary depending on factors such as country of origin and duration of residence in Canada. Possible reasons for these differences include lower levels of social support, being unaware of available support services, and difficulty or hesitancy accessing services due to language, culture or other barriers experienced by immigrants.[6,19,21,22]

Huron Perth data

In the 2021 Census, 1.2 per cent of all Huron Perth women reported they had immigrated to Canada since 2011. In general, Perth has a higher rate of recent immigration where 12.5 per cent of the total immigrant population arrived between 2016 and 2021, compared to 6.5 per cent in Huron. The 2021 Census also reported that Huron is home to 4,200 immigrants and Perth, 7,310 immigrants. In other words, 7 per cent of the population in Huron and 9.1 per cent of the population in Perth was born outside Canada. The most common places of birth among recent immigrants differs between Perth and Huron. In Perth, 50 per cent of recent immigrants were from Asia and 33 per cent were from the Americas. By contrast, 47 per cent of recent immigrants in Huron were from the Americas and 30 per cent were from Asia. Almost 70 per cent of all immigrants living in Huron are from Europe compared to 50 per cent in Perth.

Language

Being unable to communicate with a healthcare provider or community services due to language barriers can limit a woman's ability to access prenatal care and support, understand information and make informed decisions, and communicate their needs and/or concerns.[6] This could lead to isolation and impact their mental well-being and reproductive health.

Huron Perth data

Only 0.7 per cent of all Huron Perth women reported that they did not know English,[23] however, 4.9 per cent of women indicated that the language spoken most often at home was not English. For most, a Germanic language was spoken most often at home. This suggests that as many as 1 in 20 (about 5 per cent) of all women in Huron Perth may have difficulty understanding English resources and programming. The Anabaptist population, who have a higher fertility and pregnancy rate, are likely among those who speak a Germanic language most often at home.

Health Services

What does the research say?

To optimize the well-being of women, and prenatal and child health outcomes, supports and services require a life-course approach including preconception, maternal, newborn and child health.[24] Many women identify healthcare providers as their primary and preferred source of preconception information; a preconception visit can help individuals take steps toward a healthy pregnancy before they even get pregnant.[25]

Prenatal care is important to promote good health during pregnancy, to prevent health problems and to respond to those problems that occur.[24, 25] When individuals have access to preconception and prenatal care, service providers have the opportunity to support those who are disadvantaged because of social determinants of health and other barriers such as rural geography or a limited support network.[17] As such, having access to a health services, such as a primary care provider, is an important determinant of reproductive health.

Huron Perth data

Women 15 to 49 years in Huron Perth were more likely to report they had a regular healthcare provider in Huron Perth than Ontario from 2015 to 2018. Percentages were similar between Ontario and Huron Perth in 2019 and 2020.

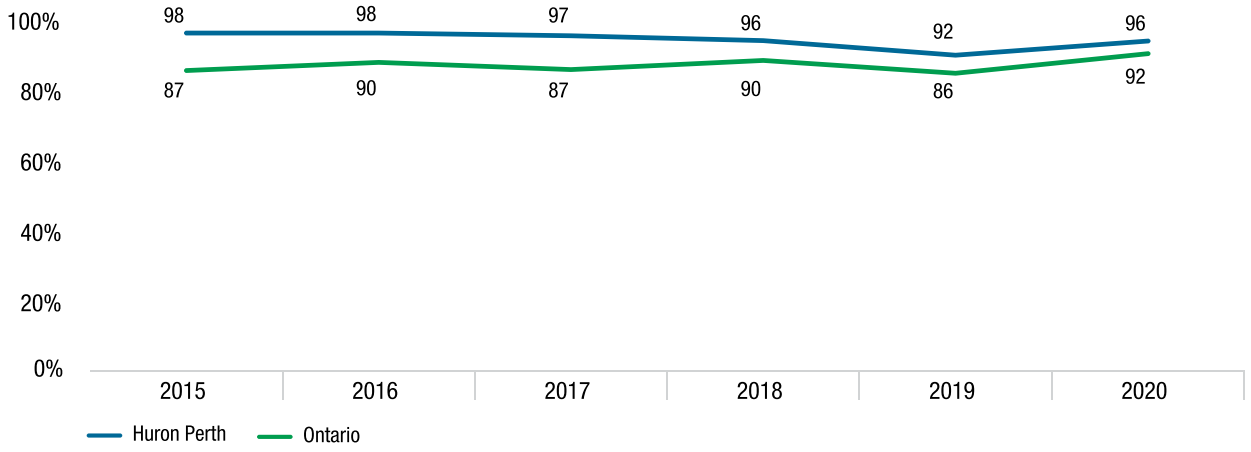


Figure 6 Percentage of women 15-49 years who reported they had a regular healthcare provider

Data source: Canadian Community Health Survey (CCHS) 2015-2020. Statistics Canada, Ontario Share file, Health Analytics Branch, Ontario MOHLTC

1 Public Health Agency of Canada. Government of Canada. 2024 [cited 2024 Feb 21]. Social determinants of health and health inequalities. Available from: https://www.canada.ca/en/public-health/services/health-promotion/population-health/what-determines-health.html

2 Canadian Mental Health Association [Internet]. [cited 2024 Feb 21]. Social Determinants of Health. Available from: https://ontario.cmha.ca/provincial-policy/social-determinants/

3 Canadian Public Health Association. What are the social determinants of health? [Internet]. [cited 2024 Feb 21]. Available from: https://www.cpha.ca/what-are-social-determinants-health

4 Muzumdar P, Heller J. Let's Talk: Determinants of health [Internet]. Antigonish, NS: National Collaborating Centre for Determinants of Health; 2024. Available from: https://nccdh.ca/images/uploads/NCCDH_Lets_Talk_Determinants_of_health_EN_FV.pdf

5 Dennis CL, Prioreschi A, Brown HK, Brennenstuhl S, Bell RC, Atkinson S, et al. Medical, behavioural and social preconception and interconception risk factors among pregnancy planning and recently pregnant Canadian women. Fam Med Community Health. 2022 Sep;10(3):e001175.

6 Shaw E. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

7 Healthy People 2030 [Internet]. 2022 [cited 2024 Feb 22]. The Surgeon General's Call to Action to Improve Maternal Health - Healthy People 2030. Available from: https://health.gov/healthypeople/tools-action/browse-evidence-based-resources/surgeon-generals-call-action-improve-maternal-health

8 Social Research & Planning Council. Quality of Life: A strong economy [Internet]. Stratford ON: United Way Perth-Huron; 2023 Nov [cited 2024 Feb 29]. Available from: https://perthhuron.unitedway.ca/wp-content/uploads/2023/11/2023-11-17-A-STRONG-ECONOMY.pdf

9 Dagher RK, Linares DE. A Critical Review on the Complex Interplay between Social Determinants of Health and Maternal and Infant Mortality. Children. 2022 Mar 10;9(3):394.

10 Larson CP. Poverty during pregnancy: Its effects on child health outcomes. Paediatr Child Health. 2007 Oct;12(8):673–7.

11 Mikkonen J, Raphael D, Bryant T, Raphael A. Social determinants of health: the Canadian facts 2nd Edition [Internet]. Oshawa: Ontario Tech University Faculty of Health Science and York University School of Health Policy and Management; 2020 [cited 2024 Feb 27]. Available from: https://thecanadianfacts.org/The_Canadian_Facts-2nd_ed.pdf

12 Statistics Canada. Government of Canada, Statistics Canada. 2022 [cited 2024 Feb 27]. Income, meet inflation. Available from: https://www.statcan.gc.ca/o1/en/plus/1615-income-meet-inflation

13 Data Source: Statistics Canada (2022). Consumer Price Index Data Visualization Tool, modified 2022-12-21. https://www150.statcan.gc.ca/n1/pub/71-607-x/2018016/cpilg-ipcgl-eng.htm

14 Government of Canada. Statistics Canada. 2017 [cited 2024 Feb 27]. Socioeconomic disparities in small-for-gestational-age birth and preterm birth. Available from: https://www150.statcan.gc.ca/n1/pub/82-003-x/2017011/article/54885-eng.htm

15 Dunlop AL, Burjak M, Dean LT, Alshawabkeh AN, Avalos LA, Aschner JL, et al. Association of maternal education, neighborhood deprivation, and racial segregation with gestational age at birth by maternal race/ethnicity and United States Census region in the ECHO cohorts. Front Public Health. 2023;11:1165089.

16 Luo ZC, Wilkins R, Kramer MS. Effect of neighbourhood income and maternal education on birth outcomes: a population-based study. CMAJ Can Med Assoc J. 2006 May 9;174(10):1415–20.

17 Wagner B. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

18 Urquia M, Frank J, Moineddin R, Glazier R. Immigrants' duration of residence and adverse birth outcomes: a population-based study. BJOG Int J Obstet Gynaecol. 2010 Apr;117(5):591–601.

19 Vang Z, Sigouin J, Flenon A, Gagnon A. The Healthy Immigrant Effect in Canada: A Systematic Review,. Popul Change Lifecourse Strateg Knowl Clust Discuss Pap Ser. 2015;3(1):Article 4.

20 Urquia ML, O'Campo PJ, Heaman MI. Revisiting the immigrant paradox in reproductive health: The roles of duration of residence and ethnicity. Soc Sci Med. 2012 May;74(10):1610–21.

21 Gagnon AJ, Dougherty G, Wahoush O, Saucier JF, Dennis CL, Stanger E, et al. International migration to Canada: The post-birth health of mothers and infants by immigration class. Soc Sci Med. 2013 Jan;76:197–207.

22 Public Health Agency of Canada. Chapter 1: Family-centred maternity and newborn care in Canada: Underlying philosophy and principles [Internet]. 2017 [cited 2024 Apr 17]. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-1.html

23 Statistics Canada. Census Profile, 2021 [Internet]. Ottawa; 2023 [cited 2024 Aug 19].
Available from: https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed August 19, 2024).

24 World Health Organization. Preconception care to reduce maternal and childhood mortality and morbidity [Internet]. Geneva: World Health Organization; 2013 [cited 2024 May 23]. Available from: https://iris.who.int/handle/10665/78067

25 Eunice Kennedy Shriver National Institute of Child Health and Human Development [Internet]. 2017 [cited 2024 May 23]. What is prenatal care and why is it important? Available from: https://www.nichd.nih.gov/health/topics/pregnancy/conditioninfo/prenatal-care

Fertility and Pregnancy

Fertility Rates

What Is It?

Fertility rates measure the number of live births divided by the number of women of reproductive age in the population. Reproductive age is 15 to 49 years.

General fertility rates are the total number of live births per woman 15 to 49 years of age in the population during a given time.

Age-specific fertility rates are the number of live births per woman in an age group within the reproductive years in the population during a given time.

Total fertility rates tell us how many births there would be in an area if all women lived to the end of their reproductive years (49 years old) and the age-specific birth rates for the area remained the same.

Why Is It Important?

Fertility rates provide information on the changing demographics in Huron Perth. When total fertility rates are less than 2.1 children per woman, a population does not naturally replace itself.[1] The population will naturally decrease over time unless there is sufficient immigration into the population to offset this trend.

It is also important to examine fertility rates by age, as high fertility among certain age groups is associated with increased obstetric and perinatal complications.[2] For example, research shows that women aged 35 years and older are at an increased risk of infertility, and fetal and maternal complications, such as preterm birth, low birth-weight, stillbirth and chromosomal abnormalities.[2, 3]

Fertility rates have been impacted by major societal disruptions affecting public health (e.g., pandemics) or the economy (e.g., recession or downturn), and during times of heightened general uncertainty.[1]

What Does It Tell Us?

Fertility rates in Huron Perth are higher than the province. Huron Perth fertility rates have been increasing over time, while Ontario fertility rates have been declining. For most municipalities there is little or no need for immigration to sustain current population levels. Goderich, Stratford, and St. Marys and Perth South have lower total fertility rates than the rest of Huron Perth indicating those municipalities are reliant on immigration to maintain their populations.

There has been a significant decrease in the Huron Perth fertility rate for 15 to 24 year olds and an increase for 30 to 49 year olds from 2013 to 2021.

In 2021, neither Huron Perth nor Ontario had a total fertility rate high enough to maintain the current population without immigration. Huron Perth's total fertility rate was 1.88 children per woman in 2021 while Ontario was 1.42 children per woman. This indicates that the demand for reproductive services in Huron Perth continues to be higher than in other parts of the province.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2018 to 2021). Resource Type: Tabulated data. Data Extracted on 20 Nov, 2018, 25 Oct, 2019, and 1 Jan, 2023.

Birth Data [2013-2021] - Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO. Extracted Nov 30, 2023.

Statistics Canada. 2022. Census Profile. 2021 Census. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released July 13 2022. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E.

Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries.

Limitations

General fertility rates and age-specific fertility rates were calculated using the number of live births statistics however, the total fertility rates were calculated using births - the number of pregnancies resulting in a birth. The number of births includes stillbirths and counts multiple births as one. The number of stillbirths and multiple births is small relative to the number of singleton live births, so the number of births is a good approximation for the number of live births.

Births that were missing the woman's age or residence were excluded from the analysis as were out of province births.

General fertility rates ignore differences in the age structures of a population. Total fertility rates are not affected by the age distribution of the population, but are affected by the timing of births (i.e., the average age of the female at first birth).[4]

General Fertility Rates

Fertility rates in Huron Perth are increasing and are higher than Ontario. Fertility rates in Huron Perth are highest where there are Anabaptist communities. In contrast, fertility rates for Ontario are declining *(Figure 1).*

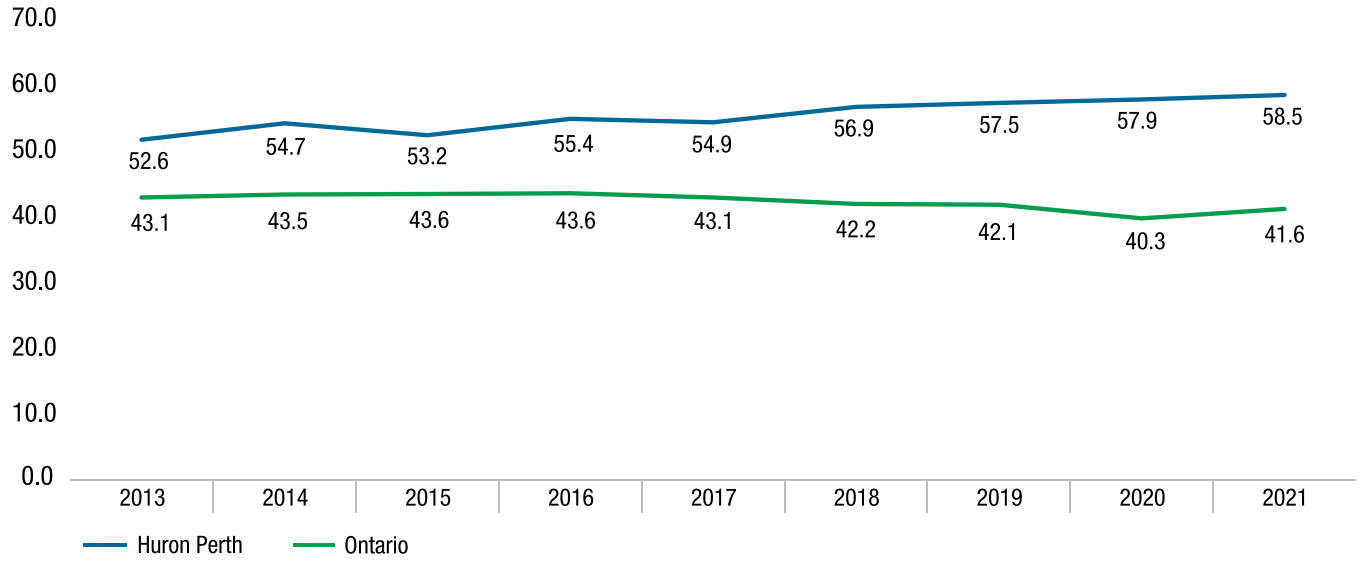


Figure 1 General fertility rate (live births per 1,000 females 15-49 years), 2013 to 2021

Data sources: (1) Birth Data [2013-2021] - Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Extracted Nov 30, 2023. (2) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO. Extracted Nov 30, 2023

Age-specific Fertility Rates

Huron Perth has significantly higher fertility rates than Ontario for every age group except 35 to 49 year olds *(Figure 2)*. This is despite declining fertility rates in 15 to 24 year olds *(Figure 3).* For the higher risk age group of women 35 to 49 years, Huron Perth has a significantly lower fertility rate than Ontario for 2013 to 2021 combined. This indicates that women in Huron Perth are more likely to give birth at younger ages when the risk for negative infant health outcomes is lower.

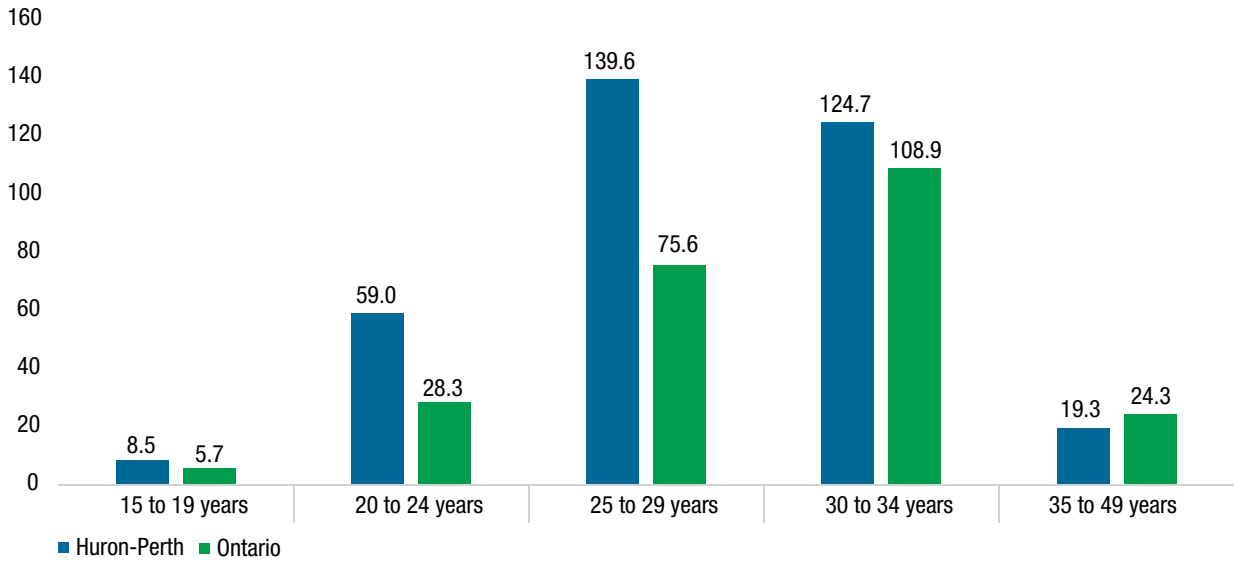


Figure 2 Age-specific fertility rate (live births per 1,000 females 15-49 years), Huron Perth and Ontario, 2013 to 2021

*Data sources: (*1) Birth Data [2013-2021] - Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Extracted Nov 30, 2023. (2) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO, extracted Nov 30, 2023.

Although Huron Perth has a higher fertility rate in the younger age groups, there has been a shift towards older women giving birth in Huron Perth from 2013 to 2021 *(see Figure 3)*. There has been a significant decrease in the Huron Perth fertility rate for 15 to 24 year olds and an increase for 30 to 49 year olds from 2013 to 2021. The fertility rate for 25 to 29 year olds remained unchanged in Huron Perth for 2013 to 2021.

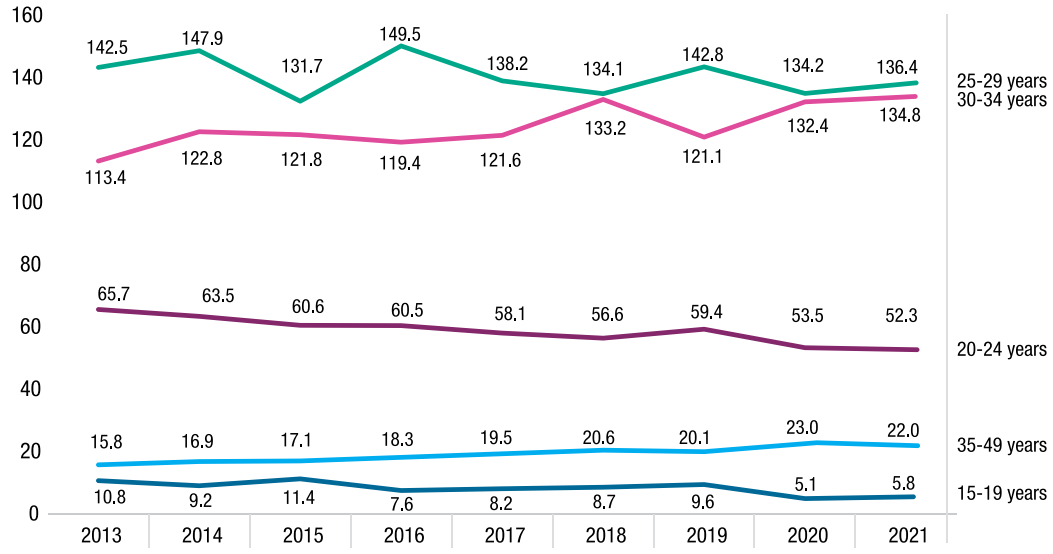


Figure 3 Age-specific fertility rates (live births per 1,000 females), Huron Perth, 2013 to 2021

Data sources: (1) Birth Data [2013-2021] - Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Extracted Nov 30, 2023 (2) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO, extracted Nov 30, 2023.

Total Fertility Rates

The total fertility rate for Huron Perth was 1.88 births per woman for 2021 but there are important differences between municipalities within the region shown in Figure 4. Goderich, Stratford, St. Marys, and Perth South have lower total fertility rates indicating those municipalities are reliant on immigration to maintain their populations. The remaining municipalities require little or no immigration to maintain their current population as their total fertility rates are close to or above 2.1. The municipalities with total fertility rates over 2.1 are also home to Anabaptist communities who typically have more than two children per family.

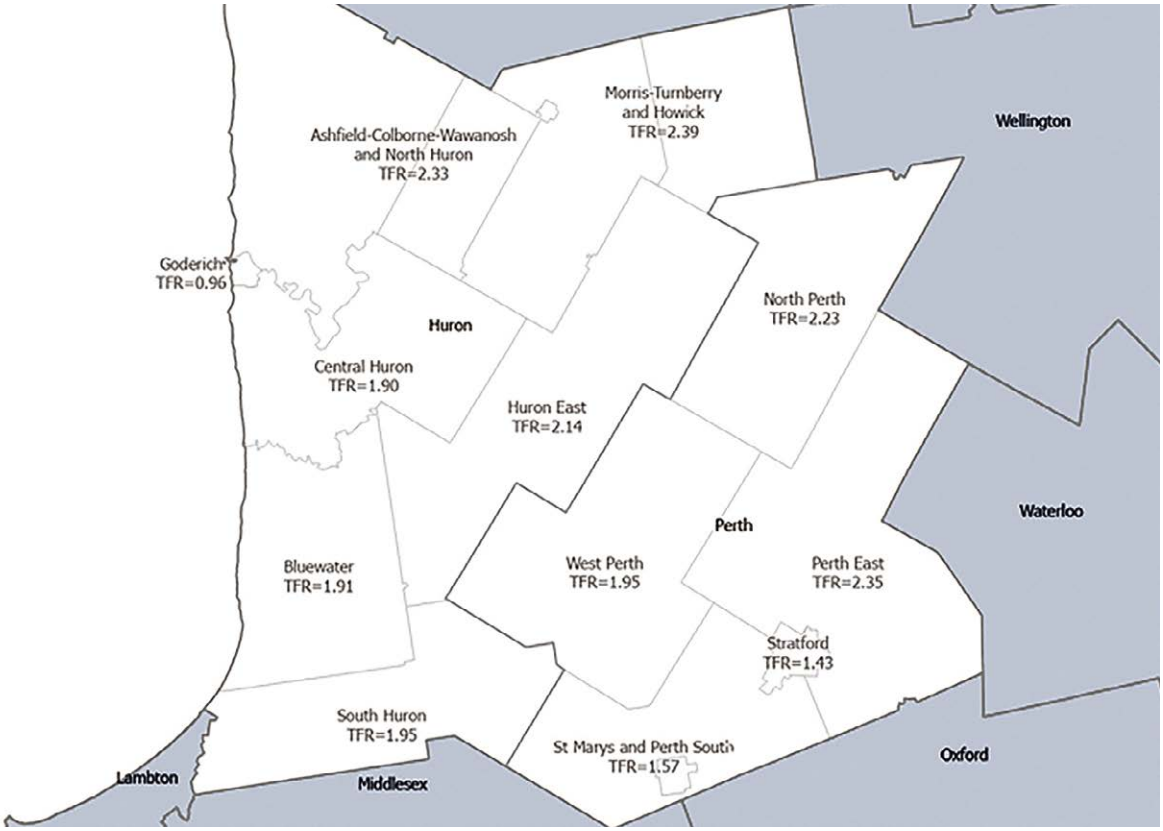


Figure 4 Total Fertility Rate in 2021 (births per woman 15-49 years of age) by municipality in Huron Perth

Data source: (1) Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2021. Resource Type: Tabulated data. Data Provided on 1 Jan, 2023. (2) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries.

1 Government of Canada SC. Fertility in Canada, 1921 to 2022 [Internet]. 2024 [cited 2024 Mar 4]. Available from: https://www150.statcan.gc.ca/n1/pub/91f0015m/91f0015m2024001-eng.htm

2 Johnson JA, Tough S. No-271-Delayed Child-Bearing. J Obstet Gynaecol Can. 2017 Nov 1;39(11):e500–15.

3 Shaw E. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

4 Association of Public Health Epidemiologists in Ontario [Internet]. 2013 [cited 2024 Apr 24]. Core indicators for public health in Ontario: 6B Fertility Rates Available from: http://core.apheo.ca/index.php?pid=13

Pregnancy Rates

What Is It?

Pregnancy rates show the number of pregnancies among females of reproductive age (15 to 49 years) in an area. Pregnancies include both deliveries (live births and stillbirths) as well as therapeutic abortions.

Total pregnancy rate is the number of pregnancies per 1,000 females aged 15 to 49 in the time period and geographic area.

Age-specific pregnancy rates are the number of pregnancies per 1,000 females in an age group in the time period and geographic area.

Why Is It Important?

Unlike fertility rates, which only provide us with information on births, pregnancy rates provide information on more pregnancy trajectories, including live births, stillbirths, and therapeutic abortions.

It is important to examine pregnancy rates by age group, as pregnancies among some age groups, such as adolescents[1-4] or individuals over the age of 35,[5] are associated with health risks for both mothers and infants.[5]

What Does It Tell Us?

Huron Perth has a higher total pregnancy rate than Ontario and it increased from 2013 to 2021. Huron Perth females also tend to be pregnant at a younger age (20 to 34 years) than Ontario.

The pregnancy rate for 35 to 49 year old females was significantly lower in Huron Perth than Ontario from 2013 to 2021.

Data sources

Vital Statistics Data [2013 to 2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 2, 2023.

Hospital and Medical Services Data [2013 to 2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 6, 2023.

Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO, extracted Nov 30, 2023.

Limitations

Pregnancies that end in a miscarriage and deliveries and therapeutic abortions that occurred out-of-province were excluded from the analysis. Missing or unknown data were also excluded.

Therapeutic abortions include only surgical abortions, not pharmacologic ones. Surgical abortions include those that took place in hospitals, physician offices, and abortion clinics. Abortions are likely underestimated due to the exclusion of pharmacological abortions.

Vital Statistics Data reports number of births rather than number of deliveries therefore a pregnancy resulting in multiple births was counted more than once. Since multiple births are rare, the number of births was a good approximation for the number of pregnancies resulting in a delivery.

Age-specific pregnancies are based on the female's age at time of delivery or therapeutic abortion.

Total Pregnancy Rates

Total pregnancy rates in Huron Perth significantly increased over time from 2013 to 2021 *(Figure 1)*. In contrast, total pregnancy rates in Ontario decreased from 2013 to 2021. Total pregnancy rates in Huron Perth were significantly higher than Ontario in all years, with the exception of 2013 when there was no difference between Huron Perth and Ontario.

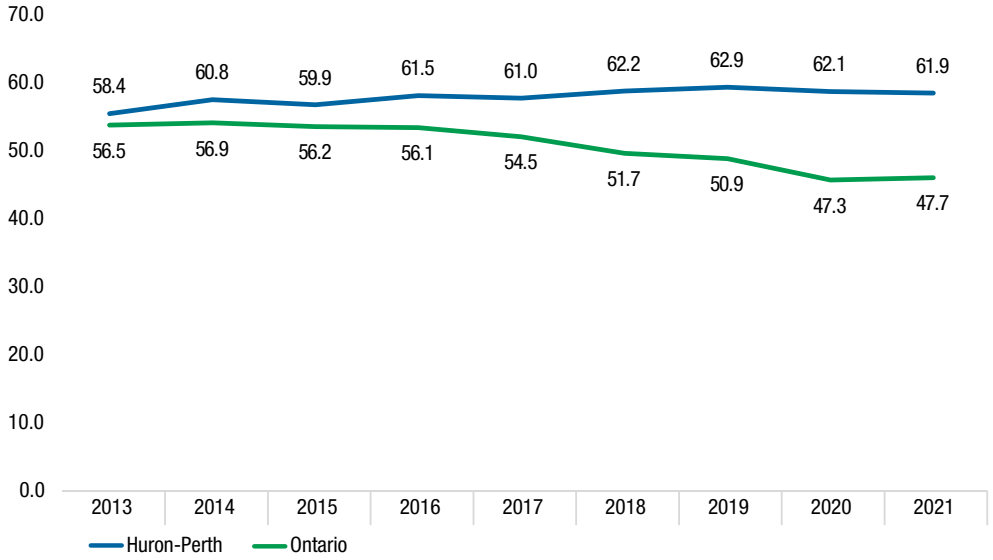


Figure 1 Total pregnancy rate (per 1,000 females 15-49 years) for Huron Perth and Ontario, 2013 to 2021

Data sources: (1) Vital Statistics Data [2013 to 2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 2, 2023.
(2) Hospital and Medical Services Data [2013 to 2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 6, 2023.
(3) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO, extracted Nov 30, 2023.

Age-specific Pregnancy Rates

For 15 to 19 year olds, pregnancy rates are similar when comparing Huron Perth to Ontario. Huron Perth pregnancy rates were higher than Ontario for 20 to 24, 24 to 29 and 30 to 34 year olds, and lower for 35 to 49 year olds for 2013 to 2021.

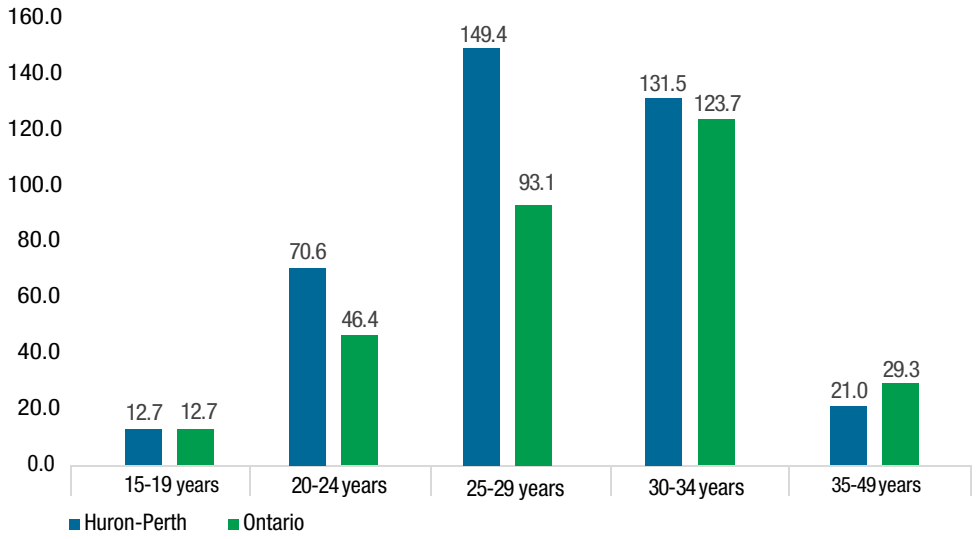


Figure 2 Age-specific pregnancy rates (per 1,000 females) for Huron Perth and Ontario, 2013-2021

Data sources: (1) Vital Statistics Data [2018-2022], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 2, 2023. (2) Hospital and Medical Services Data [2018-2022], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 6, 2023. (3) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries: IntelliHEALTH Ontario, extracted November 6, 2023.

1 Johnson JA, Tough S. No-271-Delayed Child-Bearing. J Obstet Gynaecol Can. 2017 Nov 1;39(11):e500–15.

2 Shaw E. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

3 Centres for Disease Control and Prevention [Internet]. 2023 [cited 2024 Mar 4]. About Teen Pregnancy. Available from: https://www.cdc.gov/teenpregnancy/about/index.htm

4 Fleming N, Ng N, Osborne C, Biederman S, Yasseen AS, Dy J, et al. Adolescent Pregnancy Outcomes in the Province of Ontario: A Cohort Study. J Obstet Gynaecol Can. 2013 Mar;35(3):234–45.

5 Penman-Aguilar A, Carter M, Snead MC, Kourtis AP. Socioeconomic Disadvantage as a Social Determinant of Teen Childbearing in the U.S. Public Health Rep. 2013 Mar;128(2_suppl1):5–22.

Therapeutic Abortion

What Is It?

Therapeutic abortion (TA) is also known as an induced abortion and is the term used throughout this report. For this report, therapeutic abortion (TA) refers to the planned termination of a pregnancy by surgical procedure. This may be achieved through surgical procedures performed at hospitals, clinics, and private physician's offices, within or outside Huron Perth. Medications can be taken to induce an abortion, termed pharmacologic abortion. Pharmacologic abortions were excluded.

Why Is It Important?

The majority of TAs occur as the result of an unintended pregnancy.[1,2] They may also be performed to end a pregnancy for other reasons such as maternal health concerns and known genetic conditions or malformations.[1] TAs can be an indicator of unwanted and unplanned pregnancies in the population.

TA rates may be affected by barriers such as: the unavailability of services nearby, being unable to afford the costs of travel to access abortion care, difficulty in accessing sexual and reproductive health services that are culturally-responsive and stigma-free, access to birth control, and education.[1,2] Previous experiences of discrimination within the healthcare system also create access barriers for minority and marginalized groups, such as Indigenous, and racialized people, members of 2SLGBTQI+ communities, and youth.[3]

What Does It Tell Us?

The TA rate in Huron Perth was lower than Ontario from 2013 to 2021. Huron Perth also had a lower age-specific TA rate for all age groups from 2013 to 2021. The trend over time shows that TA rates have decreased in Huron Perth and Ontario from 2013 to 2021.

Data sources

Hospital and Medical Services Data [2013-2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 6, 2023.

Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO, extracted Nov 30, 2023

Limitations

Therapeutic abortions that occurred out-of-province were excluded from the analysis. Pharmacologic abortions were excluded. Missing or unknown data were also excluded.

Limitations on therapeutic abortions are discussed in more detail in the limitations section on pregnancy rates *(page 40)*.

Total Therapeutic Abortion Rates

The rate of therapeutic abortions for 15 to 49 year olds in Huron Perth was significantly lower than in Ontario for every year from 2013 to 2021. The rates in both Huron Perth and Ontario decreased significantly during that period.

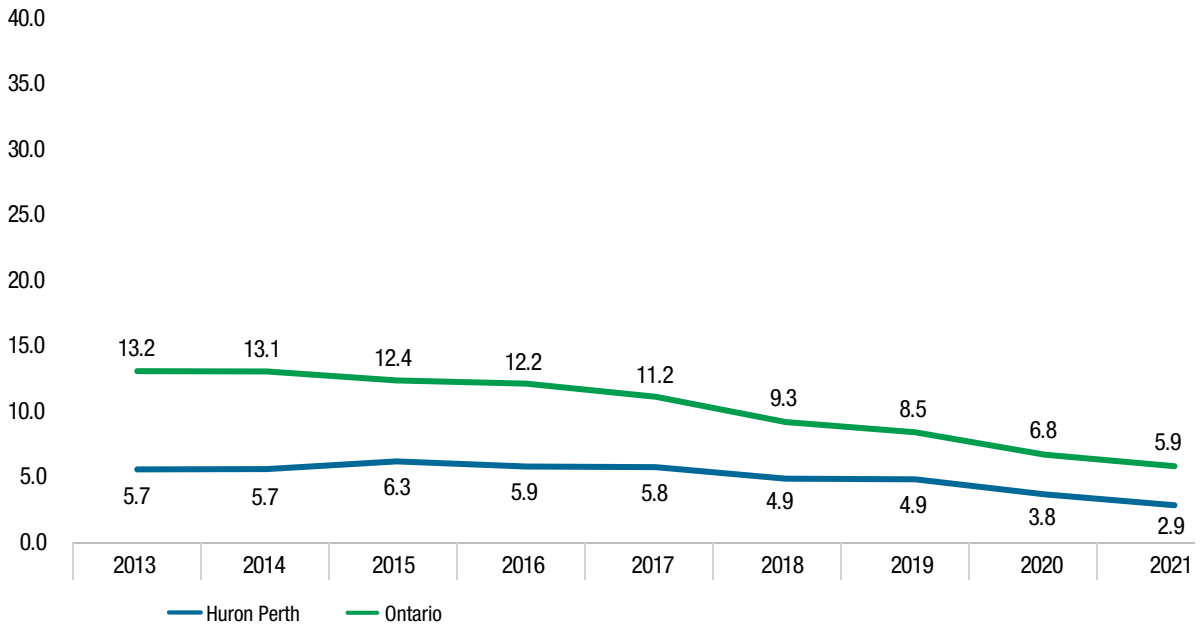


Figure 1 Total therapeutic abortion rate (per 1,000 females aged 15-49), Huron Perth and Ontario, 2013 to 2021

Data sources: (1) Hospital and Medical Services Data [2013-2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 6, 2023. (2) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO, extracted Nov 30, 2023.

Age-specific Therapeutic Abortion Rates

Huron Perth had a significantly lower therapeutic abortion rate than Ontario in every age group for 2013 to 2021 combined. All differences in Figure 2 are statistically significant.

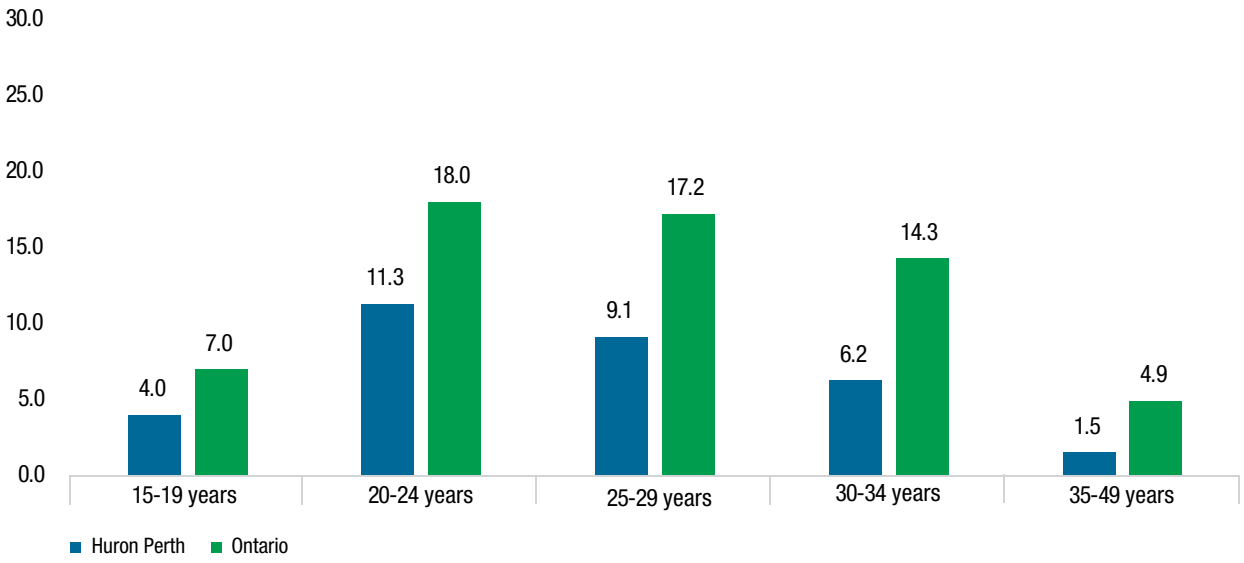


Figure 2 Age-specific therapeutic abortion rate (per 1,000 females), Huron Perth and Ontario, 2013-2021

Data sources: (1) Hospital and Medical Services Data [2013-2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted November 6, 2023. (2) Statistics Canada. Table 17-10-0139-01 Population estimates, July 1, by census division, 2016 boundaries, IntelliHEALTH ONTARIO, extracted Nov 30, 2023.

1 Sabourin JN, Burnett M. A Review of Therapeutic Abortions and Related Areas of Concern in Canada. J Obstet Gynaecol Can. 2012 Jun;34(6):532–42.

2 Health Canada. Government of Canada Strengthens Access to Abortion Services - News Release [Internet]. 2023 [cited 2024 Mar 22]. Available from: https://www.canada.ca/en/health-canada/news/2023/05/government-of-canada-strengthens-access-to-abortion-services.html

3 Health Canada. Government of Canada Strengthens Access to Abortion Services - News Release [Internet]. 2022 [cited 2024 Mar 22]. Available from: https://www.canada.ca/en/health-canada/news/2022/05/government-of-canada-strengthens-access-to-abortion-services.html

Healthy Pregnancy

Folic Acid Supplementation

What Is It?

Folic acid, also called vitamin B9, is one of the B vitamins important for healthy growth of an unborn baby.[1]

The report presents are the percentages of women who gave birth that reported taking folic acid prior to pregnancy, during pregnancy, and both prior to and during pregnancy, during a given time period.

Why Is It Important?

Folic acid is important for the development of an unborn baby's neural tube (the part of the baby that becomes the brain and spinal cord) particularly during the first few weeks of pregnancy. It is hard to get enough folic acid from food alone. A folic acid supplement can help reduce the risk of neural tube defects (NTD), which are birth defects that occur when the neural tube fails to close during the early weeks of a pregnancy, and can result in lifelong disability or death.[1,2] Folic acid deficiency is also associated with other congenital anomalies such as heart defects, urinary tract anomalies, oral facial clefts and limb defects.[2]

Health Canada recommends that women who could become pregnant take a multivitamin containing 0.4 mg of folic acid every day, even if they are not planning to become pregnant, as many pregnancies are unplanned. If planning to become pregnant, a folic acid supplement should be taken for at least three months before pregnancy and a prenatal supplement continued throughout pregnancy.[1] Healthcare providers may recommend up to 4 mg of folic acid daily, for women in which the risk for NTDs is higher.[2]

Women who do not take a folic acid supplement, or who are on a restricted diet that avoids grain products (eg., a gluten-free diet) or who experience food insecurity may be at a higher risk of insufficient folic acid intake and resulting complications.[3] "Food insecurity is the inadequate or insecure access to food because of financial constraints…the food available to them might not be enough, safe, culturally adequate or meet the Canada's Food Guide recommendations."[4]

What Does It Tell Us?

From 2013 to 2021, most (92 per cent) Huron Perth women reported taking folic acid during pregnancy. However, only half of the pregnant individuals who took it during pregnancy also reported taking it preconceptionally.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Provided on May 17, 2024.

Limitations

Records missing folic acid supplementation data were excluded. Missing data comprised 6.9 to 11.2 per cent of Ontario records and 0.9 to 2.1 per cent of Huron Perth records. Ontario data for 2013 should be interpreted with caution as greater than 10 per cent of records were missing folic acid supplementation data that year.

Folic Acid Supplementation

Huron Perth women were more likely than Ontario women to report consuming folic acid supplements during pregnancy (92 per cent Huron Perth and 82 per cent Ontario). 49 per cent of Ontario women took folic acid during pregnancy only, compared to 46 per cent of Huron Perth women. An additional 46 per cent of Huron Perth women reported taking folic acid both during preconception and pregnancy. Women from Ontario were more likely than Huron Perth women to report never taking folic acid supplements during preconception or pregnancy (16 per cent versus 5 per cent for Huron Perth). All differences in Figure 1 are statistically significant.

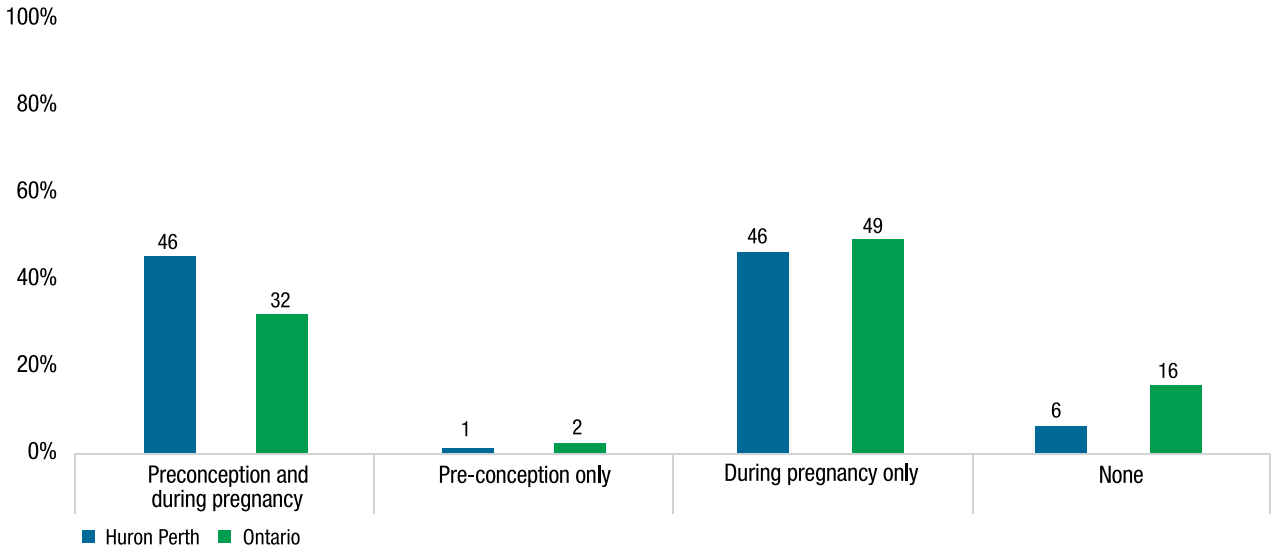


Figure 1 Percentage of women giving birth by whether or not they took folic acid supplementation and when, Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Extracted on May 17, 2024.

There was a significant decrease in the per cent of Huron Perth women taking folic acid during pregnancy only from 2013 to 2021 but any changes over time in the other categories were too small to be statistically significant *(see Figure 2)*. Despite the changes over time for the pregnancy only category, most Huron Perth women reported taking folic acid during pregnancy only or during preconception and pregnancy from 2013 to 2021.

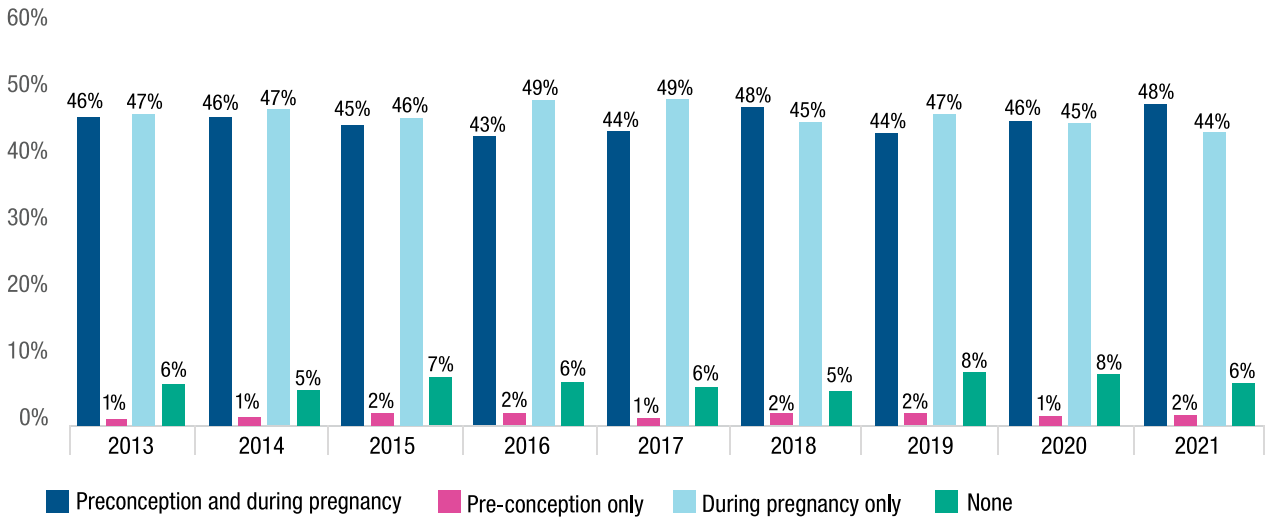


Figure 2 Percentage of women giving birth by whether or not they took folic acid supplementation and when, Huron Perth, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Extracted on May 17, 2024.

1 Public Health Agency of Canada. Folic acid and neural tube defects [Internet]. 2018 [cited 2024 Mar 8]. Available from: https://www.canada.ca/en/public-health/services/pregnancy/folic-acid.html

2 Wilson RD, Wilson RD, Audibert F, Brock JA, Carroll J, Cartier L, et al. Pre-conception Folic Acid and Multivitamin Supplementation for the Primary and Secondary Prevention of Neural Tube Defects and Other Folic Acid-Sensitive Congenital Anomalies. J Obstet Gynaecol Can. 2015 Jun;37(6):534–49.

3 Shaw E. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

4 Huron Perth Public Health. The Real Cost of Eating: Food Insecurity in Huron and Perth. Stratford ON; 2023.

Maternal Mental Health

What Is It?

Maternal mental health examines the prevalence of self-reported mental health conditions during pregnancy. Indicators presented include the percentage of women who gave birth (live or still) who:

- experienced depression during pregnancy
- experienced anxiety during pregnancy
- had given birth at least once before with a history of postpartum depression
- experienced an 'other' mental health concern during pregnancy such as addiction, bipolar, or schizophrenia; and
- experienced any mental health concern during pregnancy (including anxiety, depression, history of postpartum depression, addiction, bipolar schizophrenia, or other mental health concerns), during a given period of time.

Why Is It Important?

Poor maternal mental health and mental illness are among the most common complications in pregnancy.[1–3] They are important public health issues because of their multiple impacts on the entire family, especially the parent-child dyad, and have a significant societal cost.[2,4]

Individuals with mental health concerns during or after pregnancy may be at an increased risk of poor physical health, pregnancy complications, preterm labour, substance use, and difficulties caring for themself and their baby.[4,5] There is a significant association between maternal depression and anxiety and some of these outcomes.[5] When prolonged or untreated, maternal mental health concerns can have lasting impacts on the quality of parent-child interactions (e.g., attachment), and on the child's emotional and cognitive health and well-being.[4,6,7]

While anyone may experience mental health concerns during and after pregnancy, certain groups are more vulnerable, including those with biological risk factors such as a personal or family history of mental illness, or history of substance use;[3,4,8] and psychosocial risk factors such as limited social support, stressful life events, recent immigration, and experiencing violence.[2,4,8] Individuals may use substances to cope with trauma or stress to deal with concurrent mental health conditions.[5] Maternal mental health concerns can be compounded by the intersectionality of social determinants of health (e.g., housing insecurity, violence, and low social support).[4]

What Does It Tell Us?

Maternal mental health is an area of concern for Huron Perth.

From 2013 to 2021, a higher percentage of Huron Perth females who gave birth self-reported at least one mental health concern during pregnancy (including anxiety, depression, history of postpartum depression, addiction, bipolar, schizophrenia, or other mental health concerns) compared to Ontario. For Huron Perth and Ontario, the percentage of females self-reporting at least one mental health concern has increased over time.

The percentage of Huron Perth females that reported experiencing depression, and/or anxiety during pregnancy, was significantly higher than Ontario. Further, there has been a significant increase in depression and anxiety over time for Huron Perth.

There were some differences between municipalities in the region for depression during pregnancy and for postpartum depression in a previous pregnancy.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Extracted on 20 Nov, 2018, 25 Oct, 2019, and 4 Nov 2022.

Limitations

Records with missing data were excluded. Less than 1 per cent of Huron Perth pregnancies and less than 6 per cent of Ontario pregnancies were missing data on maternal mental health.

Maternal mental health is self-reported, so it is subject to social desirability bias and under-reporting. Changes in the acceptability of maternal mental health concerns may change what is reported without changing what females giving birth experience.

Anxiety

Self-reported anxiety during pregnancy increased over time for Huron Perth and Ontario *(Figure 1)*. From 2018 to 2021, the percentage was significantly higher for Huron Perth. The increase in self-reported anxiety over time is consistent across all municipalities within Huron Perth *(data not shown)*.

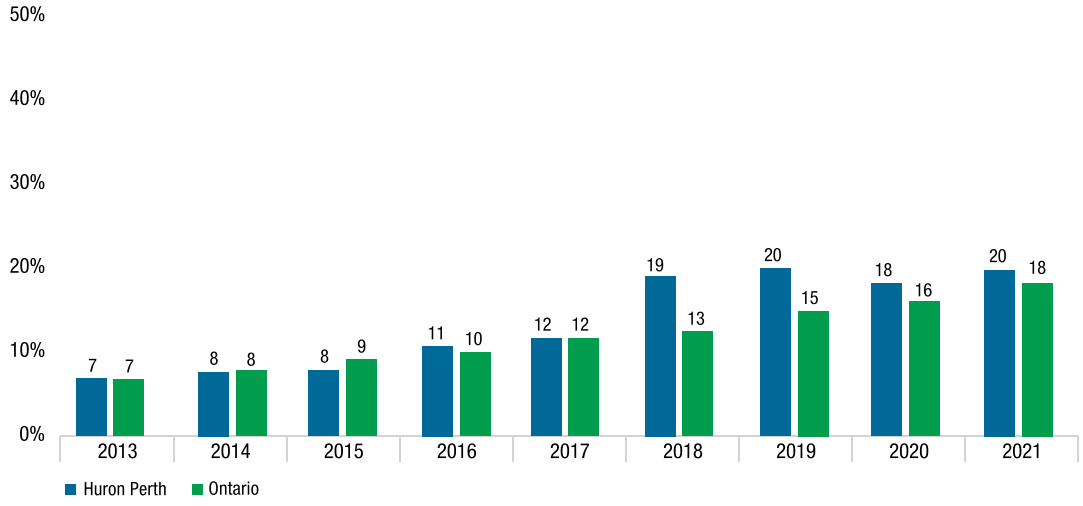


Figure 1 Percentage of females who gave birth (live or still) and reported experiencing anxiety during the pregnancy, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Provided on 25 Oct, 2019 and 4 Nov 2022

Depression

Self-reported depression during pregnancy increased in Huron Perth and across Ontario from 2013 to 2021 *(Figure 2)*. For Huron Perth, the percentage of females giving birth who reported experiencing depression was significantly higher than Ontario for 2013 to 2021. Within Huron Perth, the increase over time was due to four municipalities in Huron County: Ashfield-Colborne-Wawanosh, North Huron, Huron East, and Central Huron *(data not shown)*. The trend for all other municipalities in Huron Perth was stable over time.

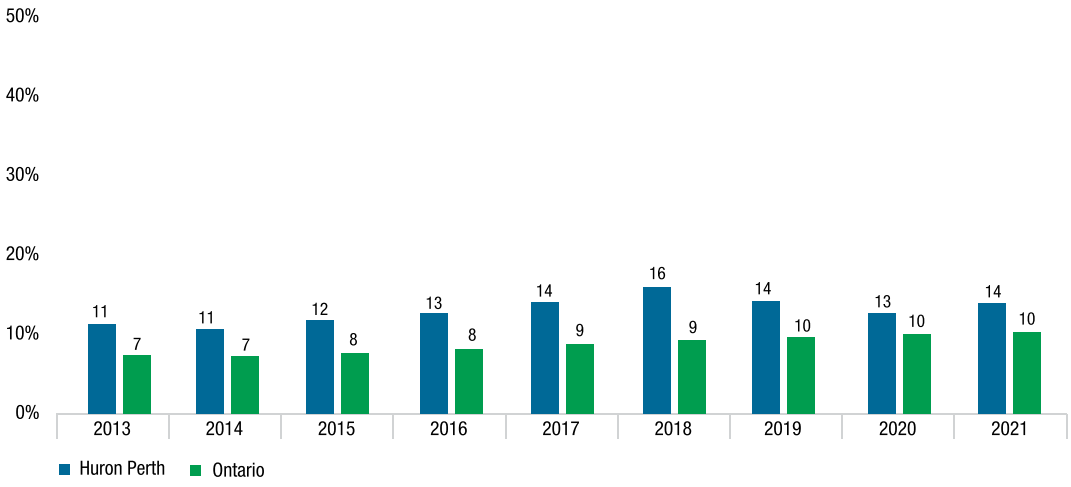


Figure 2 Percentage of females who gave birth (live or still) and reported experiencing depression during the pregnancy, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019 and 4 Nov 2022

History of Postpartum Depression

Self-reported history of postpartum depression has been stable over time for Huron Perth *(Figure 3)*. Although the percentage of women reporting a history of postpartum depression is stable for Huron Perth overall, that is not the case for some individual municipalities. The percentage has been decreasing over time in North Perth and increasing over time in Ashfield-Colborne-Wawanosh, North Huron, and South Huron *(data not shown)*.

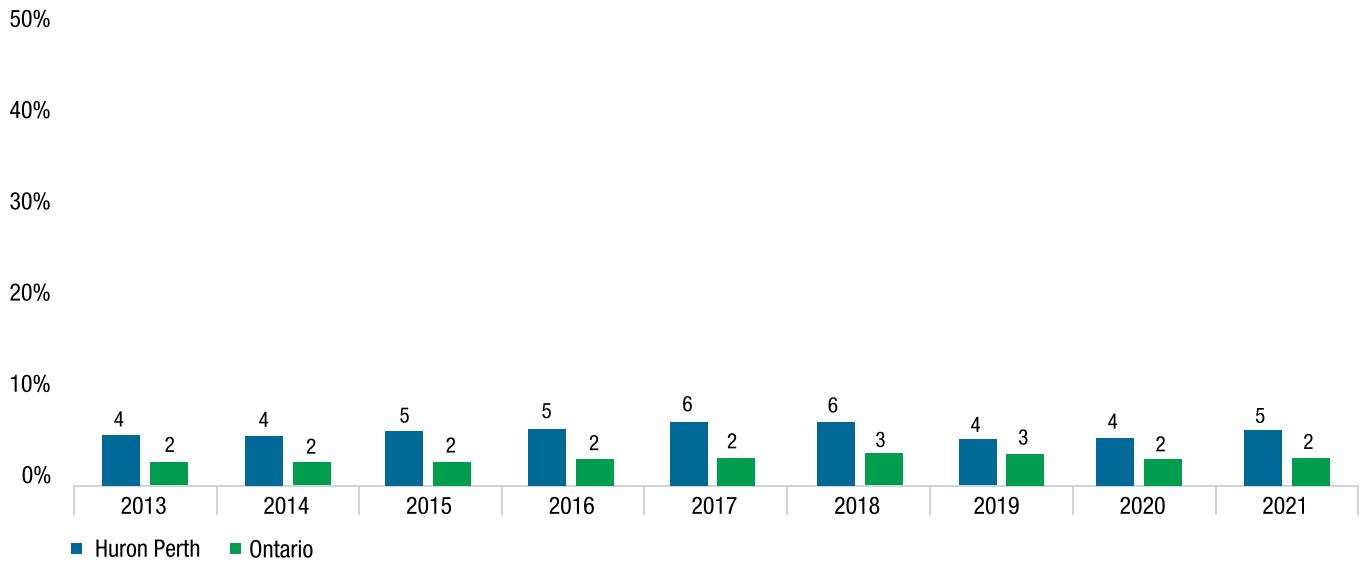


Figure 3 Percentage of females who gave birth (live or still) and reported experiencing postpartum depression during a previous pregnancy, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data provided on 25 Oct, 2019 and 4 Nov 2022

Other Mental Health Conditions

The percentage of females self-reporting a mental health condition other than depression, anxiety or postpartum depression during pregnancy, such as addiction, bipolar, or schizophrenia, has been stable over time in Huron Perth *(Figure 4)*. Although the numbers in Huron Perth appear to be increasing, the increase is not big enough to be statistically significant.

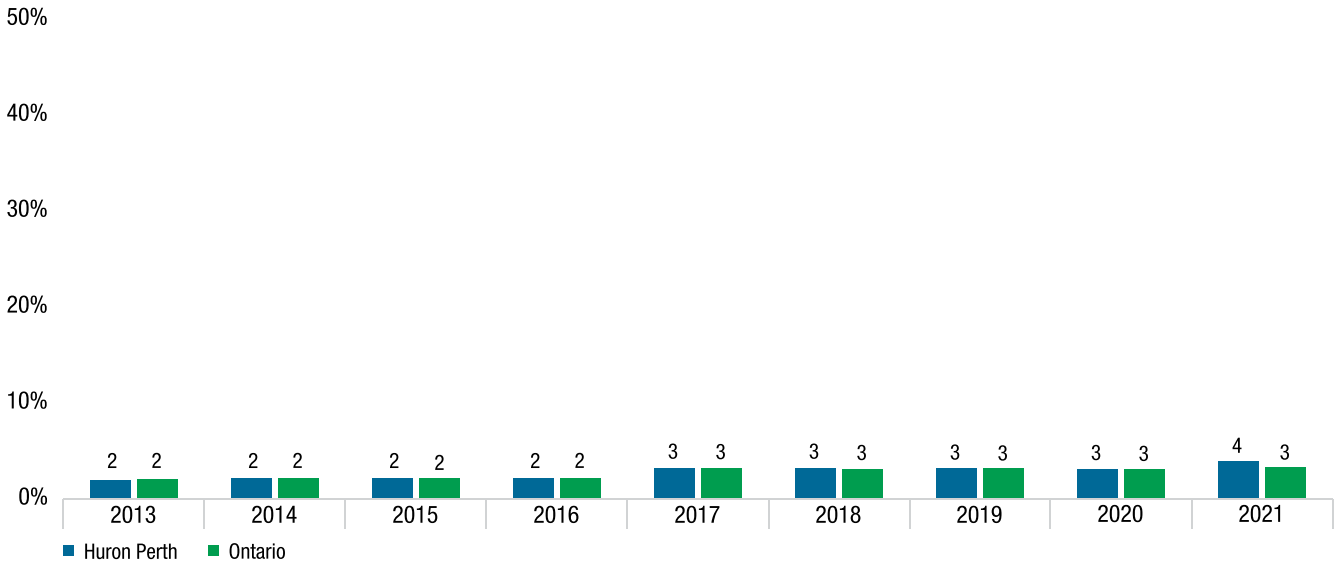


Figure 4 Percentage of females who gave birth (live or still) and reported experiencing an other mental health condition(s) during the pregnancy, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019 and 4 Nov 2022

At Least One Mental Health Concern

Females self-reporting at least one mental health concern during pregnancy and/or postpartum depression in a previous pregnancy has increased over time for Huron Perth and Ontario *(Figure 5)*. For all years shown, the percentage was significantly higher in Huron Perth than Ontario.

Within Huron Perth, St Marys, Perth South and Goderich had stable trends over time in females reporting at least one mental health concern during pregnancy *(data not shown)*. The other municipalities in Huron and Perth had an increase over time. Stratford consistently had a higher percentage of females reporting at least one mental health concern during pregnancy than the rest of Huron Perth for all years except 2018 and 2021.

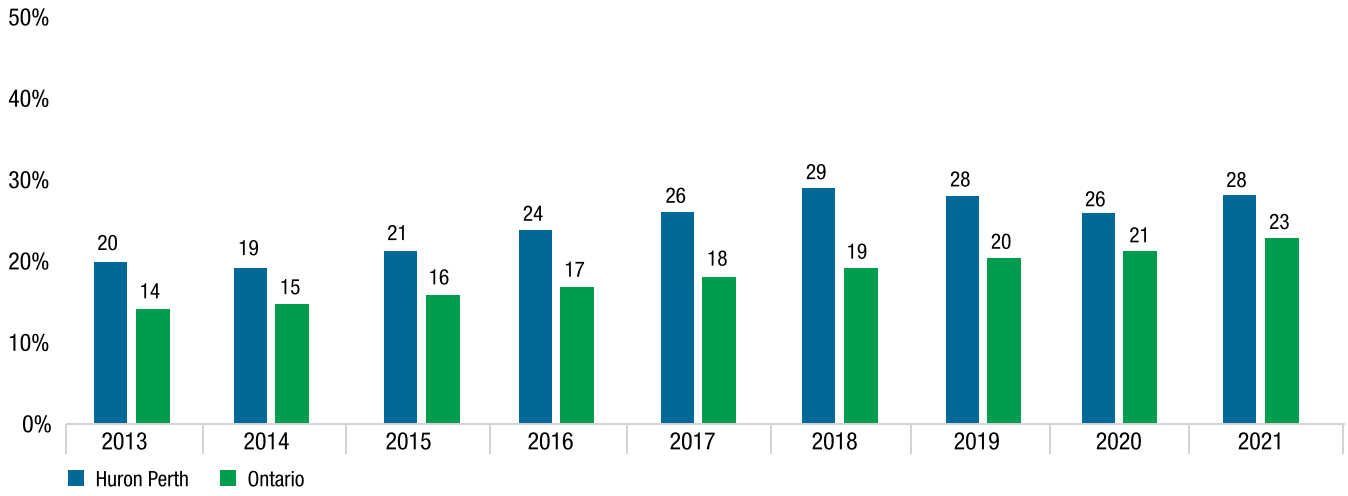


Figure 5 Percentage of females who gave birth (live or still) and reported experiencing at least one mental health concern during pregnancy and/or postpartum depression during a previous pregnancy, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data provided on 25 Oct, 2019 and 4 Nov 2022

1 Centre for Addiction and Mental Health. Centre for Addiction and Mental Health. [cited 2024 Mar 8]. Perinatal Mood and Anxiety Disorders. Available from: https://www.camh.ca/en/professionals/treating-conditions-and-disorders/perinatal-mood-and-anxiety-disorders

2 Dennis CL, Vigod S, Charlebois J, Cantin C. Starting the Conversation: Perinatal Mental Health [Internet]. Webinar presented at: The Provincial Council for Maternal and Child Health; 2021 Dec 2 [cited 2024 Apr 30]. Available from: https://www.youtube.com/watch?v=4bgyRI3ywtg

3 Wagner B. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

4 Healthy Human Development Table. Perinatal mental health toolkit for Ontario public health units [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018. Available from: https://www.publichealthontario.ca/-/media/Documents/H/2018/hhdt-toolkit-perinatal-mental-health.f?rev=55e9c59fc52f4a84bc2335c5d6637f1b&sc_lang=en

5 Shaw E. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

6 Mensah G, Singh T. Evidence Brief: Exploring interventions to address perinatal mental health in a public health context [Internet]. Ontario Agency for Health Protection and Promotion (Public Health Ontario),; 2016 [cited 2024 Feb 29]. Available from: https://www.publichealthontario.ca/-/media/Documents/E/2017/eb-perinatal-mental-health.pdf?rev=27faf48787a742408f5041b32fda3108&sc_lang=en

7 World Health Organization [Internet]. unknown [cited 2024 Mar 8]. Maternal Health and Substance Use. Available from: https://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/maternal-mental-health

8 Centre for Addiction and Mental Health [Internet]. [cited 2024 Mar 8]. Risk Factors for Perinatal Mental Health Problems. Available from: https://www.camh.ca/en/professionals/treating-conditions-and-disorders/perinatal-mood-and-anxiety-disorders/perinatal-mood---risk-factors

Substance Use During Pregnancy

What Is It?

Substance Use in Pregnancy looks at the prevalence of tobacco/vaping (smoking), alcohol, and other drug use during pregnancy. Indicators presented include the percentage of women who gave birth (live or still) who reported:

- any smoking at the time of the newborn's birth or at the first prenatal visit;
- any alcohol exposure during pregnancy, and;
- any drug exposure during pregnancy (including cocaine, gas/glue, hallucinogens, marijuana (cannabis), methadone (prior to Apr. 2014), narcotics, illicit opioids and other drugs).

Why Is It Important?

There are a variety of reasons that individuals may use substances during pregnancy including a dependence, an addiction, to cope with trauma and/or history of trauma (e.g., adverse childhood experiences), to cope with life stressors (e.g., lack of social support), a concurrent mental health issue, for recreational use or social reasons.[1,2] Substance use often occurs in the context of social determinants of health such as poverty, homelessness and exposure to violence.[1–3] Together, these can adversely affect adequate nutrition, treatment for concurrent mental illness, and prenatal care.[2]

Substance use during pregnancy can cause serious health problems for the pregnant person and their developing baby. Some of the main effects (e.g., preterm birth, low birth weight, and congenital anomalies) of these prenatal exposures are the leading causes of infant mortality.[4]

Tobacco use during pregnancy can increase the risk of miscarriage, premature birth, low birth weight, and certain congenital anomalies.[1,5] Exposure to second hand smoke before and after birth also increases an infant's risk for Sudden Infant Death Syndrome (SIDS).[1,5] Like tobacco cigarettes, vaping products (e-cigarettes) can deliver nicotine as well as other substances that can be potentially harmful to pregnant individuals and their babies.[6]

Cannabis became legal in Canada in 2018. Individuals may use cannabis during pregnancy to relieve symptoms of pregnancy-associated nausea or hyperemesis gravidarum.[2] Although the evidence regarding prenatal cannabis use is mixed, studies indicate an association between cannabis use and increases in the risk of preterm labour, low birth weight, small for gestational age, and long-term effects on a child's neurological development.[3,7]

Alcohol, when consumed during pregnancy, increases the risk of fetal alcohol spectrum disorder (FASD), which includes a range of physical, social, cognitive and emotional problems.[3,8] FASD is the leading known cause of preventable developmental disability in Canada.[8]

What Does It Tell Us?

Substance use during pregnancy is an area of concern for Huron Perth, particularly for the larger population centres, though there have been some decreases in substance use. Huron Perth remains significantly higher than Ontario for self-reported smoking, alcohol exposure, and drug exposure during pregnancy. Self-reported smoking during pregnancy has decreased over time in Huron Perth while alcohol exposure during pregnancy has been stable from 2013 to 2021. Exposure to any drug during pregnancy increased from 2013 to 2021 for Huron Perth and Ontario. Stratford and Goderich had consistently higher rates than Huron Perth on all three indicators.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Extracted on 25 Oct, 2019 and Apr 4, 2024.

Limitations

Records with missing data are excluded. For all three indicators, less than 1 per cent of Huron Perth records and less than 7 per cent of Ontario records had missing data.

Substance use during pregnancy is self-reported, so it is subject to social desirability bias and under-reporting.

From April 2014, methadone was not included in the list of drug exposures if it was prescribed by a healthcare provider. The change in reporting affects the comparability of 2013 to later years, however, the number of women who report using prescribed methadone during pregnancy is low. Removing prescription methadone from the indicator did not significantly decrease the percentage of women who report substance use during pregnancy.

Smoking

Smoking during pregnancy has been decreasing in Huron Perth and Ontario though the percentages remain significantly higher for Huron Perth than for Ontario *(Figure 1)*. When data for 2013 to 2021 are combined, self-reported smoking during pregnancy is higher than the rest of Huron Perth for Stratford, Goderich, and Central Huron and lower for North Perth, Perth East, Perth South, St. Marys, Morris-Turnberry, and Howick *(data not shown)*.

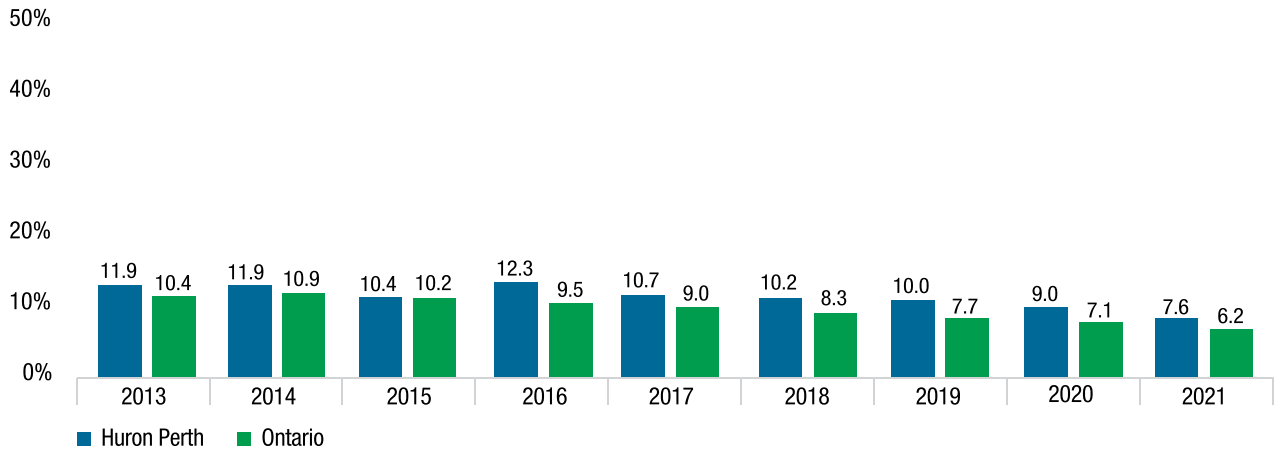


Figure 1 Percentage of females who gave birth (live and still) who reported smoking any amount during their prenatal visit or when admitted to hospital or midwifery care for birth

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019 and 4 Nov 2022

Alcohol Exposure

The trend over time for alcohol exposure during pregnancy has been stable for Huron Perth and Ontario though Huron Perth has a higher percentage of women reporting alcohol exposure during pregnancy from 2013 to 2021 compared to Ontario *(Figure 2)*. Some municipalities, including Stratford, West Perth, Central Huron, Bluewater, and South Huron show a significant increase in prenatal alcohol exposure over time *(data not shown)*. When looking at the combined years, self-reported prenatal alcohol exposure was higher in Stratford and Goderich than Huron Perth and lower in North Perth, Perth East, South Huron, Morris-Turnberry, and Howick *(data not shown)*.

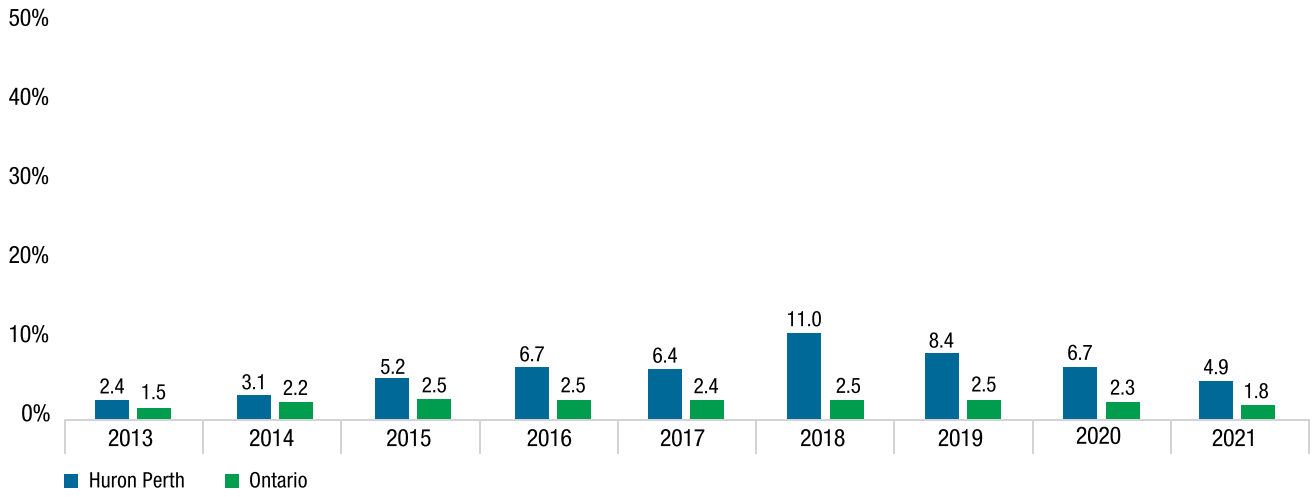


Figure 2 Percentage of females who gave birth (live and still) who reported any alcohol consumption, during their prenatal visit or when admitted to hospital or midwifery care for birth

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019 and, 4 Nov 2022

Drug Exposure

The trend over time for self-reported drug exposure by females during pregnancy increased from 2013 to 2021 for Huron Perth and Ontario.

When data from 2013 to 2017 are combined, self-reported drug exposure (marijuana or illicit drug use) during pregnancy is higher in Huron Perth than Ontario *(Figure 3)*. Stratford and Goderich had the highest percentage of self-reported drug exposure during pregnancy compared to the rest of Huron Perth while North Perth, Perth East, Morris-Turnberry, Howick, Ashfield-Colborne-Wawanosh, and North Huron were lower than the rest of Huron Perth (data not shown). Further, municipalities in Huron Perth except South Huron, Morris-Turnberry, Howick, Ashfield-Colborne-Wawanosh, and North Huron showed a significant increase over time in the percentage of females reporting drug exposure during pregnancy *(data not shown)*.

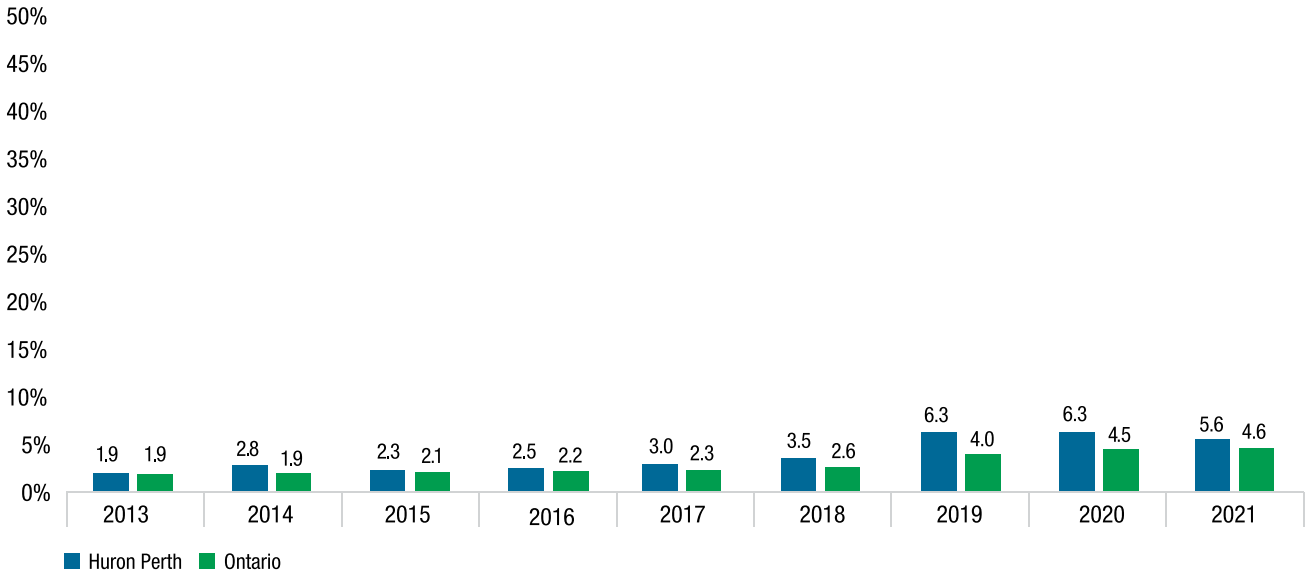


Figure 3 Percentage of females who gave birth (live and still) who reported during their prenatal visit or when admitted to hospital or midwifery care for birth, consuming any marijuana or illicit drugs

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct 2019 and 4 Apr 2024

1 Shaw E, et al. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

2 Mead A, Ryan D, Paquette V, Smith E, Joshi P, Tanella C, et al. Best Practice Guidelines for Mental Health Disorders in the Perinatal Period: Substance Use Disorders [Internet]. Vancouver, B.C.: BC Reproductive Mental Health Program; 2023 [cited 2024 Feb 29]. Available from: http://www.perinatalservicesbc.ca/Documents/Resources/HealthPromotion/Best_Practice_Guideline_Mental_Health_Disorders_in_the_Perinatal_Period.pdf

3 Chief Medical Officer of Health of Ontario. 2023 Annual Report of the Chief Medical Officer of Health of Ontario to the Legislative Assembly of Ontario – Balancing Act An All-of-Society Approach to Substance Use and Harms [Internet]. King's Printer for Ontario; 2024.
Available from: https://www.ontario.ca/files/2024-04/moh-cmoh-annual-report-2023-en-2024-04-02.pdf

4 Ontario Public Health Association. Shift- Enhancing the health of Ontarians: A call to action for preconception health promotion and care. [Internet]. Toronto, ON; 2014 [cited 2024 Mar 4]. Available from: https://opha.on.ca/wp-content/uploads/2021/06/OPHA-Shift-Enhancing-the-health-of-Ontarians-A-call-to-action-for-preconception-health-promotion-and-care_1.pdfext.pdf

5 Centers for Disease Control and Prevention [Internet]. 2023 [cited 2024 Apr 17]. Smoking During Pregnancy.
Available from: https://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/index.htm

6 Wagner B, et al. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines).
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

7 Cannabis Use During Pregnancy & Lactation: Practice Resources for Healthcare Providers. [Internet]. Vancouver, B.C.: Perinatal Services BC; 2020 Feb [cited 2024 Mar 12]. Available from: https://cms.psbchealthhub.ca/sites/default/files/2023-10/cannabis-in-pregnancy-pratice-resource.pdf

8 Taylor G. The Chief Public Health Officer's Report on the State of Public Health in Canada, 2015: Alcohol Consumption in Canada [Internet]. Ottawa, ON: Public Health Agency of Canada; 2016 Jan [cited 2024 Apr 17]. Available from: https://www.canada.ca/en/public-health/services/publications/chief-public-health-officer-reports-state-public-health-canada/2015-alcohol-consumption-canada.html

Pre-Pregnancy Body Mass Index and Gestational Weight Gain

What Is It?

An individual's weight status before pregnancy is used to set recommendations for weight gain during pregnancy.[1,2] Body mass index (BMI) is calculated as weight in kilograms divided by height in metres squared [BMI = weight (kg)/height (m^2)].

Pre-pregnancy BMI is based on self-reported height and weight closest to conception (no later than 12 weeks gestation) and is expressed as a percentage of pregnant individuals in each BMI category out of the total number of individuals who had a live birth or still birth.

Gestational weight gain is the percentage of individuals with weight gain during pregnancy within, above or below the ranges recommended by Health Canada *(Table 1)*.

Table 1 Health Canada gestational weight gain recommendations for singleton and twin pregnancies

Pre-pregnancy BMI Category	Recommended Total Weight Gain (kg) Singleton Pregnancy	Recommended Total Weight Gain (kg) Twin Pregnancy
<18.5 kg/m^2	12.5-18.0	N/A
18.5-24.9 kg/m^2	11.5-16.0	17.0-25.0
25-29.9 kg/m^2	7.0-11.5	14.0-23.0
30-34 kg/m^2*	5.0-9.0	11.0-19.0

*There is insufficient evidence to provide guidelines for gestational weight gain for BMI > 35.0 kg/m^2.

N/A – There is insufficient evidence to provide guidelines for individuals with a BMI <18.5 kg/m^2 carrying twins

Why Is It Important?

Low (<18.5kg/m^2) or high (30-34.9 kg/m^2) pre-pregnancy BMI and inadequate or excess gestational weight gain (GWG) are associated with adverse pregnancy outcomes, such as caesarean section births, preterm births and small for gestational age and large for gestational age births.[3] Gaining the recommended weight during pregnancy can reduce some of these risks and help to optimize maternal, infant, and child health outcomes.[1,4] General recommendations are based on pre-pregnancy BMI categories and should be individualized to the pregnant individual.[2] Various factors may influence weight recommendations during pregnancy, including pre-pregnancy weight, age, parity, access to foods, opportunities for physical activity, family and partner support, cultural norms and beliefs, genetic characteristics, and socioeconomic status.[2,5]

Research evidence has shown that weight stigma can result in mental, physical, social, and economic consequences.[6] Weight bias, stigma and discrimination are described as the continuum of negative weight-related attitudes, beliefs, assumptions and judgements in society held about people living in larger bodies.[6] They are common experiences exhibited across society.[6]

It is important to note that BMI is not a sensitive measure of individual body composition. It may over- or under- estimate individual risk and should not be used as a sole indicator of health status or health risk.

What Does It Tell Us?

Most pregnancies in Huron Perth were singleton pregnancies, consistent with Ontario. Most pregnant individuals had a pre-pregnancy BMI between 18.5 and 29.99 and half (50 per cent) had gestational weight gain above the recommended range. *(Figures 1 and 3)*.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Provided on Oct 25, 2019 and Apr 4, 2024.

Limitations

Findings should be interpreted with caution because there was a high number of records missing information on pre-pregnancy BMI and gestational weight gain (greater than 10 per cent). Missing data were excluded from the analysis.

Multiple birth pregnancies were excluded from the analysis as the sample size was too small for Huron Perth.

Pre-Pregnancy BMI

Most Huron Perth women had a pre-pregnancy BMI between 18.5 and 29.99 from 2013 to 2021 for singleton pregnancies *(Figure 1)*. For singleton pregnancies in Huron Perth and Ontario, the percentage with a pre-pregnancy BMI of 30.0 or higher increased significantly from 2013 to 2021 while the percentage with a pre-pregnancy BMI between 18.5 and 29.9 decreased *(data not shown)*. The percentage of singleton pregnancies with a pre-pregnancy BMI below 18.5 remained stable from 2013 to 2021 for Huron Perth and Ontario.

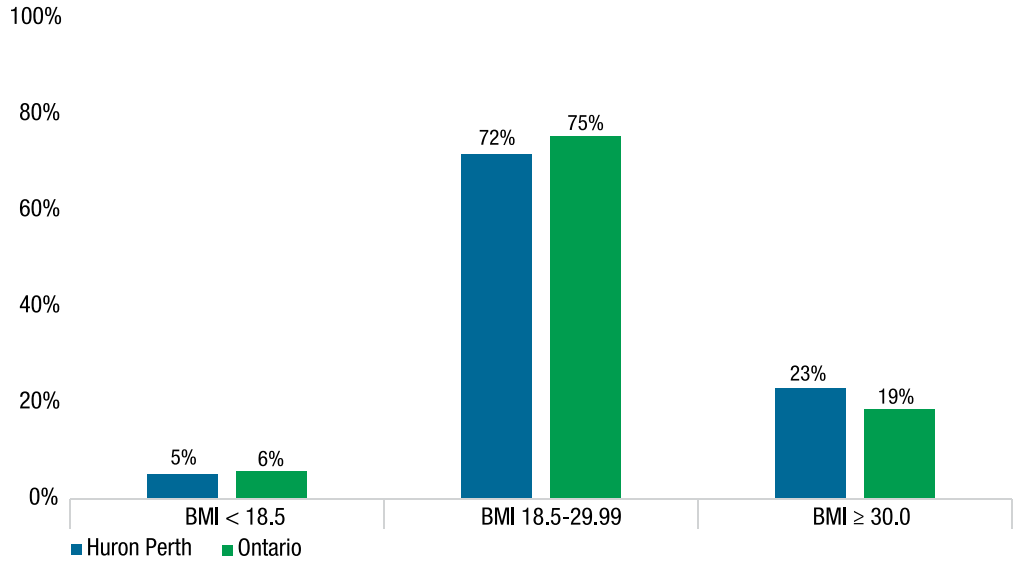


Figure 1 Percentage of singleton pregnancies by pre-pregnancy BMI, Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019, and 4 Apr 2024.

Gestational Weight Gain During Pregnancy

Half of Huron Perth women with a singleton pregnancy had a gestational weight gain that was above the recommended range from 2013 to 2021 *(Figure 2)*. All differences, between Huron Perth and Ontario and between weight gain ranges, in Figure 2 are significant.

About 70 per cent of singleton pregnancies, regardless of pre-pregnancy BMI, had gestational weight gain that was outside the recommended range *(Figure 2)*.

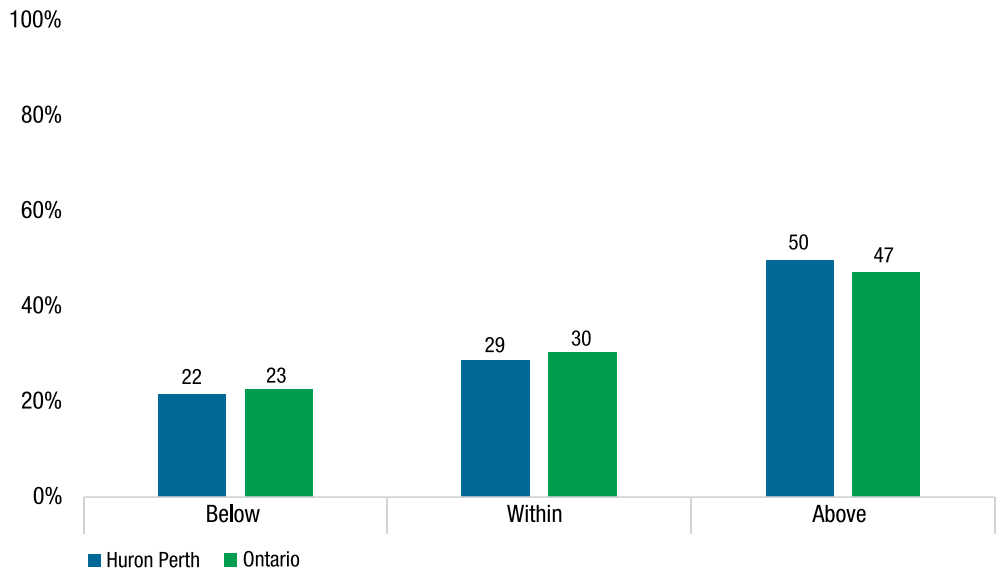


Figure 2 Gestational weight gain below, within, or above the recommended range for women with singleton pregnancies, Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019, and 4 Apr 2024.

1 O'Connor DL, Blake J, Bell R, Bowen A, Callum J, Fenton S, et al. Canadian Consensus on Female Nutrition: Adolescence, Reproduction, Menopause, and Beyond. J Obstet Gynaecol Can. 2016 Jun;38(6):508-554.e18.

2 Health Canada. Prenatal Nutrition Guidelines for Health Professionals: Gestational Weight Gain [Internet]. 2010 [cited 2024 Mar 8]. Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/healthy-weights/prenatal-guidelines-professionals-gestational-weight-gain.html

3 Canada PHA of. Effect of maternal weight on pregnancy outcomes [Internet]. 2016 [cited 2024 Aug 2]. Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/effect-maternal-weight-pregnancy-outcomes.html

4 Society of Obstetricians and Gynaecologists of Canada. Pregnancy Info. n.d. [cited 2024 Aug 1]. Weight gain during pregnancy. Available from: https://www.pregnancyinfo.ca/your-pregnancy/healthy-pregnancy/weight-gain-during-pregnancy/

5 Wagner B. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

6 Wharton S, Lau DCW, Vallis M, Sharma AM, Biertho L, Campbell-Scherer D, et al. Obesity in adults: a clinical practice guideline. Can Med Assoc J. 2020 Aug 4;192(31):E875–91.

Prenatal Class Attendance

What Is It?

The percentage of females who gave birth (live and still) who reported participating in prenatal education classes (online and in person) during their pregnancy, during a given time period.

Why Is It Important?

Prenatal education empowers pregnant individuals and their families to make informed choices by supporting them in accessing credible, evidence-based information. Prenatal classes cover a range of topics including pregnancy, birth, breastfeeding, newborn safety and care, mental well-being, and parenting.[1]

Monitoring the use of prenatal programs and services is important for identifying trends in uptake of prenatal education, identifying priority populations, and informing plans for the delivery of prenatal education programs in Huron and Perth.

What Does It Tell Us?

Pregnant females giving birth in Huron Perth, particularly Stratford, St. Marys, and Perth South, were more likely to report attending prenatal class during their pregnancy. The prenatal class could be in-person, online, or a combination of the two.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Extracted on 25 Oct, 2019 and 4 Nov 2022.

Limitations

Prenatal class attendance data should be interpreted with caution due to the high percentage of records with missing data. Overall, 5.2 per cent of Huron Perth records and 13.1 per cent of Ontario records from 2013 to 2021 are missing information on prenatal care but there are individual years where the percentage of records with missing data exceeds 10 per cent for Huron Perth.

Prenatal Class Attendance

Prenatal class attendance in Huron Perth has been stable over time; it is higher than Ontario (except for 2019) and there are regional differences *(Figure 1)*. The percentage of females giving birth who reported attending prenatal class was higher than Huron Perth in Stratford, St. Marys, and Perth South. In North Perth, Perth East, Ashfield-Colborne-Wawanosh, North Huron, Morris-Turnberry, Howick, and South Huron, attendance was lower than Huron Perth overall.

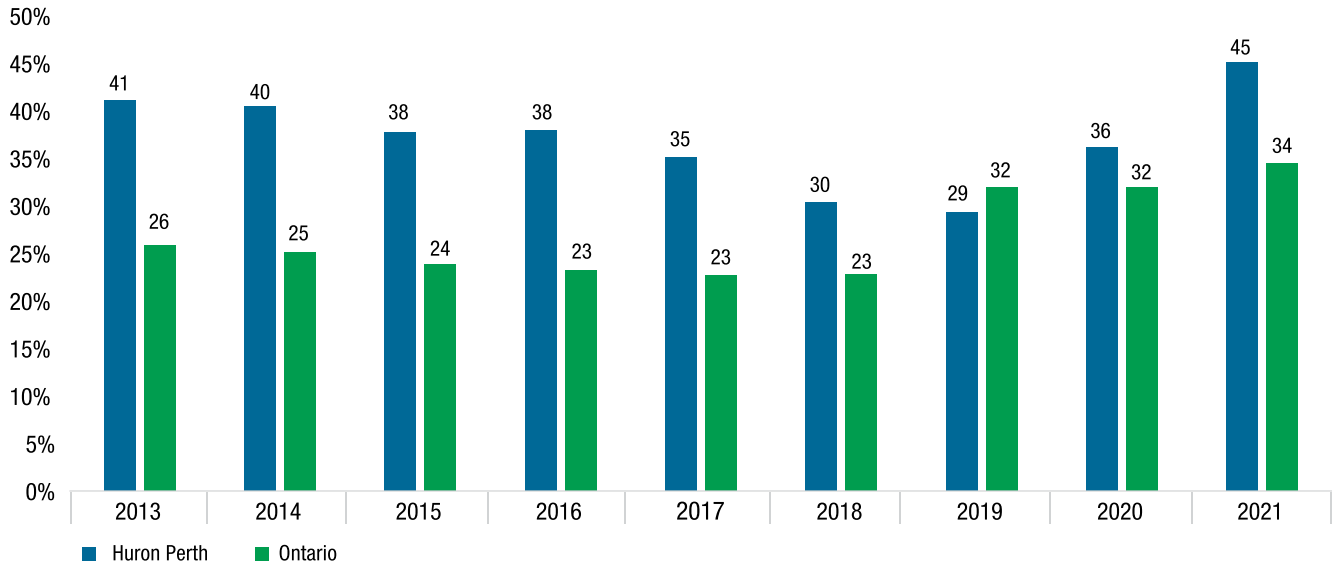


Figure 1 Percentage of females who gave birth (live or still) that reported attending a prenatal class

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Provided on 25 Oct, 2019 and 4 Nov 2022

1 Moola S. Family-centred maternity and newborn care national guidelines Chapter 4: Care during labour and birth [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2024 Mar 12].
Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-4.html

Birth

Birth Location

What Is It?

The percentage of females who give birth somewhere other than a hospital.

Out of hospital birth locations include home, birth centre, nursing station, midwifery clinic, and other Ontario locations.

Why Is It Important?

Increasing access to midwifery care across Canada since 1992 has led to an increase in the number of home or out-of-hospital births attended by registered midwives. Home birth is safe for low-risk individuals likely to have an uncomplicated vaginal birth.[1,2] Midwives are the only healthcare professionals who are specifically trained to attend out-of-hospital births.[3]

Home birth compared with hospital is associated with a higher rate of spontaneous vaginal birth and lower rates of postpartum hemorrhage, perineal trauma (third and fourth degree perineal tears) and of obstetric interventions, such as caesarean section, assisted vaginal birth, episiotomy, augmentation of labour with oxytocin, epidural or spinal analgesia/anesthesia. It's also associated with lower rates of use of narcotics and nitrous oxide for pain relief.[2,4] Higher rates of complications with hospital births are expected because births that are anticipated to be high risk are excluded from home birth.

People choose a home birth for many different reasons, such as finding their home a supportive and comfortable environment, feeling more in control in their home environment, experiencing a family-centred choice, and aligning with their philosophy of birth.[5] There may also be cultural considerations.

With some rural Ontario hospitals no longer offering some or all childbirth services, either permanently or on a temporary basis, expectant and new parents may need to travel to a distant hospital to access appropriate care.[6]

What Does It Tell Us?

Out of hospital births for the general population are becoming increasingly common in Huron Perth. Home births are also known to be preferred and more common than hospital births in local Anabaptist communities.

Nearly all the out of hospital births occurred at home. From 2013 to 2017, less than 1 per cent of out of hospital births occurred in a birth centre, nursing station, midwifery clinic, or other Ontario location (anything not listed, e.g., ambulance).

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019, and 4 Nov 2022.

Limitations

Records with missing data are excluded, however, fewer than six records across the province were missing birth location.

Birth Location

Huron Perth has significantly more births occurring out of hospital than Ontario though the trend is increasing over time for both regions *(Figure 1)*. The high percentage of out of hospital births in Huron Perth is due to births in Huron County and rural municipalities in Perth *(data not shown).*

Factors that may influence the higher percentage of out of hospital births include fewer hospital labour and delivery units in Huron County, Anabaptist communities in rural Huron Perth that prefer home births, and increased use of midwifery services. Additionally, during the COVID-19 pandemic, out of hospital births may have been preferred for a variety of reasons, such as hospital protocols limiting labour support to mitigate the spread of the virus or individual fear of acquiring the illness.[1]

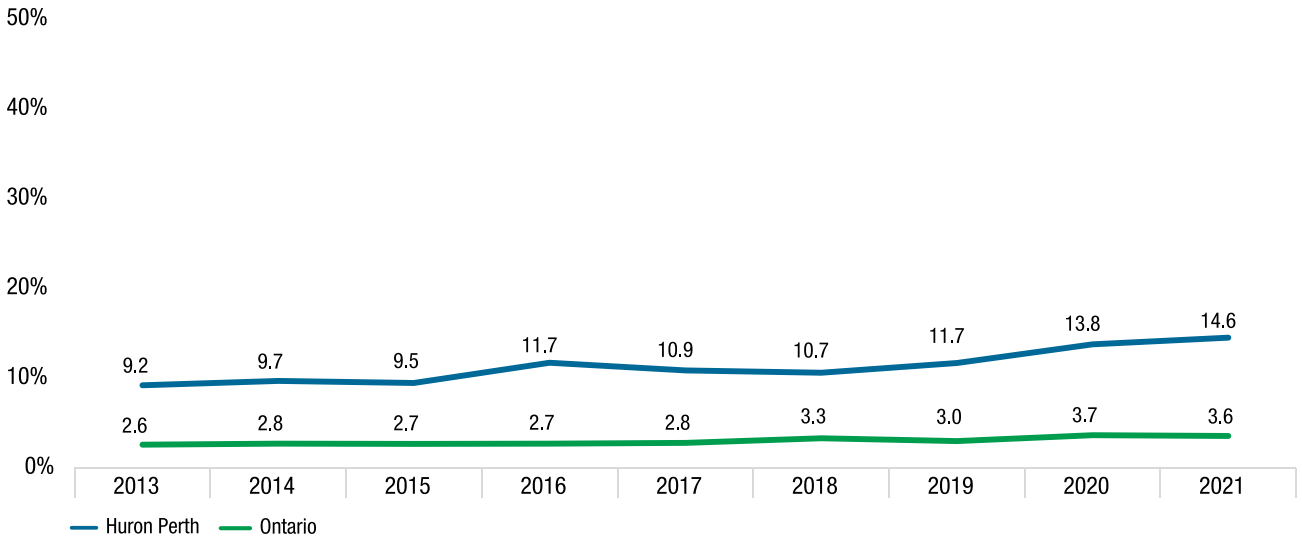


Figure 1 Percentage of females who gave birth out of hospital, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019, and 4 Nov 2022

1 Kornelsen J, et al. Chapter 8: Organization of services [Internet]. Ottawa, ON: Public Health Agency of Canada; 2022 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-8.html

2 Hutton EK, Cappelletti A, Reitsma AH, Simioni J, Horne J, McGregor C, et al. Outcomes associated with planned place of birth among women with low-risk pregnancies. CMAJ. 2016 Mar 15;188(5):E80–90.

3 Association of Ontario Midwives [Internet]. [cited 2024 Mar 12]. Midwifery Care. Available from: https://www.ontariomidwives.ca/midwifery-care

4 Expert Advisory Panel on Choice of Birthplace Guideline [Internet]. Association of Ontario Midwives; 2016. Available from: https://www.ontariomidwives.ca/sites/default/files/CPG per cent20supplemental per cent20resources/Choice per cent20of per cent20birthplace.pdf

5 Association of Ontario Midwives [Internet]. n.d. [cited 2024 Mar 8]. Why Give Birth at Home? Available from: https://www.ontariomidwives.ca/home-birth

6 Chapter 9: Epilogue [Internet]. Ottawa, ON: Public Health Agency of Canada; 2022 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-9.html

Delivering Healthcare Provider

What Is It?

This section of the report looks at the percentage of women giving birth by type of healthcare provider (HCP) who assisted with the delivery.

The per cent of women giving birth by type of healthcare provider (HCP) who assisted with the delivery is the total number of deliveries by HCP over the total number of women giving birth *(excluding missing data).*

Why Is It Important?

Women who receive early and regular prenatal care generally have better outcomes.[4] Further, studies suggest that a woman's positive birth experience may improve her adjustment to parenting, her self-care and her follow-up care and have a lasting, even lifelong, effect on her psychological well-being and the future health of her child.[1] A woman's experience is impacted by many factors; the ability to access care in her home community may be one factor that contributes to a positive prenatal and birth experience.

According to the Public Health Agency of Canada, "the autonomy of birthing persons is the highest ethical principal in childbirth"; this includes their decisions about where to give birth, the choice of provider, and supports.[5] However, this decision may be limited due to the availability and caseload of prenatal healthcare providers and due to geography. For example, local midwife services often have a waitlist; and obstetricians are only located in some urban areas of the counties.

Midwifery-led births have lower rates of interventions and less use of analgesia or anesthesia; women are more likely to experience a spontaneous vaginal birth.[6] Canadian mothers express higher rates of satisfaction with their birth experience when fewer interventions are used.[6] Midwives have expertise in low-risk pregnancy and birth, which are less likely to require medical intervention due to concerns or complications.

What Does It Tell Us?

Amongst the different delivery providers, midwives and family physicians are more likely to attend a childbirth in Huron Perth than Ontario. While the use of midwives increased from 2013 to 2021 in Huron Perth, the use of family physicians and obstetricians has decreased. Despite the decrease over time, obstetricians remain the most common healthcare provider attending births in Huron Perth.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Extracted data. Data Provided on April 29, 2024.

Limitations

Records missing healthcare provider data, which were less than one per cent of total birth records, were excluded.

Delivering Healthcare Provider

The percentage of Huron Perth births attended by family physician or obstetrician decreased from 2013 to 2021 while the percentage attended by a midwife or other healthcare provider increased. In figure 1, all trends over time are statistically significant.

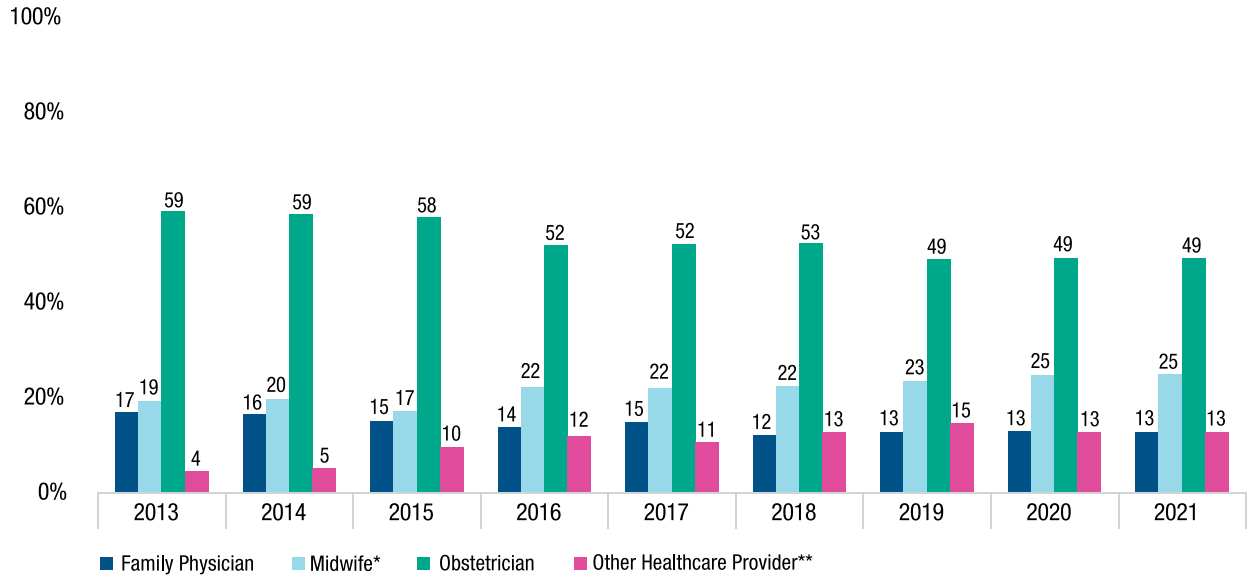


Figure 1 Percentage of women giving birth by type of healthcare provider who caught the baby during delivery, Huron Perth, 2013 to 2021

**Midwife includes registered midwife, Aboriginal midwife, and midwifery student. Midwife attended births occur at home or hospital.*
***Other healthcare provider includes resident, surgeon, registered nurse, paramedic, unattended (no healthcare provider), and others.*

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Extracted data. Data Extracted on Apr 29, 2024.

Women giving birth in Huron Perth are more likely to be attended by a family physician, midwife, or other healthcare provider than women in Ontario *(Figure 2)*. Although fewer Huron Perth women are attended by an obstetrician than previously, it is still the most common attending healthcare provider for women in Huron Perth and Ontario *(Figure 2)*. All differences in Figure 2 are statistically significant.

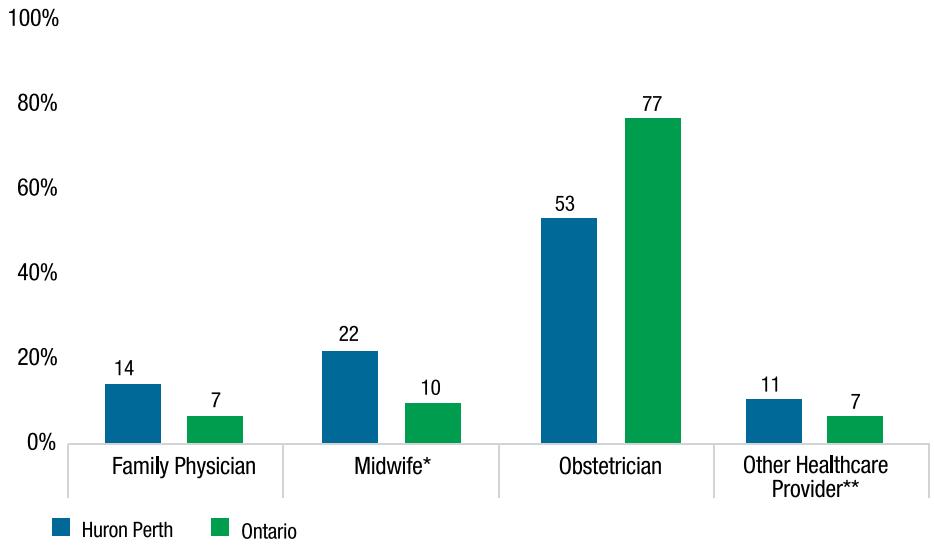


Figure 2 Percentage of women giving birth by type of healthcare provider who caught the baby during delivery, Huron Perth and Ontario, 2013 to 2021

**Midwife includes registered midwife, Aboriginal midwife, and midwifery student. Midwife attended births occur at home or hospital.*
***Other healthcare provider includes resident, surgeon, registered nurse, paramedic, unattended (no healthcare provider), and others.*

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Extracted data. Data Extracted on Apr 29, 2024.

1 Moola S, et al. Chapter 4: Care during labour and birth [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-4.html

2 The Vanier Institute of the Family. In Context: Understanding Maternity Care in Canada [Internet]. Ottawa, ON: The Vanier Institute of the Family; 2017 May [cited 2024 Mar 12]. Available from: https://vanierinstitute.ca/in-context-understanding-maternity-care-in-canada/

3 Hutton EK, Cappelletti A, Reitsma AH, Simioni J, Horne J, McGregor C, et al. Outcomes associated with planned place of birth among women with low-risk pregnancies. CMAJ. 2016 Mar 15;188(5):E80–90.

4 Wagner B, et al. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

5 Kornelsen J, et al. Chapter 8: Organization of services [Internet]. Ottawa, ON: Public Health Agency of Canada; 2022 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-8.html

6 Chapter 9: Epilogue [Internet]. Ottawa, ON: Public Health Agency of Canada; 2022 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-9.html

Labour Type and Delivery

What Is It?

The types of births occurring in Huron Perth and Ontario.

Spontaneous vaginal labour per cent is the number of females who delivered via spontaneous vaginal labour divided by the total number of females giving birth.

Induced vaginal labour per cent is the number of females who delivered via induced vaginal labour divided by the total number of females giving birth.

Planned caesarean section per cent is the number of females who delivered via planned caesarean section divided by the total number of females giving birth.

Unplanned caesarean section per cent is the number of females who delivered via unplanned caesarean section divided by the total number of females giving birth.

Why Is It Important?

Birth is a natural process and maternal and newborn interventions should only occur when the reasons to do so are well documented and evidence based.[1]

Compared to other types of delivery, vaginal delivery has less risk of injury and infection, shorter hospital stay, faster and less painful recovery, and no complications from surgery. While vaginal delivery is a normal process, some risks include tearing of the vagina or perineum during birth, problems with bladder or bowel control, and pain during sex.[2]

Induction of labour refers to the artificial initiation of contractions prior to the spontaneous onset of labour. Induction is indicated when the risks to the mother or baby of prolonging the pregnancy exceed the risks associated with induction.[1] There is a higher risk of caesarean section with an induction.[3]

Caesarean section, or C-section, is a surgical procedure that may be essential to preventing maternal or fetal injury or death in a complicated birth.[4,5] Compared with vaginal deliveries, C-sections are associated with increased risks of maternal morbidity and higher hospital costs;[4] other risks include the potential for increased bleeding or infection, longer recovery,[5,6] delays in establishing breastfeeding,[2,5] and increased potential of complications in future pregnancies.[5]

What Does It Tell Us?

Spontaneous vaginal labour is the most common type of labour for females giving birth in Huron Perth and Ontario, however the percentages declined over time in both regions *(Figure 1)*. The other three types of births - ordered from most to least common - have increased: vaginal induced labour, planned caesarean section and unplanned caesarean section *(Figures 1 and 2)*.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019, and 28 Sep 2023.

Limitations

Records with missing data were excluded. Less than 1 per cent of records in Huron Perth or Ontario were excluded.

Type of Birth

Huron Perth has a significantly higher per cent of spontaneous vaginal births than Ontario *(Figure 1)*. Within the Huron Perth region, women who live in North Perth, Perth East, Ashfield-Colborne-Wawanosh, North Huron, Morris-Turnberry, and Howick have a significantly higher per cent of spontaneous vaginal births than Huron Perth *(data not shown)*.

The Huron Perth pattern of a decrease in spontaneous vaginal births and increase in other birth types seen in Figure 1, is reflected in most of the municipalities within the region though the changes over time may not be significant due to smaller numbers *(data not shown)*. There are two exceptions to this pattern - in Goderich and West Perth. Goderich had a significant decrease in vaginal induced labour from 2013 to 2021 while changes in the other three birth types were too small to be significant. West Perth had a significant decrease in planned caesarean sections from 2013 to 2021 while changes in the other three birth types were too small to be significant.

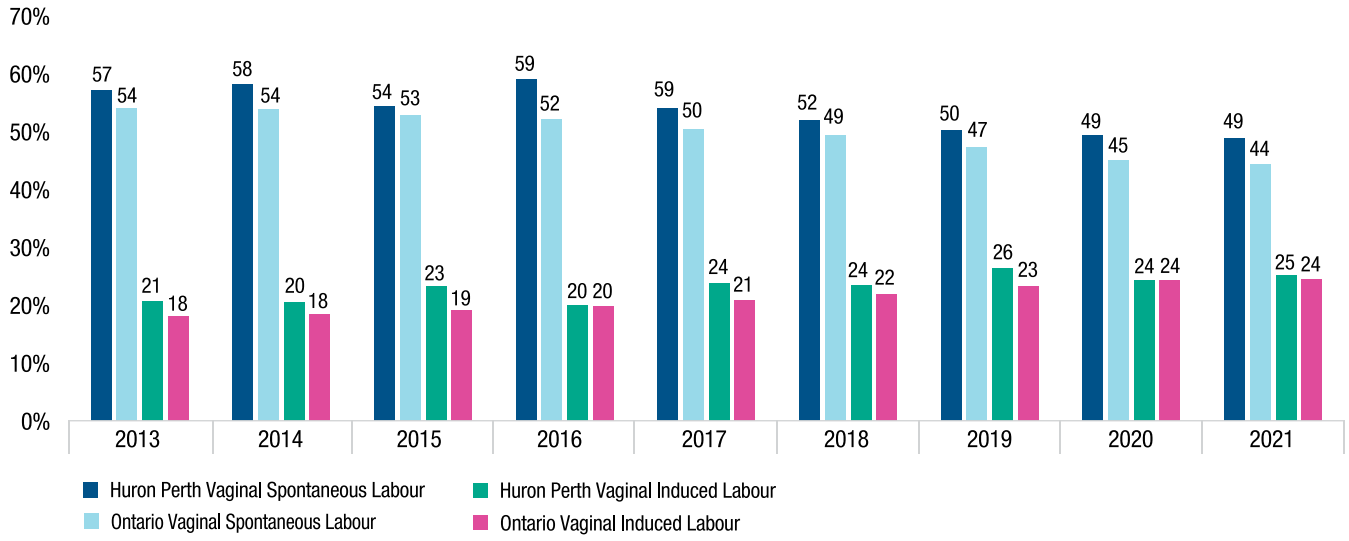


Figure 1 Per cent of females giving birth by vaginal spontaneous labour or vaginal induced labour, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Extracted on 25 Oct, 2019, and 28 Sep 2023

Huron Perth has a lower percentage of planned and unplanned caesarean sections than Ontario *(Figure 2)* however, three municipalities stand out with higher rates than Huron Perth for 2013 to 2021 combined; Stratford, St. Marys, and Perth South *(data not shown)*. Stratford was significantly higher than Huron Perth for planned and unplanned caesarean sections. St. Marys and Perth South were higher for unplanned caesarean sections.

The increase in planned caesarean sections over time in Huron Perth is driven by two municipalities - Stratford and North Perth. West Perth has a decreasing trend over time while any changes for the municipalities were too small to be statistically significant *(data not shown)*.

The increase in unplanned caesarean sections is due to three municipalities - Perth East, Huron East, and South Huron. Any changes over time in the remaining municipalities for unplanned caesarean section were too small to be statistically significant *(data not shown)*.

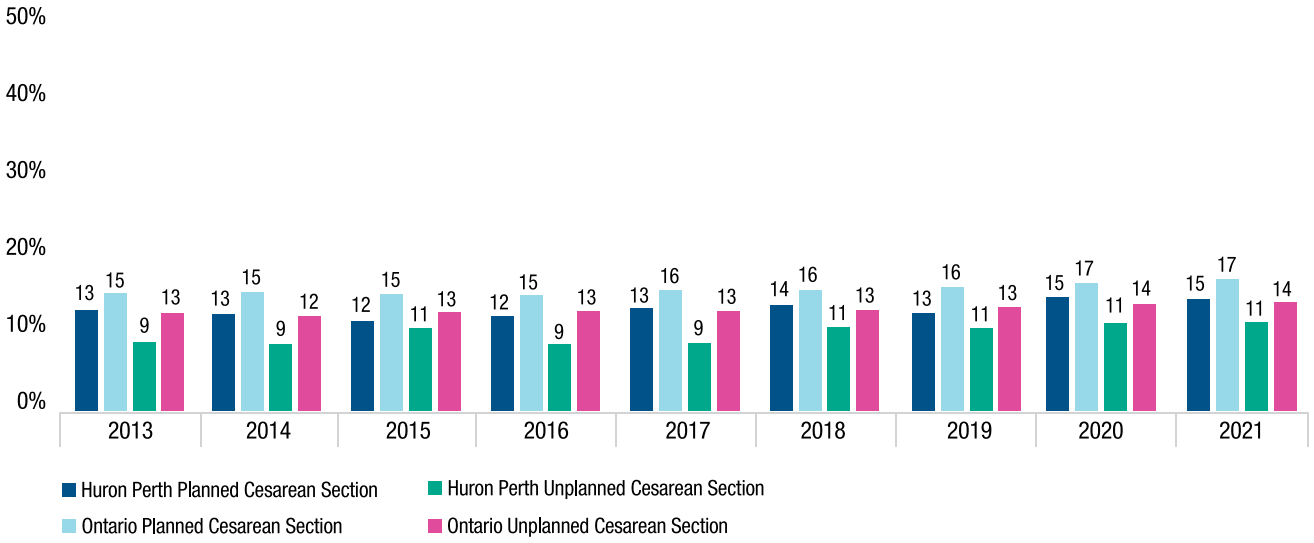


Figure 2 Per cent of females giving birth by planned or unplanned cesarean section, Huron Perth and Ontario 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Extracted on 25 Oct, 2019, and 28 Sep 2023

1 Moola S, et al. Chapter 4: Care during labour and birth [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-4.html

2 BC Women's Hospital + Health Centre. Provincial Health Services Authority. n.d. [cited 2024 Mar 20]. Types of Birth. Available from: http://www.bcwomens.ca/health-info/pregnancy-parenting/types-of-birth

3 Sunnybrook Hospital [Internet]. n.d. [cited 2024 Apr 17]. Inducing Labour - Pregnancy Information. Available from: https://sunnybrook.ca/content/?page=crib-induced-labour-pregnancy

4 Canadian Institute for Health Information [Internet]. [cited 2024 Mar 12]. Low Risk Caesarean Sections. Available from: https://www.cihi.ca/en/indicators/low-risk-caesarean-sections

5 World Health Organization [Internet]. 2021 [cited 2024 Mar 12]. Caesarean section rates continue to rise, amid growing inequalities in access. Available from: https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access

6 Caesarean section (C-section) – Pregnancy Info [Internet]. [cited 2024 Aug 14]. Available from: https://www.pregnancyinfo.ca/birth/delivery/caesarean-section/

Live Births

What Is It?

Live births are infants that shows signs of life, such as a heartbeat, immediately after birth, regardless of pregnancy duration. A live birth is not necessarily a viable birth.

The crude live birth rate is the total number of live births divided by the total population in the same time period.

Live births by maternal age are stratified by the mother's age on the day she gave birth.

Live births by parity are stratified by the number of times a woman previously gave birth (live and stillbirths).

Counts of live births are presented by data source - Better Outcomes Registry Network (BORN) and Vital Statistics. BORN is the data source used for most of this report because it contains more information about the infant and mother. Vital Statistics contains limited data from the Ontario birth registration.

Why Is It Important?

Like pregnancy and fertility rates, live birth rates are an indicator of population growth and the reproductive capacity of a population. The number of live births in Huron and Perth can be used to inform program planning and service delivery.

What Does It Tell Us?

There has been an increase in the number of births and the live birth rate from 2013 to 2021 in Huron Perth. The increase in live birth rate indicates that the increase in births is higher than the increase in population occurring in the region over the same time period.

The Huron Perth crude live birth rate has increased from 2013 to 2021 while the Ontario birth rate declined *(Figure 1).* Also, Huron Perth women giving birth were more likely to be younger and have higher parity than Ontario *(Figure 2).*

The count of live births in Huron Perth is similar in BORN and Vital Statistics. Data on women and infants during pregnancy and birth are entered into BORN by licensed healthcare providers including midwives, nurses, and physicians. Vital Statistics contains information from the Ontario live birth registration if the parent and healthcare provider both completed and submitted the required forms. The similarity between the two data sources indicates either can be used to better understand reproductive heath in Huron Perth.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct, 2019, and 1 Jan, 2023.

Birth Data - Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted Jun 6, 2024.

Statistics Canada. Table 17-10-0152-01 Population estimates, July 1, by census division, 2021 boundaries, IntelliHEALTH ONTARIO

Limitations

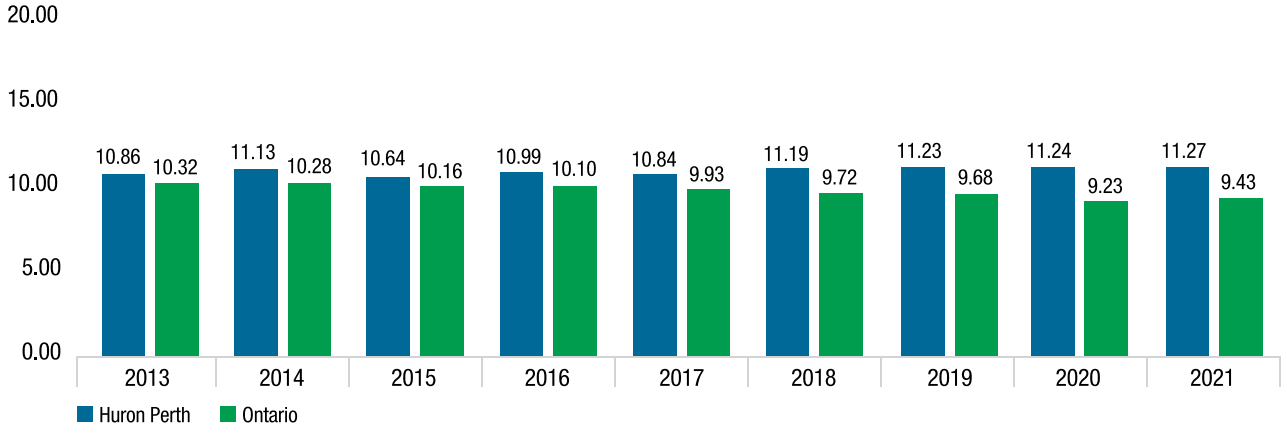
Under-registration of live births as part of Vital Statistics, particularly among vulnerable populations, is a known problem in Ontario. From 1991 to 2010, 19 to 50 per cent of infant deaths in Ontario could not be linked to a birth registration in Vital Statistics.[1]

Live births with an unknown maternal age or unknown parity are excluded from the respective graphs. Less than 1 per cent of live births were excluded due to missing maternal age or parity.

Crude Live Birth Rate

The crude live birth rate increased significantly from 2013 to 2021 in Huron Perth while the Ontario rate declined *(Figure 1).*

Figure 1 Crude live birth rate (per 1,000 population), Huron Perth and Ontario 2013 to 2021



Data sources: (1) Birth Data [2013-2021] - Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Extracted Jun 6, 2024. (2) Statistics Canada. Table 17-10-0152-01 Population estimates, July 1, by census division, 2021 boundaries, IntelliHEALTH ONTARIO.

Live Births by Maternal Age

Mothers were likely to be younger in Huron Perth than Ontario. Huron Perth has a significantly higher percentage than Ontario of births among the 15 to 29 year old groups *(Figure 2)*. In Huron Perth, the highest percentage of live births is to women 25 to 29 years of age. In contrast, the 30-34 year age group has the highest percentage of live births in Ontario. All differences in Figure 2 are statistically significant.

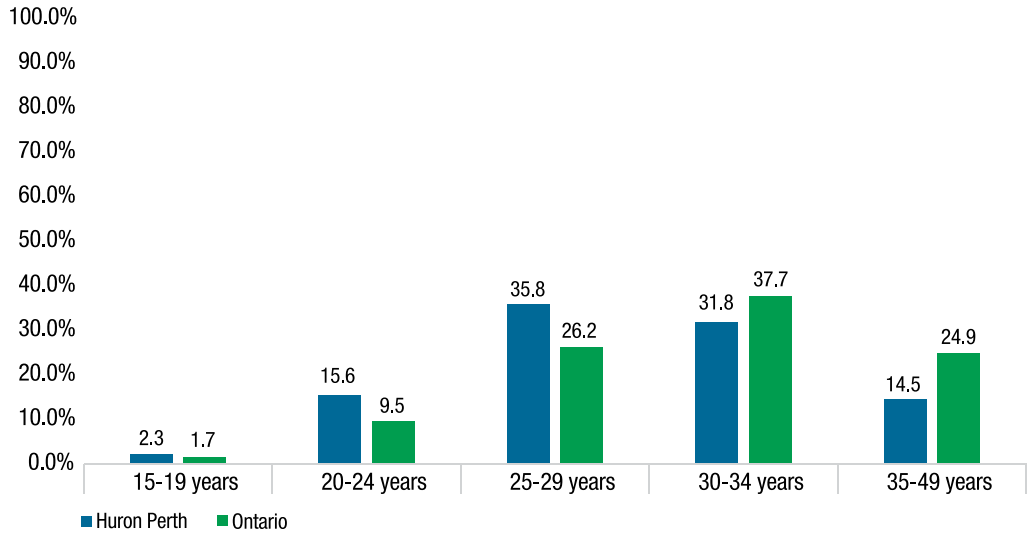


Figure 2 Percentage of live births by maternal age, Huron Perth and Ontario, 2013 to 2021

Data source: Birth Data [2013 to 2021] - Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Extracted Jun 6, 2024.

Live Births by Parity

Huron Perth women were more likely to have had at least two prior births (live or stillbirth) compared to Ontario women who were more likely to have had one or no prior births *(Figure 3)*. All differences in Figure 3 are statistically significant.

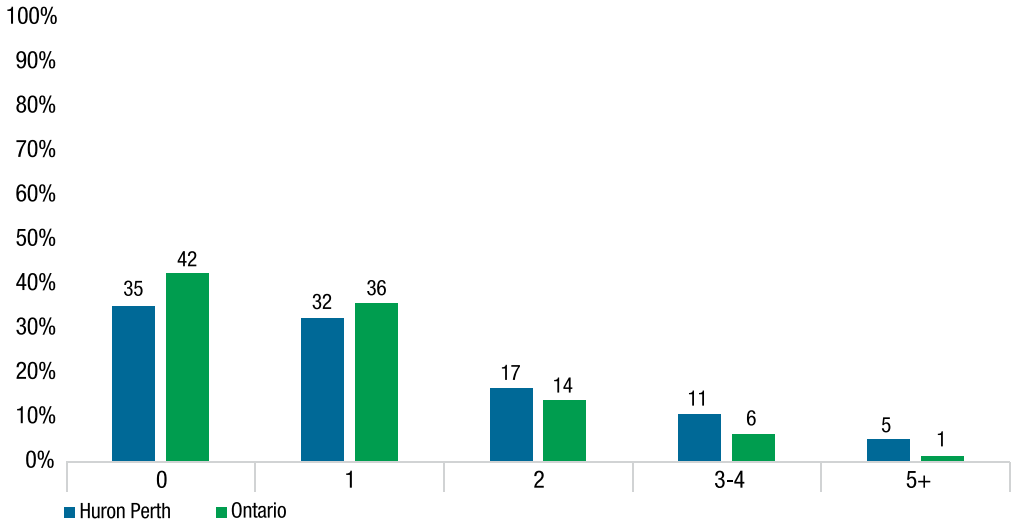


Figure 3 Percentage of live births by parity for women 15-49 years, Huron Perth and Ontario 2013 to 2021

Data source: Birth Data [2013 to 2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted 6 Jun 2024.

Live Births by Data Source

The number of births reported in BORN and Vital Statistics are similar. From 2013 to 2021, the counts differ by less than 60 births *(Figure 4).*

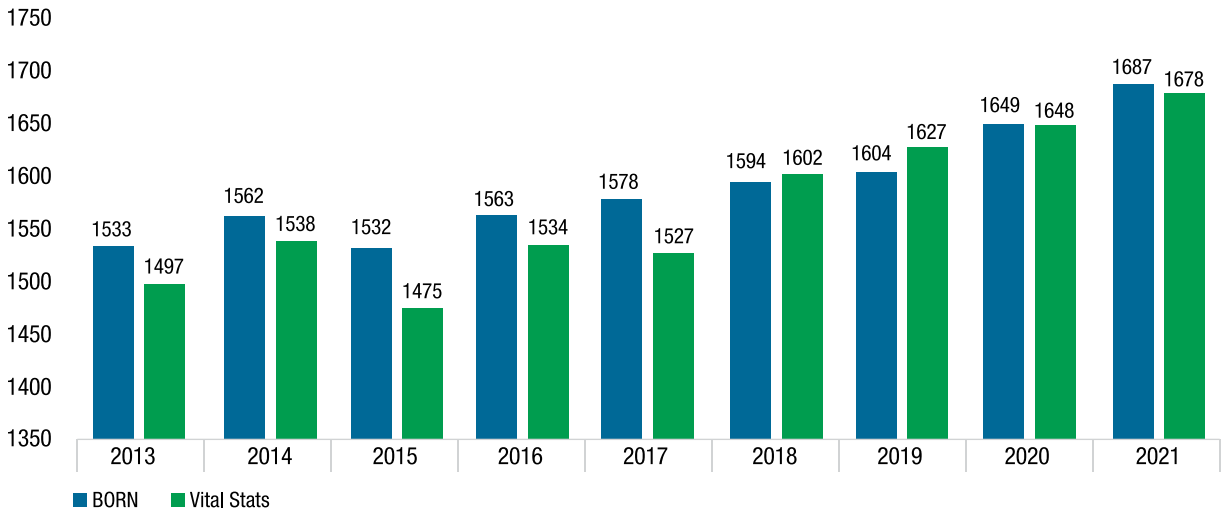


Figure 4 Number of live births, by data source, Huron Perth, 2013 to 2021

Data sources: (1) Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 19 Oct 2019 and 28 Sep 2023. (2) Birth Data [2013 to 2021], Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO, extracted 6 Jun 2024.

1 Fell DB, Park AL, Sprague AE, Islam N, Ray JG. A new record linkage for assessing infant mortality rates in Ontario, Canada. Can J Public Health. 2020 Apr;111(2):278–85.

Stillbirths

What Is It?

A stillbirth is an infant born during or after 20 weeks of gestation with no sign of life or an infant weighing at least 500 grams at birth with no sign of life. For example, an infant born at 19 weeks gestation with no sign of life and weighing 500 grams is counted as a stillbirth as is an infant born at 21 weeks of gestation with no sign of life and weighing 490 grams.

The crude stillbirth rate is the number of stillbirths per 1,000 total births in an area during a given time period.

Why Is It Important?

Causes of stillbirths are often unknown. However, some possible reasons for stillbirth may include trauma or exposure to toxic substances (e.g., use of tobacco or other substances), advanced maternal age, congenital anomalies in the fetus, problems with the placenta or umbilical cord, or maternal health issues like illness or infection.[1,2] Almost half of fetal losses occur in presumed uncomplicated pregnancies that catch parents and medical personnel unaware.[3]

Regardless of the cause, studies indicate parents suffer emotional distress including depression, post-traumatic stress disorder and anxiety. These effects can persist into subsequent pregnancies.[3,4]

What Does It Tell Us?

Due to the small numbers, Huron Perth stillbirth rates are variable and counts for some years were suppressed. The stillbirth rate for 2013 to 2021 in Huron Perth was 4.5 stillbirths per 1,000 births and does not differ significantly from the Ontario annual stillbirth rates for the same period. Ontario stillbirth rates have been stable over time *(Figure 1).*

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2018 to 2021). Resource Type: Tabulated data. Data Extracted on 20 Nov, 2018, 25 Oct, 2019, and 1 Jan, 2023.

Limitations

The stillbirth rate does not include stillbirths caused by pregnancy termination at or after 20 weeks gestation. There is limited research on late term abortions at or after 20 weeks gestation; however, two studies indicate they include a large proportion of women with wanted pregnancies seeking a late term abortion because of maternal or fetal conditions.[5] Pregnancies that were terminated because of fetal conditions that would have resulted in a stillbirth are not included in the data.

A number of data quality concerns have been identified for the stillbirth data. Stillbirths among births weighing less than 500g but at or after 20 weeks gestation may be more prevalent due to maternal age or country of birth of the women in a jurisdiction. These stillbirths at the low end of birth weight or gestational age may not be consistently classified across jurisdictions in Ontario.[6,7] The rate of stillbirth may be affected by temporal and regional variations in the definition of stillbirth and birth registration practices, especially for stillbirths and live births at the low end of birth weight or gestational age range.[8]

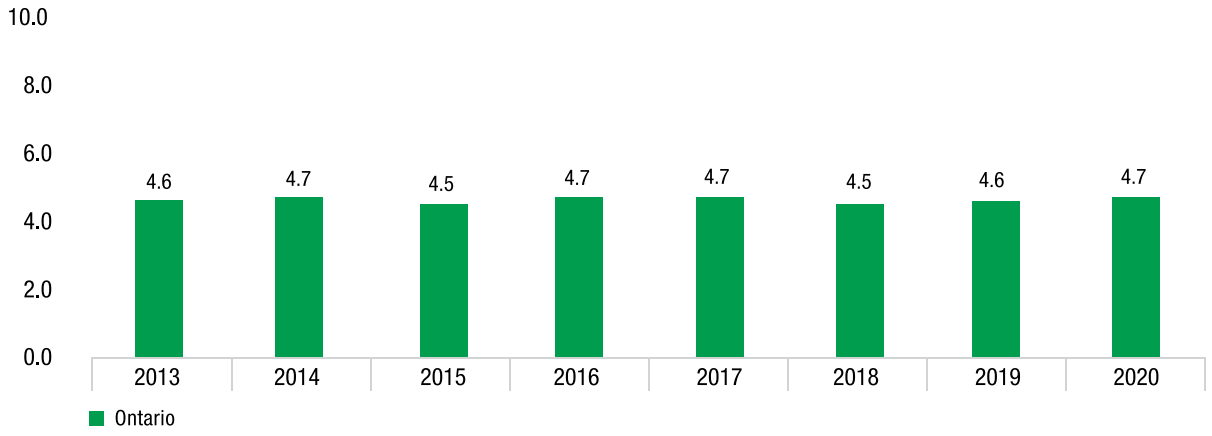


Figure 1 Crude stillbirth rate (per 1,000 births) for Ontario, 2013-2020

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2020. Resource Type: Tabulated data. Data provided on 25 Oct, 2019, and 1 Jan, 2023.

1 National Health Services, UK [Internet]. 2017 [cited 2024 Mar 8]. Stillbirth - Causes. Available from: https://www.nhs.uk/conditions/stillbirth/causes/

2 Better Outcome Registry & Network. Number of live and stillbirths among infants born in Ontario, by COVID-19 Vaccination Status [Internet]. 2021 [cited 2024 Mar 8]. Available from: https://www.bornontario.ca/en/news/number-of-live-and-stillbirths-among-infants-born-in-ontario-by-covid-19-vaccination-status.aspx

3 Wagner B. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

4 Ladhani NNN, Fockler ME, Stephens L, Barrett JFR, Heazell AEP. No. 369-Management of Pregnancy Subsequent to Stillbirth. J Obstet Gynaecol Can. 2018 Dec;40(12):1669–83.

5 Demont C, Dixit A, Foster A. Later gestational age abortion in Canada: A scoping review. Can J Hum Sex. 2023 Apr;32(1):51–62.

6 Joseph KS, Allen A, Kramer MS, Cyr M, Fair M. Changes in the registration of stillbirths < 500 g in Canada, 1985-95. Fetal-Infant Mortality Study Group of the Canadian Perinatal Surveillance System. Paediatr Perinat Epidemiol. 1999 Jul;13(3):278–87.

7 Joseph KS, Lee L, Arbour L, Auger N, Darling EK, Evans J, et al. Stillbirth in Canada: anachronistic definition and registration processes impede public health surveillance and clinical care. Can J Public Health. 2021 Aug 1;112(4):766–72.

8 Joseph KS, Kramer MS. Recent trends in Canadian infant mortality rates: effect of changes in registration of live newborns weighing less than 500 g. Can Med Assoc J. 1996 Oct;155(8):1047–52.

Multiple Births

What Is It?

The multiple birth rate refers to the number of deliveries involving multiple births, per 100 deliveries during a given period of time. Multiple births can include twins, triplets, quadruplets, or higher order multiple births.

Why Is It Important?

Multiple gestation pregnancies can put both mothers and infants at a greater risk of serious health issues. Women pregnant with multiples are at a greater risk of gestational diabetes, hypertension, miscarriage, pre-eclampsia, caesarean section delivery, and complications during delivery.[1–3] Infants have a greater risk of low birth weight, preterm birth, death within the first week, as well as many other health issues.[3,4]

Fertility treatments increase the likelihood of a multiple pregnancy. Multiple births in Canada has increased along with a rise in assisted reproductive technology (ART).[1,3,5] Canadians experiencing infertility (e.g., women who have delayed childbearing), single parents, and same-sex couples are increasingly turning to ART.[6] However, in more recent years, this growth has slowed somewhat, due to improvements in ART leading to fewer multiple births.[7]

What Does It Tell Us?

The multiple birth rate in Huron Perth is similar to Ontario *(Figure 1)*. Although Ontario has had a decrease in the number of deliveries involving multiple births over time, Huron Perth's rate has remained stable from 2013 to 2021. In Huron Perth and Ontario, the rate of multiple births increases with maternal age *(Figure 2)*.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. BORN Information System [2013 to 2021], extracted October 25, 2019 and April 4, 2024.

Limitations

Records missing information on the number of fetuses, which were less than one per cent of total pregnancies, were excluded.

Multiple Birth Rates

The multiple birth rate in Huron Perth was similar to Ontario from 2013 to 2021 *(Figure 1)*. During that period, Huron Perth had an average of 24 deliveries per year involving two or more infants. Although there is more variation in the multiple birth rate over time in Huron Perth due to small numbers, the changes are not statistically significant. Ontario did have a significant decrease in the multiple birth rate from 2013 to 2021.

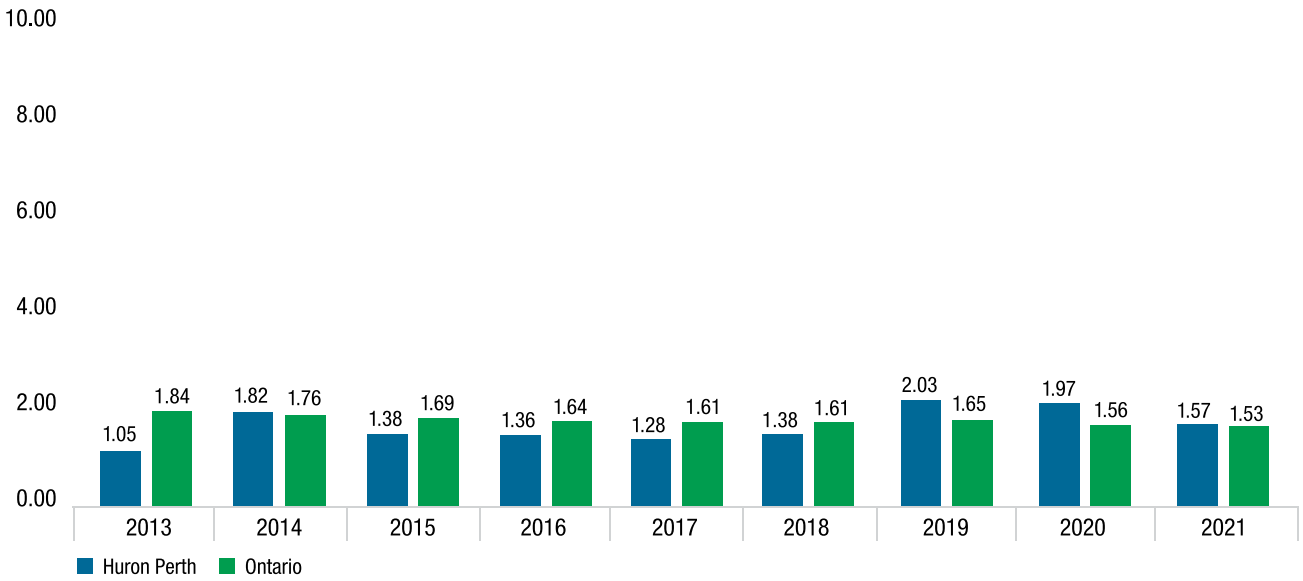


Figure 1 Multiple birth rate (per 100 deliveries), Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data provided on 25 Oct 2019, and 4 Apr 2023.

For 2013 to 2021 combined, the multiple birth rate increased as maternal age increased for Huron Perth and Ontario *(Figure 2)*. The differences between the age groups are statistically significant for Huron Perth and Ontario. Combining nine years of data also makes it possible to see significant differences between Huron Perth and Ontario in each age group. Huron Perth has a lower multiple birth rate than Ontario for women under 35 years of age and a higher multiple birth rate for women 35 years and older.

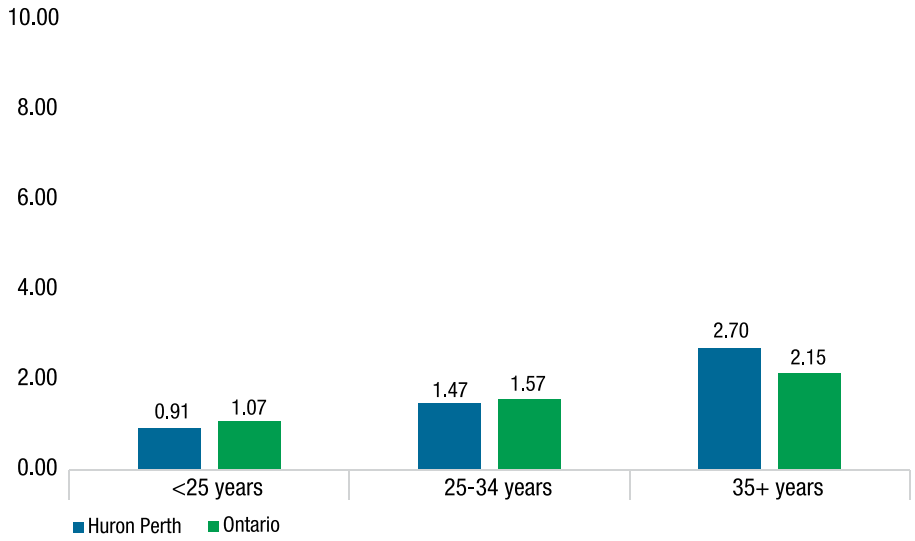


Figure 2 Multiple birth rate (per 100 deliveries) by maternal age group, Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Extracted on 25 Oct 2019, and 4 Apr 2023.

1 HealthLink BC [Internet]. [cited 2024 Mar 21]. Multiple Pregnancy: Twins or More. Available from: https://www.healthlinkbc.ca/pregnancy-parenting/pregnancy/twins-and-other-multiples/multiple-pregnancy-twins-or-more

2 Wagner B, et al. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

3 Okun N, Sierra S, Wilson RD, Audibert F, Brock JA, Campagnolo C, et al. Pregnancy Outcomes After Assisted Human Reproduction. J Obstet Gynaecol Can. 2014 Jan 1;36(1):64–83.

4 Public Health Agency of Canada. Government of Canada. 2017 [cited 2024 Mar 21]. National Multiple Births Day - Data Blog - Chronic Disease Infobase. Available from: https://health-infobase.canada.ca/datalab/multiple-births-blog.html

5 Moola S, et al. Chapter 4: Care during labour and birth [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-4.html

6 Health Canada. Toward a strengthened Assisted Human Reproduction Act [Internet]. 2017 [cited 2024 Sep 24]. Available from: https://www.canada.ca/en/health-canada/programs/consultation-assisted-human-reproduction/document.html

7 Society of Obstetricians and Gynaecologists of Canada. Pregnancy Info. n.d. [cited 2024 Apr 18]. Assisted Reproduction. Available from: https://www.pregnancyinfo.ca/before-you-conceive/human-reproduction/assisted-reproduction/

Infant Health

Gestational Age

What Is It?

The average length of pregnancy is 280 days, or 40 weeks, counted from the first day of the woman's last menstrual period.[1]

Preterm birth is defined as a birth before 37 weeks of gestational age. Term birth is defined as a birth between 37 and 41 weeks of gestational age. Post-term birth is defined as a birth on or after 42 weeks of gestational age.

Why Is It Important?

The earlier an infant is born, the greater the risk of adverse health outcomes, including death.[2] Examples of short and long-term health issues premature infants may face include breathing and feeding/digestive difficulties, cerebral palsy, developmental delay, and vision and hearing impairments. Preterm births (babies born alive before 37 weeks[3]) may also adversely affect or challenge families in other ways such as financially and emotionally.[2,4,5]

Causes of preterm births are numerous, complex, and in many cases not well understood. However, several factors associated with preterm births include multiple birth status, maternal diabetes and hypertension, younger (adolescent) or older (35+) maternal age, previous preterm birth, tobacco, alcohol and substance use during pregnancy, stress, infection (including COVID-19), and lower income.[4–6]

Most women who give birth after their due dates have uncomplicated labour and give birth to healthy babies. However, post-term (any pregnancy after 42 weeks[7]) pregnancies also can present health risks for both a mother and her baby. Women with post-term pregnancies (particularly if the baby is large) have a greater risk of requiring an assisted vaginal birth or caesarean section, as well as other delivery complications.[1,7] Some of the risks of post-term birth for infants include shoulder dystocia, meconium in the lungs, decreased amniotic fluid and stillbirth.[1,7]

As with preterm births, causes of post-term births are not very well understood. Several factors are known to increase the chance of a post-term births, including being a first time mother (lower parity), being an older mother, higher body mass index, depression/anxiety, and previously having a post-term pregnancy.[1,7]

What Does It Tell Us?

Most (more than 90 per cent) of the births in Huron Perth are term births *(Figure 1)*. Huron Perth has significantly fewer preterm births than Ontario but similar term and post-term births. The highest rate of preterm births occurs in the 35+ age group though the differences between the age groups is small *(Figure 2)*.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. BORN Information System [2013 to 2021], extracted on April 29, 2024.

Limitations

Records missing gestational age data, which were less than one per cent of total births, were excluded.

Gestational age data can be affected by recall errors, post-conception bleeding, irregular or long/short menstrual cycles, delayed ovulation, and pregnant women or partner's desire to indicate a later conception.[8,9] These types of errors have become less of an issue in the past decade with the use of ultrasound technology in Ontario to estimate gestational age.[8,9]

Gestational Age Rates

Most births are at term *(Figure 1)* with seven to eight per cent occurring preterm and one per cent or fewer postterm. Huron Perth had significantly fewer preterm births than Ontario for 2013 to 2021 combined *(Figure 1)*. There were no significant differences between Huron Perth and Ontario for term and post-term births. In Ontario, the percentage of preterm births has increased significantly over time but remained stable in Huron Perth *(data not shown)*. Stratford had a significantly higher rate of preterm births while Perth East had a significantly lower rate of preterm births than the rest of Huron Perth for 2013 to 2021 combined. *(data not shown)*. Although the combined 2013 to 2021 preterm birth rate for Bluewater, Morris-Turnberry and Howick and Central Huron did not differ significantly from Huron Perth, all four had significant changes in their preterm birth rates over time. The preterm birth rate decreased significantly from 2013 to 2021 for Central Huron and increased significantly for Bluewater and Morris-Turnberry and Howick.

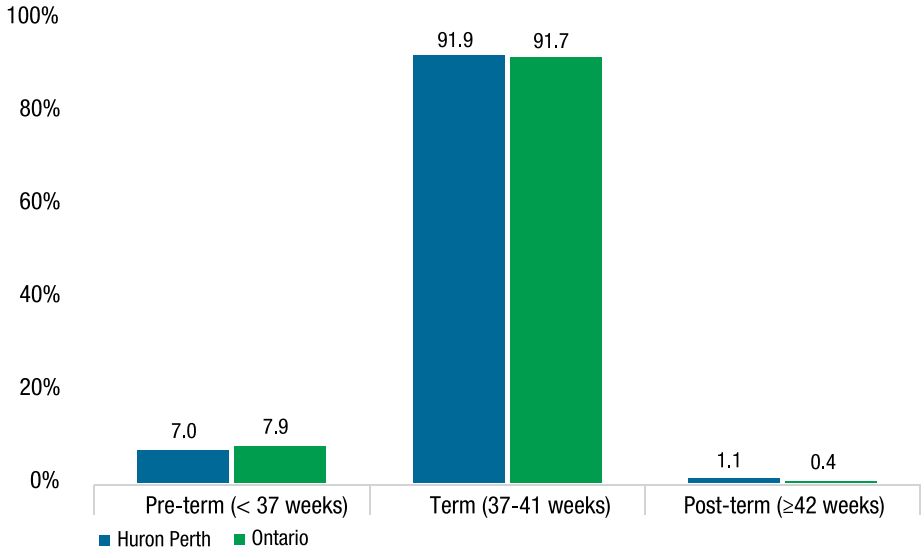


Figure 1 Gestational age rates (per 100 live births), Huron Perth and Ontario, 2013 to 2021 combined

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Analytical Report Tool Extracted on 29 Apr 2024.

The percent of preterm births does differ significantly between maternal age groups *(Figure 2).* Preterm births are most likely to occur in the 35+ age group and least likely to occur in the 25 to 34 age group. Within Huron Perth, the rate of preterm births increased significantly from 2013 to 2021 for women 35+ years but remained stable for women under 35 years *(data not shown)*. In contrast, the Ontario preterm birth rate increased significantly for women under 35 years and decreased significantly for women 35+ years from 2013 to 2021 *(data not shown)*.

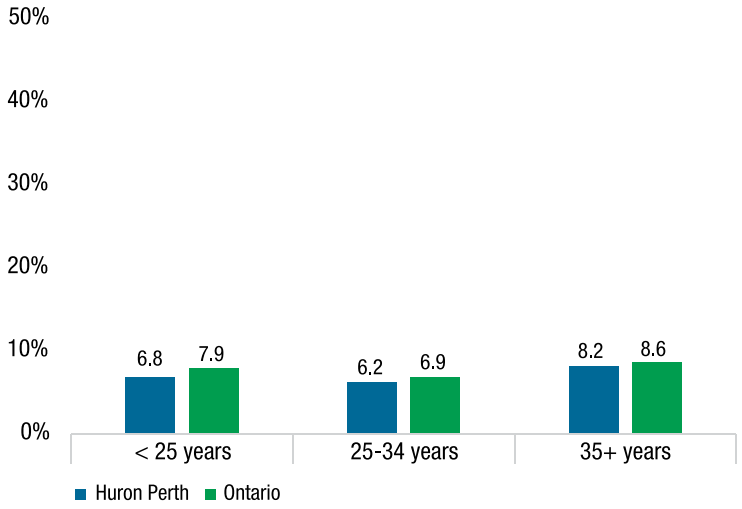


Figure 2 Preterm birth rate (<37 weeks completed gestation), by mother's age group, Huron Perth and Ontario, 2013 to 2021 combined

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Extracted on 25 Oct 2019, and 4 Apr 2023.

1 The American College of Obstetricians and Gynecologists [Internet]. 2023 [cited 2024 Mar 21]. When Pregnancy Goes Past Your Due Date. Available from: https://www.acog.org/womens-health/faqs/when-pregnancy-goes-past-your-due-date

2 Moore GP, Daboval T, Moore-Hepburn C, Lemyre B. Counselling and management for anticipated extremely preterm birth: Informing CPS statements through national consultation. Paediatr Child Health. 2017 Sep 1;22(6):330–3.

3 Moola S, et al. Chapter 4: Care during labour and birth [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-4.html

4 World Health Organization [Internet]. 2023 [cited 2024 Mar 21]. Preterm birth. Available from: https://www.who.int/news-room/fact-sheets/detail/preterm-birth

5 Morin F, Chalmers B, Ciofani L, deMontigny F, Gower S, Hanvey L, et al. Chapter 7: Loss and grief [Internet]. Ottawa: Public Health Agency of Canada; 2020 [cited 2024 Apr 18]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-7.html

6 Centers for Disease Control and Prevention [Internet]. n.d. [cited 2024 Mar 21]. Preterm Birth. Available from: https://www.cdc.gov/maternal-infant-health/preterm-birth/?CDC_AAref_Val=https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm

7 Management of the Uncomplicated Pregnancy Beyond 41+0 Weeks' Gestation [Internet]. Association of Ontario Midwives; [cited 2024 Mar 21]. Available from: https://www.ontariomidwives.ca/sites/default/files/CPG-Management-uncomplicated-pregnancy-beyond-41-weeks-gestation-Summary-PUB.pdf

8 You JJ, Alter DA, Stukel TA, McDonald SD, Laupacis A, Liu Y. Proliferation of prenatal ultrasonography. Can Med Assoc J. 2010 Feb 9;182(2):143–51.

9 Association of Public Health Epidemiologists in Ontario. Association of Public Health Epidemiologists in Ontario. 2013 [cited 2024 Aug 7]. Core indicators for pubic health in Ontario: Preterm birth rate. Available from: http://core.apheo.ca/index.php?pid=140

Birth Weights

What Is It?

Birth weight rates by weight category are the total number of live births in that weight category per 100 live births over a given period of time (includes both singleton and multiple births).

Birth weight categories	Weight range (grams)
Extremely low	500-999
Very low	1000-1499
Moderately low	1500-2499
Normal	2500-4499
High	4500+

Small for gestational age refers to singleton live births with weights below the tenth per centile for their gestational age and sex.

The small for gestational age rate is the number of small for gestational age births per 100 live singleton births in a region over a given period of time.

Large for gestational age refers to singleton live births with weights above the ninetieth per centile for their gestational age and sex.

The large for gestational age rate is the number of large for gestational age births per 100 live singleton births in a region over a given period of time.

Why Is It Important?

A baby with a low birth weight may have been born too early (premature), too small, or both.[1]

Low birth weight is defined as weight less than 2500grams.[2] Low birth weight is a major risk factor for infant mortality[1,3,4] and is often associated with being born prematurely.[3] Infants with a low birth weight are also at an increased risk for many health and developmental issues, such as learning difficulties, hearing and visual impairments, and chronic respiratory problems.[1,3]

Small for gestational age (SGA) infants may appear physically or neurologically mature, but are smaller than other babies of the same gestational age.[2] Many SGA infants are healthy but may be small because their parents are small.[5,6] SGA may also be the result of fetal growth problems such as intrauterine growth restriction, where the unborn baby receives less oxygen and nutrients than it needs to grow.[1,2,6,7] SGA infants may face health problems before and after birth, including low oxygen levels, low blood sugar, and difficulty maintaining a normal body temperature.[6–8]

Low birth weight and SGA are important public health issues as they occur more frequently in certain disadvantaged populations, such as individuals with low socioeconomic status.[9,10] Some risk factors for SGA and low birth weight include poor maternal/pregnancy health and nutrition, as well as tobacco, alcohol or substance use during pregnancy.[1,5] Low birth weight is also associated with maternal depression and anxiety.[10]

Large for gestational age infants (LGA) weigh more than usual for infants of the same gestational age. The birth of an LGA infant can pose both immediate health risks including: caesarean section delivery, shoulder dystocia, fetal hypoxia (i.e., fetus is deprived of oxygen) and low blood sugar.[2,11] Longer term, children who were born LGA have an increased risk of developing asthma, diabetes, obesity, and metabolic syndrome.[2,11] Some factors associated with LGA and high birth weight include larger parents, high weight gain during pregnancy, and gestational diabetes.[11,12]

What Does It Tell Us?

Huron Perth has a lower rate of SGA babies and a higher rate of LGA babies than Ontario *(Figures 1 and 2)*. In Huron Perth, infants were more likely to have a low birth weight (less than 2500 grams) if they were born preterm, were part of a multiple birth pregnancy, or had a mother younger than 25 years old or older than 34 years.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Provided on Oct 25, 2019 and Apr 4, 2024.

Limitations

Records missing birth weight data, which were less than one per cent of total birth records, were excluded. For the analysis by gestational age, records missing gestational age were also excluded. Less than five per cent of records were excluded from the analysis.

Size for Gestational Age and Birth Weight Categories

Huron Perth had a significantly lower rate of SGA births than Ontario from 2013 to 2021 *(Figure 1)*. The trend over time for Huron Perth and Ontario was stable from 2013 to 2021. Huron County did show a decrease over time in the rate of small for gestational age births *(data not shown)* but Perth County, Stratford and St. Marys did not. When looking at the municipalities, Huron East, Central Huron, South Huron, St. Marys and Perth South all had significant decreases in the rate of SGA births from 2013 to 2021 while other municipalities had no significant changes *(data not shown)*. Compared to the rest of Huron Perth, Goderich had a significantly higher rate of SGA births when data for 2013 to 2021 were combined *(data not shown)*.

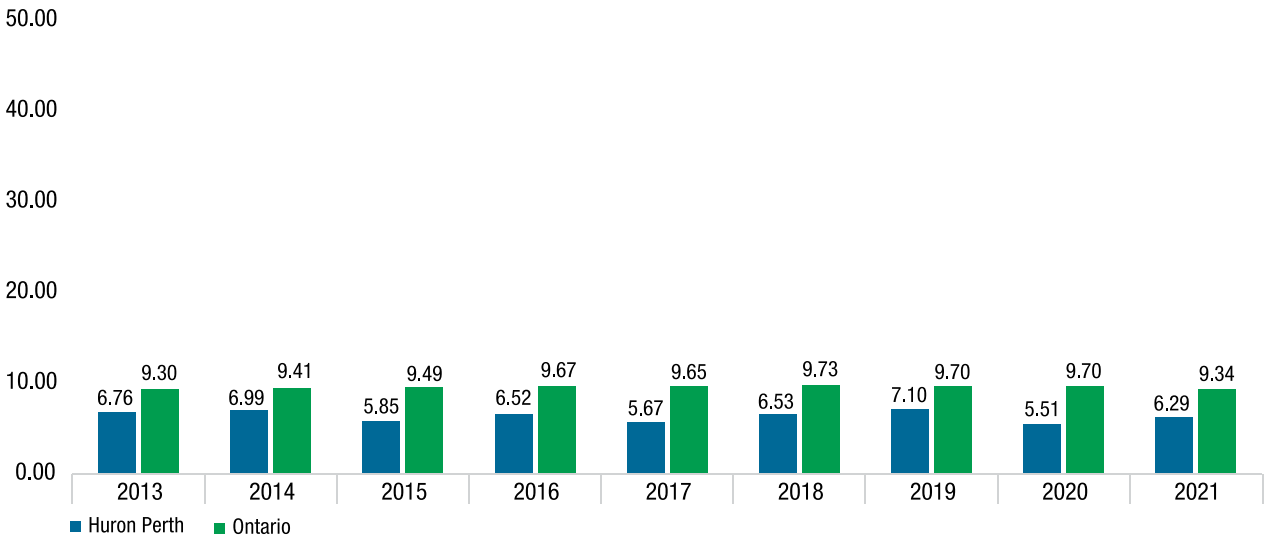


Figure 1 Small for gestational age (below 10th per centile) rate (per 100 live singleton births), Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Provided on Oct 25, 2019 and Apr 4, 2024.

Huron Perth had a significantly higher rate of LGA births than Ontario from 2013 to 2021 *(Figure 2)*. The trend over time for Huron Perth and Ontario was stable from 2013 to 2021. Perth County, Stratford, and St. Marys did show a decrease over time in the rate of LGA births *(data not shown)* but Huron County did not. Looking at the municipalities, Perth East, South Huron, and Stratford had an increase in the rate of LGA births from 2013 to 2021 while Bluewater had a decrease *(data not shown)*. Compared to the rest of Huron Perth, Stratford and Perth East had a significantly lower rate of LGA births for 2013 to 2021 combined while South Huron had a significantly higher rate *(data not shown)*.

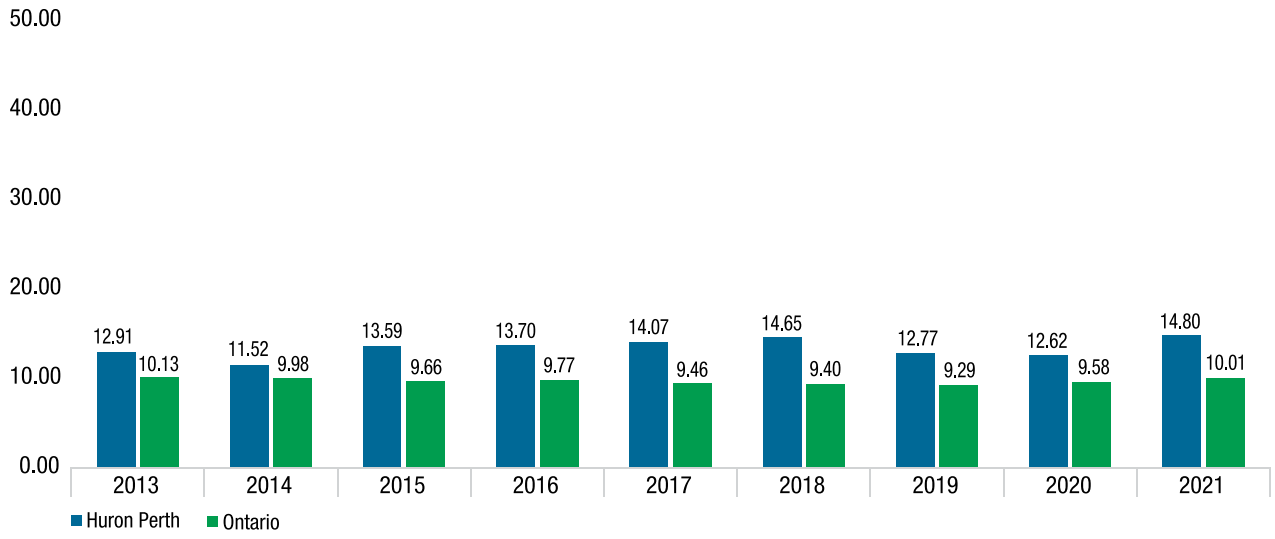


Figure 2 Large for gestational age (below 10th per centile) rate (per 100 live singleton births), Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Provided on Oct 25, 2019 and Apr 4, 2024.

Birth weight was affected by gestational age, whether the baby was from a singleton or multiple fetus pregnancy, and maternal age. Two per cent of term and postterm babies weighed less than 2500 grams while 48 per cent of preterm babies weighed less than 2500 grams. Three per cent of singleton babies weighed less than 2500 grams while 48 per cent of multiple birth babies weighed less than 2500 grams *(data not shown)*. Women 25 to 34 years old were less likely to have a low birth weight baby than younger and older women *(Figure 3).*

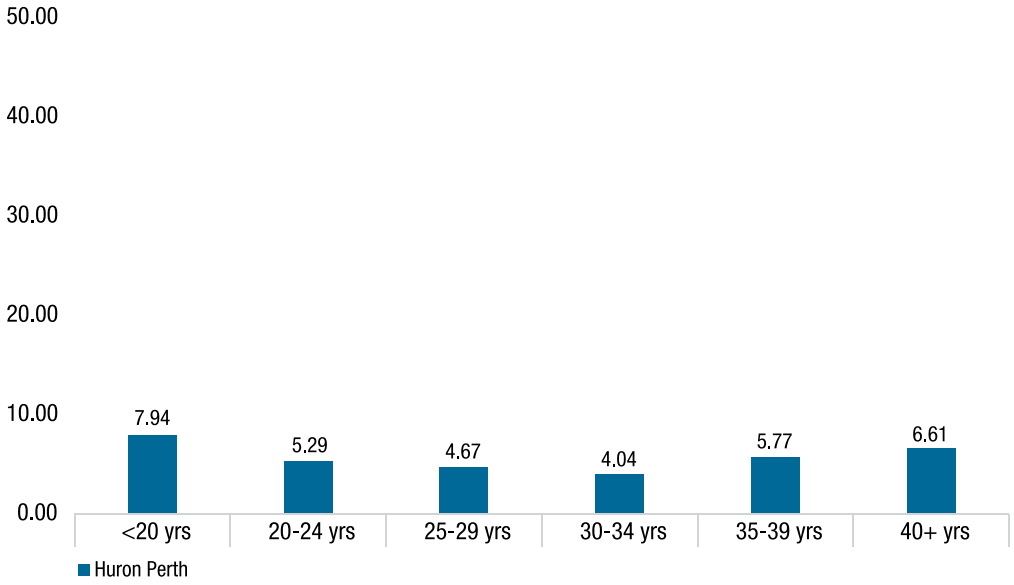


Figure 3 Low birth weight baby (<2500 grams) rate (per 100 live births), Huron Perth, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: 2013 to 2021. Resource Type: Tabulated data. Data Provided on April 4, 2024.

1 U.S. Department of Health and Human Services [Internet]. National Library of Medicine; n.d. [cited 2024 Mar 21]. Birth Weight: MedlinePlus Medical Encyclopedia. Available from: https://medlineplus.gov/birthweight.html

2 Hunt G. Chapter 5: Postpartum Care [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 21]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-5.html

3 March of Dimes [Internet]. 2021 [cited 2024 Mar 21]. Low birthweight. Available from: https://www.marchofdimes.org/find-support/topics/birth/low-birthweight

4 Kingdom J, Ashwal E, Lausman A, Liauw J, Soliman N, Figueiro-Filho E, et al. Guideline No. 442: Fetal Growth Restriction: Screening, Diagnosis, and Management in Singleton Pregnancies. J Obstet Gynaecol Can [Internet]. 2023 Oct 1 [cited 2024 May 9];45(10). Available from: https://www.jogc.com/article/S1701-2163(23)00396-1/abstract

5 Merck Manual Professional Edition [Internet]. [cited 2024 May 8]. Small-for-Gestational-Age (SGA) Infant - Pediatrics. Available from: https://www.merckmanuals.com/en-ca/professional/pediatrics/perinatal-problems/small-for-gestational-age-sga-infant

6 University of Rochester Medical Center [Internet]. n.d. [cited 2024 Mar 21]. Small for Gestational Age - Health Encyclopedia. Available from: https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=90&ContentID=P02411

7 Small for gestational age (SGA): MedlinePlus Medical Encyclopedia [Internet]. [cited 2024 May 2]. Available from: https://medlineplus.gov/ency/article/002302.htm

8 Government of Canada. Statistics Canada. 2022 [cited 2024 Mar 21]. Why are babies in Canada getting smaller? Available from: https://www150.statcan.gc.ca/n1/pub/82-003-x/2022001/article/00001-eng.htm

9 Government of Canada. Statistics Canada. 2017 [cited 2024 Feb 27]. Socioeconomic disparities in small-for-gestational-age birth and preterm birth. Available from: https://www150.statcan.gc.ca/n1/pub/82-003-x/2017011/article/54885-eng.htm

10 Shaw E. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

11 Evidence Brief: Risk Factors for Large for Gestational Age (LGA) Infants in Ontario [Internet]. Ontario Agency for Health Protection and Promotion (Public Health Ontario); 2015 [cited 2024 May 2]. Available from: https://www.publichealthontario.ca/-/media/Documents/E/2015/eb-risk-factors-lga-infants.pdf?rev=07e7483e0fea47dbae6bc7c9b82234fd&sc_lang=en

12 U.S. Department of Health and Human Services [Internet]. 2021 [cited 2024 Mar 21]. Large for gestational age (LGA): MedlinePlus Medical Encyclopedia. Available from: https://medlineplus.gov/ency/article/002248.htm

Infant Mortality

What Is It?

Infant mortality is defined as the death of an infant in the first year of life.[1]

Why Is It Important?

Internationally, infant mortality is used as an indicator of infant health, but is also considered to be an indicator of the state of education and health status of women, overall human development, and the strength of the public health environment of that country.[2,3] It is seen to reflect the overall health of society.[2,3]

While the infant mortality rate in Canada has improved over the past few decades, this improvement is not equally distributed. Infant mortality is strongly associated with socioeconomic status in Canada. Risk factors for infant death include low maternal education, inadequate housing, lack of access to healthcare, food insecurity, poverty, and unemployment.[4]

Leading causes of infant deaths include preterm birth, congenital anomalies, infection, and sudden infant death syndrome.[1,4]

What Does It Tell Us?

Huron Perth infant mortality rate is similar to Ontario but more variable over time due to the smaller numbers. Ontario had a significant decrease in infant mortality from 2013 to 2021 but Huron Perth numbers were too small to see any significant change over time. Most (72 per cent) of the infant deaths in Huron Perth occurred during the neonatal period (0 to 27 days).

Data sources

Mortality Database [2013-2021], Ontario Ministry of Health and Long-term Care: IntelliHEALTH ONTARIO, extracted Mar 21, 2024.

Birth Data [2013-2021], Ontario Ministry of Health and Long-term Care: IntelliHEALTH ONTARIO, extracted Nov 30, 2023.

Limitations

Deaths that occurred outside Ontario are not included.

Infant mortality data in Huron Perth and Ontario should be interpreted with caution due to known data quality issues with birth data from Ontario Vital Statistics. Registration of a live birth or stillbirth requires a form submitted by a qualified health professional and a form submitted by a parent or guardian. Ontario hospitals do not require the parent/guardian to complete the registration paperwork prior to hospital discharge while hospitals in other provinces and territories do.[5] In Ontario, the parent/guardian submits their registration form to their municipality who processes the forms and submits them to Vital Statistics. As a result, Ontario has a higher proportion of infant death records that cannot be linked to a birth record. From 1991 to 2010, unlinked infant death registrations ranged from 19 to 50 per cent in Ontario compared to about one per cent for the rest of Canada.[5]

Events or processes that make it more difficult for the parent/guardian to complete the registration paperwork increase the percentage of unlinked birth and death records in Ontario. From 1996 to the mid-2000s, some municipalities charged an administration fee to parents/guardians when registering a live birth or stillbirth.[6] This led to an increase in unregistered births, particularly among low income and adolescent parents.[7] During the COVID-19 pandemic from 2020-2022, hospitals and municipal governments were stretched thin for resources. Consequently, fewer resources were available to assist parents/guardians with live birth and stillbirth registrations. As of December 2023, a decrease in the number of stillbirths during the pandemic is evident in Vital Statistics but not other data sources (BORN and hospital discharges).[8]

Infant Mortality Data

From 2013 to 2021, an average of eight infants per year died in Huron Perth. Most (72 per cent) of those deaths occurred during the neonatal period (0 to 27 days old).

Figure 1 shows the infant mortality rate for Huron Perth and Ontario using three year moving averages. The small number of deaths occurring each year means the annual rates are unstable and three year moving averages is one method to reduce the instability. Huron Perth infant mortality rates are more variable than Ontario because the number of deaths is smaller. Infant mortality rates in Huron Perth were similar to Ontario from 2014 to 2020 but while Ontario had a decrease in mortality from 2013 to 2021, Huron Perth did not. Huron Perth infant mortality rates were variable from 2013 to 2021 but none of the changes were statistically significant.

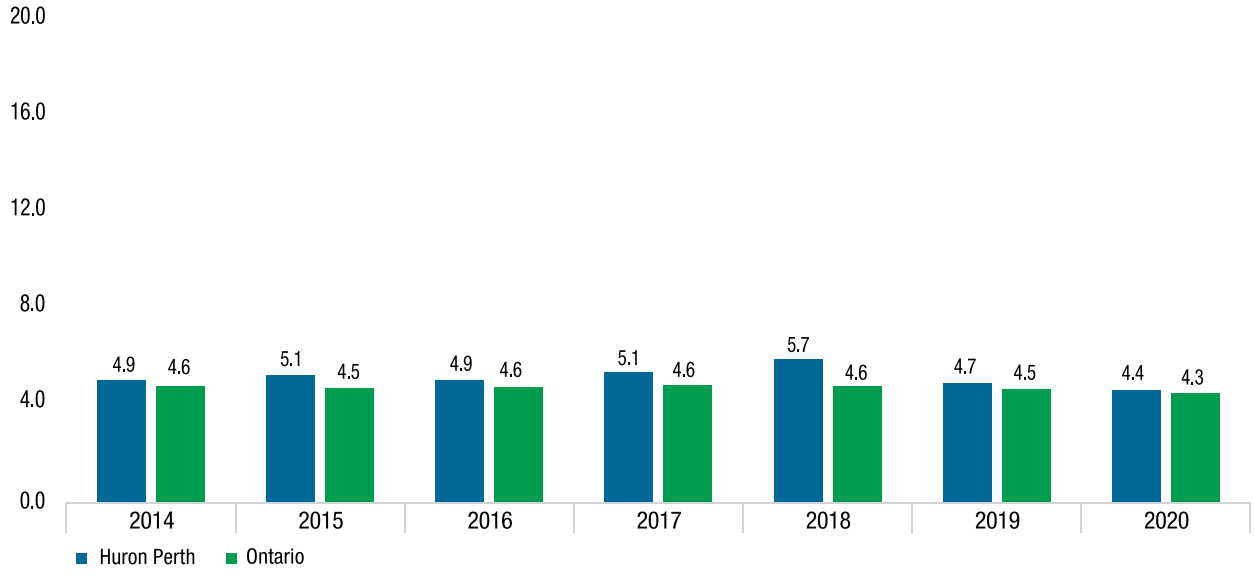


Figure 1 Infant mortality rate (per 1,000 live births), based on moving 3-year averages, Huron Perth and Ontario, 2014-2020

Data sources: (1) Mortality Database [2013 to 2021], Ontario Ministry of Health: IntelliHEALTH ONTARIO, extracted Mar 21, 2022. (2) Birth Data [2013 to 2021], Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, extracted Nov 20, 2023

1 Morin F, Chalmers B, Ciofani L, deMontigny F, Gower S, Hanvey L, et al. Chapter 7: Loss and grief [Internet]. Ottawa: Public Health Agency of Canada; 2020 [cited 2024 Apr 18]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-7.html

2 Chief Medical Officer of Health. The Chief Public Health Officer's report on the state of public health in Canada 2008: Addressing Health Inequalities [Internet]. Her Majesty the Queen in Right of Canada, represented by the Minister of Health; 2008 [cited 2024 Mar 22]. Available from: https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/report-on-state-public-health-canada-2008.html

3 Centers for Disease Control and Prevention - Maternal and Infant Health [Internet]. 2023 [cited 2024 Mar 22]. Infant Mortality. Available from: https://www.cdc.gov/maternal-infant-health/infant-mortality/?CDC_AAref_Val=https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm

4 Public Health Agency of Canada. Key Health Inequalities in Canada: A National Portrait [Internet]. Ottawa: Public Health Agency of Canada; 2018 [cited 2024 Mar 22]. Available from: https://www.canada.ca/en/public-health/services/publications/science-research-data/inequalities-infant-mortality-infographic.html

5 Fell DB, Park AL, Sprague AE, Islam N, Ray JG. A new record linkage for assessing infant mortality rates in Ontario, Canada. Can J Public Health. 2020 Apr;111(2):278–85.

6 Association of Public Health Epidemiologists in Ontario (APHEO). Timeline of changes in live birth registration in Ontario [Internet]. [cited 2024 Mar 20]. Available from: http://core.apheo.ca/resources/indicators/RHWG_Timeline_of_Changes_in_Birth_Registration.pdf

7 Woodward GL, Bienfeld MK, Ardal S. Under-reporting of Live Births in Ontario: 1991-1997. Can J Public Health. 2003;94(6):463–7.

8 Association of Public Health Epidemiologists in Ontario (APHEO). Perinatal and Infant Mortality Rates Core Indicator [Internet]. [cited 2024 Mar 20]. Available from: https://www.apheo.ca/core-indicators-reproductive-health-subgroup

Intention to Breastfeed Exclusively

What Is It?

Intention to breastfeed exclusively refers to women who self reported during pregnancy or at time of birth an intention to exclusively feed their infant human milk, regardless of feeding method (i.e., feed at the breast or provide expressed or donor milk).

Why Is It Important?

Breastfeeding is recognized as the unequalled way to provide optimal nutritional, immunological and emotional nurturing of infants.[1,2] Breastfeeding also has benefits for the mother's health, as it can help reduce the risk for breast cancer, ovarian cancer and osteoporosis later in life, and facilitate mother-infant bonding.[1–3]

The World Health Organization and Health Canada recommend exclusive breastfeeding for the first six months, and sustained for up to two years or longer with appropriate complementary feeding to support nutrition needs, for immunological protection and growth and development of infants and toddlers.[1,2]

Most pregnant individuals decide how to feed their baby early in pregnancy, if not before.[2] Decisions about breastfeeding are complex and can be affected by several psychosocial factors, including the cultural context, availability of positive peer and effective clinical support, self-confidence in their ability to breastfeed, and perceptions of their family's and friends' views about breastfeeding.[2] Some infants may not be exclusively breastfed for personal, medical, or social reasons. Families who choose not to breastfeed also need support to safely and effectively feed infant formula.[1]

What Does It Tell Us?

The percentage of mothers who report they intend to breastfeed exclusively has decreased significantly from 2013 to 2021. Huron Perth mothers were more likely to report they intended to breastfeed exclusively than mothers from Ontario from 2018 to 2021.

Data sources

Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data Provided on Oct 25, 2019 and Apr 4, 2024.

Limitations

The analysis excluded records missing information on intention to breastfeed exclusively. Fourteen to 25 per cent of records from 2013 to 2017 were excluded. Due to the high percentage of excluded records, results from this timeframe should be interpreted with caution. Less than five per cent of records from 2018 to 2021 were excluded.

Information on intention to exclusively breastfeed is self-reported and subject to bias. Mothers may have provided the answer they believed their healthcare provider wanted to hear rather than what they actually intended to do. Further, intending to exclusively breastfeed does not necessarily mean infants were exclusively breastfed.

Intention To Breastfeed Exclusively

The percentage of women that reported they intended to breastfeed exclusively when discharged from hospital or midwifery care declined significantly over time from 2013 to 2021 for Huron Perth and Ontario, however, the drop from 2017 to 2018 should be interpreted with caution *(Figure 1)*. From 2013 to 2017, over 10 per cent of records were missing information on intention to breastfeed so the drop in percentage from 2017 to 2018 could simply be due to more complete record keeping rather than an actual change in breastfeeding intention among women in Huron Perth and Ontario. The decrease in women intending to breastfeed exclusively from 2018 to 2021 for Huron Perth and Ontario likely reflects an actual change due to the small percentage of missing records.

From 2018 to 2021, the percentage of Huron Perth mothers reporting they intended to breastfeed exclusively was significantly higher compared to Ontario *(Figure 1)*.

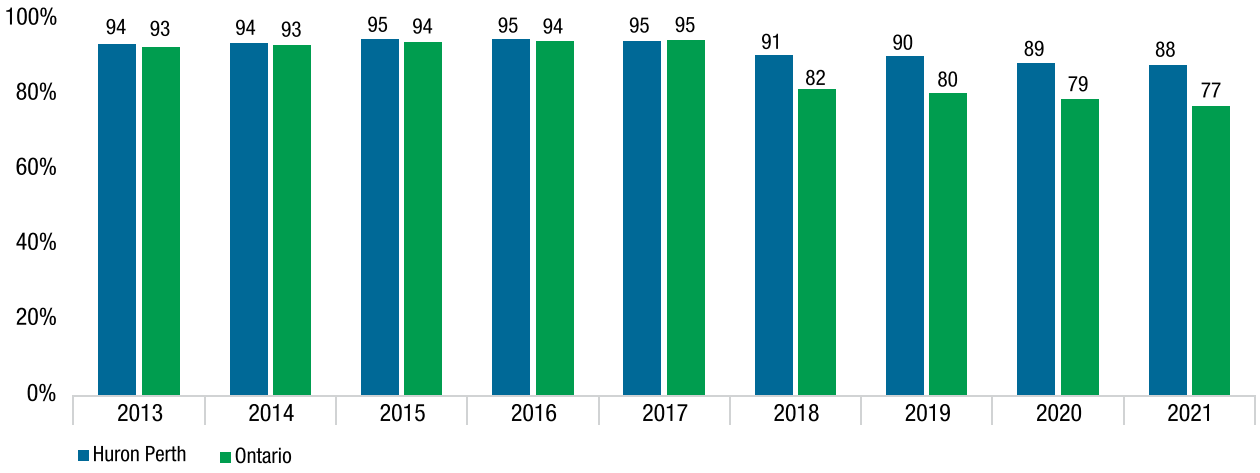


Figure 1 Percentage of women reporting they intend to breastfeed exclusively upon discharge from hospital or midwife care, Huron Perth and Ontario, 2013 to 2021

Data source: Better Outcomes Registry and Network (BORN) Ontario. Years Provided: (2013 to 2021). Resource Type: Tabulated data. Data provided on 25 Oct 2019, and 4 Apr 2023.

Although the percentage of mothers intending to exclusively breastfeed has declined across Huron Perth as a whole, that is not true for all municipalities within Huron Perth. West Perth, St. Marys and Perth South, Central Huron, Bluewater, and South Huron remained stable with no significant increases or decreases over time from 2013 to 2021 *(data not shown)*.

1 Health Canada. Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months [Internet]. 2012 [cited 2024 Mar 21]. Available from: https://www.canada.ca/en/health-canada/services/canada-food-guide/resources/nutrition-healthy-term-infants/nutrition-healthy-term-infants-recommendations-birth-six-months.html

2 Green M, et al. Chapter 6: Breastfeeding [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2023 Aug 30]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-6.html

3 Public Health Agency of Canada [Internet]. 2023 [cited 2024 Mar 22]. Breastfeeding your baby. Available from: https://www.canada.ca/en/public-health/services/child-infant-health/breastfeeding-infant-nutrition.html

Considerations and Conclusions

Considerations and Conclusion

This report provides a snapshot of maternal and infant health and well-being in Huron and Perth Counties.

While many indicators of healthy pregnancies and births suggest that overall, Huron and Perth mothers and infants are doing well compared to Ontario, there are some areas that indicate ongoing challenges or needs, and/or opportunities to improve what currently exists. This report includes some considerations for these areas, but it is not an exhaustive list; rather the considerations mentioned are meant to inform the conversation around the questions, "so what?" or "what could this mean for Huron and Perth?"

Demographics

Considerations for Huron and Perth municipalities include:

Consider the systems in place to attract people of reproductive age (likely due to immigration) into the area to both replace the jobs of some of the baby boomers once they retire and to support seniors as they age. Over the next few decades, Huron Perth's aging population will require more support (e.g., community paramedicine, medical, homecare, recreation and social programs) which means more people are required to manage this support. The systems can include things such as: safe and affordable housing options, transportation, childcare, reproductive healthcare, access to family doctors, other primary care providers and supports for newcomers.

Social and Structural Determinants of Health

Considerations for Huron Perth municipalities, healthcare providers, community services and supports and decision-makers include:

- Keep the social and structural determinants of health in mind when planning reproductive health programs and services. "The most effective interventions occur at the population health level, by responding to such issues as food insecurity, affordable housing and a living wage. This requires the creation of stronger social safety nets for families and healthy public policy and environments supportive of healthy lifestyles."[1]
- Improve collection of sociodemographic data in Huron and Perth Counties.
- Incorporate indicators in data collection to inform inequities experienced by individuals, groups and populations in Huron and Perth Counties.
- Collect experiential data from individuals, groups and populations focused on informing strategies to improve health inequities.
- Ensure an environment that is culturally safe, reflective of equity, diversity and inclusivity, and trauma informed, in the provision of reproductive, maternal and newborn care.

Fertility and Pregnancy

Considerations for healthcare providers and community services and supports include:

- Continue to provide preconception, prenatal, birth and early childhood supports and services.
- Ensure individuals in their reproductive years have the information they need to make an informed decision about choosing to delay childbearing, including possible challenges (e.g., declining fertility), increased risks (e.g., miscarriage) and personal factors (e.g., chronic medical conditions).[2]
- Provide care that is trauma informed.

Folic Acid Supplementation

Considerations for healthcare providers include:

- Assess if women of childbearing age are taking a multivitamin with folic acid. Identifying why women of childbearing age are not taking a folic acid supplement could help improve supplementation rates.
- Continue to recommend all women of childbearing age take 0.4 mg of folic acid daily.

Gestational Weight Gain

Considerations for healthcare providers include:

- Provide weight-inclusive and weight neutral care by highlighting the importance of improving healthy behaviours to establish a stable preconception and interconception weight instead of recommending weight loss, or to ensure a healthy weight gain in pregnant women instead of weight control.[2,3]
- Provide individualized counselling and support that is client centred and considers the various factors that may be influencing weight gain during pregnancy such as access to foods, opportunities for physical activity, family and partner support, cultural norms and beliefs, and socioeconomic status.[4,5]
- Ensure women are aware of the increased risks to maternal and newborn health associated with a low (<18.5kg/m^2) or high (30-34.9 kg/m^2) pre-pregnancy BMI, as well as the recommendations regarding weight gain during pregnancy.[2, 6] Although there are increased risks, reassure pregnant women with a BMI over 25 kg/m2 that they are likely to have healthy pregnancy outcomes, even if they require additional interventions during pregnancy, labour, and birth.[7]

Maternal Mental Health

Considerations for Huron Perth municipalities, healthcare providers, and community services and supports include:

- Address protective factors for maternal (caregiver) mental health at community/society and structural levels, as well as at the individual/family levels. For example: interventions and programs that focus on positive social connection and support, enhance access to mental health services, decrease stigma and discrimination for those seeking help, and strengthen parenting skills, capacity and resilience.[5,8,9]
- Strengthen comprehensive approach to perinatal mental healthcare to include: mental health screening, trauma-informed and culturally safe care, awareness of social and structural health inequities and their potential impacts on individuals, such as parents experiencing high stress due to

challenging life situations (e.g., precarious finances or housing or safety conditions, lack of a social network) and referring the family to the appropriate services.[5,10] More can be found in Tackling Health Inequities: Ontario's Social Determinants of Health Framework from the Huron Perth & Area Ontario Health Team.

- Initiate conversations with individuals and families prenatally about any concerns they may have regarding social isolation and loneliness, their need and interests for social connectedness, and make appropriate referrals or link families to community services and supports in Huron and Perth Counties.[2]

Delivering Healthcare Provider

Considerations for municipalities and decision-makers include:

- Continue to recruit healthcare providers, particularly those providers that support and care for women in reproductive years and that require prenatal care, such as obstetricians, midwives, and family medicine practitioners who provide obstetrical care.

Prenatal Classes

Considerations for healthcare providers include:

- Continue to promote prenatal education from reliable, evidence-informed sources that are low or no cost to ensure accessibility.

Substance Use

Considerations for healthcare providers and substance and mental health community services and supports include:

- Continue to focus on supporting pregnant women, and their support persons, with harm reduction messaging, as well as education on the harmful effects substance use has on the unborn child and the pregnant woman. This also identifies the need to support those in reproductive years with education about the negative impacts of substance use so to limit substance use during pregnancy. A broader focus on effective health promotion strategies (e.g., policy support, upstream protective factors and advocacy at a local, provincial and federal level) in program planning as a multi-pronged approach needed to support the reduction of substance use harms in this population.[11]
- Address the impacts of using multiple substances preconceptionally, prenatally and postpartum.
- During prenatal appointments, encourage positive health behaviours and work with individuals to reduce potentially harmful substance use.[2]
- Mental health and substance use often go hand in hand. A humanistic and compassionate person-centred approach is needed during pregnancy "where the health and medical aspects of the use or addiction are considered, as well as the psychosocial factors."[2, 12]

Intention to Breastfeed

Considerations for healthcare providers and community services and supports include:

- Incorporate infant feeding decision making in prenatal conversations with families.
- Ensure healthcare and service providers who support families during the prenatal and postpartum periods have the education and skills to share information about the importance of breastfeeding and to help families make an informed decision about infant feeding. Offer opportunities for families to access free or low-cost credible information about breastfeeding, for example online prenatal classes or classes specifically for breastfeeding.
- Use inclusive language, for example, breastfeeding/chestfeeding.

1 Public Health Agency of Canada. Chapter 1: Family-centred maternity and newborn care in Canada: Underlying philosophy and principles [Internet]. 2017 [cited 2024 Apr 17]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-1.html

2 Shaw E, et al. Chapter 2: Preconception care [Internet]. Ottawa, Ontario: Public Health Agency of Canada; 2019. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-2.html

3 Nagpal TS, Prapavessis H, Campbell CG, De Vrijer B, Giroux I, Mottola MF. Are pre-pregnancy weight fluctuations and adherence to prenatal nutrition and exercise recommendations related to excessive gestational weight gain? J Behav Med. 2020 Dec;43(6):1047–55.

4 Health Canada. Prenatal Nutrition Guidelines for Health Professionals: Gestational Weight Gain [Internet]. 2010 [cited 2024 Mar 8]. Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/healthy-weights/prenatal-guidelines-professionals-gestational-weight-gain.html

5 Wagner B, et al. Chapter 3: Care during pregnancy [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

6 Moola S, et al. Chapter 4: Care during labour and birth [Internet]. Ottawa, ON: Public Health Agency of Canada; 2018 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-4.html

7 Chapter 9: Epilogue [Internet]. Ottawa, ON: Public Health Agency of Canada; 2022 [cited 2024 Mar 12]. (Family-centred Maternity and Newborn Care National Guidelines). Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-9.html

8 Public Health Agency of Canada. From risk to resilience: An equity approach to COVID-19 – The Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2020 [Internet]. Ottawa, ON: Public Health Agency of Canada; 2020 Oct [cited 2024 Jun 7]. Available from: https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html

9 Dagher RK, Linares DE. A Critical Review on the Complex Interplay between Social Determinants of Health and Maternal and Infant Mortality. Children. 2022 Mar 10;9(3):394.

10 Registered Nurses' Association of Ontario. Assessment and interventions for perinatal depression. 2nd Edition [Internet]. Toronto, ON: Registered Nurses' Association of Ontario; 2018. Available from: https://rnao.ca/bpg/guidelines/assessment-and-interventions-perinatal-depression

11 Chief Medical Officer of Health of Ontario. 2023 Annual Report of the Chief Medical Officer of Health of Ontario to the Legislative Assembly of Ontario – Balancing Act An All-of-Society Approach to Substance Use and Harms [Internet]. King's Printer for Ontario; 2024. Available from: https://www.ontario.ca/files/2024-04/moh-cmoh-annual-report-2023-en-2024-04-02.pdf

12 Mead A, Ryan D, Paquette V, Smith E, Joshi P, Tanella C, et al. Best Practice Guidelines for Mental Health Disorders in the Perinatal Period: Substance Use Disorders [Internet]. Vancouver, B.C.: BC Reproductive Mental Health Program; 2023 [cited 2024 Feb 29]. Available from: http://www.perinatalservicesbc.ca/Documents/Resources/HealthPromotion/Best_Practice_Guideline_Mental_Health_Disorders_in_the_Perinatal_Period.pdf