Healthy Minds

Examining Mental Health and Mental Illness in the Southwestern Public Health Region

Population Health Assessment
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Contents

Summary

Mental health is a complex aspect of overall health that is impacted by many different factors, such as lifestyle, environment and biology, but there are three main determinants: social inclusion, freedom from discrimination and violence and access to economic resources.[1,2] Mental illness is a distinct concept that intersects with mental health to create a continuum of mental well-being. At a given time in a person's life, they may range from poor to optimal mental health with no symptoms to serious mental illness. This report describes the most recent population health data about mental health and mental illness for people living in the Southwestern Public Health (SWPH) region. Some key findings from this report are:

- Mental health and mental illness are impacted by sociodemographic factors, which may be inequitable. In particular, the impact of income was evident – people living with a lower household income were more likely to report:
    - mood disorders,
    - depressive symptoms,
    - anxiety disorders and
    - consultations with health professionals about emotional or mental health
- They were less likely to report:
    - a strong sense of community belonging,
    - life satisfaction and
    - very good or excellent overall mental health.
- Females were more likely to report having a mood disorder, depressive symptoms, consulting with a health professional about emotional or mental health, visiting an emergency department for self-harm and being hospitalized for self-harm. However, males were more likely to die by suicide.

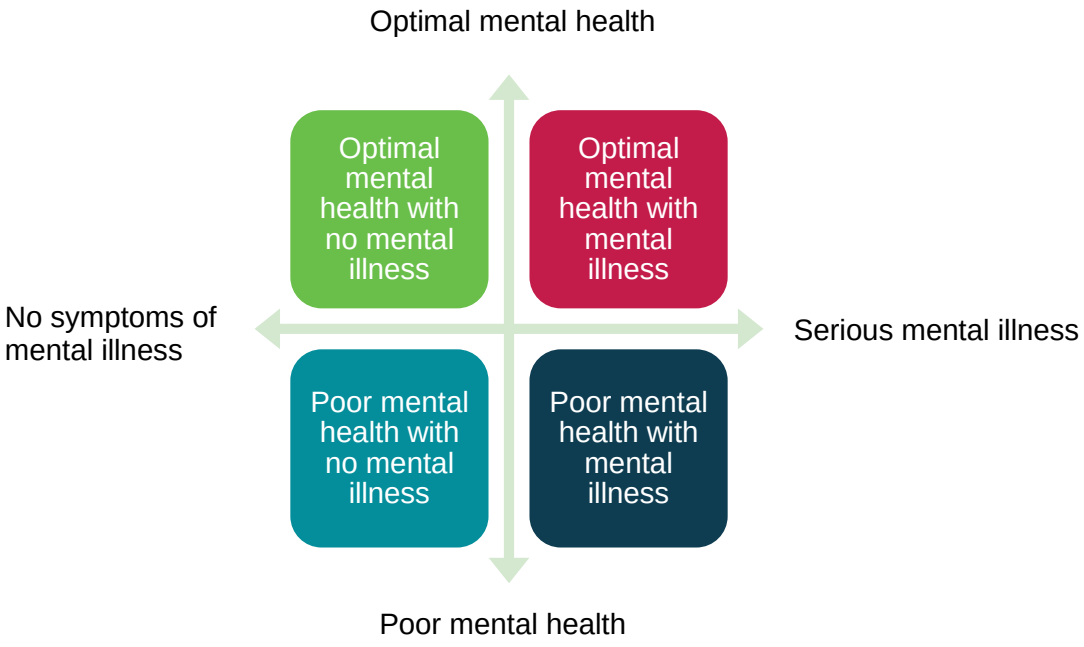
These findings should be interpreted alongside other local research about mental health and within the context of existing evidence showing the impact of the social determinants of mental health, in particular, the impact of environmental factors such as policies, living standards, working conditions, community supports and social protection.[3]

Healthy Minds

Introduction

Mental health is often described as a continuum, which means that someone may experience a range of mental health (anywhere from optimal to poor) at a given time over their life. Optimal mental health is often subjective, with the World Health Organization suggesting that it is a state of well-being where one can cope with the stresses of life and contribute to their community.[4] A distinct but related concept to mental health is mental illness. Mental illness is a diagnosable condition where biological factors in the brain cause altered thinking, mood or behaviour which in turn causes distress or impairs functioning (such as mood disorders, anxiety disorders, substance dependence and eating disorders).[5] It is possible for someone to have a mental illness but report positive mental health (e.g., they are coping and feel supported) or for someone to have no mental illness but report poor mental health, for example, due to situations such as unemployment or social isolation (Figure 1).

Figure 1. Illustration of intersecting mental health and mental illness[6]



Promoting mental health and well-being is a priority for Southwestern Public Health (SWPH). Beginning in 2017, several projects were undertaken to look at ways that mental health could be improved in Oxford County. Many of these projects began in response to a youth suicide crisis that occurred in Oxford County in 2016; a crisis which saw six youth between the ages of 16 and 20 years die by suicide. The results and recommendations from these projects can be found in several reports.[7–10]

The purpose of this report is to provide updated local population health data about mental health and mental illness based on information that is available to public health units. This report is intended to complement the 2019 health status report titled Understanding our Communities' Health, which aimed to provide a high-level overview of the current health status of people residing in the SWPH region compared to Ontario.[11]

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

The data in this report is one piece of evidence that may be used to inform programs and services offered by public health and community partners. Mental health is an essential component of overall health and it is important that community agencies continue to do work that improves the mental health of our residents. We recognize that mental health is a complex topic and is influenced by many different factors, such as lifestyle (e.g., diet, physical activity and sleep), environment (e.g., living in a safe community, having supportive relationships, having a fulfilling job) and biology, but there are three main determinants of mental health: social inclusion, freedom from discrimination and violence and access to economic resources.[1,2] However, discussing these influencing factors as separate indicators was out of the scope of this report.

Although substance use disorders are considered a mental illness in parts of this report and are highly connected to mental health, substance use is not specifically highlighted in this report. Instead, local information about substance use can be found in numerous reports/platforms.[12–21]

SWPH recognizes that protective factors for mental health, such as social support, community participation and access to recreation are important to understand. However, most of the population health data currently available to public health focuses on stress, mental illness and

service use for mental health and mental illness. Despite this gap in information, this data still provides some understanding of local mental health and mental illness and demonstrates the need to advocate for the collection of more positive (or resilience-based) population-level mental health data.

The data from this report should be considered alongside other local research about mental health, such as reports from community partners and qualitative research, to obtain a more complete picture of mental health. For example, a previous community needs assessment in Woodstock, Ontario found that protective factors for local mental health include having relationships with people who understand who they are and having spaces to go to escape stressors and to connect with themselves and nature.[8] Another report highlighted the negative impact of stigma, shame and bullying on youth mental health and suicide and describe how supportive relationships, a sense of belonging to the community and opportunities for involvement in the community are important protective factors.[22]

Findings

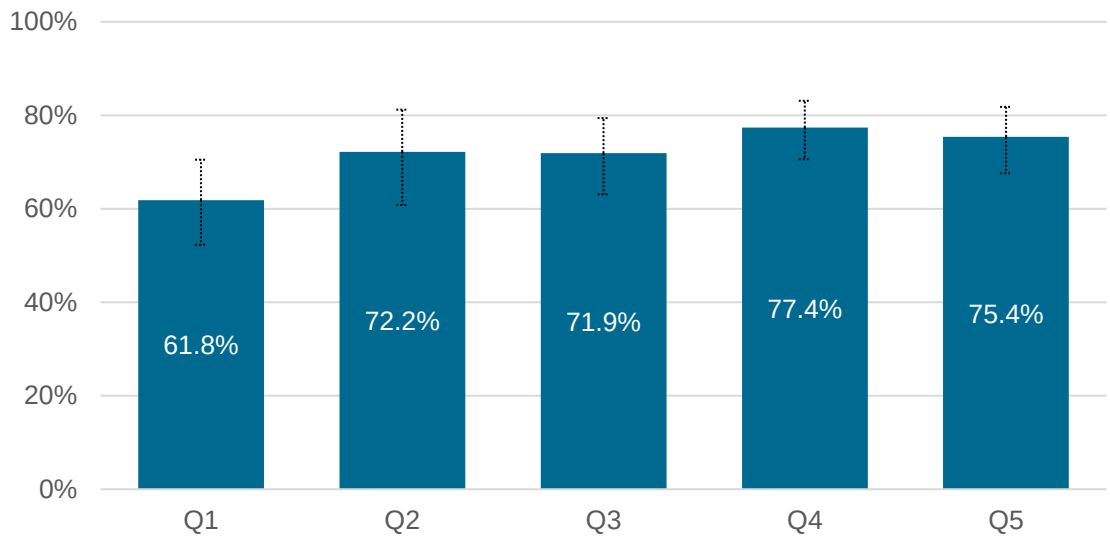
Self-reported Mental Health and Well-being

Sense of community belonging

From 2015 to 2016, 72.6% (95% confidence interval (CI): 68.9-76.0) of people aged 12 years and older living in the SWPH region reported a somewhat strong or very strong sense of belonging to their local community and 27.4% (95% CI: 24.0-31.1) reported a somewhat weak or very weak sense of belonging.

Sense of community belonging varied by household income; a higher proportion of people in the second highest income quintile (Q4) reported a somewhat strong or very strong sense of community belonging compared to people in the lowest income quintile (Figure 2).

Figure 2. Somewhat strong or very strong sense of community belonging by income quintile[a], residents 12 years and older, Southwestern Public Health, 2015-2016



Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Self-reported life satisfaction and stress

From 2015 to 2016, 92.1% (95% CI: 89.8-94.0) of people aged 12 years and older living in the SWPH region reported that they were either satisfied or very satisfied with life in general and 7.9% (95% CI: 6.1-10.2) were neither satisfied nor dissatisfied or were somewhat to very dissatisfied.

A lower proportion of people living in our urban municipalities reported that they were either satisfied or very satisfied with life in general compared to people living in our rural municipalities (89.4% versus 96.2%; Figure 3).

[a] Quintiles are five equal groups divided based on their level of income (each group contains 20% of the population). Therefore, people in Q1 have the lowest 20% of incomes and people in Q5 have the highest 20% of incomes. Using this data source, it is not possible to provide the income ranges associated with each quintile.

Figure 3. Life satisfaction by urban or rural residence, residents 12 years and older, Southwestern Public Health, 2015-2016

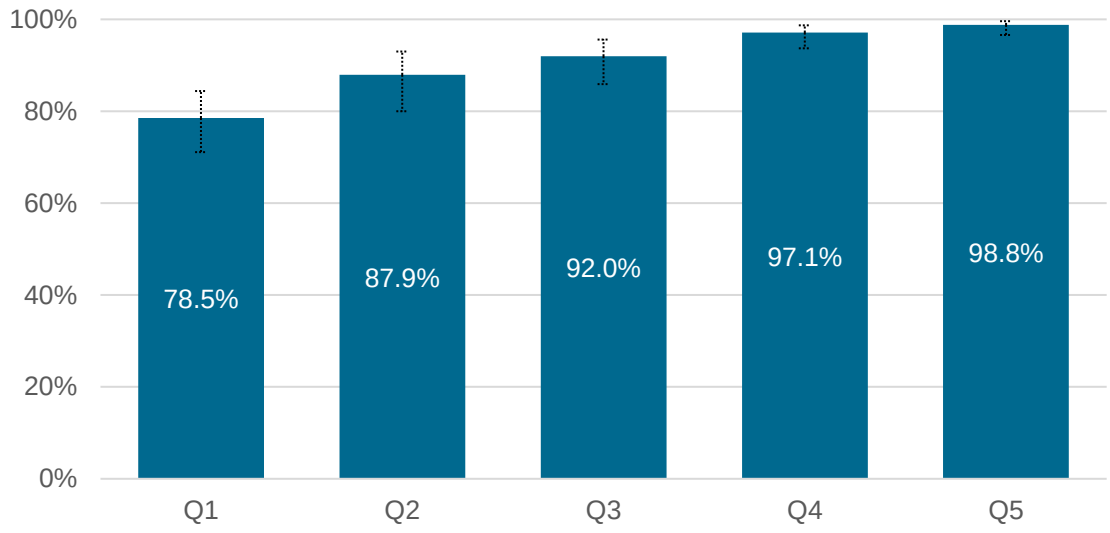
From 2015 to 2016, 89.4% (95% CI: 85.8%-92.2%) of people living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock reported that they were either satisfied or very satisfied with life in general.

From 2015 to 2016, 96.2% (95% CI: 93.6%-97.8%) of people living in the rural municipalities of Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford reported that they were either satisfied or very satisfied with life in general.

Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

There was a gradient effect of household income on life satisfaction. In general, the proportion of people reporting that they were satisfied or very satisfied with life increased with increasing income (Figure 4).

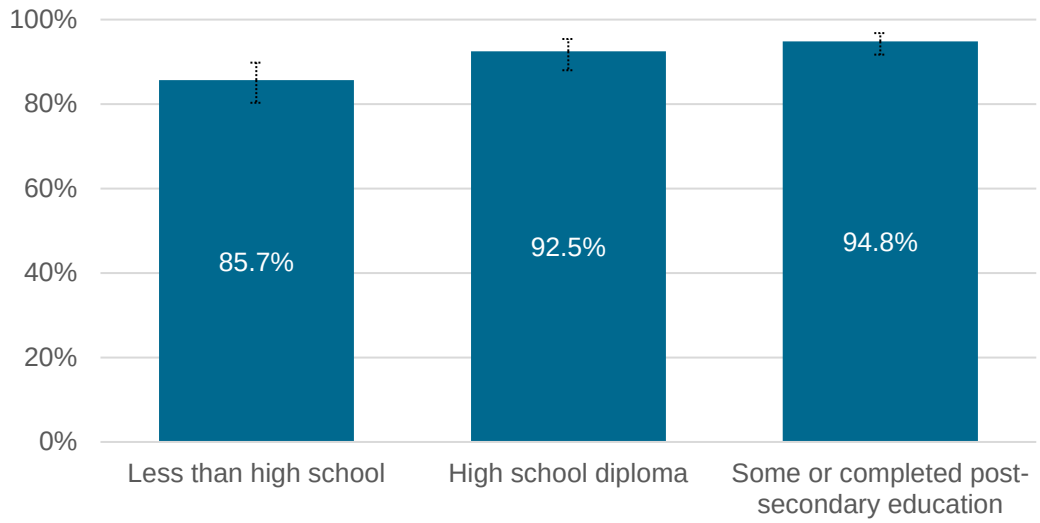
Figure 4. Life satisfaction by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016



Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Additionally, a higher proportion of people with some or completed post-secondary education reported being satisfied or very satisfied with life in general compared to people with less than high school education (94.8% versus 85.7%; Figure 5).

Figure 5. Life satisfaction by education level, residents 12 years and older, Southwestern Public Health, 2015-2016

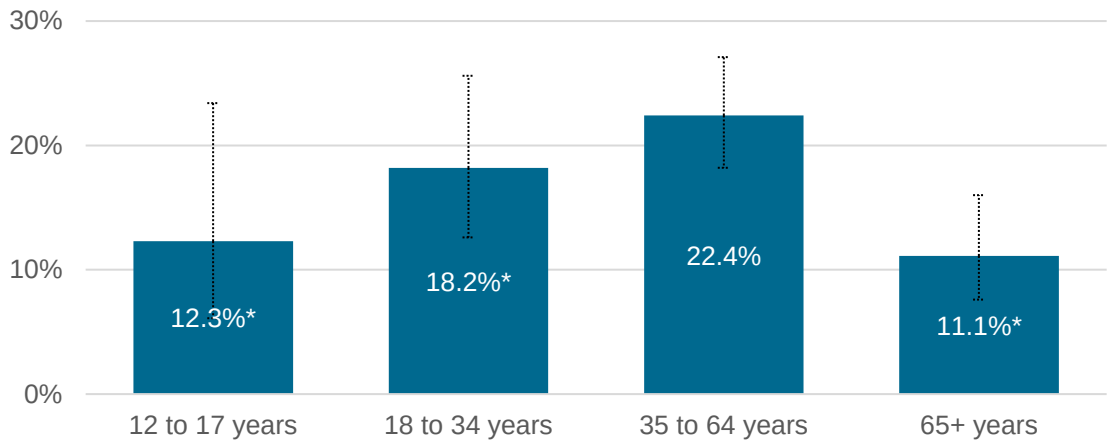


Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

From 2015 to 2016, 18.2% (95% CI: 15.5-21.3) of people aged 12 years and older living in the SWPH region reported that most days of their life were “quite a bit” or “extremely” stressful and 81.8% (95% CI: 78.8-84.5) reported that most days were “not at all”, “not very” or “a bit” stressful.

A higher proportion of residents aged 35 to 64 years reported that most days of their life are quite a bit or extremely stressful compared to residents aged 65 years and older (22.4% versus 11.1%; Figure 6).

Figure 6. Life stress by age group, Southwestern Public Health, 2015-2016



*These per cents should be interpreted with caution due to their variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

From 2015 to 2016, 22.8% (95% CI: 18.8-27.4) of people aged 12 years and older living in the SWPH region that worked at a job or business in the past 12 months reported that most days at work were quite a bit to extremely stressful and 77.2% (95% CI: 72.6-81.2) reported that most days at work were not at all to a bit stressful.

A higher proportion of residents aged 35 to 64 years old reported that most days at work were quite a bit or extremely stressful (30.7%; 95% CI: 24.3-37.9) compared to residents aged 18 to 34 years (12.7%[b]; 95% CI: 9.2-17.2). Data about work stress was not reportable for residents aged 12 to 17 years or 65 years and older because the question was not applicable for most people in these age groups.

Self-reported mental health and mental illness

From 2015 to 2016, 73.2% (95% CI: 69.7-76.4) of people aged 12 years and older living in the SWPH region reported very good or excellent mental health, 20.7% (95% CI: 17.9-23.9) reported good mental health and 6.1% (95% CI: 4.7-8.0) reported fair or poor mental health.

[b] This per cent should be interpreted with caution due to its high variability.

A lower proportion of people living in our urban municipalities reported having very good or excellent self-reported mental health compared to people living in our rural municipalities (70.1% versus 77.9%; Figure 7).

Figure 7. Very good or excellent self-reported mental health by urban or rural residence, residents 12 years and older, Southwestern Public Health, 2015-2016

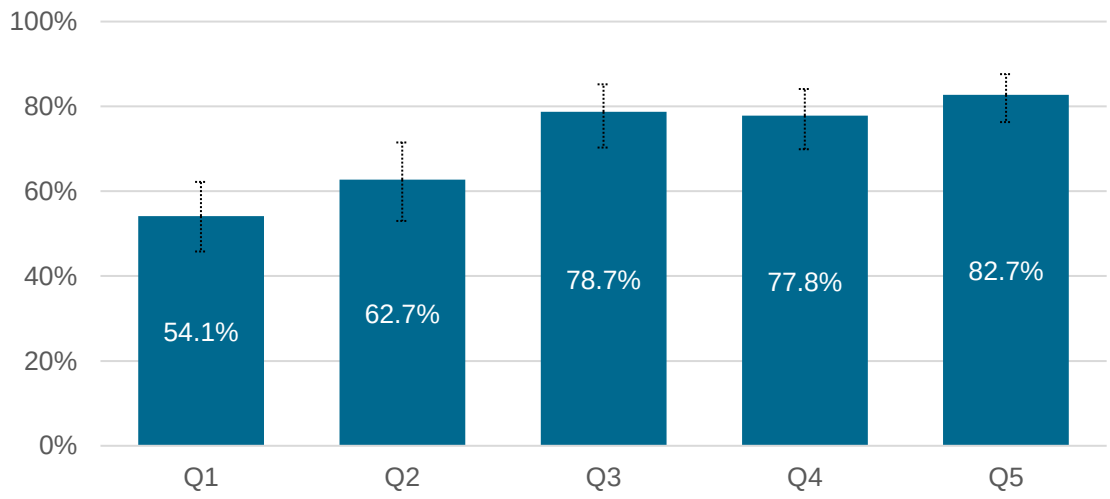
From 2015 to 2016, 70.1% (95% CI: 65.2%-74.6%) of people living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock reported having very good or excellent self-reported mental health.

From 2015 to 2016, 77.9% (95% CI: 72.5%-82.5%) of people living in the rural municipalities of Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford reported having very good or excellent self-reported mental health.

Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Self-reported mental health varied by household income; a higher proportion of people in the highest three income quintiles reported very good or excellent mental health compared to people in the lowest income quintile (Figure 8).

Figure 8. Very good or excellent self-reported mental health by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016

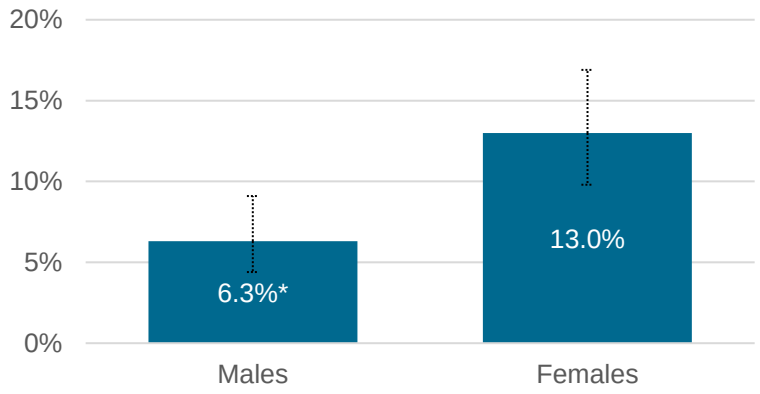


Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Mood disorders

From 2015 to 2016, 9.7% (95% CI: 7.8-12.0) of people aged 12 years and older living in the SWPH region reported that they had a mood disorder such as depression, bipolar disorder, mania or dysthymia (persistent depressive disorder). A higher proportion of females reported having a mood disorder compared to males (13.0% versus 6.3%; Figure 9).

Figure 9. Self-reported mood disorder by sex, residents 12 years and older, Southwestern Public Health, 2015-2016



*This per cent should be interpreted with caution due to its variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

A higher proportion of people living in the urban municipalities reported having a mood disorder compared to people living in the rural municipalities (12.0% versus 6.2%; Figure 10).

Figure 10. Self-reported mood disorder by urban or rural residence, residents 12 years and older, Southwestern Public Health, 2015-2016

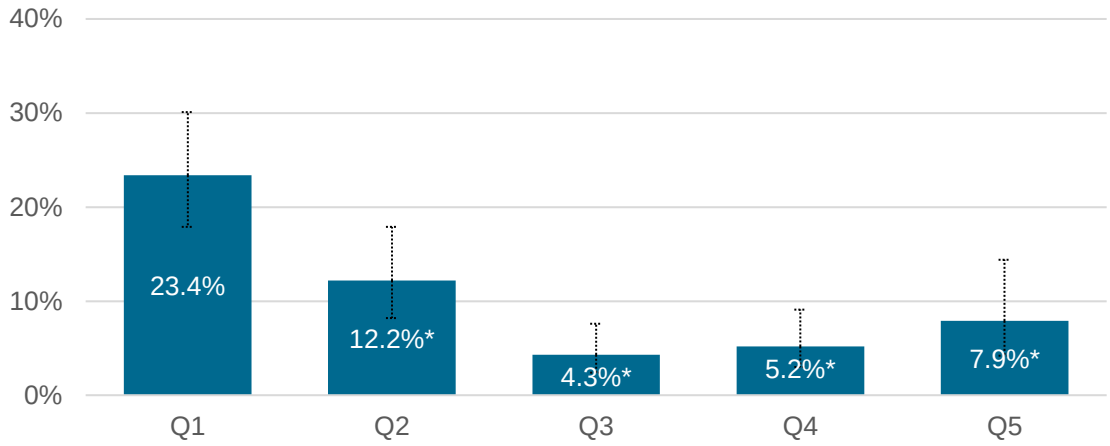
From 2015 to 2016, 12.0% (95% CI: 9.4%-15.3%) of people living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock reported having a mood disorder.

From 2015 to 2016, 6.2%* (95% CI: 4.2%-9.1%) of people living in the rural municipalities of Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West reported having a mood disorder.

*This per cent should be interpreted with caution due to its variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

A higher proportion of people in the lowest income quintile reported having a mood disorder compared to people in the highest three income quintiles (Figure 11).

Figure 11. Self-reported mood disorder by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016

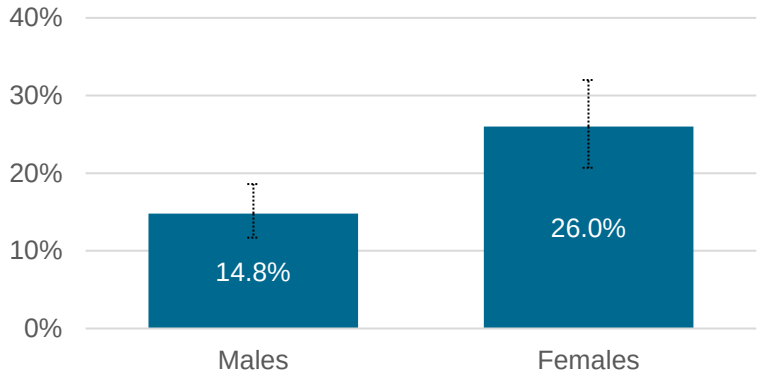


*These per cents should be interpreted with caution due to their variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

From 2015 to 2016, 20.5% (95% CI: 17.5-24.0) of people aged 12 years and older living in the SWPH region reported mild to severe depression symptoms in the past two weeks based on their score on the Patient Health Questionnaire (PHQ-9), an instrument used for screening, diagnosing, monitoring and measuring the severity of depression.

A higher proportion of females reported having mild to severe depression symptoms compared to males (26.0% versus 14.8%; Figure 12).

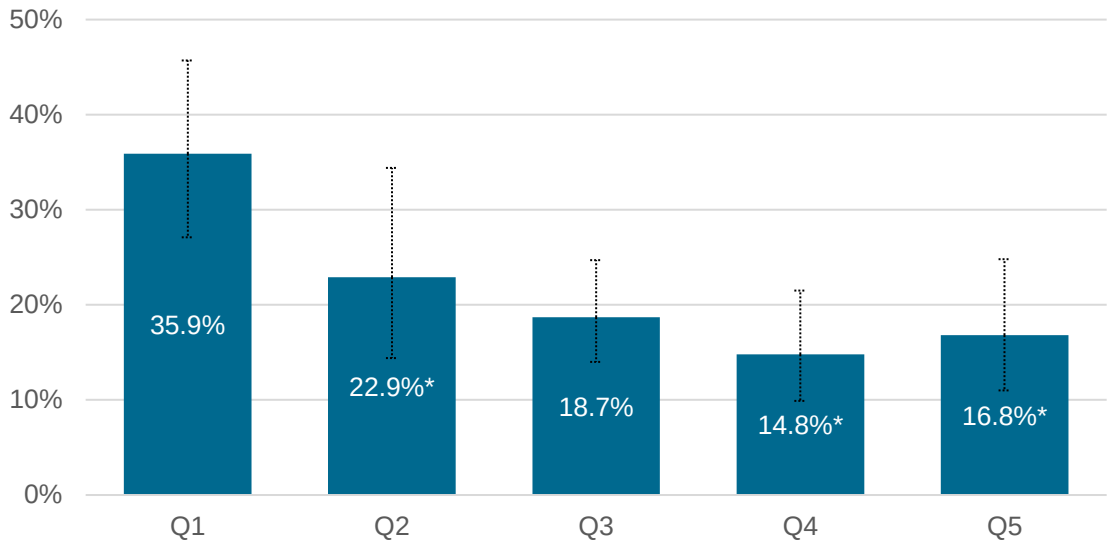
Figure 12. Mild to severe depression symptoms by sex, residents 12 years and older, Southwestern Public Health, 2015-2016



Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Self-reported depression symptoms also varied by household income; a higher proportion of people in the lowest income quintile reported mild to severe depression symptoms compared to people in the highest three income quintiles (Figure 13).

Figure 13. Mild to severe depression symptoms by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016



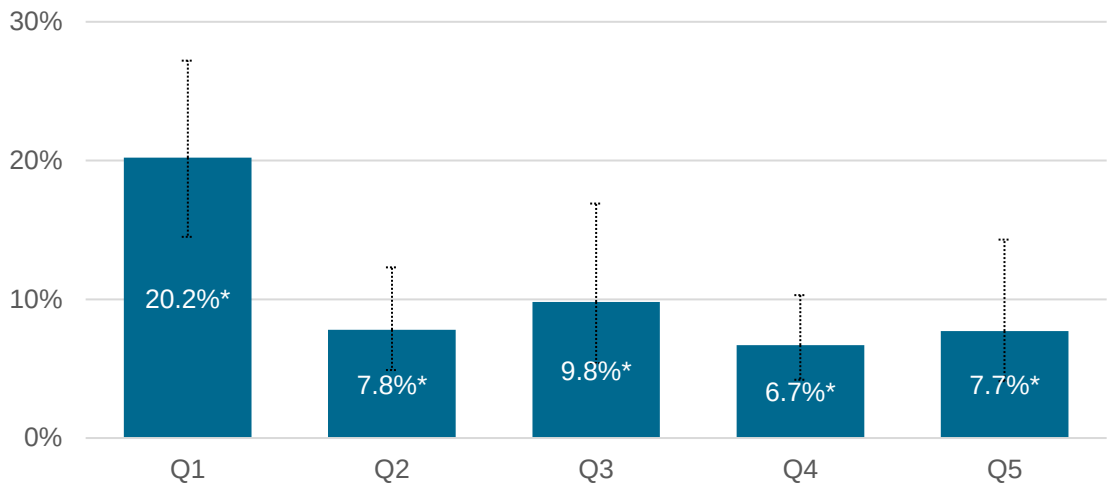
*These per cents should be interpreted with caution due to their variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Anxiety disorders

From 2015 to 2016, 9.9% (95% CI: 8.0-12.2) of people aged 12 years and older living in the SWPH region reported that they had an anxiety disorder such as a phobia, obsessive-compulsive disorder (OCD) or a panic disorder.

A higher proportion of people in the lowest income quintile reported having an anxiety disorder compared to people in all higher income quintiles except Q3 (Figure 14).

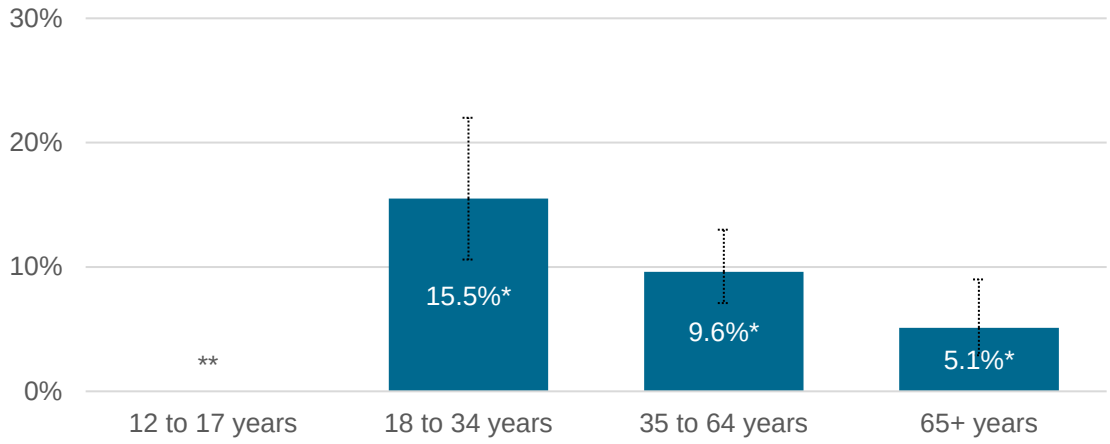
Figure 14. Self-reported anxiety disorder by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016



*These per cents should be interpreted with caution due to their variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

A higher proportion of residents aged 18 to 34 years reported that they had an anxiety disorder compared to residents aged 65 years and older (15.5% versus 5.1%; Figure 15).

Figure 15. Self-reported anxiety disorder by age group, Southwestern Public Health, 2015-2016



**Data is not reportable for this age group.
*These per cents should be interpreted with caution due to their variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

Suicidal thoughts and attempts

From 2015 to 2016, 13.6% (95% CI: 11.3-16.4) of people 15 years and older living in the SWPH region reported that they seriously considered attempting suicide in their lifetime.[23]

Among those that seriously considered attempting suicide in their lifetime, 2.4%[c] (95% CI: 1.6-3.7) of people seriously considered it in the past 12 months.[23]

From 2015 to 2016, 2.9%[c] (95% CI: 2.0-4.1) of people 15 years and older living in the SWPH region reported that they attempted suicide in their lifetime.[23] Data for the past 12 months was not reportable for people living in the SWPH region.

Service Use

Consultations with health professionals about emotional or mental health

From 2015 to 2016, 12.8% (95% CI: 10.8-15.1) of people aged 12 years and older living in the SWPH region reported that they saw or talked to a health professional about their emotional or mental health in the past 12 months. Among people that consulted a health professional, 32.8% reported four or more consultations in 12 months (Table 1).

A higher proportion of females reported that they saw or talked to a health professional about their emotional or mental health compared to males (16.5% versus 8.9%; Figure 16).

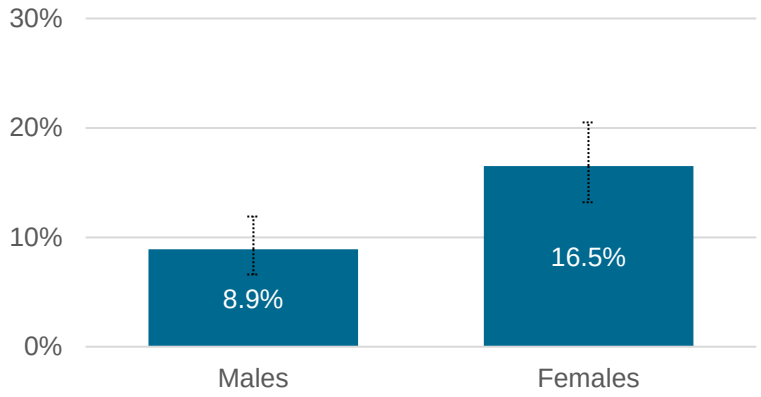
[c] This estimate should be interpreted with caution due to its high variability.

Table 1. Number of consultations with a health professional about emotional or mental health, residents 12 years and older, Southwestern Public Health, 2015-2016

Number of consultations in past 12 months	Per cent (95% CI)
One	18.1% (16.5%-19.8%)
Two	14.1% (12.7%-15.7%)
Three	10.1% (8.8%-11.6%)
Four or more	32.8% (30.8%-34.8%)
Not stated/Don't know	25.0% (23.1%-26.9%)

Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

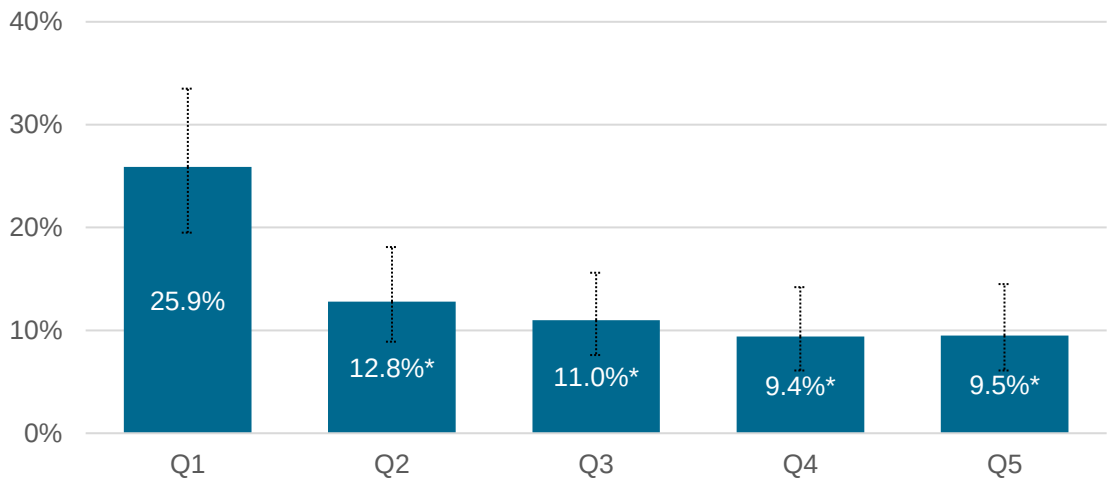
Figure 16. Consulted with a health professional about emotional or mental health by sex, residents 12 years and older, Southwestern Public Health, 2015-2016



Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

A higher proportion of people in the lowest income quintile reported consulting with a health professional about their emotional or mental health compared to people in all higher income quintiles (Figure 17).

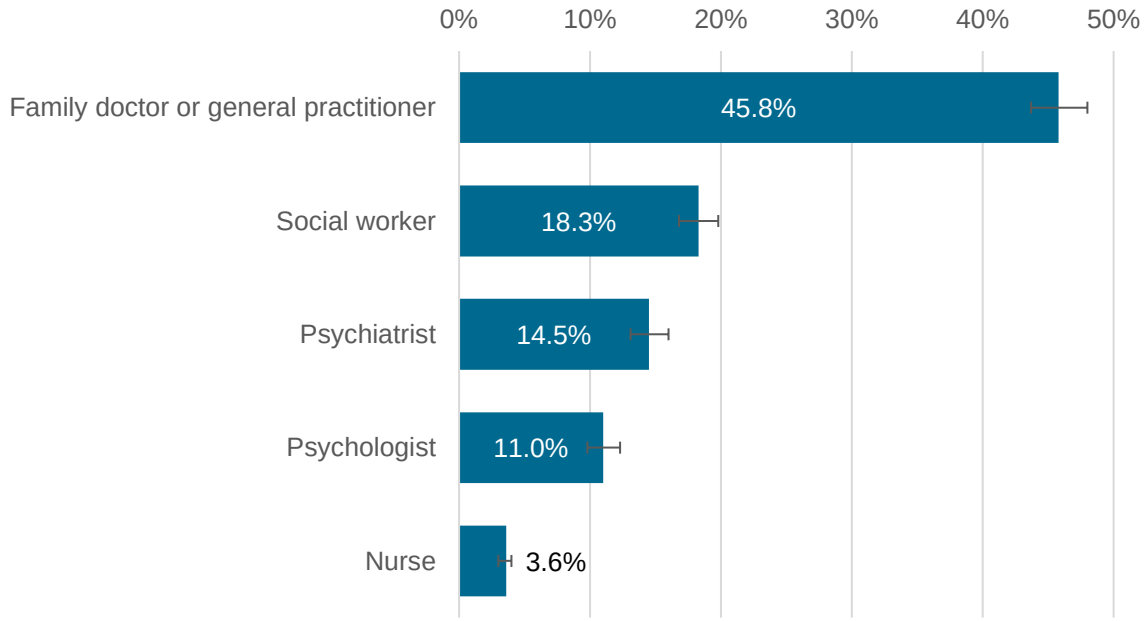
Figure 17. Consulted with a health professional about emotional or mental health by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016



*These per cents should be interpreted with caution due to their variability.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

The most common types of health professionals that people reported seeing or talking to about their emotional or mental health in the past 12 months were family doctors or general practitioners followed by social workers (Figure 18).

Figure 18. Type of health professional consulted about emotional or mental health, residents 12 years and older, Southwestern Public Health, 2015-2016



Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

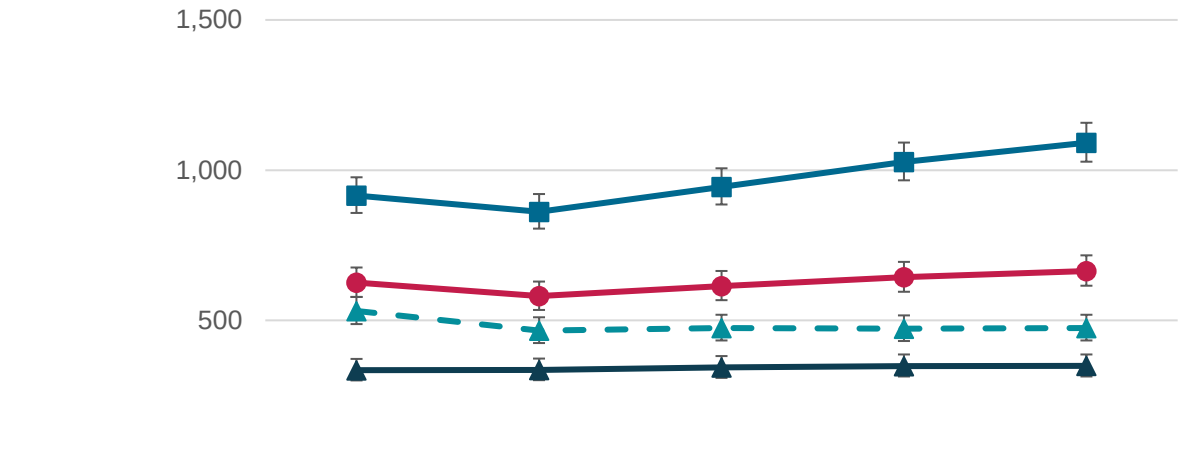
Mental health physician visits

In 2016, there were 664.2 physician visits to discuss mental health per 1,000 population living in the SWPH region. This data is based on administrative records that include visits to general and family practice physicians, pediatricians and psychiatrists that bill the Ontario Health Insurance Plan (OHIP). However, we recognize that there are many different types of professionals who offer mental health support, such as psychologists, social workers and counsellors that were not included here as they do not bill OHIP for services.

Topics of discussion could vary widely, for example, including mental illness such as drug dependence or depression as well as situational stressors such as marital difficulties, unemployment and economic problems.

There were no differences in the rate of people who visited physicians to discuss mental health by sex. However, each age group was different from the others. People aged 25 to 54 years had the highest rate of physician visits for mental health, people 55 years and older had the lowest and people less than 25 years old were in between (Figure 19).

Figure 19. Crude rate of physician visits for mental health (per 1,000 population), by age group, Southwestern Public Health, 2012-2016



	2012	2013	2014	2015	2016
Overall	625.4	580.9	614.4	643.4	664.2
< 25 years	531.4	466.0	474.2	472.1	474.6
25 to 54 years	915.7	861.5	944.1	1027.5	1091.3
55+ years	334.3	335.5	343.2	348.3	348.6

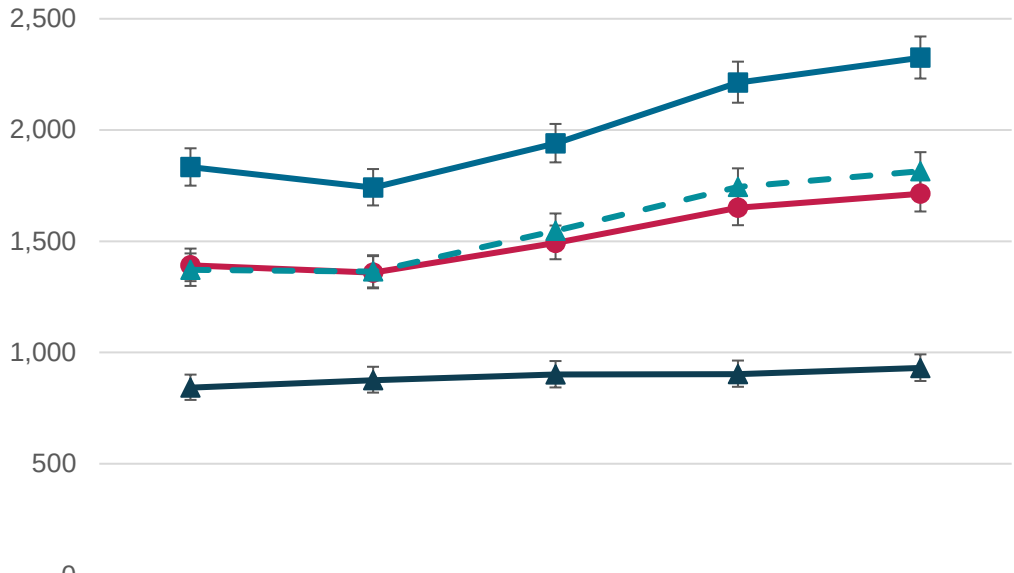
Source: Medical Services (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 4, 2019 & Population Estimates (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018.

Mental health emergency department visits

The rate of emergency department visits for mental health (including conditions such as mood disorders, anxiety disorders and substance use) has increased slightly over time from 2015 to 2017 (Figure 20). In 2017, there were 1,713.4 visits per 100,000 population.

The rates of emergency department visits for mental health did not differ by sex but they did differ by age group (Figure 20). Adults aged 25 to 54 years had the highest rate of emergency department visits for mental health and older adults (55+ years) had the lowest.

Figure 20. Crude rate of emergency department visits for mental health (per 100,000 population), by age group, Southwestern Public Health, 2013-2017

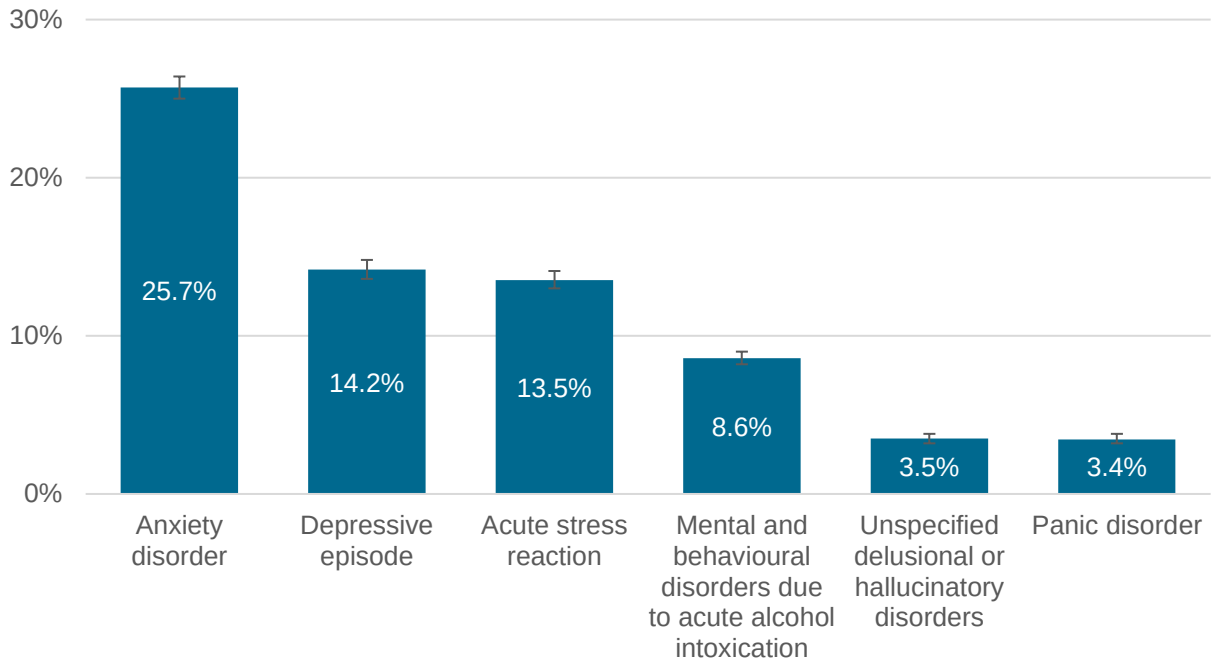


	2013	2014	2015	2016	2017
Overall	1392.3	1359.2	1493.1	1650.4	1713.4
< 25 years	1371.0	1363.9	1546.6	1744.7	1815.0
25 to 54 years	1832.6	1741.1	1939.7	2213.6	2324.8
55+ years	842.1	876.1	901.0	903.5	930.8

Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019.

The most common mental health concern leading to emergency department visits were anxiety disorders (25.7%) followed by depressive episodes (14.2%) and acute stress reactions (i.e., crisis reactions in response to exceptional physical and mental stress) (13.5%; Figure 21).

Figure 21. Proportion of emergency department visits for mental health by condition, Southwestern Public Health, 2013-2017 (combined)

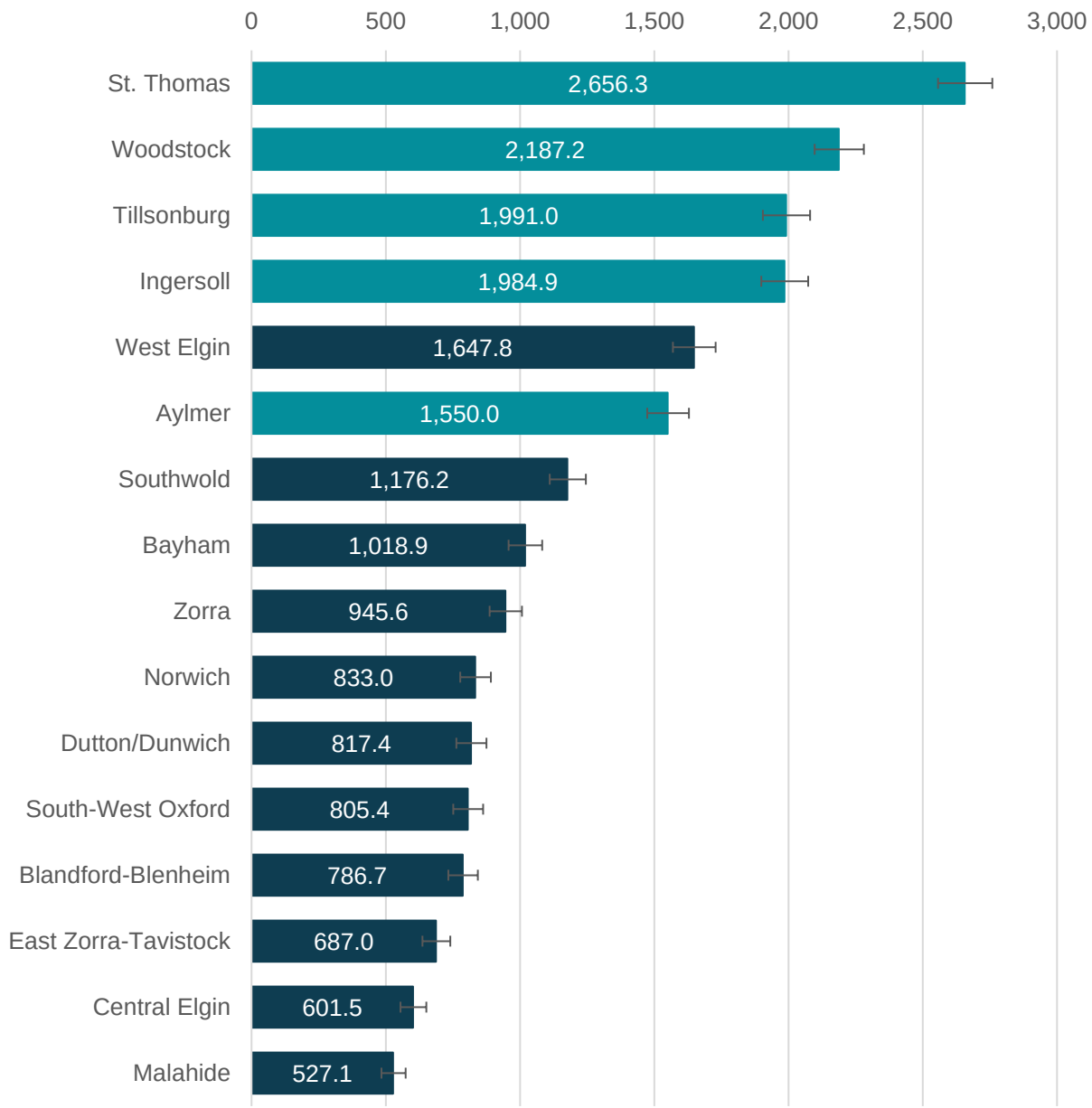


Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 3, 2019.

Across all municipalities in the SWPH region, the rates of emergency department visits for mental health were higher among people living in the urban municipalities (i.e., St. Thomas, Woodstock, Tillsonburg, Ingersoll and Aylmer) compared to the rural municipalities, except for West Elgin (Figure 22).

Differences between those living in urban versus rural areas could be due to various factors, such as accessibility of hospitals and other mental health services, differences in the underlying prevalence of mental health concerns and community culture or norms around seeking care for mental health.

Figure 22. Crude rate of emergency department visits for mental health (per 100,000 population) by municipality, Southwestern Public Health, 2016



Note: the urban municipalities are highlighted using a lighter blue compared to the rural municipalities which are shown using a darker blue.

Source: Ambulatory Emergency External Cause (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019 & Population Estimates (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019.

Impact of marginalization

Emergency department visits for mental health conditions (such as substance use, schizophrenia, mood disorders, anxiety and personality disorders) among people 15 years and older differ by levels of marginalization in the community.

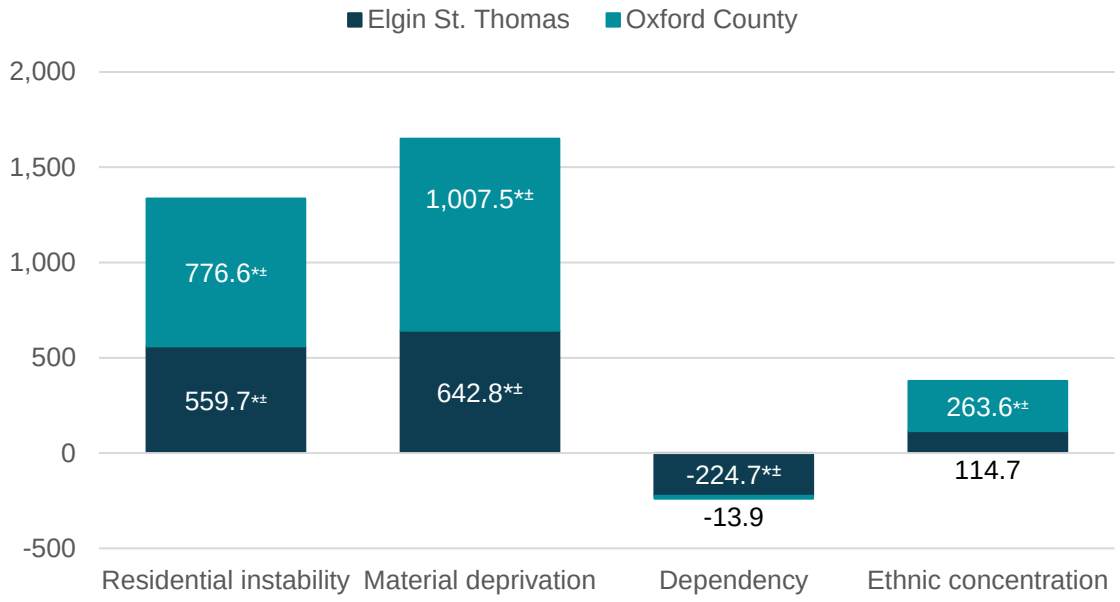
Marginalization was measured using the 2011 Ontario Marginalization Index (ON-Marg), which measures four dimensions of health inequity: residential instability, material deprivation, dependency and ethnic concentration.

- **Residential instability** includes measures of housing, age and marital status to identify areas with more people who do not own houses, who move frequently and who live alone. Someone with high residential instability has difficulty, or is at risk of having difficulty, staying in a home for long periods of time.
- **Material deprivation** includes measures of lone-parent families, low income and poor housing conditions. Someone with high material deprivation cannot afford basic resources and services such as housing, food and clothing.
- **Dependency** considers the overall per cent of seniors in the population, the dependency ratio (i.e., ratio of people aged 0 to 14 years and 65 years and older compared to people aged 15 to 64 years) and the employment rate. A community with high dependency has fewer people participating in the labour market.
- **Ethnic concentration** measures the proportion of the population identifying as recent immigrants and visible minority immigrants. Research has shown that recent immigrants tend to have better health than Canadian-born people, but this effect diminishes over time the longer one lives in Canada.[24] On the other hand, visible minorities may experience poorer health due to experiences of discrimination.[25] A community with high ethnic concentration may have more people at risk of poor health and discrimination over a long-term period.

If each socioeconomic group experienced the same rate of emergency department visits for mental health as the most advantaged group in terms of material deprivation, there could be a reduction of 1,650 emergency department visits over a two-year period in the SWPH region (Figure 23) and the rate of emergency department visits for mental health could be reduced by 35.6% in Oxford County and 31.4% in Elgin St. Thomas (Figure 24).

If each socioeconomic group experienced the same rate of emergency department visits for mental health as the most advantaged group in terms of residential instability, there could be a reduction of 1,337 emergency department visits over a two-year period in the SWPH region (Figure 23) and the rate of emergency department visits for mental health could be reduced by 27.5% in Oxford County and 27.3% in Elgin St. Thomas (Figure 24).

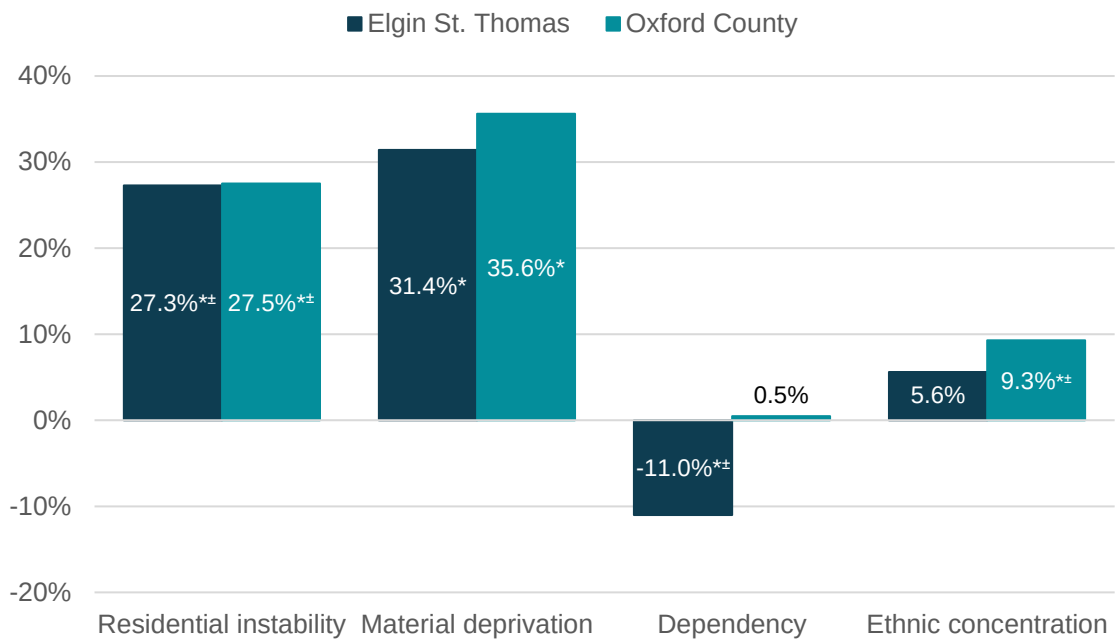
Figure 23. Projected reduction in the number of emergency department visits for mental health if each socioeconomic group experienced the same rate of the most advantaged group, residents 15 years and older, Elgin St. Thomas and Oxford County, 2011-2012



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

Source: Public Health Ontario. Snapshots: Elgin St. Thomas Public Health & Oxford County Public Health & Emergency Services: Health Inequities in Mental Health Emergency Department Visits 2003-04 to 2011-12. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 May 9 [cited 2018 Dec 19]. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Mental-Health-ED-Inequities.aspx

Figure 24. Projected reduction in the rate of emergency department visits for mental health if each socioeconomic group experienced the same rate of the most advantaged group, residents 15 years and older, Elgin St. Thomas and Oxford County, 2011-2012



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

Source: Public Health Ontario. Snapshots: Elgin St. Thomas Public Health & Oxford County Public Health & Emergency Services: Health Inequities in Mental Health Emergency Department Visits 2003-04 to 2011-12. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 May 9 [cited 2018 Dec 19]. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Mental-Health-ED-Inequities.aspx

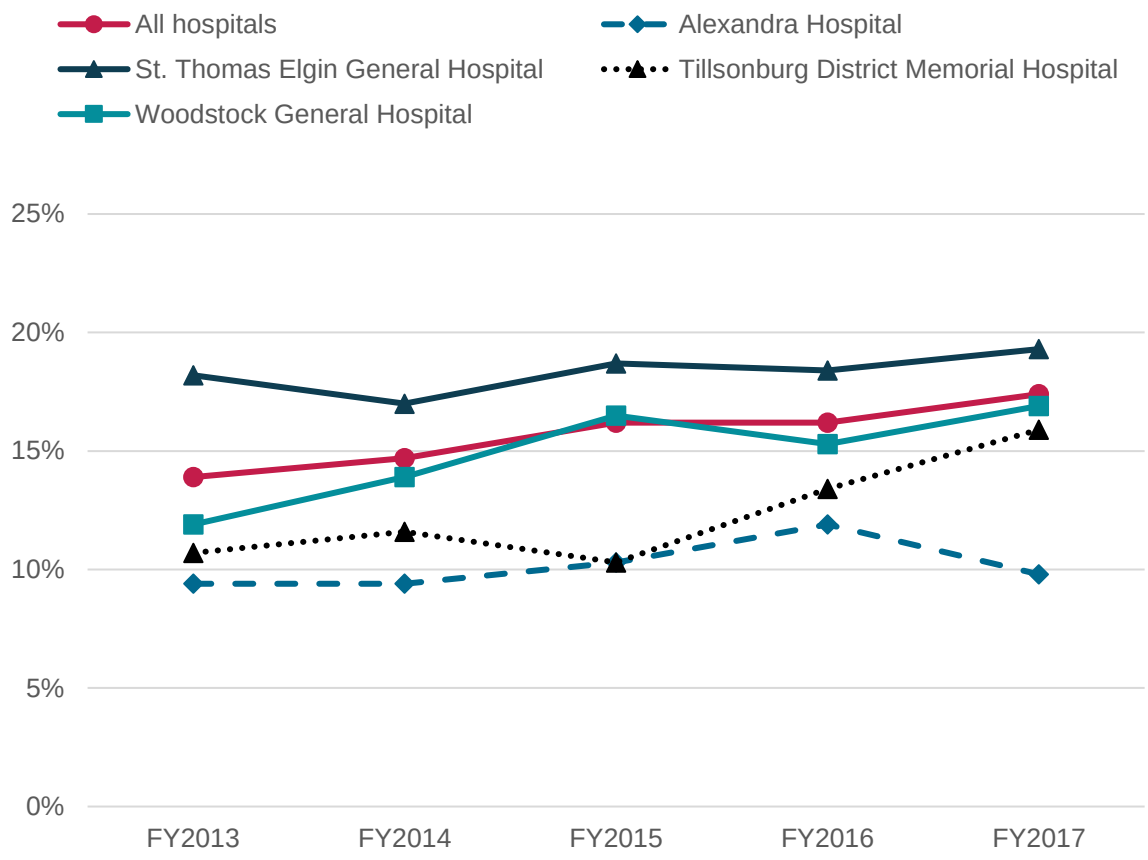
Repeat unplanned emergency department visits

Repeat unplanned visits to the emergency department for mental health may indicate the availability of, access to and quality of community services for mental health. A lower re-visit rate is desired by the Local Health Integration Networks (LHINs).

In the 2017 fiscal year, 17.4% of emergency department visits for mental health at local SWPH region hospitals had an unplanned repeat visit(s) within 30 days (Figure 25). This proportion was higher than the Ministry of Health and Long-Term Care target of 16.3%.[26] The rate appears to have increased slightly over time since the 2013 fiscal year.

Across all hospitals in the SWPH region, the St. Thomas Elgin General Hospital consistently had the highest rate of repeat unplanned emergency department visits for mental health (Figure 25).

Figure 25. Repeat unplanned emergency department visits for mental health, Southwestern Public Health hospitals, FY2013-FY2017*



Note: The repeat visit could be for mental health or substance use and occur in any Ontario hospital within 30 days
*The fiscal year (FY) in this figure is different from conventional fiscal years to account for re-visits within 30 days; it is from March 1 to February 28/29. For example, FY2017 is from March 1, 2017 to February 28, 2018

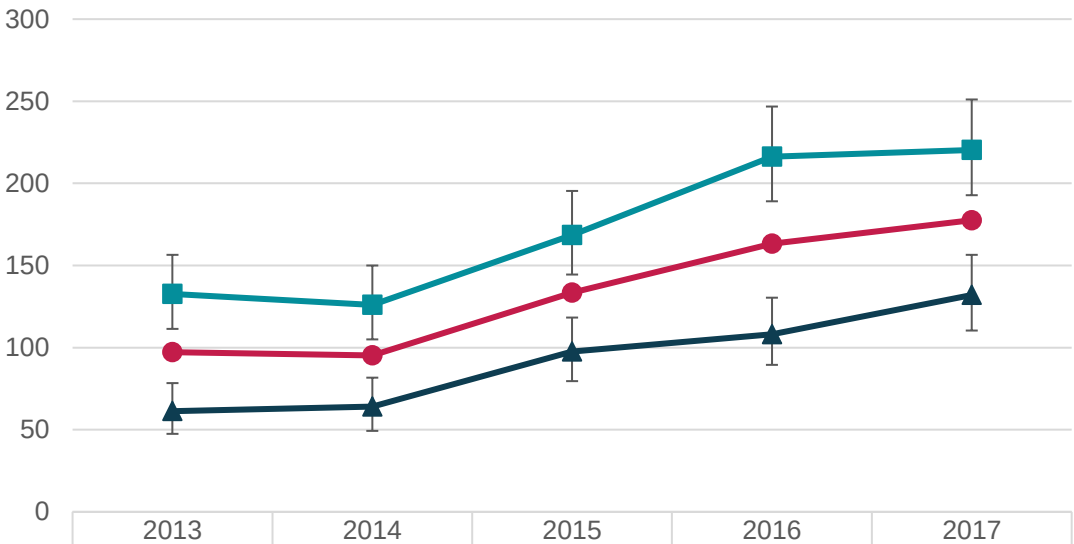
Source: National Ambulatory Care Reporting System (NACRS), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 19, 2018.

Self-harm emergency department visits

The rate of emergency department visits for self-harm increased in 2017 compared to 2013 to 2014 (error bars not shown; Figure 26). The rates of emergency department visits for self-harm were consistently higher among females than males.

It is important to note that sometimes a person may intentionally harm themselves, but not intend to end their life. The data cannot distinguish between different motives of self-harm.

Figure 26. Crude rate of emergency department visits for self-harm (per 100,000 population), by sex, Southwestern Public Health, 2013-2017

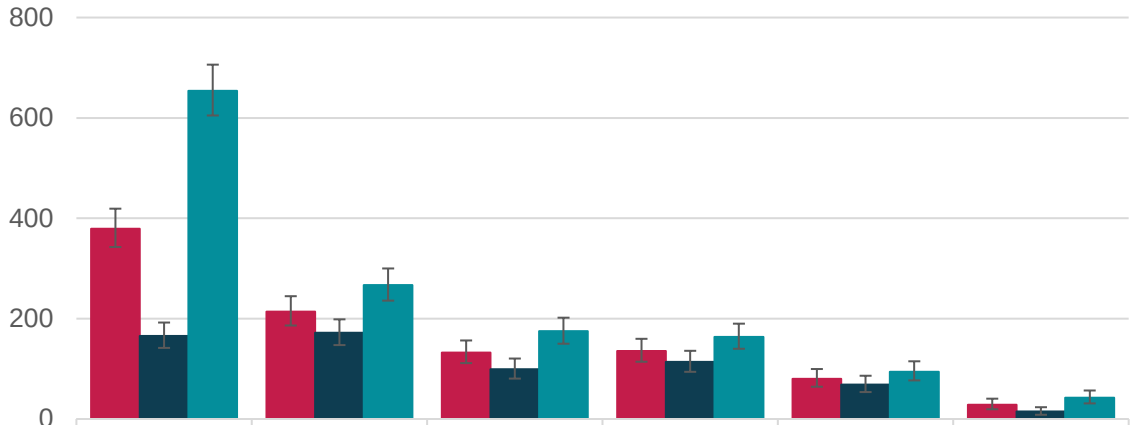


	2013	2014	2015	2016	2017
Overall	97.2	95.2	133.4	163.2	177.6
Males	61.3	64.0	97.7	108.2	132.0
Females	132.6	126.0	168.5	216.2	220.3

Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 3, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019.

Using combined data from 2013 to 2017, the rate of emergency department visits for self-harm decreased with age (Figure 27). The highest rate was among youth (10 to 24 years) with 379.3 emergency department visits per 100,000 population aged 10 to 24 years per year. Among youth, the rate of emergency department visits for self-harm was four times higher among females compared to males.

Figure 27. Five-year average rate of emergency department visits for self-harm (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)



	10 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+
Overall	379.3	214.0	132.5	135.7	80.1	28.4
Males	165.7	171.6	99.0	113.5	68.7	14.8
Females	654.0	266.9	174.9	163.6	94.3	42.6

Note: data for people less than 10 years old were not shown because there were less than five emergency department visits for self-harm over a five-year period among this age group.

Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 3, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019.

The crude rate of emergency department visits was over twice as high in the urban municipalities of the SWPH region compared to the rural municipalities (Figure 28). Like emergency department visits for mental health, this difference may be impacted by many different factors, such as the availability of services and prevalence of mental health concerns.

Figure 28. Crude rate of emergency department visits for self-harm (per 100,000 population) by urban or rural residence, Southwestern Public Health, 2016

In 2016, there were 214.6 (95% CI: 187.2-244.7) emergency department visits for self-harm per 100,000 population living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

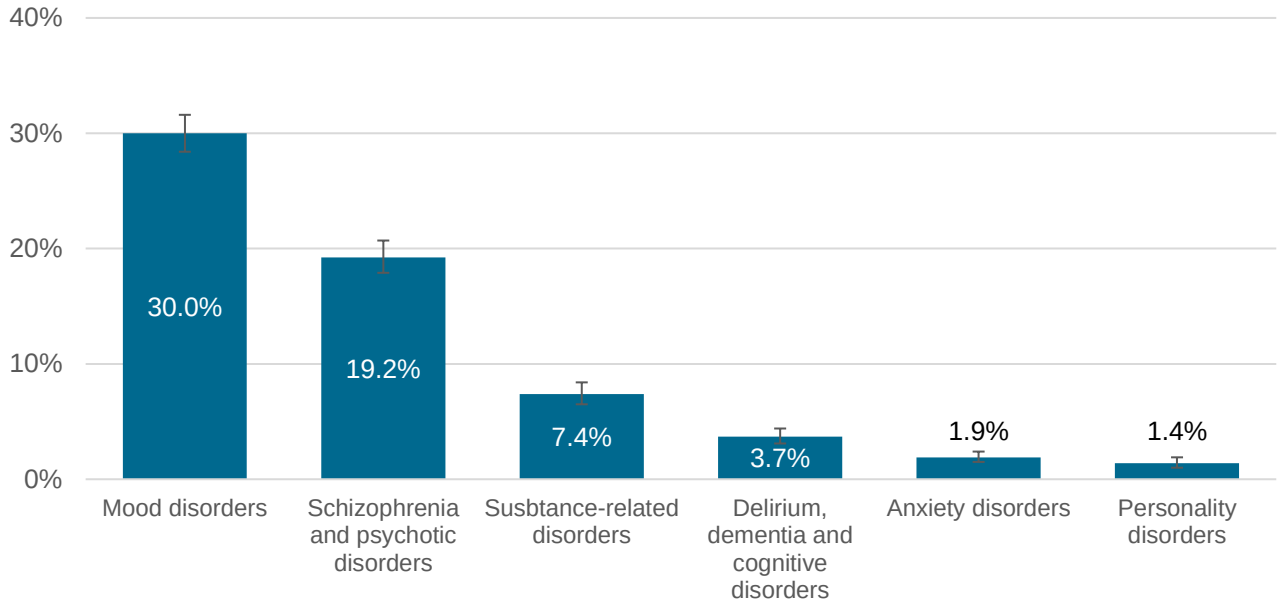
In 2016, there were 90.8 (95% CI: 73.3-110.6) emergency department visits for self-harm per 100,000 population living in the rural municipalities of Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford.

Mental health hospitalizations

The rates of hospitalizations for mental health in the SWPH region were similar between 2013 and 2017, with a slight increase in 2016.[11] Hospitalizations for mental health did not differ by sex or age group.

Among SWPH residents admitted to designated adult inpatient mental health beds, this includes general hospitals with designated adult mental health beds as well as specialty psychiatric hospitals such as the Centre for Addiction and Mental Health, the most common diagnosis was mood disorders (30.0%) followed by schizophrenia and other psychotic disorders (19.2%; Figure 29).

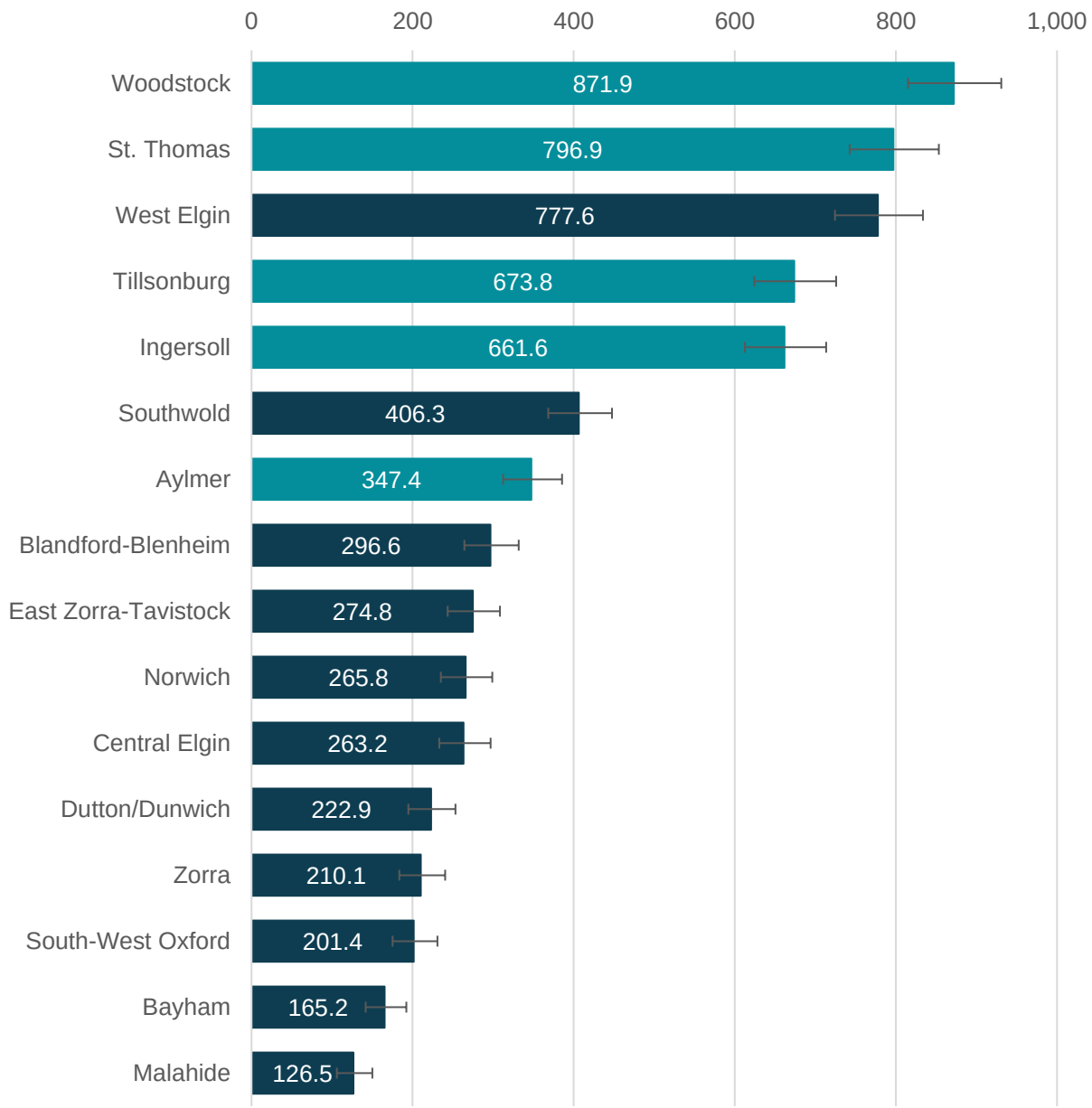
Figure 29. Proportion of admissions to designated adult inpatient mental health beds by condition, Southwestern Public Health, 2013-2017 (combined)



Source: Ontario Mental Health Reporting System (2013-2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: September 18, 2018.

Across all municipalities in the SWPH region, the rates of hospitalizations for mental health were typically higher among people living in the urban municipalities (i.e., St. Thomas, Woodstock, Tillsonburg and Ingersoll, but not Aylmer) compared to the rural municipalities, with the exception of West Elgin (Figure 30).

Figure 30. Crude rate of hospitalizations for mental health (per 100,000 population) by municipality, Southwestern Public Health, 2016



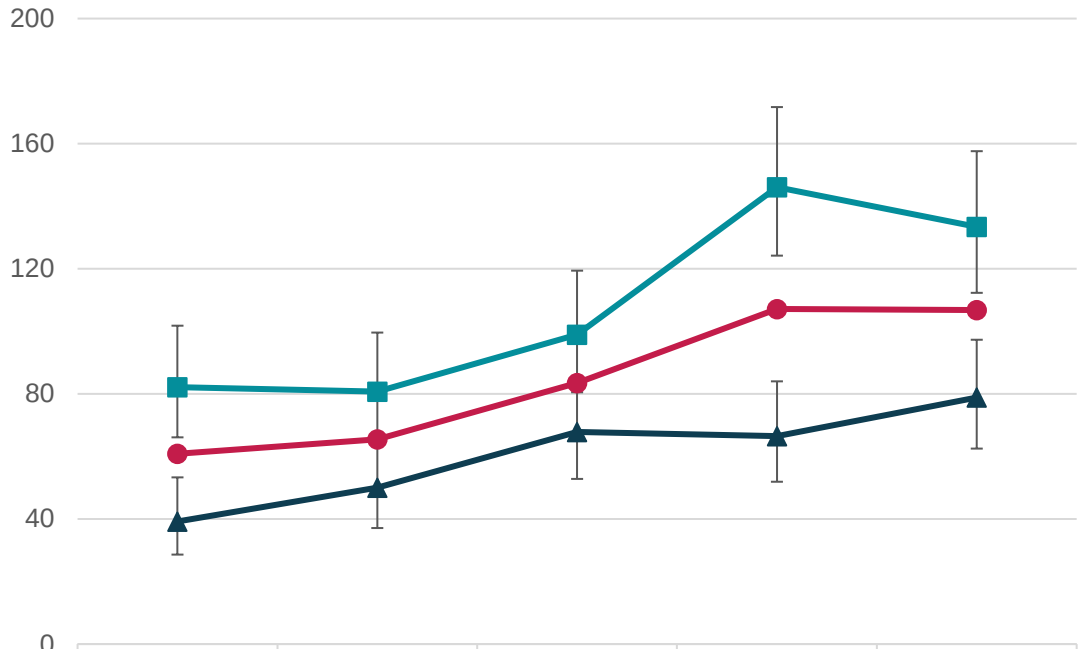
Note: the urban municipalities are highlighted using a lighter blue compared to the rural municipalities which are shown using a darker blue.

Source: Inpatient Discharges (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 3, 2019 & Ontario Mental Health Reporting System (2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 4, 2019 & Population Estimates (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018.

Self-harm hospitalizations

The rate of hospitalizations for self-harm among people living in the SWPH region was higher in 2016 and 2017 compared to 2013 and 2014 (error bars not shown; Figure 31). The rates of hospitalization for self-harm were higher among females compared to males, except in 2014 and 2015.

Figure 31. Crude rate of hospitalizations for self-harm (per 100,000 population), by sex, Southwestern Public Health, 2013-2017

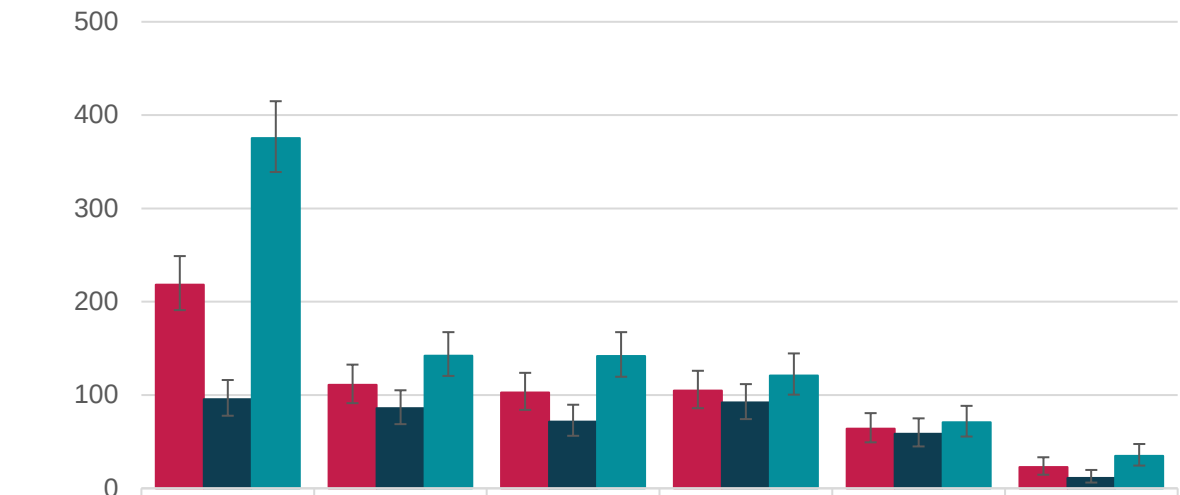


	2013	2014	2015	2016	2017
Overall	60.8	65.5	83.5	107.1	106.8
Males	39.2	50.0	67.8	66.5	78.8
Females	82.2	80.7	98.9	146.1	133.4

Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 3, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019.

Using combined data from 2013 to 2017, the rate of hospitalizations for self-harm was highest among youth (10 to 24 years), was similar among people aged 25 to 54 years and was lowest among people 55 years and older (Figure 32). Among youth, the rate of hospitalizations for self-harm was four times higher among females compared to males.

Figure 32. Five-year average rate of hospitalizations for self-harm (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)



	10 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+
Overall	218.1	110.9	102.5	104.8	63.9	22.7
Males	95.6	85.8	71.4	91.9	58.5	11.1
Females	375.4	142.2	142.0	121.0	70.8	34.8

Source: Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 3, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 2, 2019.

The crude rate of hospitalizations for self-harm was over twice as high among people living in the urban municipalities of the SWPH region compared to the rural municipalities (Figure 33).

Figure 33. Crude rate of hospitalizations for self-harm (per 100,000 population) by urban or rural residence, Southwestern Public Health, 2016

In 2016, there were 141.7 (95% CI: 119.6-166.3) hospitalizations for self-harm per 100,000 population living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

In 2016, there were 60.9 (95% CI: 46.7-77.2) hospitalizations for self-harm per 100,000 population living in the rural municipalities of Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford.

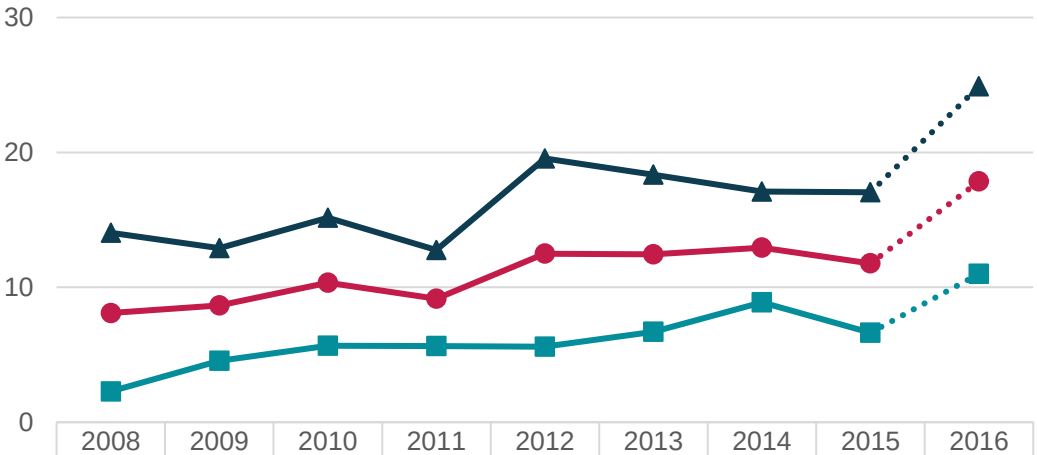
Suicide Deaths

Suicide was the second leading cause of death due to injuries in the SWPH region.[11] Although suicide is considered an action (intentional self-harm) and not a mental illness, the action is highly related to mental health.

Suicide deaths are known to be underreported because some deaths may be classified as accidents or of "unknown intent" if the motive was unclear. Deaths in children less than 10 years old are difficult to classify as a suicide because the person must be deemed able to understand the consequences of their actions.

In the SWPH region, the rates of suicide deaths were not statistically significantly different between 2008 and 2016 (error bars not shown; Figure 34). In 2008 and 2012, males had a higher rate of suicide deaths compared to females (error bars not shown).

Figure 34. Crude rate of suicide deaths (per 100,000 population), by sex, residents 10 years and older, Southwestern Public Health, 2008-2016



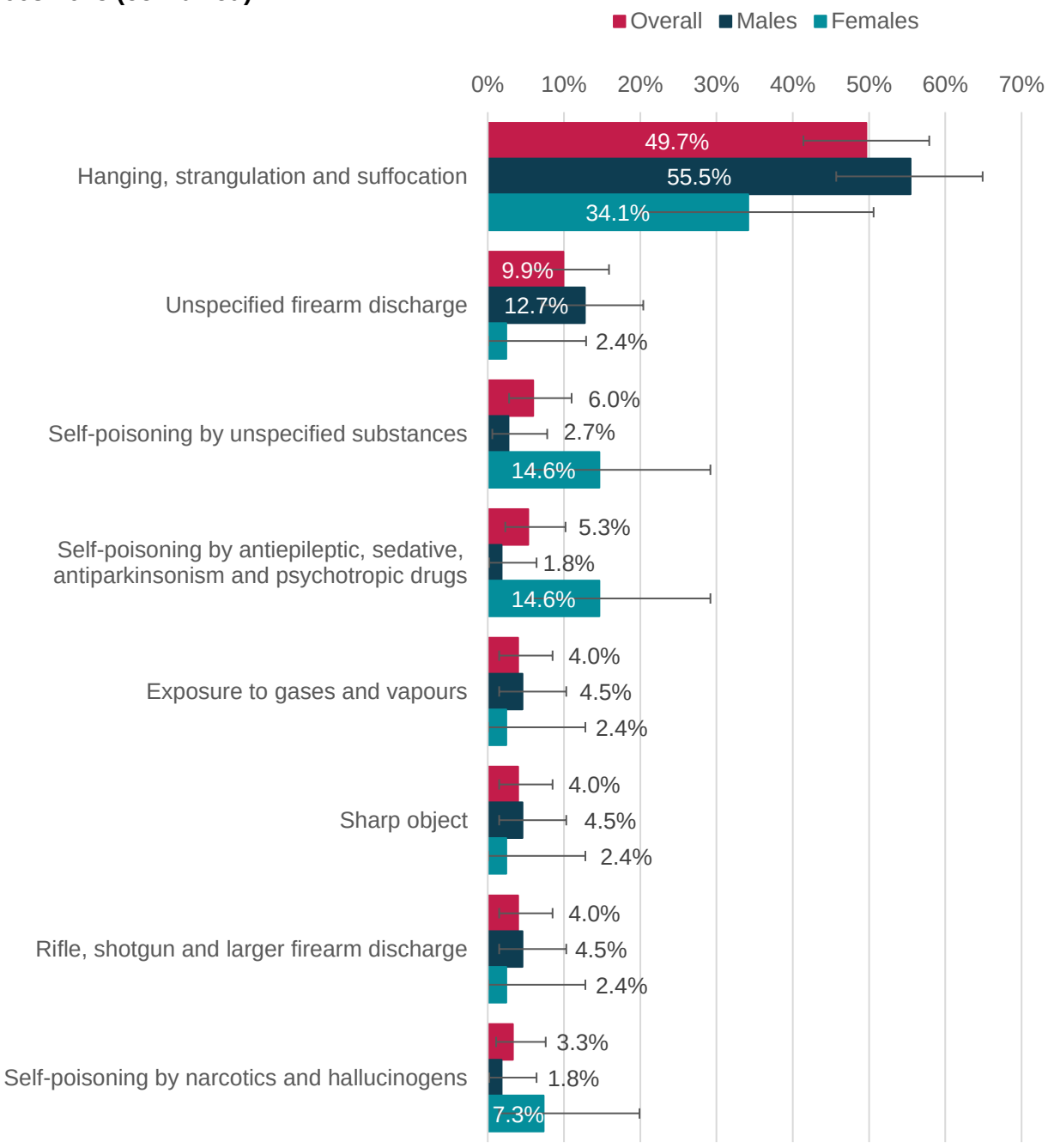
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Overall	8.1	8.7	10.3	9.2	12.5	12.4	12.9	11.8	17.8
Males	14.1	12.9	15.1	12.8	19.6	18.3	17.1	17.0	24.9
Females	2.3	4.6	5.7	5.6	5.6	6.7	8.9	6.6	11.0

Note: data from 2016 are displayed as dashed lines because they are preliminary and subject to change. Data from the Office of the Chief Coroner is typically less conservative than vital statistics data from the Ontario Ministry of Health and Long-Term Care.

Source: Ontario Mortality Data (2008-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & February 19, 2019 & Office of the Chief Coroner (2016), Ontario Ministry of Community Safety and Correctional Services, Date Received: December 21, 2018 & Population Estimates (2008-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018.

Using combined data from 2008 to 2015, over three-quarters (82.8%) of suicide deaths among people living in the SWPH region occurred at home. The most common methods of self-harm leading to death were hanging, strangulation or suffocation (49.7%) followed by unspecified firearm discharge (9.9%; Figure 35).

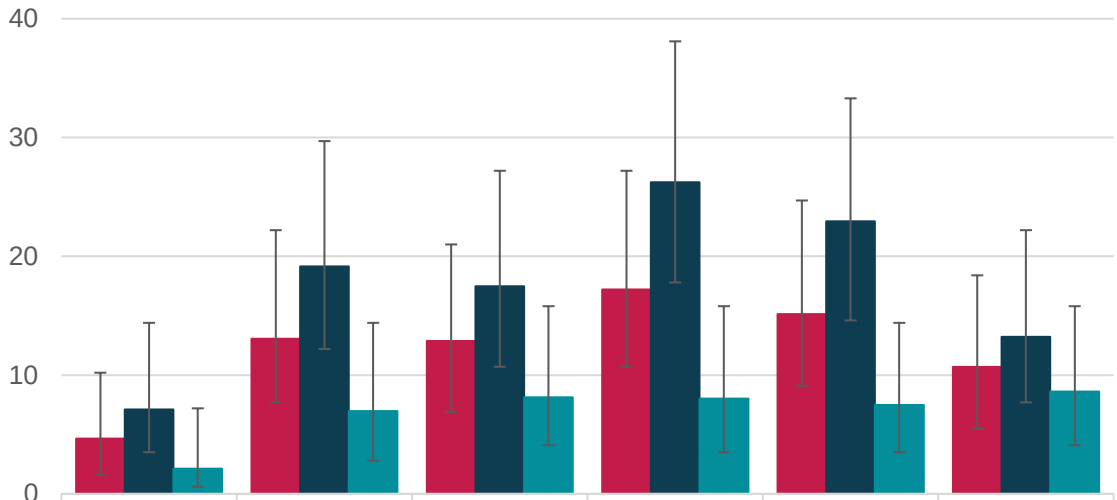
Figure 35. Method of self-harm leading to death, by sex, Southwestern Public Health, 2008-2015 (combined)



Source: Ontario Mortality Data (2008-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & February 19, 2019.

Using combined data from 2011 to 2015, the rate of suicide deaths among people aged 45 to 54 years old was higher than the rate among people aged 10 to 24 years old (Figure 36). This trend was consistent among males and, in addition, males aged 55 to 64 years old had a higher rate of suicide deaths compared to males aged 10 to 24 years old. However, the rate of suicide deaths among females was consistent across age groups.

Figure 36. Five-year average rate of suicide deaths (per 100,000 population) by sex and age group, Southwestern Public Health, 2011-2015 (combined)



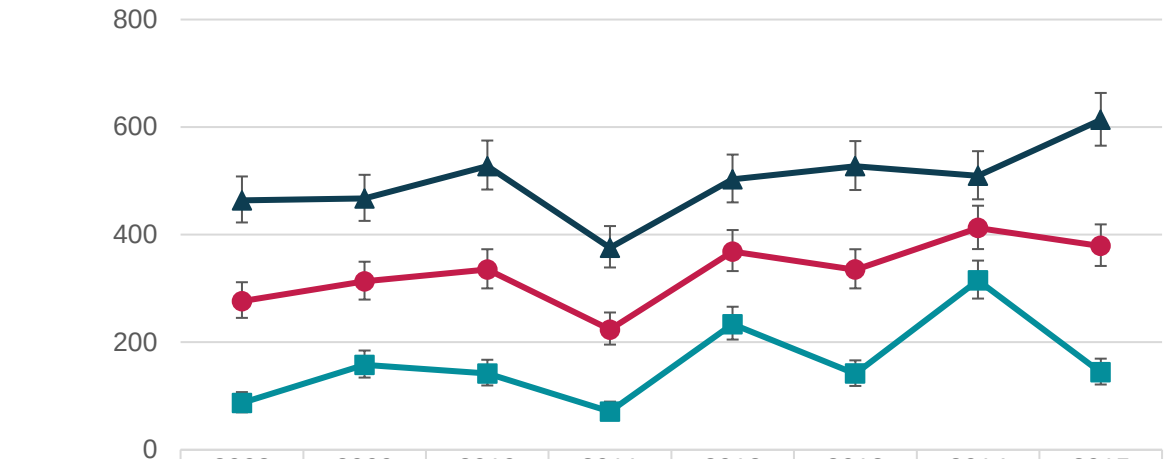
	10 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+
Overall	4.7	13.1	12.9	17.2	15.1	10.7
Males	7.1	19.1	17.5	26.2	22.9	13.2
Females	2.1	7.0	8.1	8.0	7.5	8.6

Source: Ontario Mortality Data (2011-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 19, 2019 & Population Estimates (2011-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018.

Deaths among people less than 75 years old are commonly considered premature deaths and can be measured by potential years of life lost (PYLL; i.e., the total number of years not lived by someone). For example, using this cut-off, there would be 50 potential years of life lost for someone who died at 25 years of age. However, from 2014 to 2016, the life expectancy in Canada was 82 years.[27] Therefore, the convention of using a 75-year cut-off likely underestimates the PYLL from premature deaths.

In 2015, there were 379 PYLL due to suicide deaths per 100,000 population aged 10 to 74 years (Figure 37). The rate of PYLL due to suicide deaths was consistently higher among males compared to females.

Figure 37. Crude rate of potential years of life lost (PYLL) due to suicide deaths (per 100,000 population), by sex, residents 10 to 74 years, Southwestern Public Health, 2008-2015



	2008	2009	2010	2011	2012	2013	2014	2015
Overall	277	313	335	224	369	335	412	379
Males	464	467	528	376	503	527	509	613
Females	87	158	142	71	234	141	315	144

Source: Ontario Mortality Data (2008-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 19, 2019 & Population Estimates (2008-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 19, 2019.

The rate of suicide deaths was similar between people living in the urban municipalities of the SWPH region compared to the rural municipalities (Figure 38).

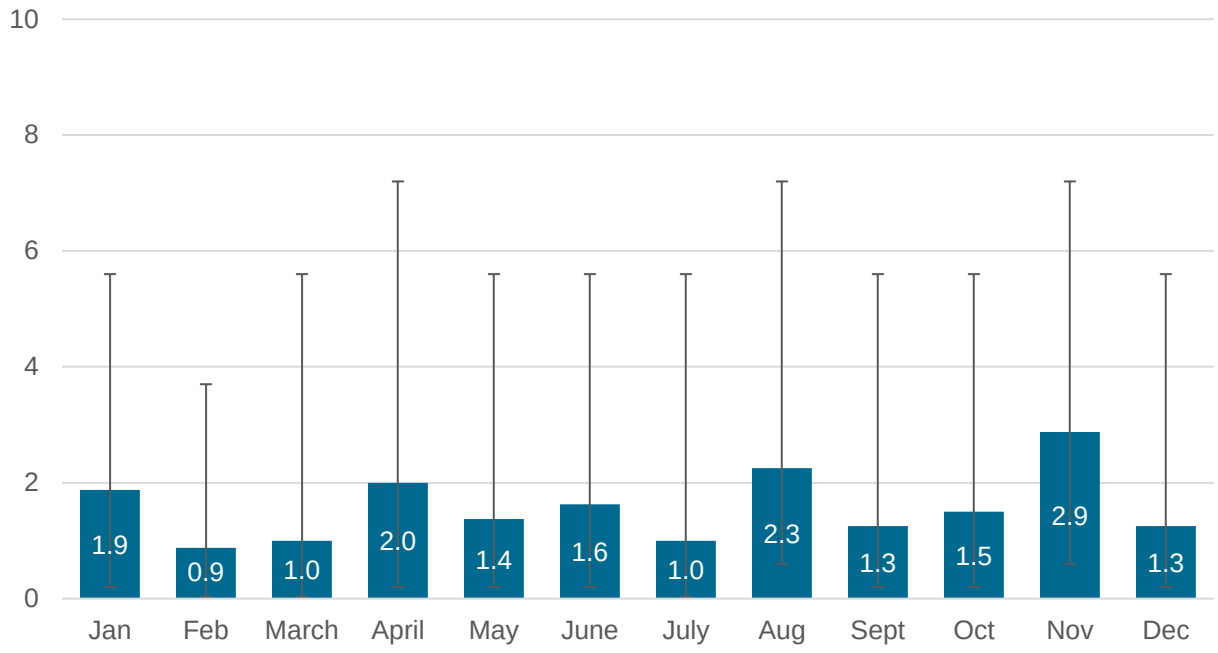
Figure 38. Crude rate of suicide deaths (per 100,000 population), by urban or rural residence, residents 10 to 74 years, Southwestern Public Health, 2008-2015 (combined)

From 2008 to 2015 (combined), there were on average 12.4 (95% CI: 6.9-21.0) suicide deaths per 100,000 population aged 10 years and older per year living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

From 2008 to 2015 (combined), there were on average 8.5 (95% CI: 4.1-15.8) suicide deaths per 100,000 population aged 10 years and older per year living in the rural municipalities of Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford.

Combined data from 2008 to 2015 suggests that there is no seasonal trend in suicide deaths in the SWPH region (Figure 39). However, despite combining several years of data, the averages for each month were based on a small number of deaths; therefore, these averages could be unstable over time.

Figure 39. Average number of suicide deaths by month, residents 10 years and older, Southwestern Public Health, 2008-2015 (combined)

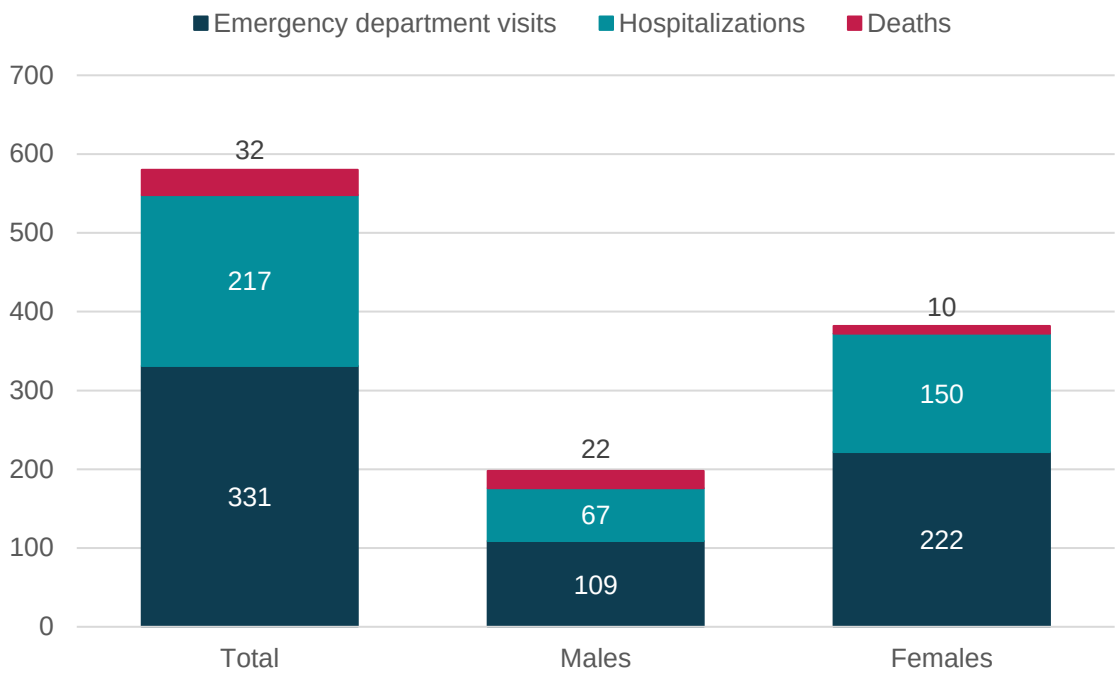


Source: Ontario Mortality Data (2008-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 19, 2019.

Summary of Service Use and Deaths from Self-harm

Data showed that females were more likely to visit the emergency department and be hospitalized for self-harm whereas males were more likely to die from suicide (Figure 40).

Figure 40. Number of emergency department visits, hospitalizations and deaths from self-harm, by sex, Southwestern Public Health, 2016



Source: Ambulatory Emergency External Cause (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 3, 2019 & Office of the Chief Coroner (2016), Ontario Ministry of Community Safety and Correctional Services, Date Received: December 21, 2018.

Discussion

This report describes the most recent population health data about mental health and mental illness for people living in the SWPH region. The data presented in this report highlight how mental health and mental illness are impacted by sociodemographic characteristics, some of which may be inequitable. There was a clear overarching trend that showed that people with higher income reported a better sense of community belonging, better life satisfaction and overall perceived mental health. Conversely, lower income was associated with increased reporting of mood disorders, depressive symptoms, anxiety disorders and consultations with health professionals about emotional or mental health. Public Health Ontario found that if each socioeconomic group experienced the same rate of emergency department visits for mental health as the least materially deprived group (a measure combining data about lone-parent families, income from government transfers, living below the low-income measure after-tax (LIM-AT) and living in houses in fair or poor condition), there could be a reduction of 1,650 emergency department visits over a two-year period in the SWPH region.

There were also differences in mental health and mental illness between females and males. Females were more likely to report having a mood disorder, depressive symptoms, consulting with a health professional about emotional or mental health and visiting the emergency department and being hospitalized for self-harm. Previous research has shown that females tend to have higher rates of depression and anxiety while males tend to have higher rates of violence and substance use.[28] These findings are largely impacted by differences in socialization (including gender role expectations), help seeking, coping and socioeconomic status.[28] However, research also shows that the prevalence of depression and anxiety may be underestimated among males because of inadequate survey tools used to capture men's experiences and clinician bias (a subconscious predisposition to overlook male distress).[28]

Across the lifespan, youth (10 to 24 years) were the most likely to visit the emergency department and be hospitalized for self-harm, while young adults (18 to 34 years) were most likely to report having an anxiety disorder. Young to middle-age adults (25 to 54 years) were most likely to report visiting a physician or an emergency department for mental health. Middle-age adults (35 to 64 years) were also more likely to report work stress while older adults (65 years and older) were least likely to report life stress.

Interestingly, people living in the rural municipalities of the SWPH region reported better life satisfaction and overall perceived mental health compared to people living in the urban municipalities. Conversely, people living in the urban municipalities were more likely to report having a mood disorder, visiting the emergency department for mental health and self-harm and being hospitalized for mental health and self-harm. However, it is unclear what factors may be affecting these differences. For example, people living in urban areas may have more access to mental health services or there may be underlying differences in the characteristics of people who live in urban versus rural settings.

The rates of emergency department visits for mental health (such as mood disorders, anxiety disorders and substance use disorders) were over nine times higher than the rates of emergency department visits for self-harm. However, when focusing on self-harm, there were some important differences in the population. Data showed that females were more likely to visit the emergency department and be hospitalized whereas males were more likely to die from suicide. In 2015, 379 potential years of life were lost in the SWPH region due to suicide, with more years of life lost among males.

Recommendations

Based on the findings from this report, the data suggest that:

1. The SWPH region should focus on reducing health inequities such as income inequality and material deprivation, which have been shown to affect local mental health and are a key social determinant of mental health.

2. The SWPH region should consider evidence-informed interventions focused on improving mental health among people living with a low income and females.

3. The SWPH region should further investigate the underlying reasons for differences in mental health and mental illness between residents living in the urban municipalities compared to the rural municipalities.

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Appendix A: Technical Notes

This report summarizes information from a variety of data sources available to Public Health. The methods used, and geography presented depends on the data source. More detail about the data sources can be found below.

Canadian Community Health Survey (CCHS)

The Canadian Community Health Survey (CCHS) is a national telephone survey that collects information about health from the population aged 12 years and older. The CCHS excludes people living on reserves and other Indigenous settlements, full-time members of the Canadian Forces and people living in institutions. Data is self-reported and may be subject to recall bias and social desirability bias. 'Don't know' and 'not stated' responses were removed from analysis when they represented less than 10% (combined) of the unweighted sample. This assumes that data are missing at random, which is not always the case. Data from 2015-2016 onwards is not comparable to previous years due to substantial changes in sampling methodology and content.

The 2016 CCHS was the first cycle of the CCHS to link survey responses to individual's tax records. Therefore, income questions were only asked for participants that refused to have their records linked or where there was a low probability of finding a link based on preliminary work. For self-reported income, responses were adjusted by Statistics Canada based on statistical models to provide health units with the most accurate income groups possible. Household income before tax was then grouped into quintiles (five equal sized groups containing 20% of the population) based on provincial data. Therefore, people in the lowest income quintile (Q1) have the lowest 20% of household incomes before tax in the province.

The error bars in figures are the confidence intervals (CIs). Each estimate is based on the survey sample and a CI is a range of values that describes the uncertainty surrounding an estimate. The 95% CI shows a range of values that have a 95% chance of including the true estimate in the population if the survey was repeated. The larger a 95% CI, the more caution should be used when using the estimate. CIs that don't overlap show statistically significant differences between groups. Statistically significant results indicate the finding is unlikely to be due to chance alone.

National Ambulatory Care Reporting System (NACRS)

NACRS contains information about unscheduled emergency department visits. The data submitted by emergency departments is validated by the Canadian Institute for Health Information (CIHI) and released to public health units through IntelliHEALTH ONTARIO. The International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10-CA) codes in Table 2 (main causes) were used to capture emergency department visits for mental health and the ICD-10-CA codes in Table 3 (external causes) were used to capture emergency department visits for self-harm. Notably, a visit to the emergency department can only have one main cause but may have multiple external causes. However, each unique visit for self-harm will be counted once.

Mental health emergency department visits codes were chosen to correspond with Public Health Ontario (PHO)'s Snapshots: *Health Inequities in Mental Health Emergency Department Visits*.[29] The indicators in that Snapshots were chosen based on a CIHI report.[30]

Table 2. Mental health emergency department visits

Measures	ICD-10-CA codes
Substance-related disorders	F10 – F19, F55
Schizophrenia, delusional and non-organic psychotic disorders	F20 – F29
Mood/affective disorders	F30 – F34, F38.0, F38.1, F38.8, F39, F53.0
Anxiety disorders	F40, F41, F42, F43.0, F43.1, F43.8. F43.9, F93.0, F93.1, F93.2
Selected disorders of adult personality and behaviour	F60, F61, F62, F68, F69

Table 3. Self-harm emergency department visits

Measures	ICD-10-CA codes
Intentional self-poisoning	X60 – X69
Intentional self-harm by hanging, strangulation and suffocation	X70
Intentional self-harm by drowning and submersion	X71
Intentional self-harm by firearm discharge	X72 – X74
Intentional self-harm by explosive material	X75
Intentional self-harm by smoke, fire and flames	X76
Intentional self-harm by steam, hot vapours and hot objects	X77
Intentional self-harm by sharp object	X78
Intentional self-harm by blunt object	X79
Intentional self-harm by jumping from a high place	X80
Intentional self-harm by jumping or lying before moving object	X81
Intentional self-harm by crashing of motor vehicle	X82
Intentional self-harm by other specified means	X83
Intentional self-harm by unspecified means	X84
Sequelae of intentional self-harm	Y87.0

Ontario Marginalization Index (ON-Marg)

Public Health Ontario used the ON-Marg to demonstrate how health equity impacts mental health emergency department visits. Emergency department visits for mental health among people 15 years and older were obtained from NACRS using the same ICD-10-CA codes outlined Table 2. The ON-Marg measures four concepts of health equity: residential instability, material deprivation, dependency and ethnic concentration. The 2011 version that was used to link health equity to health outcomes used data sources that differed from previous versions of the ON-Marg as well as the 2016 ON-Marg, which used Census data exclusively. Data sources were modified in 2011 due to data quality concerns with using the National Household Survey (Table 4). The ON-Marg technical document outlines the methods in more detail, including how the four indicators were created.[31]

Table 4. ON-Marg indicators, measures and data sources, 2011[31]

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

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

Discharge Abstract Database (DAD)

DAD contains information about hospital discharges and therefore does not capture people treated and released from emergency departments, those treated in doctors' offices or clinics or those who did not seek treatment in a hospital. This may underestimate the burden of mental health hospitalizations. The data submitted by hospitals is validated by CIHI and released to public health units on a quarterly basis through IntelliHEALTH ONTARIO. Importantly, an individual may be hospitalized and discharged for the same reason more than once over the time period; therefore, hospitalizations cannot measure disease incidence. As of the 2006 fiscal year, the only care types remaining in DAD are acute inpatient, specialized children's institutions offering rehab, children's mental health care and acute adult mental health patients not in designated adult psychiatric beds. The ICD-10-CA codes used to capture self-harm hospitalizations are the same as those used to capture emergency department visits (Table 3). However, the ICD-10-CA codes to capture mental health hospitalizations differ slightly (Table 5).

Table 5. Mental health hospitalizations

Measures	ICD-10-CA codes
Organic, including symptomatic, mental disorders (excluding Alzheimer's disease and dementia)	F04-F09
Mental and behavioural disorders due to psychoactive substance use	F10-F19
Schizophrenia, schizotypal and delusional disorders	F20-F29
Mood (affective) disorders	F30-F39
Neurotic, stress-related and somatoform disorders	F40-F48
Behavioural syndromes associated with physiological disturbances and physical factors	F50-F59
Disorders of adult personality and behaviour	F60-F69
Mental retardation	F70-F79
Disorders of psychological development	F80-F89
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence	F90-F98
Unspecified mental disorder	F99

Ontario Mental Health Reporting System (OMHRS)

OMHRS includes data about patients occupying an adult designated mental health bed (which can include cases under the age of 18). The reasons for admissions to designated mental health beds are classified based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V) codes, which includes diagnoses such as schizophrenia, major depressive disorder, alcohol dependence, bipolar disorder and mood disorder. Since OMHRS is an admission-based system, it includes people still being treated at the time of reporting.

Ontario Mortality Data (Vital Statistics)

Ontario Mortality Data is obtained through the Office of the Registrar General, Service Ontario, which receives information from death certificates completed by physicians. This information is released to public health units through IntelliHEALTH ONTARIO and includes only the primary (i.e., underlying) cause of death. There may be some uncertainty when classifying the underlying cause of death especially in the case of suicides if the intent is unknown. Suicide deaths are deaths from intentional self-harm as measured using the ICD-10-CA codes X60-X84 and Y87.0 described in Table 3.

Population Estimates and Projections

Population estimates and projections were used as the denominator to calculate rates. Population estimates are produced by the Demography Division at Statistics Canada and were obtained through IntelliHEALTH ONTARIO.

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