# Substance Use and Injury Prevention

## Health Status by Program Area

Population Health Assessment
Southwestern Public Health
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# Authors

**Melissa MacLeod, M.Sc.**
Epidemiologist
Foundational Standards
Southwestern Public Health

**Hadia Hussain, MPH**
Epidemiologist/Program Evaluator
Foundational Standards
Southwestern Public Health

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# Contents

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

**This report does not include statistics about opioid use because opioid overdose surveillance is conducted by public health and up-to-date information is shared on a regular basis through other products.**

# Summary

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

**Alcohol:** Some groups of people are more at risk of experiencing alcohol-related harms. This includes males, young adults (19 to 21 years), people living with a high income and people with some or completed post-secondary education. Unintentional injuries were a common reason for alcohol-attributable hospitalization. Addressing marginalization (residential instability) could reduce alcohol-attributable hospitalizations.

**Tobacco:** Males; middle-aged adults (22 to 54 years); people living with a low income and people living in Woodstock, Ingersoll, Tillsonburg, St. Thomas and Aylmer are more at risk of experiencing tobacco-related harms.

**Cannabis:** Cannabis use was higher among males and adults less than 55 years old. Females were more likely to report cannabis use for medical reasons (prescribed and non-prescribed). People with no more than a high school education reported more frequent cannabis use.

**Falls:** The rates of emergency department visits and hospitalizations for falls were higher among females and people aged 75 years and older. About half of hospitalizations and deaths from falls were from falls that occurred at home.

**Transportation-related injuries:** Transportation-related injuries were primarily from motor vehicle collisions. Males and middle-aged adults (20 to 44 years) were the most likely to visit the emergency department or be hospitalized from transportation-related injuries; however, males 75 years and older were more likely to die from these injuries.

**Unintentional poisonings:** The most common causes of unintentional poisonings were from drugs or medications, primarily narcotics/hallucinogens and antiepileptics, sedatives-hypnotics, antiparkinsonian medications and psychotropics. Males (when examining deaths) and people aged 75 years and older were more likely to be affected by unintentional poisonings. The rates of hospitalizations due to unintentional poisoning were higher among people living in the urban municipalities compared to the rural municipalities.

**Neurotrauma:** The rates of physician and nurse practitioner visits for neurotrauma were highest among youth (10 to 24 years) and the rate of emergency department visits for neurotrauma was highest among people aged less than 20 years old, particularly males. However, the rate of hospitalizations for neurotrauma was highest among people aged 75 years and older, especially males. The most common cause of emergency department visits was for concussions, but hospitalizations were mostly for traumatic subdural haemorrhages.

# Substance Use and Injury Prevention

# Substance Use

This section includes data about alcohol, tobacco and cannabis use as well as alcohol and tobacco-related harms.

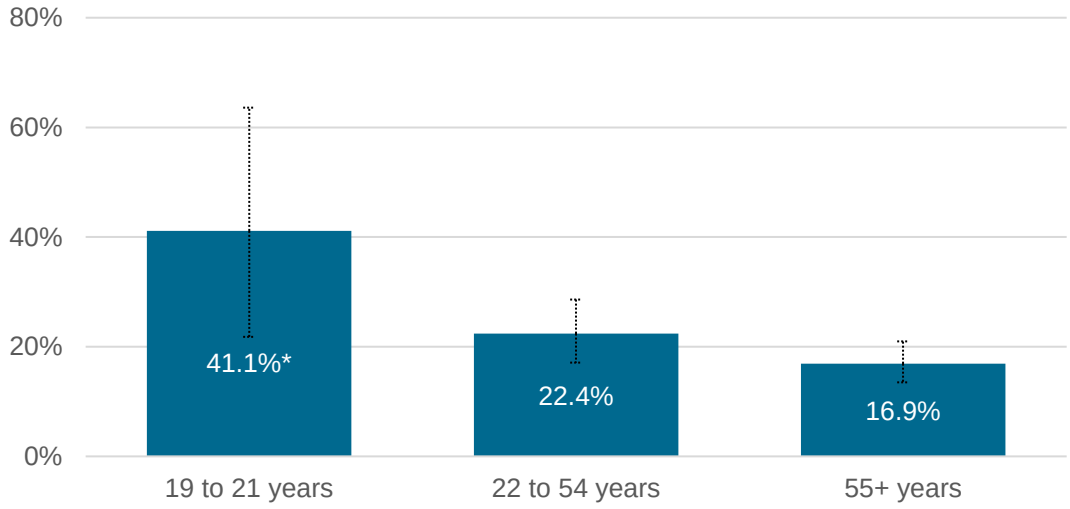
## Alcohol use and related harms

### Low risk alcohol drinking guidelines (LRADGs)

#### Met or exceeded LRADG 1 (increased long-term health risks)

The first Canadian low risk alcohol drinking guideline (LRADG1) focuses on reducing the long-term (chronic) health risks associated with alcohol use, such as cancer and heart disease. A higher proportion of young adults (19 to 21 years old) met or exceeded this guideline compared to people aged 55 years and older (41.1% versus 16.9%; Figure 1).

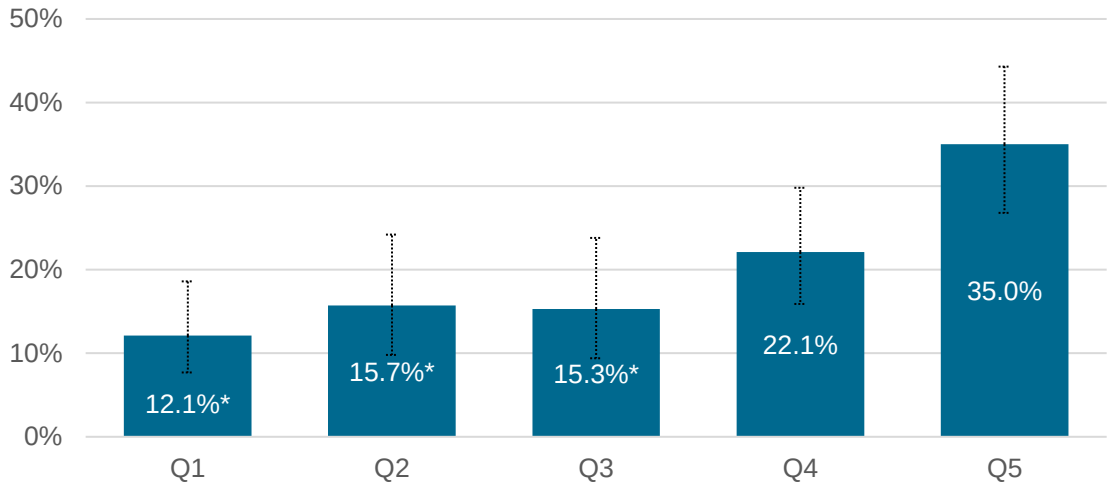
**Figure 1. Met or exceeded LRADG 1 by age group, Southwestern Public Health, 2015-2016**




*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 larger proportion of people in the highest income quintile (highest 20% of incomes) met or exceeded LRADG 1 compared to people in the lowest three income quintiles (Figure 2).

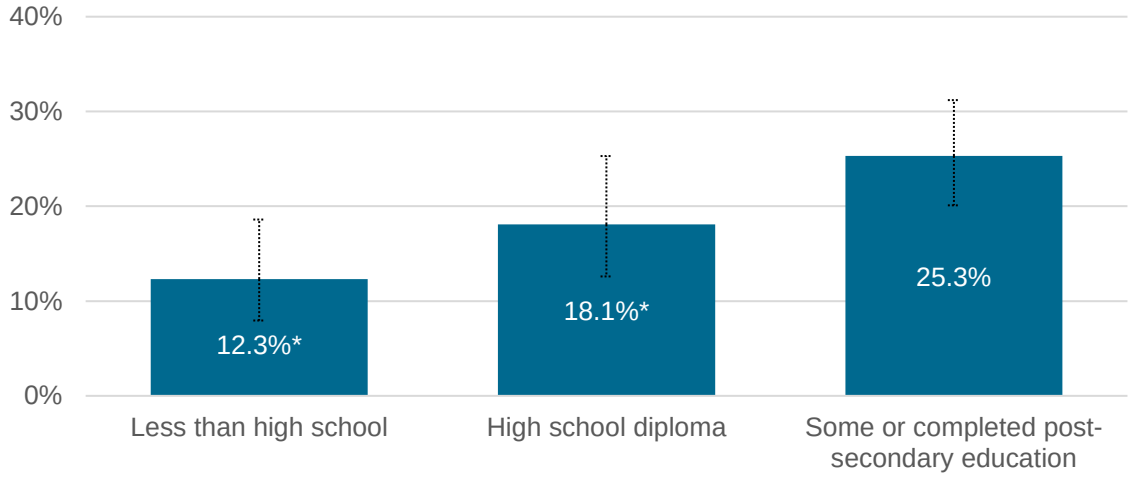
**Figure 2. Met or exceeded LRADG 1 by income quintile[a], adults 19 years and older, Southwestern Public Health, 2015-2016**




*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 people with some or completed post-secondary education met or exceeded LRADG 1 compared to people with less than a high school education (Figure 3).

**Figure 3. Met or exceeded LRADG 1 by education level, adults 19 years and older, Southwestern Public Health, 2015-2016**



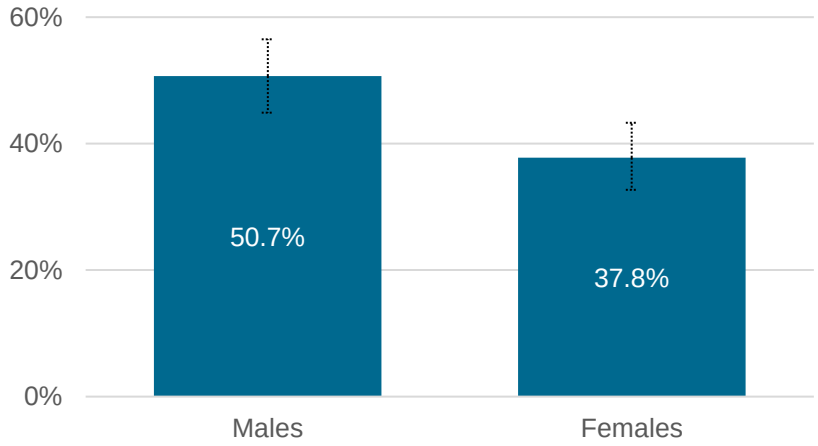

*These per cents should be interpreted with caution due to their variability.
**Source:** Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

[a] 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.

## Met or exceeded LRADG 2 (increased short-term health risks)

The second Canadian low risk alcohol drinking guideline (LRADG 2) focuses on reducing the short-term risks associated with alcohol use, such as injuries and violence. A higher proportion of males met or exceeded LRADG 2 compared to females (50.7% versus 37.8%; Figure 4).

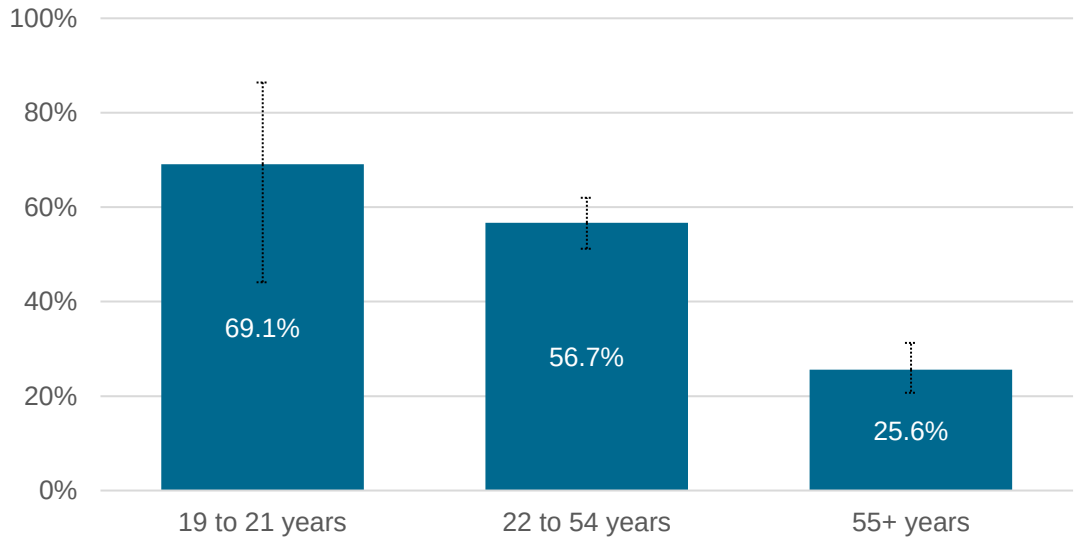
**Figure 4. Met or exceeded LRADG 2 by sex, adults 19 years and older, Southwestern Public Health, 2015-2016**




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

A higher proportion of young adults (19 to 21 years old) and middle-aged adults (22 to 54 years) met or exceeded LRADG 2 compared to older adults (55 years and older; Figure 5).

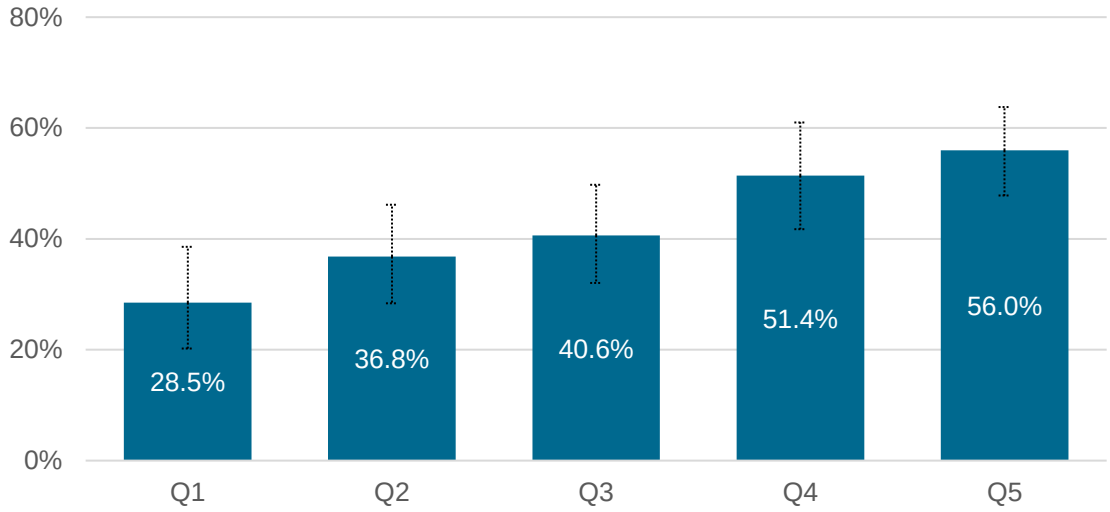
**Figure 5. Met or exceeded LRADG 2 by age group, Southwestern Public Health, 2015-2016**




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

A larger proportion of people in the highest income quintile (highest 20% of incomes) met or exceeded LRADG 2 compared to people in the lowest two income quintiles and a larger proportion of people in the second highest income quintile met or exceeded LRADG 2 compared to people in the lowest income quintile (Figure 6).

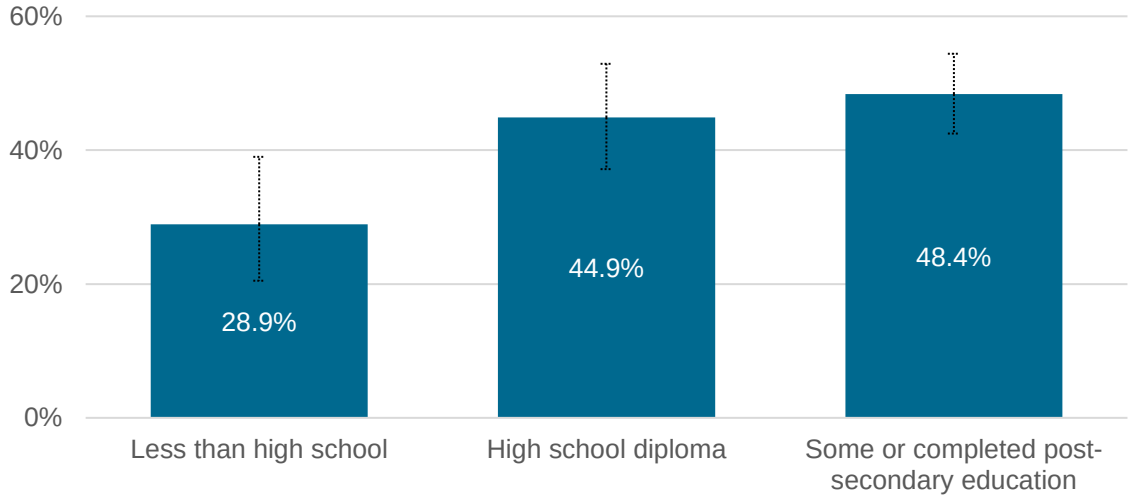
**Figure 6. Met or exceeded LRADG 2 by income quintile, adults 19 years and older, Southwestern Public Health, 2015-2016**




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

A higher proportion of people with some or completed post-secondary education met or exceeded LRADG 2 compared to people with less than a high school education (Figure 7).

**Figure 7. Met or exceeded LRADG 2 by education level, adults 19 years and older, Southwestern Public Health, 2015-2016**

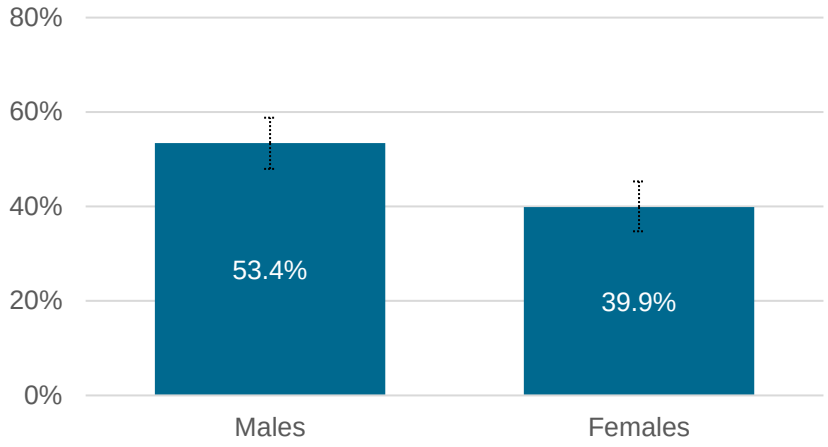



**Source:** Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

## Met or exceeded LRADG 1 and/or 2 (increased short and/or long-term health risks)

A higher proportion of males met or exceeded LRADG 1 and/or LRADG 2 compared to females (53.4% versus 39.9%; Figure 8).

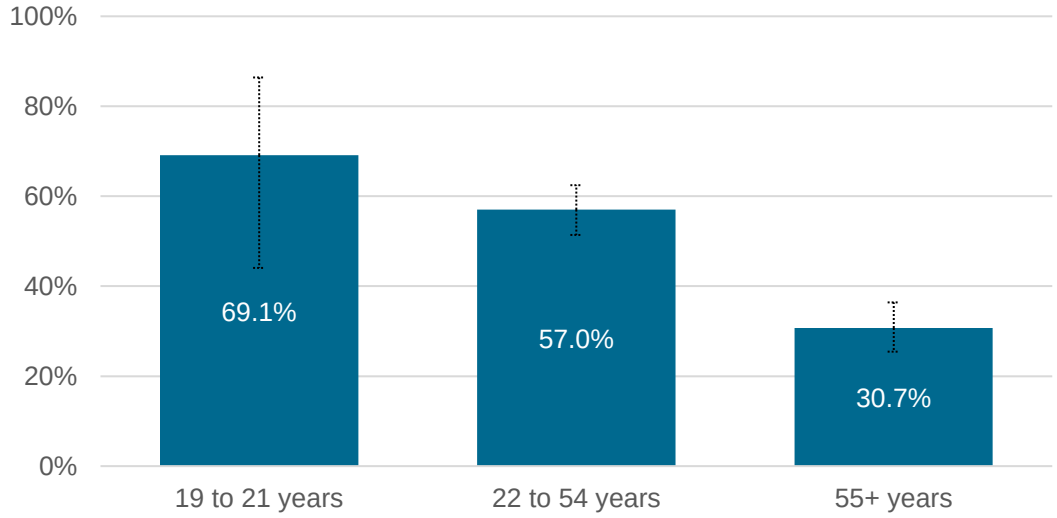
**Figure 8. Met or exceeded LRADG 1 and/or LRADG 2 by sex, adults 19 years and older, Southwestern Public Health, 2015-2016**




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

A higher proportion of young adults (19 to 21 years old) and middle-aged adults (22 to 54 years) met or exceeded LRADG 1 and/or LRADG 2 compared to older adults (55 years and older; Figure 9).

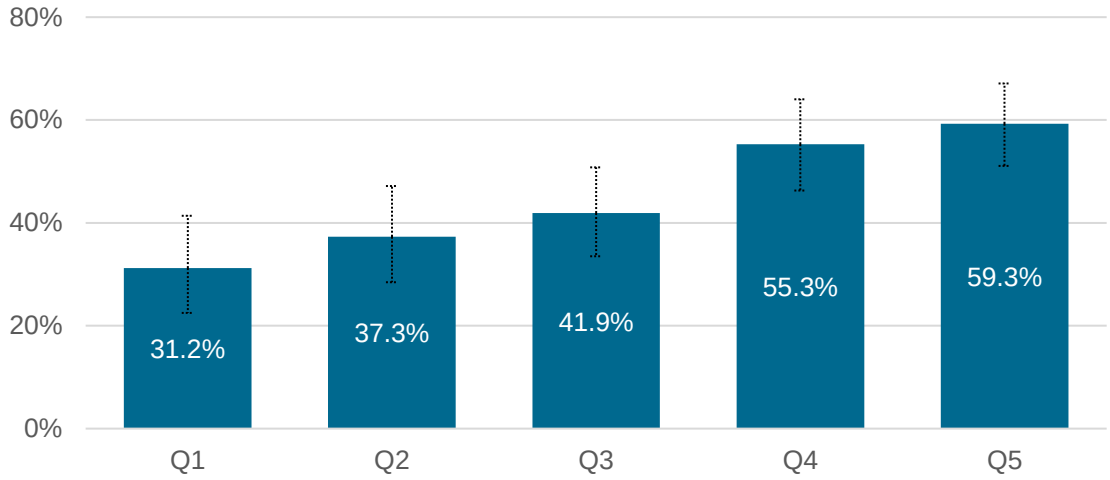
**Figure 9. Met or exceeded LRADG 1 and/or LRADG 2 by age group, Southwestern Public Health, 2015-2016**




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

A larger proportion of people in the highest income quintile (highest 20% of incomes) met or exceeded LRADG 1 and/or LRADG 2 compared to people in the lowest three income quintiles and a larger proportion of people in the second highest income quintile met or exceeded LRADG 1 and/or LRADG 2 compared to people in the lowest income quintile (Figure 10).

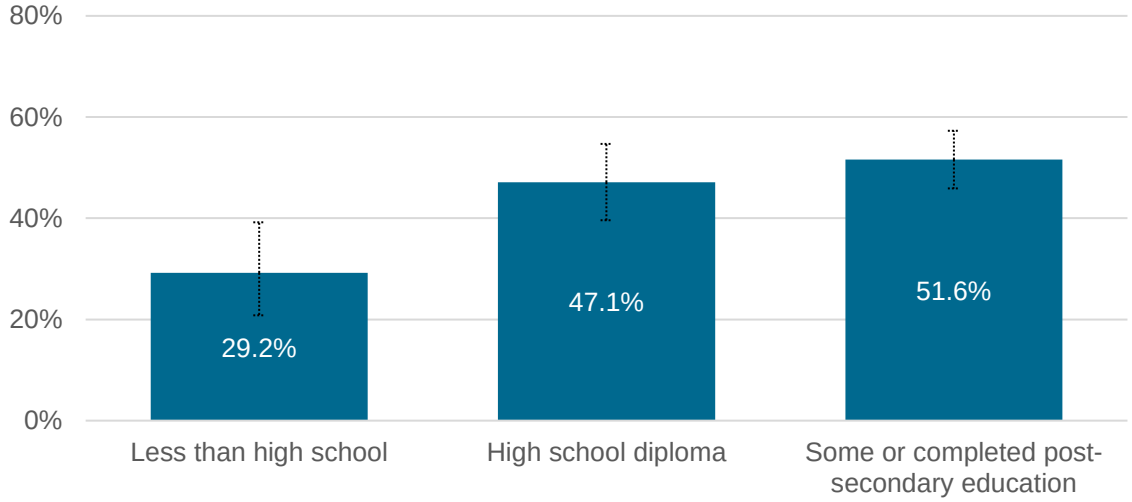
**Figure 10. Met or exceeded LRADG 1 and/or LRADG 2 by income quintile, adults 19 years and older, Southwestern Public Health, 2015-2016**




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

A higher proportion of people with some or completed post-secondary education and people with a high school diploma met or exceeded LRADG 1 and/or LRADG 2 compared to people with less than a high school education (Figure 11).

**Figure 11. Met or exceeded LRADG 1 and/or LRADG 2 by education level, adults 19 years and older, Southwestern Public Health, 2015-2016**

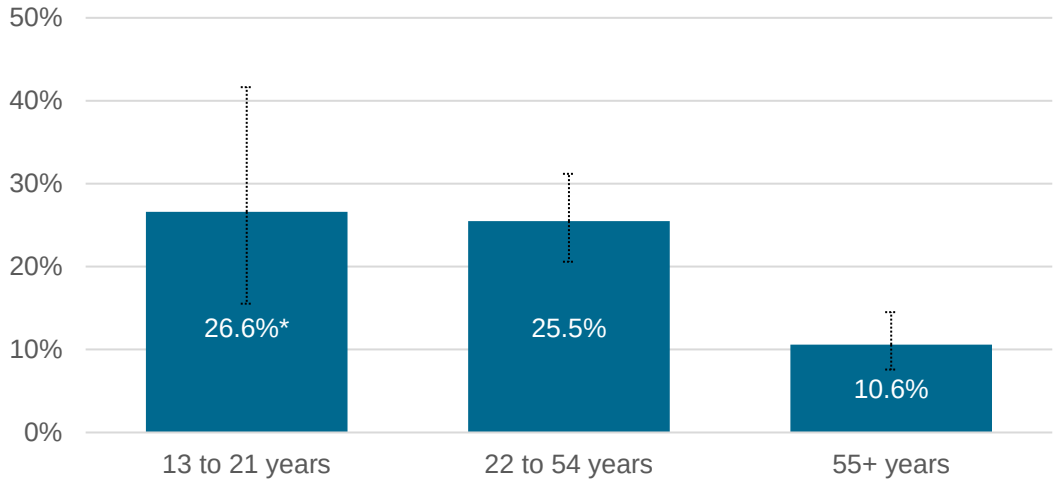



**Source:** Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

## Heavy drinking

Heavy drinking is defined as drinking five or more drinks for males or four or more drinks for females on at least one occasion per month in the past 12 months. A higher proportion of youth (13 to 21 years old) and middle-aged adults (22 to 54 years) reported heavy drinking compared to older adults (55 years and older; Figure 12).

**Figure 12. Heavy drinking by age group, 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.

## Underage drinking

Overall, 32.8% of adolescents (12 to 18 years) had a “drink of beer, wine, liquor or any other alcoholic beverage” in the past 12 months. Underage drinking appears to increase with age (Table 1). However, the data are based on a small number of adolescents which means that the results are more uncertain, and the differences were not statistically significant.

**Table 1. Underage drinking by age group, Southwestern Public Health, 2015-2016**

| Age group | Per cent (95% confidence interval (CI)) |
|---|---|
| 12 to 14 years | Not reportable |
| 15 to 16 years | 43.8%* (24.6%-65.1%) |
| 17 to 18 years | 71.2% (47.0%-87.3%) |

*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.

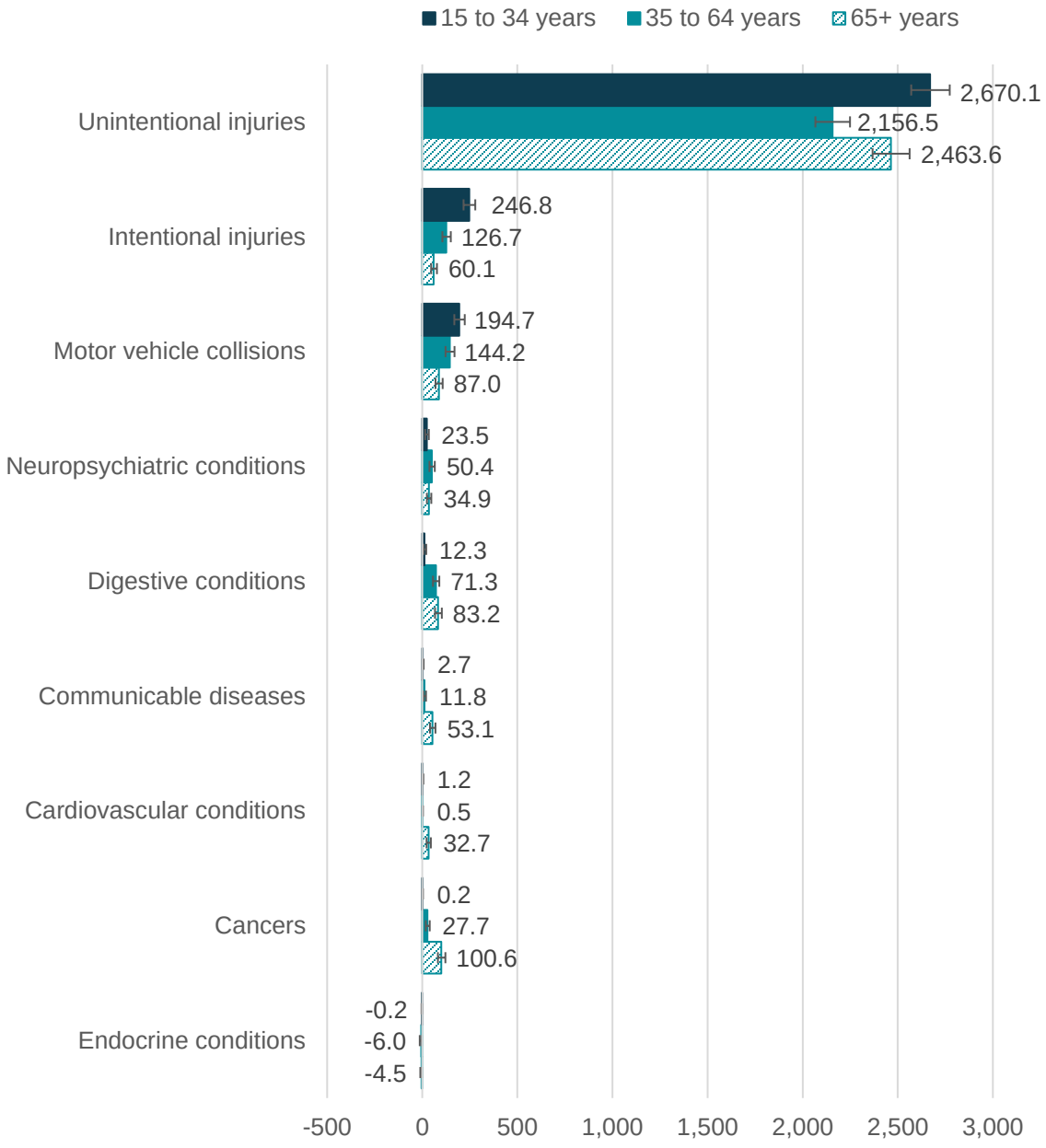
## Alcohol-attributable hospitalizations

Alcohol-attributable hospitalizations indicate what proportion of hospitalizations could disappear if people did not consume alcohol. There are some conditions that are 100% attributable to alcohol (i.e., are caused entirely by alcohol), such as alcohol-induced liver disease and alcohol-induced pancreatitis. However, alcohol-attributable hospitalizations also include conditions that are partly attributable to alcohol (e.g., hypertension, breast cancer, epilepsy). Hospitalizations for injuries do not account for injuries caused by another person's drinking. Similarly, conditions that do not directly affect the person drinking alcohol, such as fetal alcohol spectrum disorder (FASD), are not included.

Across all age groups, the highest rate of alcohol-attributable hospitalizations in the SWPH region was due to unintentional injuries (Figure 13). The rates of hospitalizations for intentional injuries and motor vehicle collisions decreased with age, but other rates of hospitalizations for digestive conditions (e.g., liver cirrhosis and pancreatitis), communicable diseases (e.g., lower respiratory tract infections), cardiovascular conditions (e.g., ischemic heart disease and strokes) and cancers increased with age.

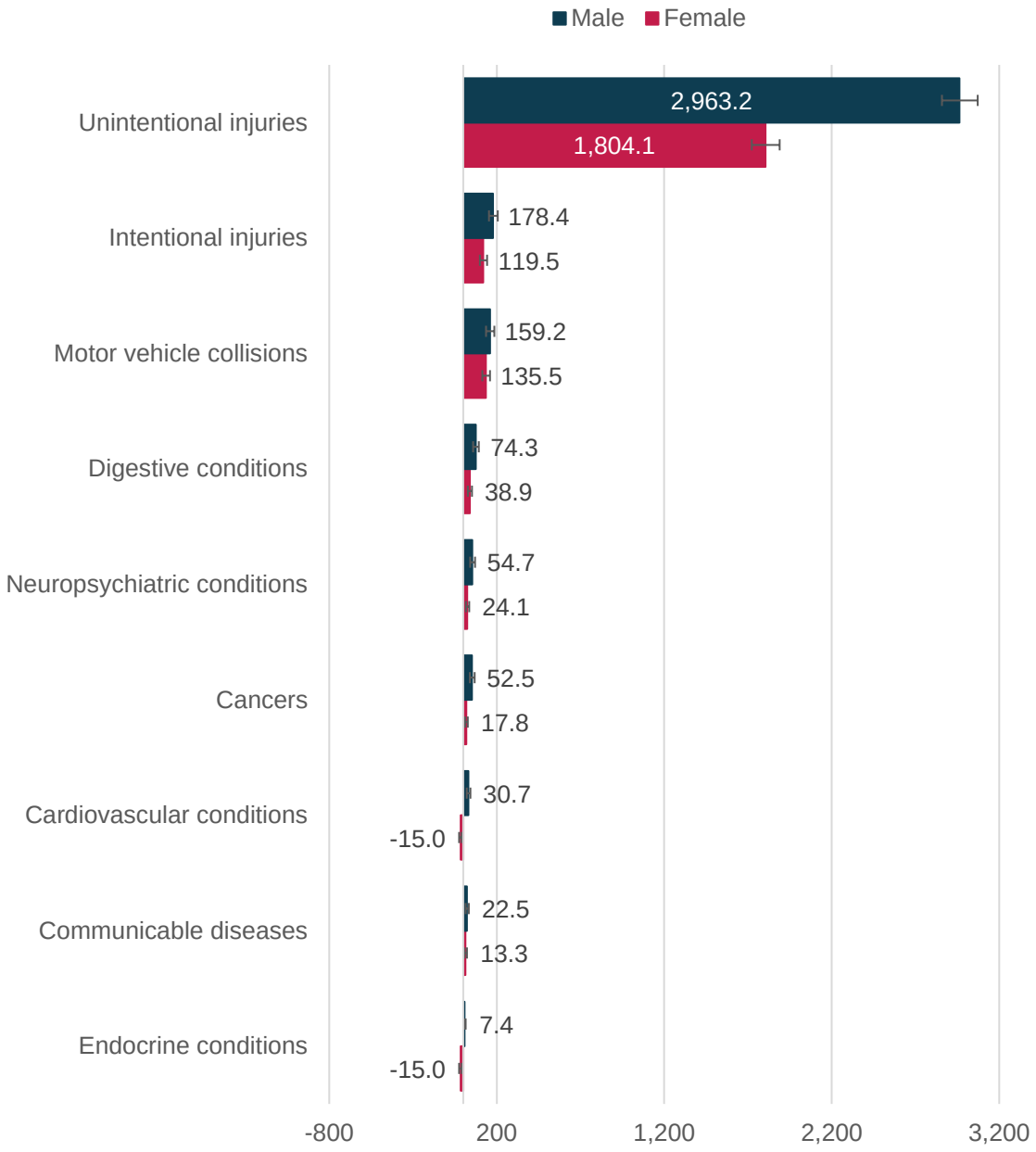
Overall, males in the SWPH region had a higher average rate of alcohol-attributable hospitalizations per year compared to females (Figure 14). Using data over a five-year period (from 2012 to 2016), the rate of alcohol-attributable hospitalizations among males 15 years and older was 3,542.8 (95% CI: 3,427.3-3,660.6) per 100,000 population compared to 2,123.2 (95% CI: 2,034.6-2,215.3) per 100,000 among females 15 years and older. This difference was consistent across all health conditions attributable to alcohol, except communicable diseases and motor vehicle collisions.

**Figure 13. Five-year average crude rate (per 100,000 population) of hospitalizations caused by alcohol by health condition group, by age group, Southwestern Public Health, 2012-2016 (combined)**




**Source:** Inpatient Discharges (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: November 2018 & Ambulatory Emergency External Cause (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: November 2018 & Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC & Statistics Canada. Table 183-0023 - Sales and per capita sales of alcoholic beverages by liquor authorities and other retail outlets, by value, volume, and absolute volume, annual, CANSIM (database; accessed: April 30, 2018) & Statistics Canada. 2017. Oxford, CTY [Census division], Ontario and Ontario [Province] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed April 30, 2018) & Sherk A, Stockwell T, Rehm J, Dorocicz J, Shield KD. The International Model of Alcohol Harms and Policies (InterMAHP). Version 1.0: December 2017. Victoria, BC: Canadian Institute for Substance Use Research, University of Victoria; 2017. Available from: www.intermahp.cisur.ca

**Figure 14. Five-year average crude rate (per 100,000 population) of hospitalizations caused by alcohol by health condition group, by sex, residents 15 years and older, Southwestern Public Health, 2012-2016 (combined)**




**Source:** Inpatient Discharges (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: November 2018 & Ambulatory Emergency External Cause (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: November 2018 & Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC & Statistics Canada. Table 183-0023 - Sales and per capita sales of alcoholic beverages by liquor authorities and other retail outlets, by value, volume, and absolute volume, annual, CANSIM (database; accessed: April 30, 2018) & Statistics Canada. 2017. Oxford, CTY [Census division], Ontario and Ontario [Province] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed April 30, 2018) & Sherk A, Stockwell T, Rehm J, Dorocicz J, Shield KD. The International Model of Alcohol Harms and Policies (InterMAHP). Version 1.0: December 2017. Victoria, BC: Canadian Institute for Substance Use Research, University of Victoria; 2017. Available from: www.intermahp.cisur.ca

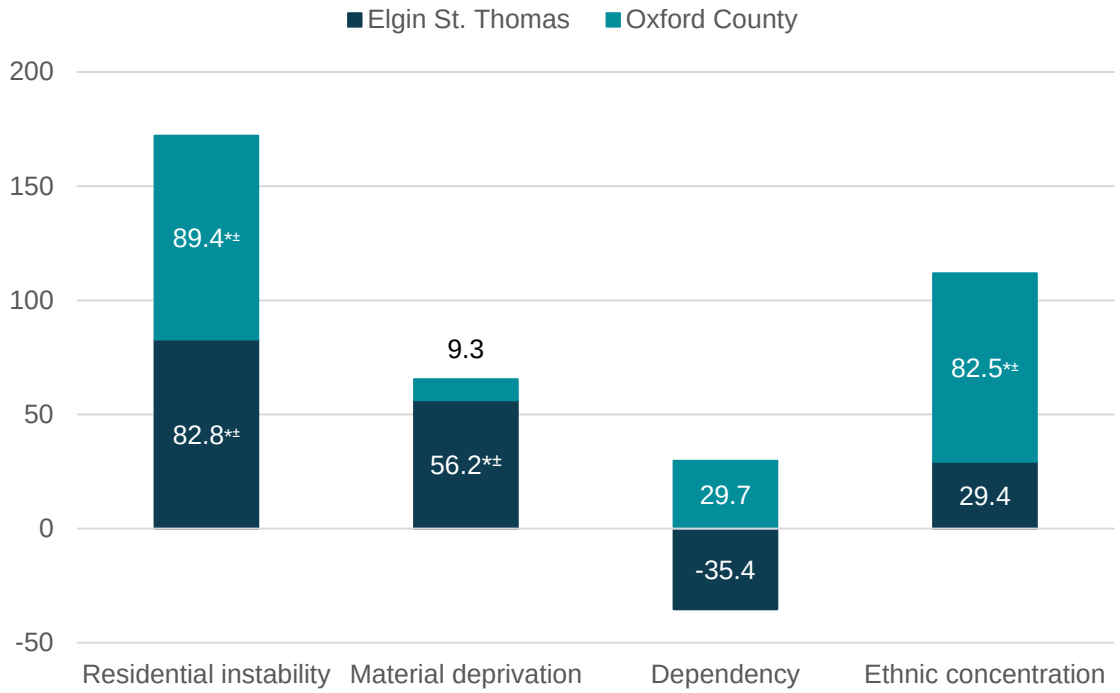
## Impact of marginalization

Alcohol-related harms, specifically 100% alcohol-attributable hospitalizations, 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.[2] On the other hand, visible minorities may experience poorer health due to experiences of discrimination.[3] 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 100% alcohol-attributable hospitalization rate as the most advantaged group in terms of residential instability, 172 hospitalizations could be prevented over a two-year period in the SWPH region (Figure 15) and the rate of 100% alcohol-attributable hospitalizations could be reduced by 72.1% in Oxford County and 55.6% in Elgin St. Thomas (Figure 16). Residential instability was the only aspect of marginalization found to significantly impact the rate of 100% alcohol-attributable hospitalizations in both Elgin St. Thomas and Oxford County. However, material deprivation was a significant factor in Elgin St. Thomas only and ethnic concentration was a significant factor in Oxford County only.

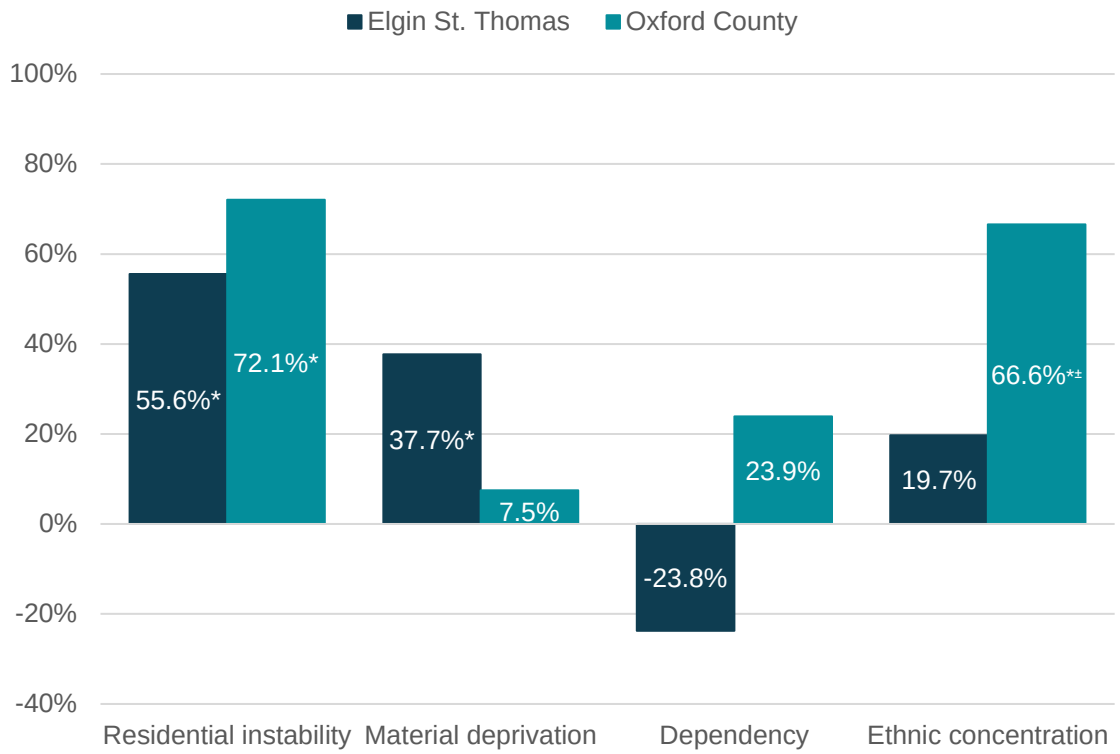
**Figure 15. Projected reduction in the number of 100% alcohol-attributable hospitalizations if each socioeconomic group experienced the same rate as the least marginalized group, Elgin St. Thomas and Oxford County, 2011-2012**




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

**Source:** Public Health Ontario. Snapshots: Elgin St. Thomas Public Health & Oxford County Public Health & Emergency Services: Health Inequities in Alcohol-Attributable Hospitalizations 2003-04 to 2011-12. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 May 7 [cited 2018 Nov 30]. Available from: http://publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Alcohol-AH-Inequities.aspx

**Figure 16. Projected reduction in the rate (per cent) of 100% alcohol-attributable hospitalizations if each socioeconomic group experienced the same rate as the least marginalized group, Elgin St. Thomas and Oxford County, 2011-2012**




*****Statistically significantly inequality between the ON-Marg quintiles (least marginalized to most marginalized)
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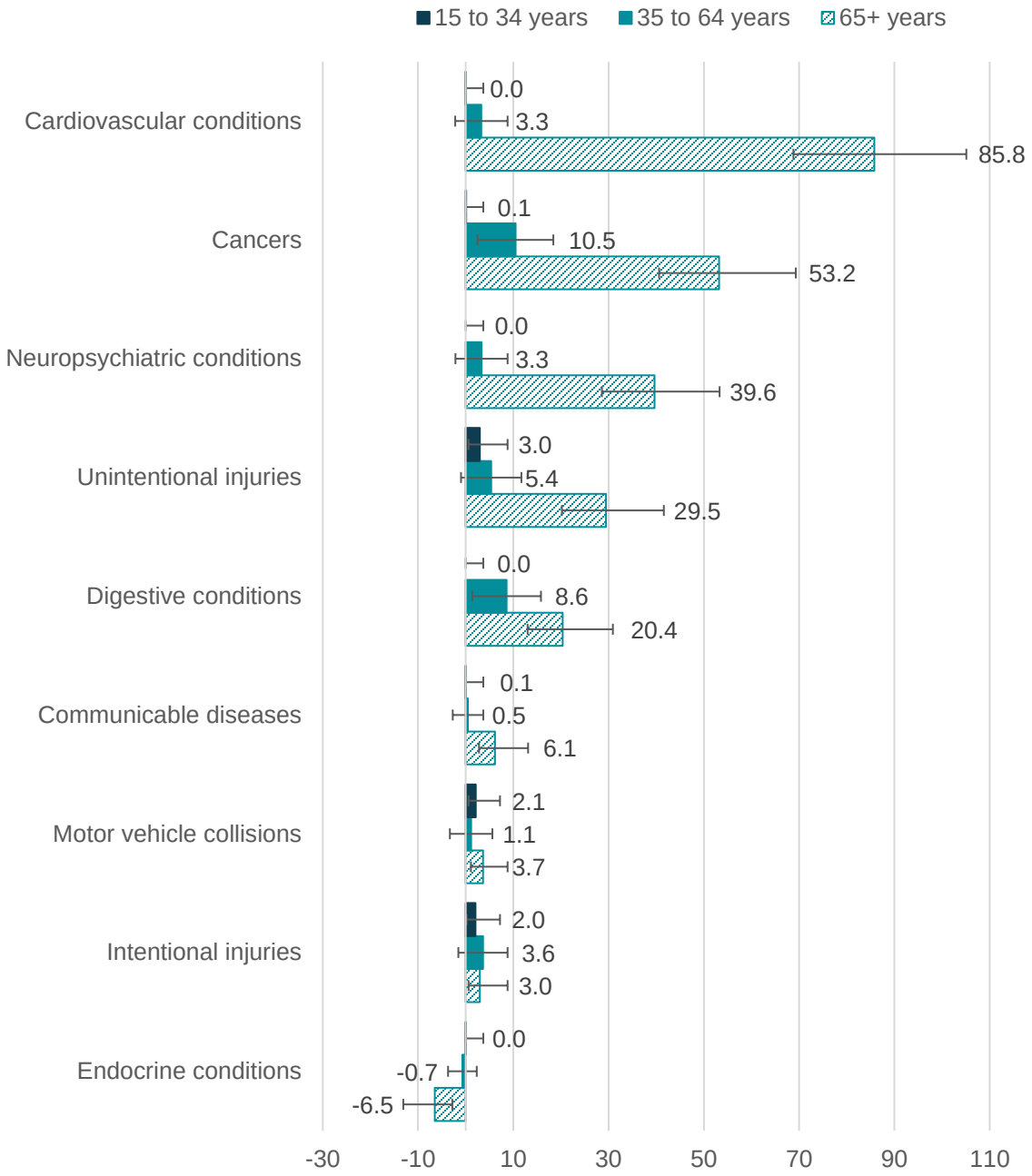
**Source:** Public Health Ontario. Snapshots: Elgin St. Thomas Public Health & Oxford County Public Health & Emergency Services: Health Inequities in Alcohol-Attributable Hospitalizations 2003-04 to 2011-12. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 May 7 [cited 2018 Nov 30]. Available from: http://publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Alcohol-AH-Inequities.aspx

## Alcohol-attributable deaths

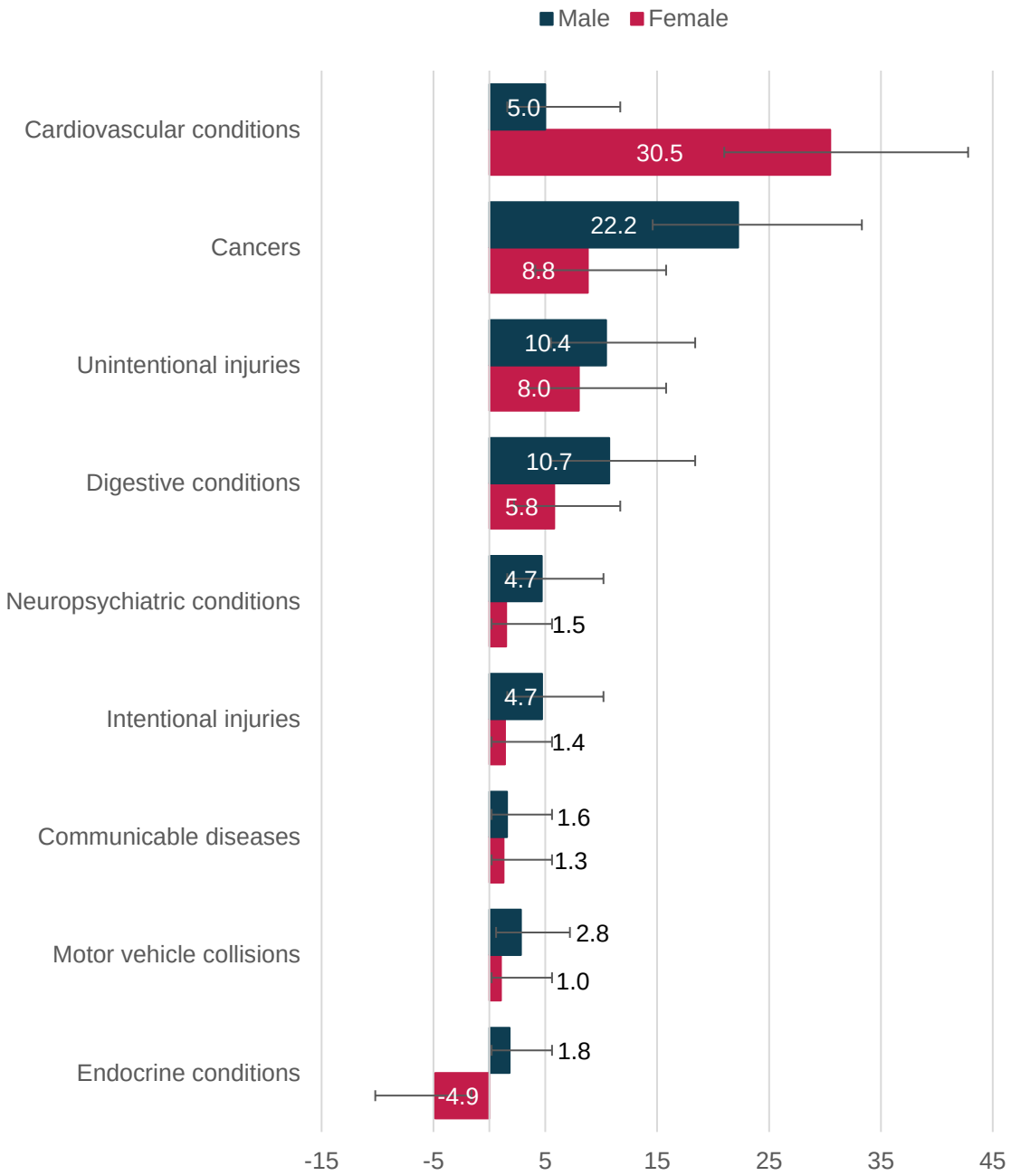
In the SWPH region deaths caused by alcohol in the form of cardiovascular conditions, cancers, neuropsychiatric conditions (such as epilepsy and alcohol dependence syndrome) and unintentional injuries increased with age (Figure 17). The rate of alcohol-attributable deaths was similar between males and females, except that females had a higher rate of deaths due to cardiovascular conditions (Figure 18).

**Figure 17. Five-year average crude rate (per 100,000 population) of deaths caused by alcohol by health condition group, by age group, Southwestern Public Health, 2008-2012 (combined)**




**Source:** Ontario Mortality Data (2008-2012), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: November 2018 & Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC & Statistics Canada. Table 183-0023 - Sales and per capita sales of alcoholic beverages by liquor authorities and other retail outlets, by value, volume, and absolute volume, annual, CANSIM (database; accessed: April 30, 2018) & Statistics Canada. 2017. Oxford, CTY [Census division], Ontario and Ontario [Province] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed April 30, 2018) & Sherk A, Stockwell T, Rehm J, Dorocicz J, Shield KD. The International Model of Alcohol Harms and Policies (InterMAHP). Version 1.0: December 2017. Victoria, BC: Canadian Institute for Substance Use Research, University of Victoria; 2017. Available from: www.intermahp.cisur.ca

**Figure 18. Five-year average crude rate (per 100,000 population) of deaths caused by alcohol by health condition group, by sex, residents 15 years and older, Southwestern Public Health, 2008-2012 (combined)**




**Source:** Ontario Mortality Data (2008-2012), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: November 2018 & Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC & Statistics Canada. Table 183-0023 - Sales and per capita sales of alcoholic beverages by liquor authorities and other retail outlets, by value, volume, and absolute volume, annual, CANSIM (database; accessed: April 30, 2018) & Statistics Canada. 2017. Oxford, CTY [Census division], Ontario and Ontario [Province] (table). Census Profile. 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed April 30, 2018) & Sherk A, Stockwell T, Rehm J, Dorocicz J, Shield KD. The International Model of Alcohol Harms and Policies (InterMAHP). Version 1.0: December 2017. Victoria, BC: Canadian Institute for Substance Use Research, University of Victoria; 2017. Available from: www.intermahp.cisur.ca

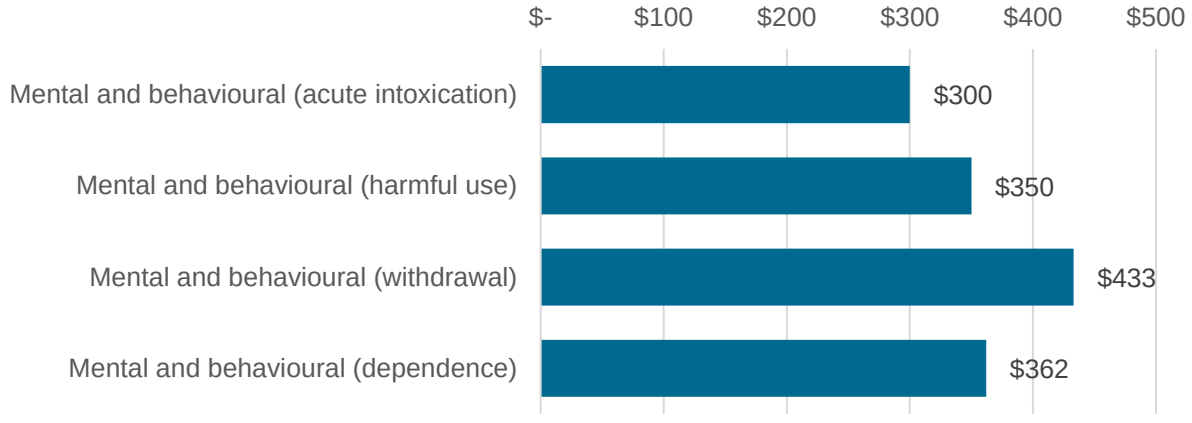
## Financial cost of care for conditions 100% attributable to alcohol

In the 2016/2017 fiscal year, there were 1,946 cases of ambulatory care for 100% alcohol-attributable hospitalizations at the St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London. The Woodstock General Hospital, Alexandra Hospital and Tillsonburg District Memorial Hospital currently do not participate in the Ministry of Health and Long-Term Care Ontario Case Costing Initiative.

The average ambulatory care cost for 100% alcohol-attributable conditions at these hospitals was $348 per case (range: $0 to $13,832). This estimate includes both direct costs (related to the provision of care to the patient) and indirect costs (related to overhead expenses needed to run the hospital, such as administration). However, this estimate does not include the cost billed to the Ontario Health Insurance Plan (OHIP). The OHIP costs may vary depending on the scenario, with an extra $97.60 per case billed for emergency room consultations with an on-duty physician or $74.25 per case for consultations with other health professionals, in addition to the assessment service cost which depends on the extent of the assessment and the time of day (range: $15.00 to $73.90).[4]

The most common 100% alcohol-attributable ambulatory cases seen in these hospitals in the 2016/2017 fiscal year were mental and behavioural disorders due to the use of alcohol (acute intoxication), with an average cost of $300 per case (Figure 19).

**Figure 19. Average cost of ambulatory care per case for 100% alcohol-attributable conditions, ordered by number of cases, St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London, FY2016/2017**

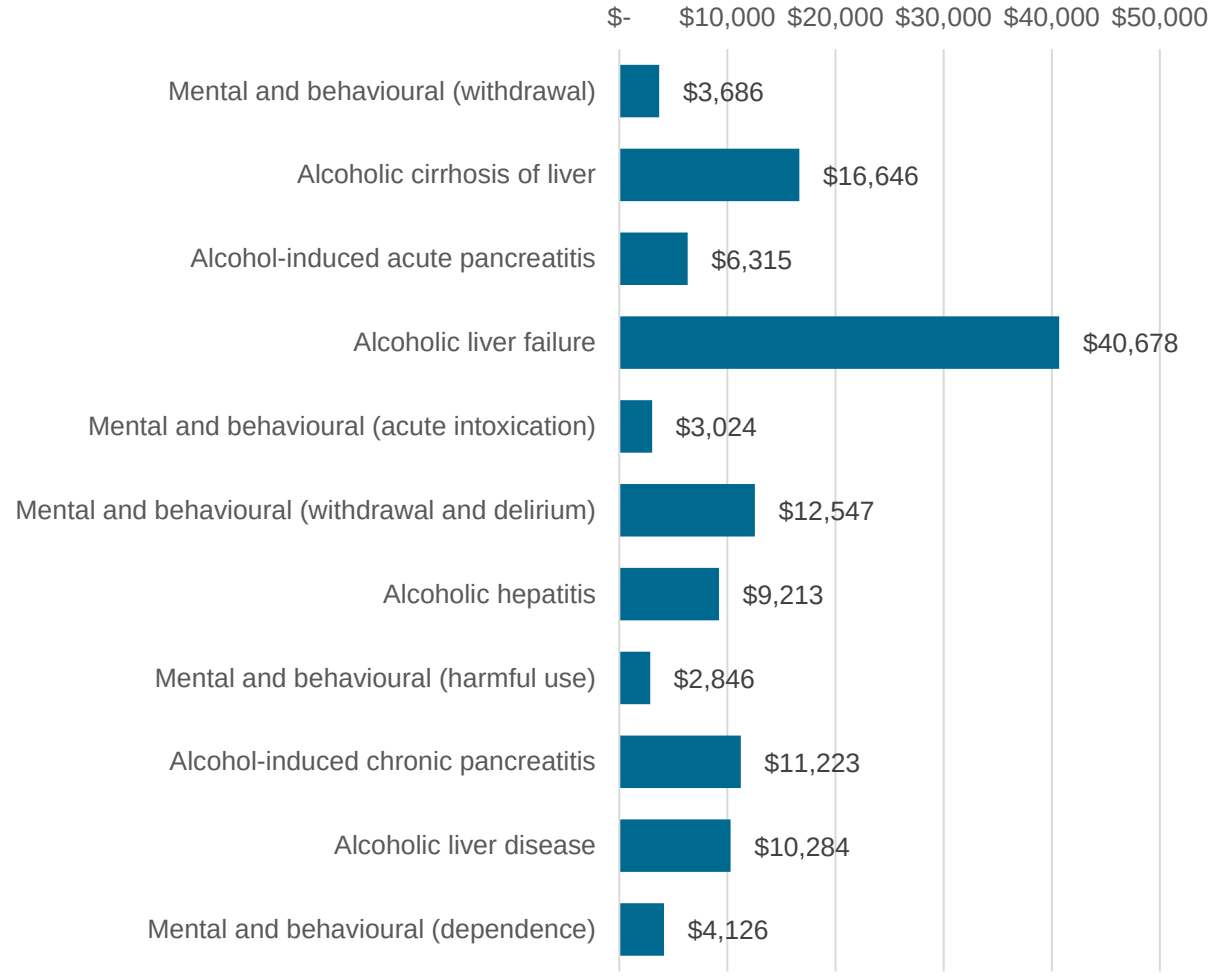



**Source:** The Ontario Case Costing Initiative (FY2016/2017), Ministry of Health and Long-Term Care, Date Extracted: March 5, 2019.

In the 2016/2017 fiscal year, there were 373 cases of acute inpatient care for 100% alcohol-attributable hospitalizations at the St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London.

The average acute inpatient care cost for 100% alcohol-attributable conditions in these hospitals was $12,781 per case (range: $18 to $421,370), including both direct costs and indirect costs. The most common 100% alcohol-attributable acute inpatient cases were mental and behavioural disorders due to the use of alcohol (withdrawal state), with an average cost of $3,686 per case (Figure 20). However, the most expensive cases were alcoholic liver failure.

**Figure 20. Average cost of acute inpatient care per case for 100% alcohol-attributable conditions, ordered by number of cases, St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London, FY2016/2017**




**Source:** The Ontario Case Costing Initiative (FY2016/2017), Ministry of Health and Long-Term Care, Date Extracted: March 5, 2019.

# Tobacco use and related harms

## Smoking status

A higher proportion of people living in the urban municipalities were daily smokers compared to people living in the rural municipalities (Figure 21).

**Figure 21. Daily smoking by urban or rural residence, residents 12 years and older, Southwestern Public Health, 2015-2016**

From 2015 to 2016, 18.9% (95% CI: 15.8-22.5) of people living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock reported daily smoking.

From 2015 to 2016, 11.3% (95% CI: 8.2-15.2) 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 daily smoking.

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

A higher proportion of middle-aged adults (22 to 54 years) were current smokers (daily and occasional) and daily smokers compared to older adults (55 years and older), but a higher proportion of older adults were former smokers (Table 2).

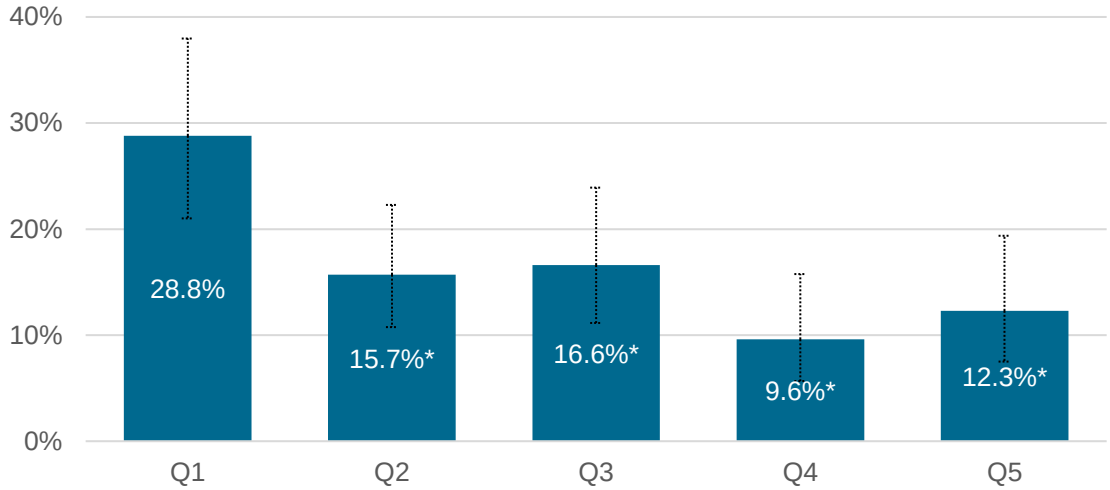
**Table 2. Smoking status by age group, Southwestern Public Health, 2015-2016**

| Age group | Current smokers<br>Per cent (95% CI) | Daily smokers<br>Per cent (95% CI) | Former smokers<br>Per cent (95% CI) |
|---|---|---|---|
| 13 to 21 years | 18.4%* (10.5%-30.0%) | Not reportable | Not reportable |
| 22 to 54 years | 26.0% (21.6%-31.1%) | 21.2% (17.3%-25.8%) | 24.3% (19.7%-29.6%) |
| 55+ years | 14.8% (11.5%-18.8%) | 11.6% (8.8%-15.1%) | 41.1% (35.5%-46.9%) |

*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 larger proportion of people in the lowest income quintile (lowest 20% of incomes) were daily smokers compared to people in the highest two income quintiles (Figure 22).

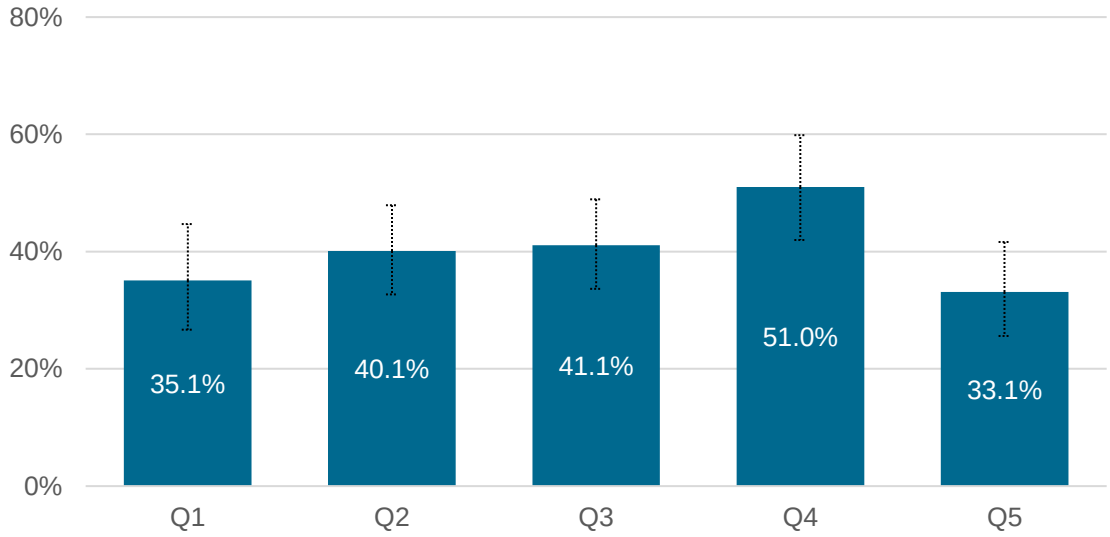
**Figure 22. Daily smoking by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016**




*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.

Conversely, a larger proportion of people in the second highest income quintile completely abstained from smoking cigarettes compared to people in the highest income quintile (51.0% versus 33.1%; Figure 23).

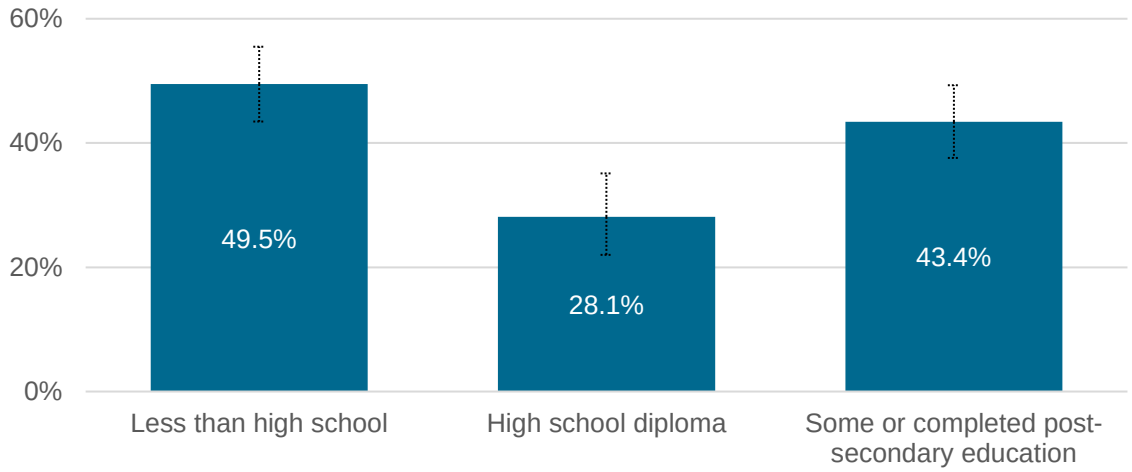
**Figure 23. Smoking abstinence by income quintile, residents 12 years and older, Southwestern Public Health, 2015-2016**




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

A higher proportion of people with less than a high school education or with some or completed post-secondary education completely abstained from smoking cigarettes compared to people with a high school diploma (Figure 24). Among people with less than a high school education, differences in smoking abstinence may be driven by age as most people between 12 to 17 years were high school students (Figure 25).

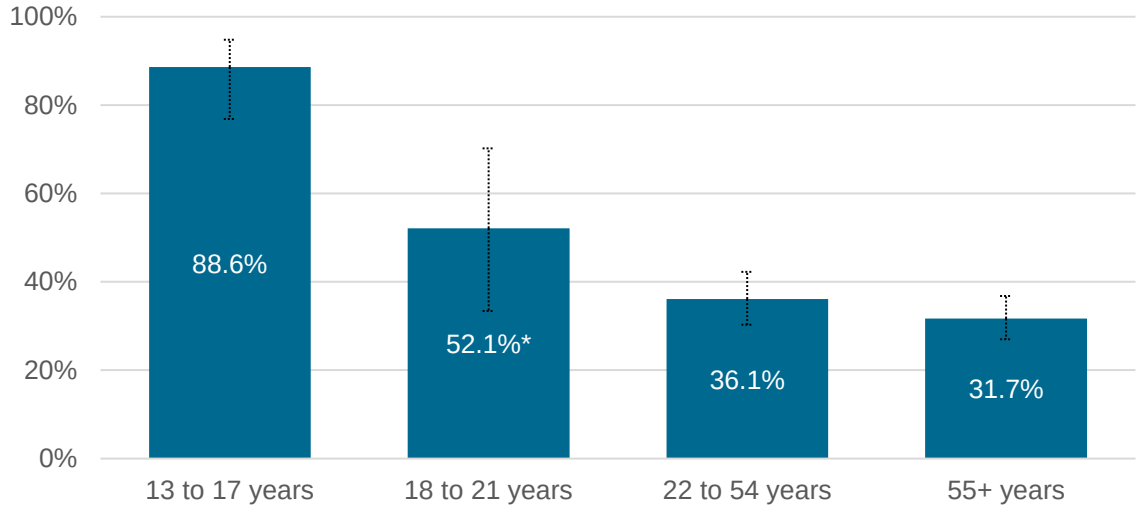
**Figure 24. Smoking abstinence by education level, residents 12 years and older, Southwestern Public Health, 2015-2016**




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

A higher proportion of youth (13 to 17 years) completely abstained from smoking cigarettes compared to all other age groups (Figure 25).

**Figure 25. Smoking abstinence by age group, 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.

## Smoke-free homes

A higher proportion of households in the rural municipalities were smoke-free (i.e., smokers are asked to refrain from smoking in the house) compared to households in the urban municipalities (Figure 26).

**Figure 26. Smoke-free homes by urban or rural residence, Southwestern Public Health, 2015-2016**

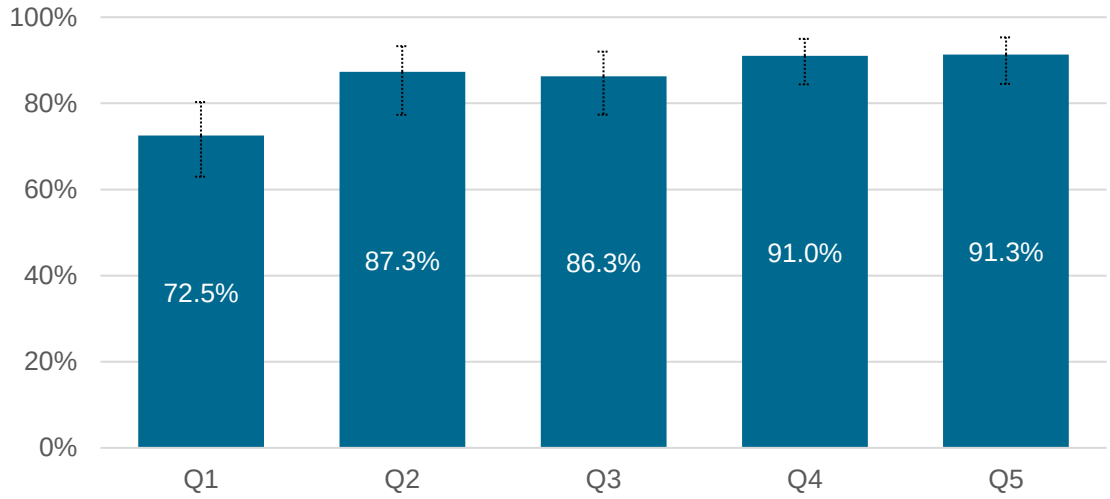
From 2015 to 2016, 82.4% (95% CI: 77.4-86.5) of homes in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock were smoke-free.

From 2015 to 2016, 91.8% (95% CI: 88.6-94.2) of homes 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 were smoke-free.

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

A smaller proportion of households in the lowest income quintile (lowest 20% of incomes) were smoke-free homes compared to households in the highest two income quintiles (Figure 27).

**Figure 27. Smoke-free homes by income quintile, Southwestern Public Health, 2015-2016**



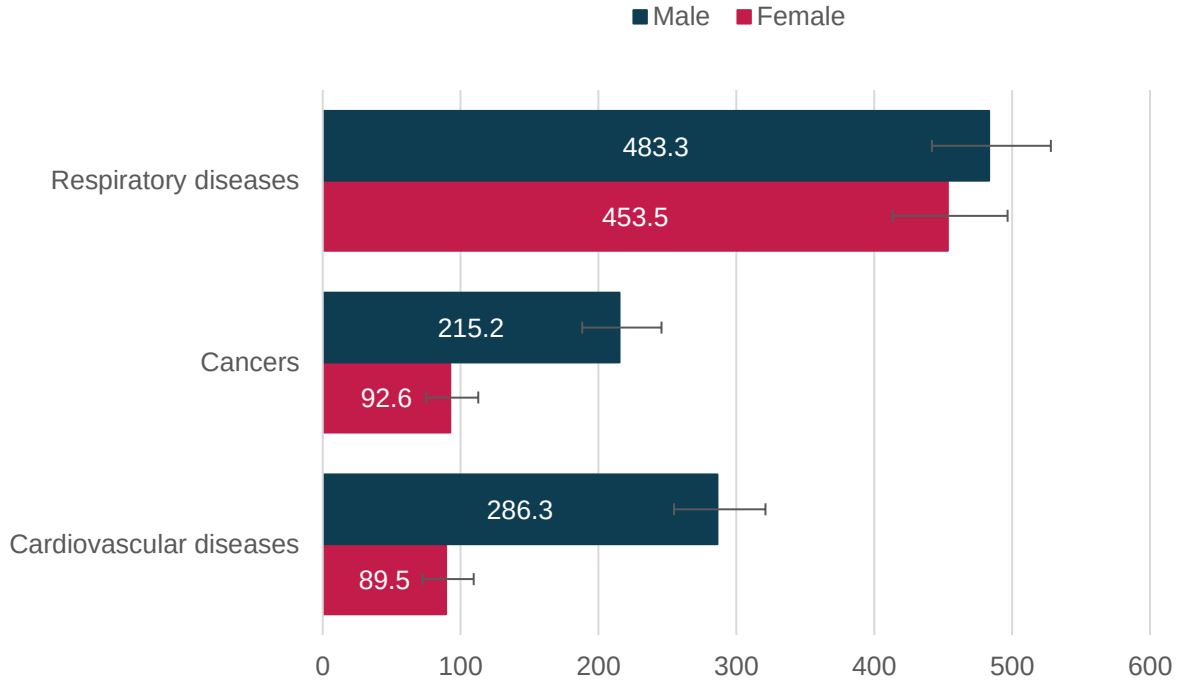

**Source:** Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

## Smoking-attributable hospitalizations

Smoking-attributable hospitalizations are the number of hospitalizations caused by cigarette smoking (excluding cigars, pipes and smokeless tobacco) for health conditions such as cancers, cardiovascular diseases and respiratory diseases.[5] This statistic does not include hospitalizations due to fires caused by smoking.

On average, 805.4 (95% CI: 751.3-862.6) hospitalizations per 100,000 population aged 35 years and older per year could be avoided if no one smoked cigarettes. The rate of smoking-attributable hospitalizations from all causes was higher among males (984.8; 95% CI: 924.4.2-1,047.5) compared to females (635.6; 95% CI: 587.5-686.4). Similarly, the rates of hospitalization for cancers and cardiovascular diseases were higher among males compared to females (Figure 28). However, among both sexes, the most common reason for hospitalization was for chronic obstructive pulmonary disease (COPD).

**Figure 28. Five-year average crude rate (per 100,000 population) of hospitalizations caused by smoking by health condition group, by sex, residents 35 years and older, Southwestern Public Health, 2011-2015 (combined)**




**Source:** Inpatient Discharges (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 12, 2019 & Population Estimates (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 12, 2019 & Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

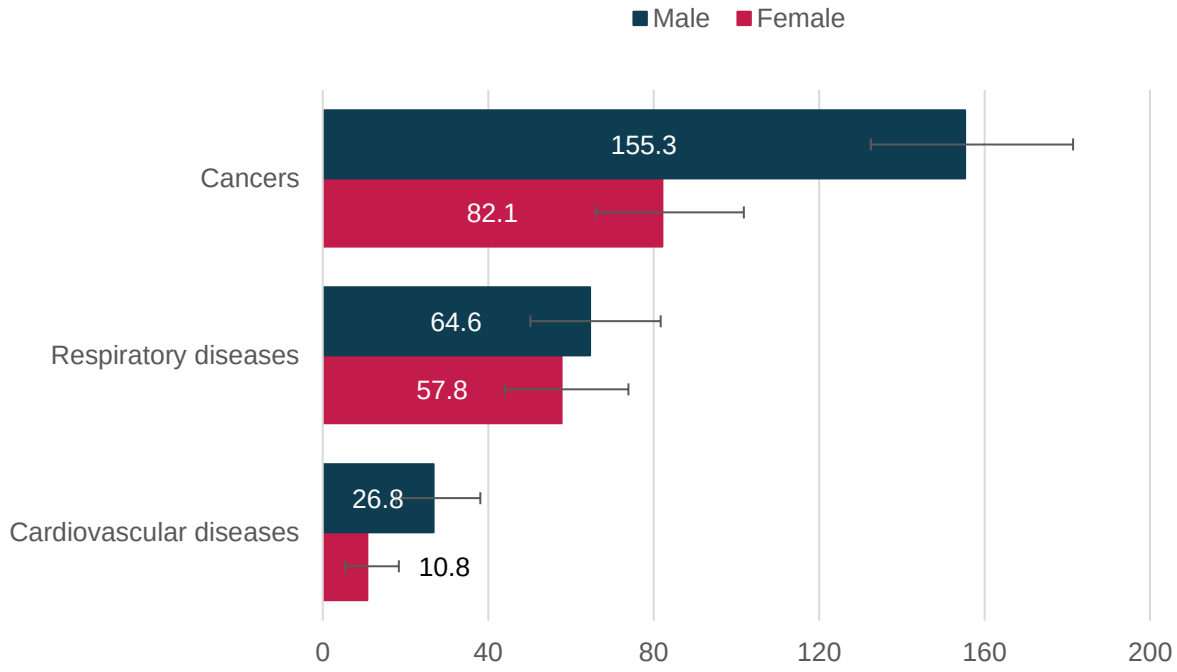
## Smoking-attributable deaths

Smoking-attributable deaths are the number of deaths caused by cigarette smoking (excluding cigars, pipes and smokeless tobacco) for health conditions such as cancers, cardiovascular diseases and respiratory diseases.[5] This statistic does not include hospitalizations due to fires caused by smoking.

On average, 197.4 (95% CI: 171.4-226.5) deaths per 100,000 population aged 35 years and older per year could be avoided if no one smoked cigarettes. The rate of smoking-attributable mortality from all causes was higher among males (246.6; 95% CI: 217.2-278.7) compared to females (150.7; 95% CI: 127.9-176.0). Similarly, the rate of cancer deaths caused by smoking was higher among males compared to females (Figure 29).

The most common causes of death were lung cancer and chronic obstructive pulmonary disease (COPD), with 82.6% and 80.0% of those deaths caused by smoking, respectively.

**Figure 29. Five-year average crude rate (per 100,000 population) of deaths caused by smoking by health condition group, by sex, residents 35 years and older, Southwestern Public Health, 2011-2015 (combined)**




**Source:** Ontario Mortality Data (2011-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 11, 2019 & Population Estimates (2011-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 11, 2019 & Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

## Other tobacco products or tobacco alternatives

From 2015 to 2016, 2.3%[b] (95% CI: 1.4-4.0) of people aged 12 years and older living in the SWPH region reported that they used an electronic cigarette (e-cigarette) in the past 30 days.[6] This statistic may be an underestimate of the prevalence of e-cigarette use when considering the population reached in the Canadian Community Health Survey (i.e., the survey is based on in-person and landline telephone interviews).

The proportion of people using chewing tobacco, pinch or snuff in the past 30 days was not reportable for people living in the SWPH region. However, in Ontario, 0.5% (95% CI: 0.3-0.6) of people aged 12 years and older reported using chewing tobacco, pinch or snuff in the past 30 days between 2015 and 2016.[6]

## Financial cost of care for respiratory conditions attributable to tobacco use

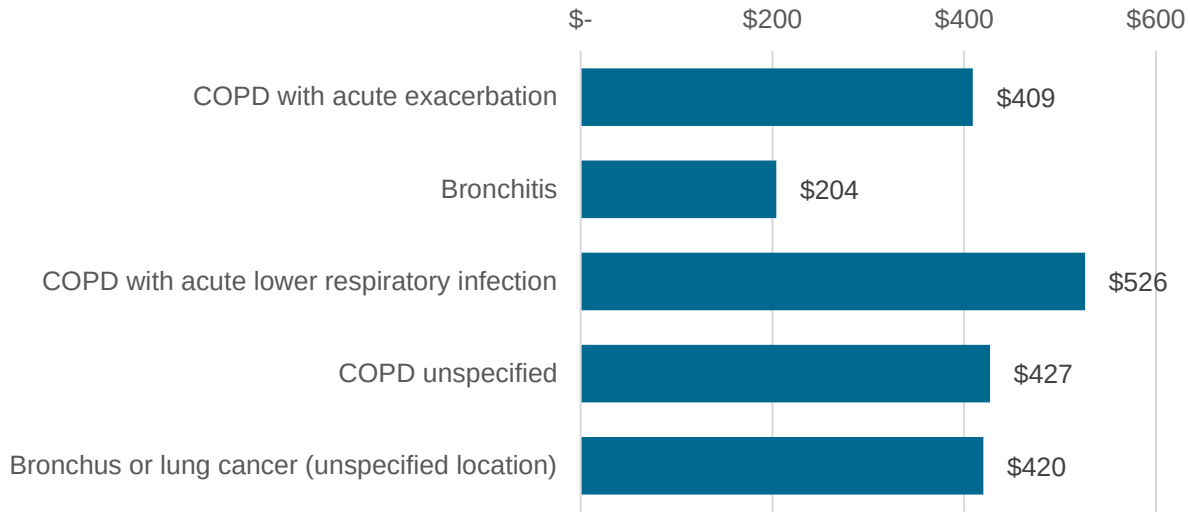
In the 2016/2017 fiscal year, there were 2,786 cases of ambulatory care for respiratory health conditions attributable to tobacco use[c] at the St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London. The Woodstock General Hospital, Alexandra Hospital and Tillsonburg District Memorial Hospital currently do not participate in the Ministry of Health and Long-Term Care Ontario Case Costing Initiative.

The average ambulatory care cost for respiratory health conditions attributable to tobacco use at these hospitals was $380 per case (range: $8 to $7,041). This estimate includes both direct costs (related to the provision of care to the patient) and indirect costs (related to overhead expenses needed to run the hospital, such as administration). However, this estimate does not include the cost billed to the Ontario Health Insurance Plan (OHIP). The OHIP costs may vary depending on the scenario, with an extra $97.60 per case billed for emergency room consultations with an on-duty physician or $74.25 per case for consultations with other health professionals, in addition to the assessment service cost which depends on the extent and the time of day (range: $15.00 to $73.90).[4]

[b] This per cent should be interpreted with caution due to its variability.
[c] Trachea, lung and bronchus cancer; bronchitis; emphysema; and chronic obstructive pulmonary disease (COPD).

The most common respiratory condition attributable to tobacco use seen in local ambulatory care in the 2016/2017 fiscal year was COPD with acute exacerbation (1,183 cases), with an average cost of $409 per case (Figure 30).

**Figure 30. Average cost of ambulatory care per case for respiratory conditions attributable to tobacco use, ordered by number of cases, St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London, FY2016/2017**

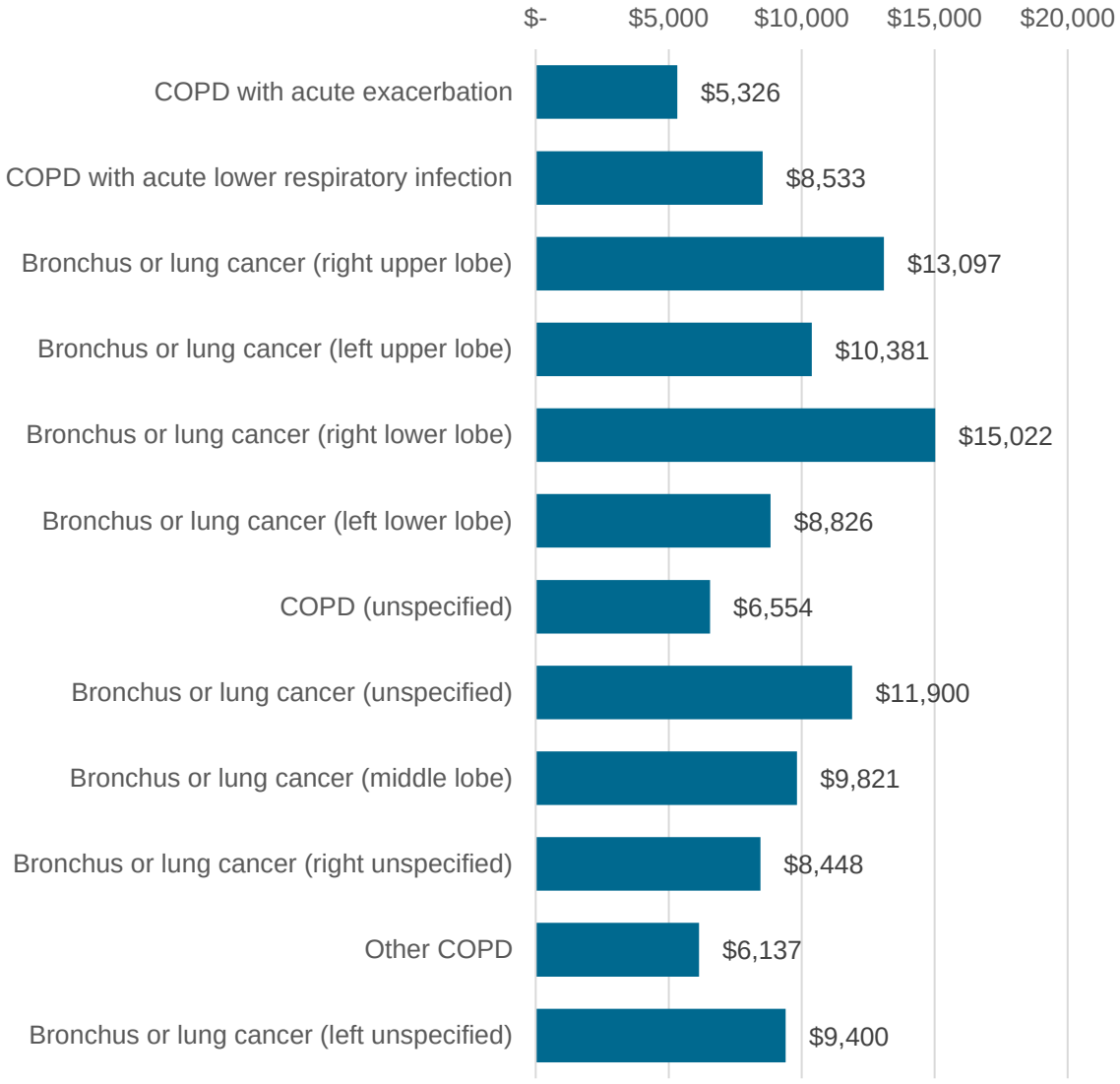



**Source:** The Ontario Case Costing Initiative (FY2016/2017), Ministry of Health and Long-Term Care, Date Extracted: April 10, 2019.

In the 2016/2017 fiscal year, there were 1,364 cases of acute inpatient care for respiratory conditions attributable to tobacco use at the St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London. The average acute inpatient care cost in these hospitals was $7,912 per case (range: $88 to $556,581), including both direct costs and indirect costs.

The most common acute inpatient cases were for COPD with acute exacerbation, with an average cost of $5,326 per case, which was closely followed by COPD with acute lower respiratory infection, which had an average cost of $8,533 per case (Figure 31). However, the most expensive cases were for bronchus or lung cancer in the right lower lobe.

**Figure 31. Average cost of acute inpatient care per case for respiratory conditions attributable to tobacco use, ordered by number of cases, St. Thomas Elgin General Hospital, London Health Sciences Centre and St. Joseph's Health Care London, FY2016/2017**

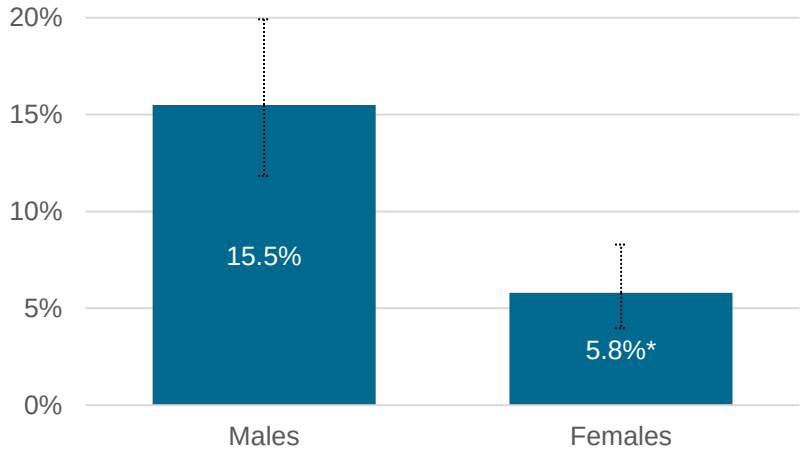



**Source:** The Ontario Case Costing Initiative (FY2016/2017), Ministry of Health and Long-Term Care, Date Extracted: April 10, 2019.

# Cannabis use, awareness and attitudes

A higher proportion of males reported using cannabis in the past 12 months (excluding those who used it one time only) compared to females (15.5% versus 5.8%; Figure 32).

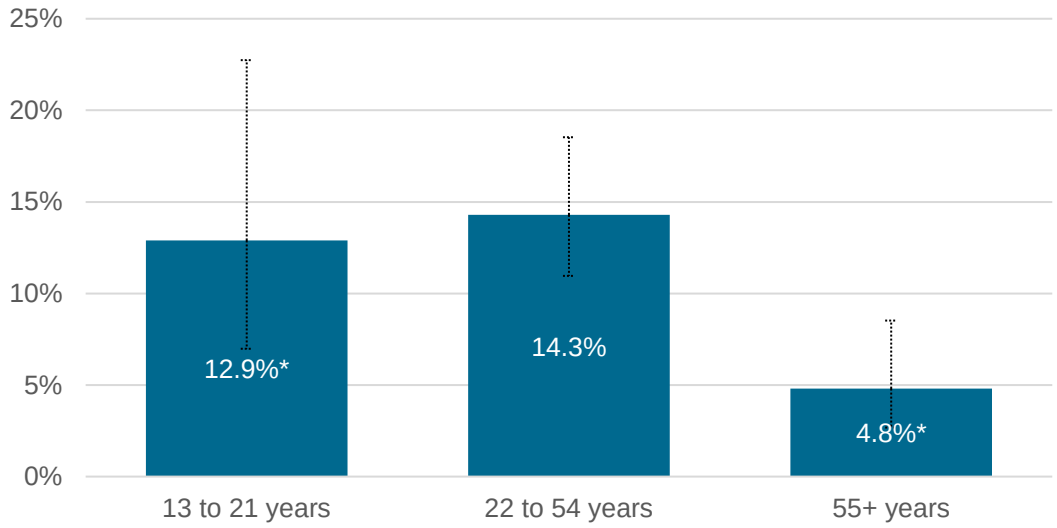
**Figure 32. Cannabis use by sex, residents 12 years and older, Southwestern Public Health, 2015-2016**




*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 middle-aged adults (22 to 54 years) reported using cannabis compared to people aged 55 years and older (14.3% versus 4.8%; Figure 33).

**Figure 33. Cannabis use by age group, Southwestern Public Health, 2015-2016**

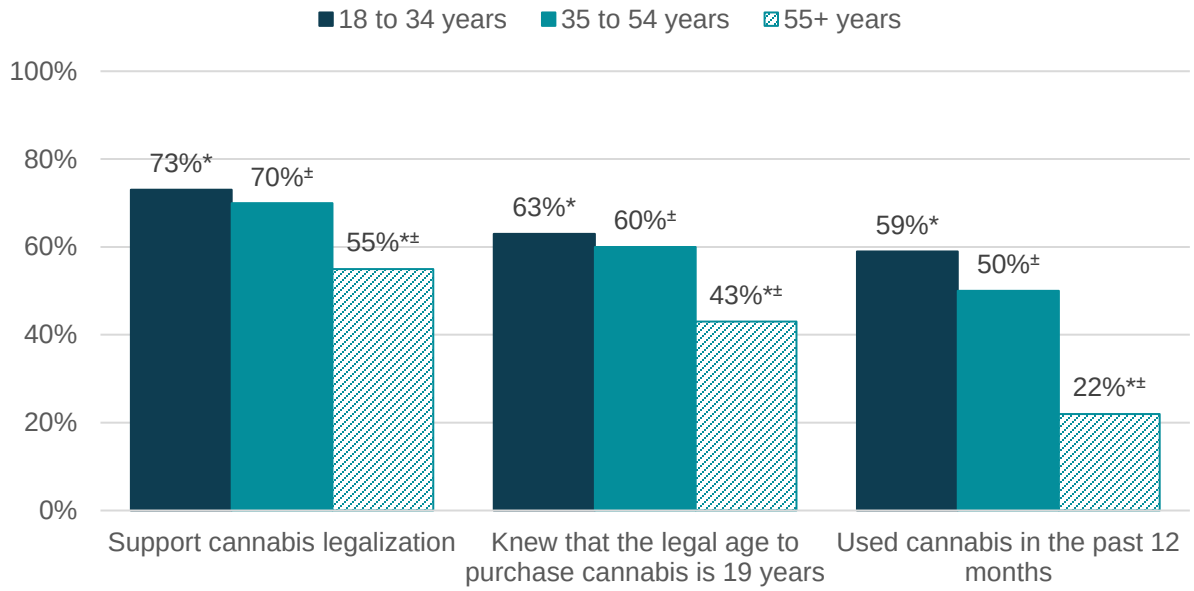



*These per cents should be interpreted with caution due to their variability.
**Source:** Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC.

An alternate source of cannabis data is available from a Tell City Hall survey that was conducted from May to June 2018. As opposed to the Canadian Community Health Survey which used in-person interviews and landline phones as part of their sampling strategy, the Tell City Hall survey used mobile phones. Therefore, data from these two surveys are likely representing different populations in the SWPH region in terms of sociodemographic characteristics.

The Tell City Hall survey found that people aged 55 years and older living in the SWPH region were less supportive of the federal government's decision to legalize cannabis compared to people aged 18 to 54 years and they were also less likely to report having used cannabis in the past 12 months and to know the legal age to purchase cannabis (Figure 34).

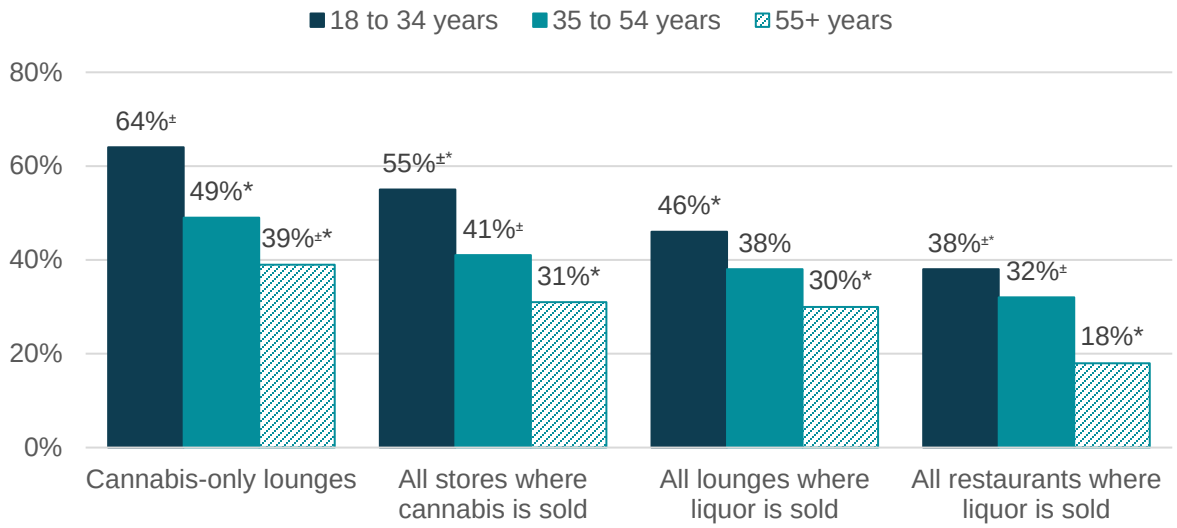
**Figure 34. Cannabis awareness, attitudes and use by age group, Southwestern Public Health, 2018**




The symbols beside the data labels indicate which groups are statistically significantly different from each other. For example, in each indicator, the two numbers with * beside them differ from each other.
**Source:** Tell City Hall (May-June 2018), Cannabis Ontario, Advanis Inc.

People living in the SWPH region had varying preferences for what they would like their municipality to start allowing in terms of cannabis consumption (Figure 35). However, typically people 18 to 35 years were the most in favour of having all forms of cannabis consumption permitted in locations (such as stores and restaurants) and this trend decreased with increasing age. Males were more likely than females to want all forms of cannabis consumption permitted in all lounges where liquor is sold (42% versus 32%) and in cannabis-only lounges (54% versus 44%).

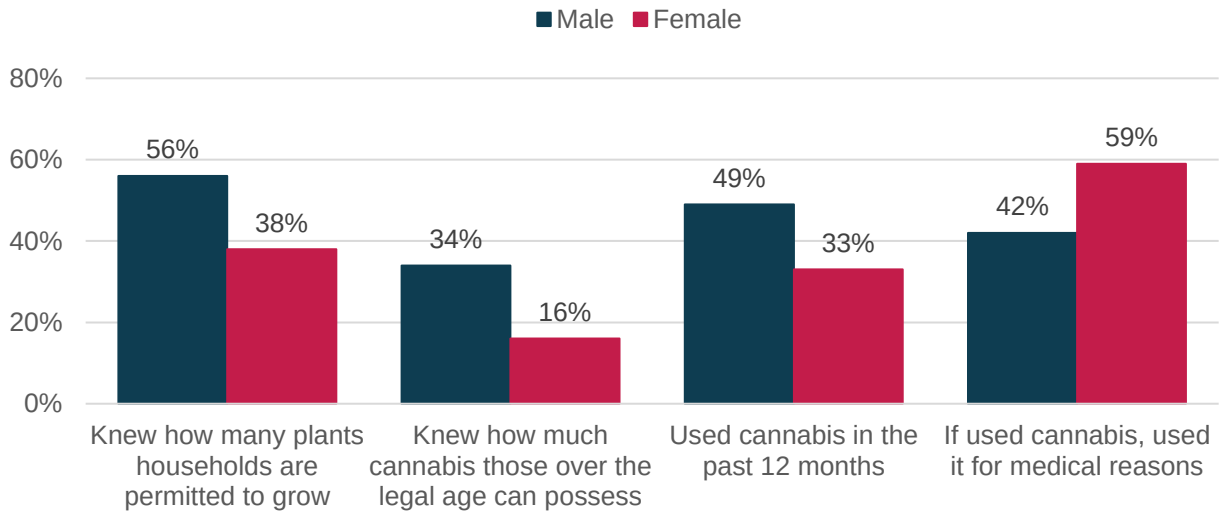
**Figure 35. Locations where residents would like their municipalities to start allowing all forms of cannabis consumption by age group, Southwestern Public Health, 2018**




The symbols beside the data labels indicate which groups are statistically significantly different from each other. For example, in each type of location, the two numbers with * beside them differ from each other.
**Source:** Tell City Hall (May-June 2018), Cannabis Ontario, Advanis Inc.

There were also some differences in cannabis awareness and use by sex. Males in the SWPH region were more likely to know how many plants each household is permitted to grow and how much cannabis someone over the legal age can possess (Figure 36). Males were also more likely to report using cannabis in the past 12 months; however, of those that used cannabis, females were more likely to report using it for medical reasons.

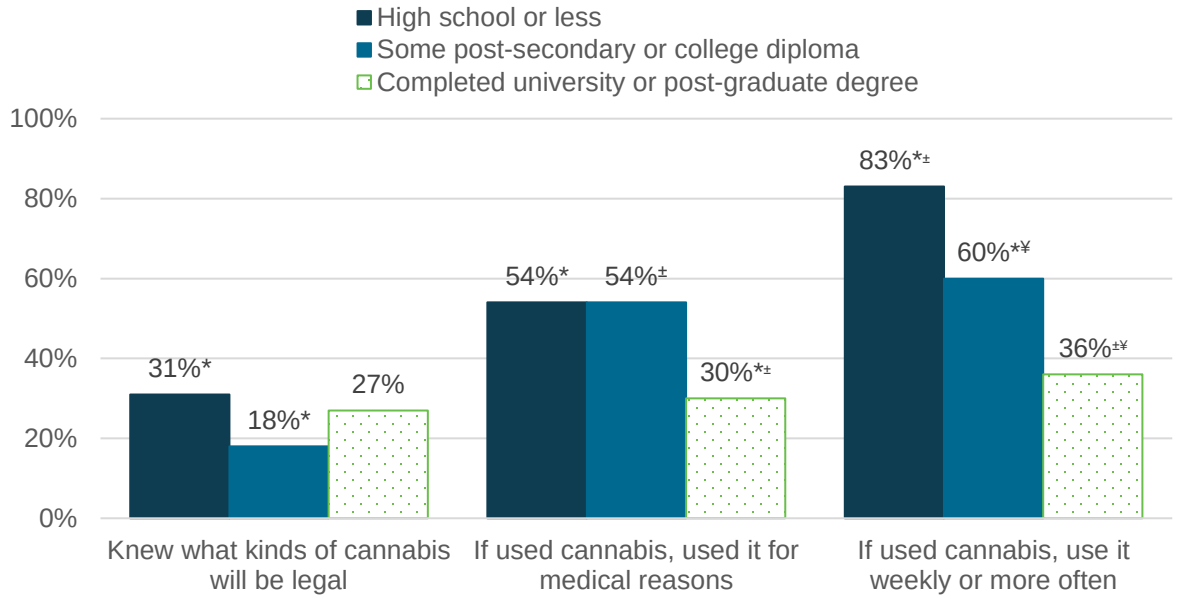
**Figure 36. Cannabis awareness and use by sex, residents 18 years and older, Southwestern Public Health, 2018**




All indicators presented above are statistically significantly different between males and females.
**Source:** Tell City Hall (May-June 2018), Cannabis Ontario, Advanis Inc.

In the SWPH region, people with a high school diploma or less were more likely to know what kinds of cannabis will be legal compared to people with some post-secondary education or a college diploma (Figure 37). Among people that reported using cannabis in the past 12 months, those with a university or post-graduate degree were less likely to report using cannabis for medical reasons whereas those with a high school diploma were more likely to report using cannabis weekly or more, with frequency of use decreasing with increasing education level.

**Figure 37. Cannabis awareness, attitudes and use by education level, residents 18 years and older, Southwestern Public Health, 2018**



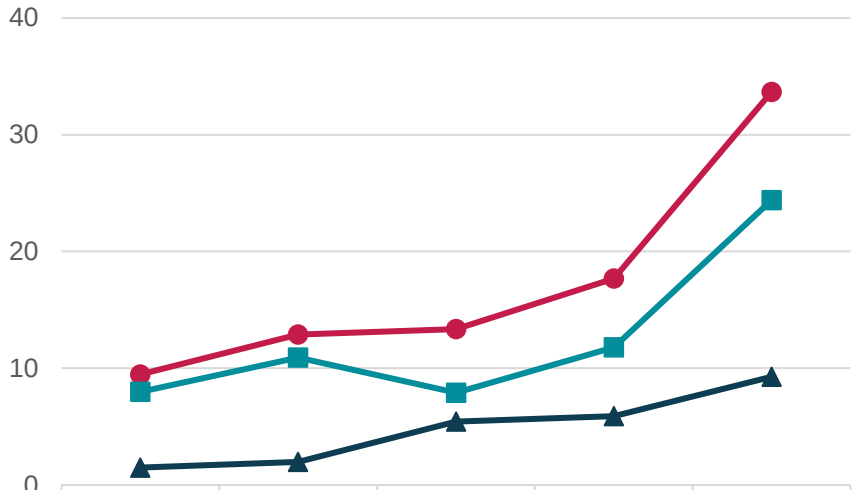

The symbols beside the data labels indicate which groups are statistically significantly different from each other.
**Source:** Tell City Hall (May-June 2018), Cannabis Ontario, Advanis Inc.

There were also some differences in cannabis use by household income. People living in the SWPH region with a household income less than $20,000 were more likely to report consuming cannabis weekly or more (83%) compared to those with a household income of $80,000 to less than $100,000 (50%), $100,000 to less than $120,000 (44%) and $160,000 or more (49%). However, people with a household income of $140,000 to less than $160,000 were more likely to report using cannabis weekly compared to those with a household income of $100,000 to less than $120,000 (82% versus 44%). Many of the household income groups are based on small numbers, so this data should be interpreted with caution.

## Cannabis-related emergency department visits

In 2017, there were 69 emergency department visits for cannabis-related health outcomes (including poisoning and mental and behavioural disorders due to cannabis use). The rate of emergency department visits for cannabis-related health outcomes in the SWPH region was higher in 2017 compared to 2013 to 2015 (Figure 38). This increase was largely related to an increase in emergency department visits for mental and behavioural disorders due to cannabis use (higher in 2017 compared to 2013 and 2015). The rates of emergency department visits for cannabis poisoning appear to be increasing over time but the differences were not statistically significant.

**Figure 38. Crude rate of emergency department visits for cannabis-related health outcomes (per 100,000 population), Southwestern Public Health, 2013-2017**

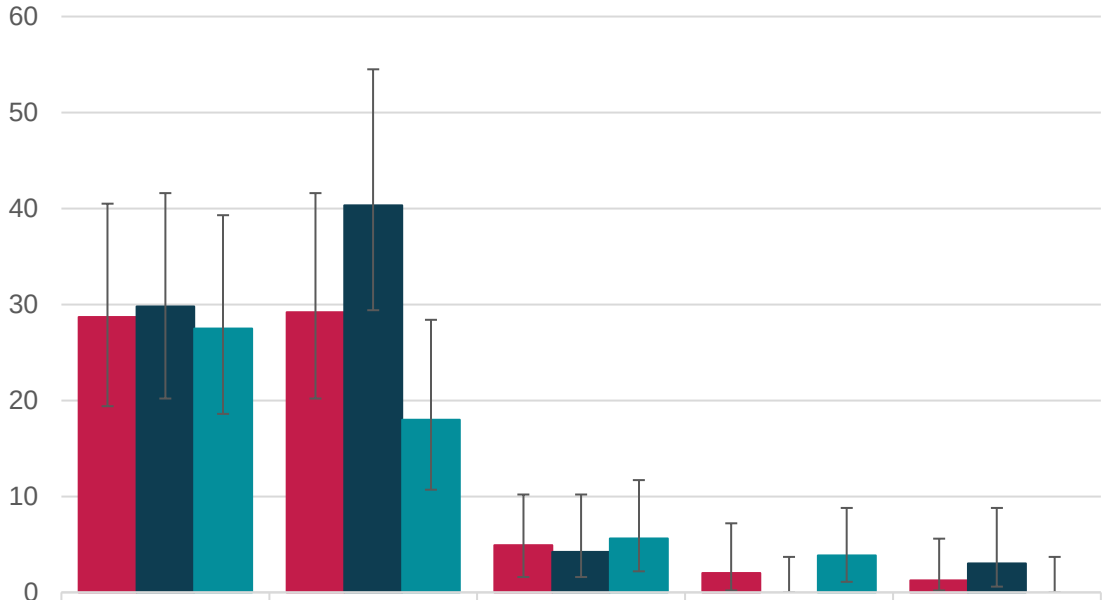



| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Total | 9.5 | 12.9 | 13.3 | 17.7 | 33.7 |
| Poisoning | 1.5 | 2.0 | 5.4 | 5.9 | 9.3 |
| Mental and behavioural | 8.0 | 10.9 | 7.9 | 11.8 | 24.4 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: April 10, 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 five-year average rate of emergency department visits for cannabis-related health outcomes was higher among residents less than 20 years and between 20 to 44 years compared to all other age groups. In the 20- to 44-year age group, the rate was higher among males compared to females (Figure 39).

**Figure 39. Five-year average rate of emergency department visits for cannabis-related health outcomes (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)**



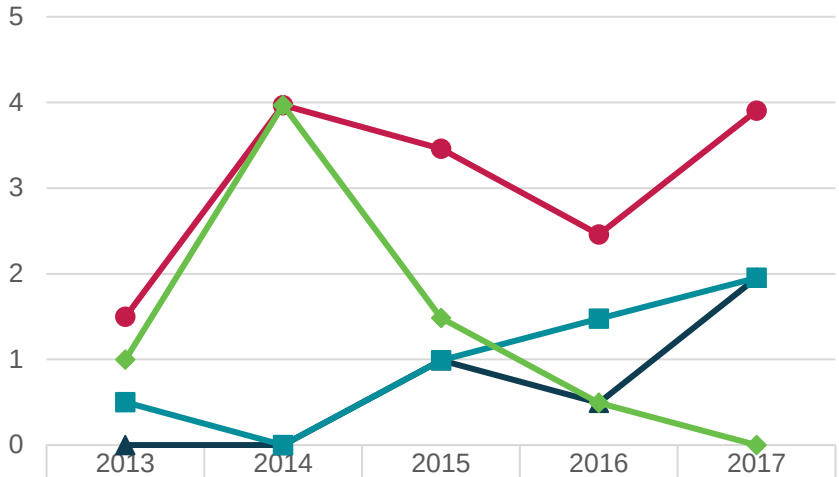

| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 28.7 | 29.2 | 4.9 | 2.0 | 1.3 |
| Males | 29.8 | 40.3 | 4.2 | 0.0 | 3.0 |
| Females | 27.5 | 18.0 | 5.6 | 3.8 | 0.0 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: April 10, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019.

## Cannabis-related hospitalizations

Over a five-year period (between 2013 and 2017), there were 31 hospitalizations for cannabis-related health outcomes (including poisoning, mental and behavioural disorders due to cannabis use and cannabis use disorder). The rate of hospitalizations each year was small (between 1.5 to 4.0 per 100,000 population between 2013 and 2017) and unstable.

**Figure 40. Crude rate of hospitalizations for cannabis-related health outcomes (per 100,000 population), Southwestern Public Health, 2013-2017**




| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Total | 1.5 | 4.0 | 3.5 | 2.5 | 3.9 |
| Poisoning | 0.0 | 0.0 | 1.0 | 0.5 | 2.0 |
| Mental and behavioural | 0.5 | 0.0 | 1.0 | 1.5 | 2.0 |
| Cannabis use disorder | 1.0 | 4.0 | 1.5 | 0.5 | 0.0 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: April 10, 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.

# Polysubstance use

## Alcohol and cannabis

From 2015 to 2016, 4.1%[d] (95% CI: 2.8-6.0) of people aged 19 years and older living in the SWPH region met or exceeded the low-risk alcohol drinking guidelines (LRADGs) 1 or 2 and reported using cannabis at least once per week.[6]

[d] These per cents should be interpreted with caution due to their variability.

### Tobacco and cannabis

From 2015 to 2016, 3.3%[d] (95% CI: 2.2-5.1) of people aged 19 years and older living in the SWPH region were current (daily or occasional) cigarette smokers and reported using cannabis at least once per week.[6]

### Alcohol, tobacco and cannabis

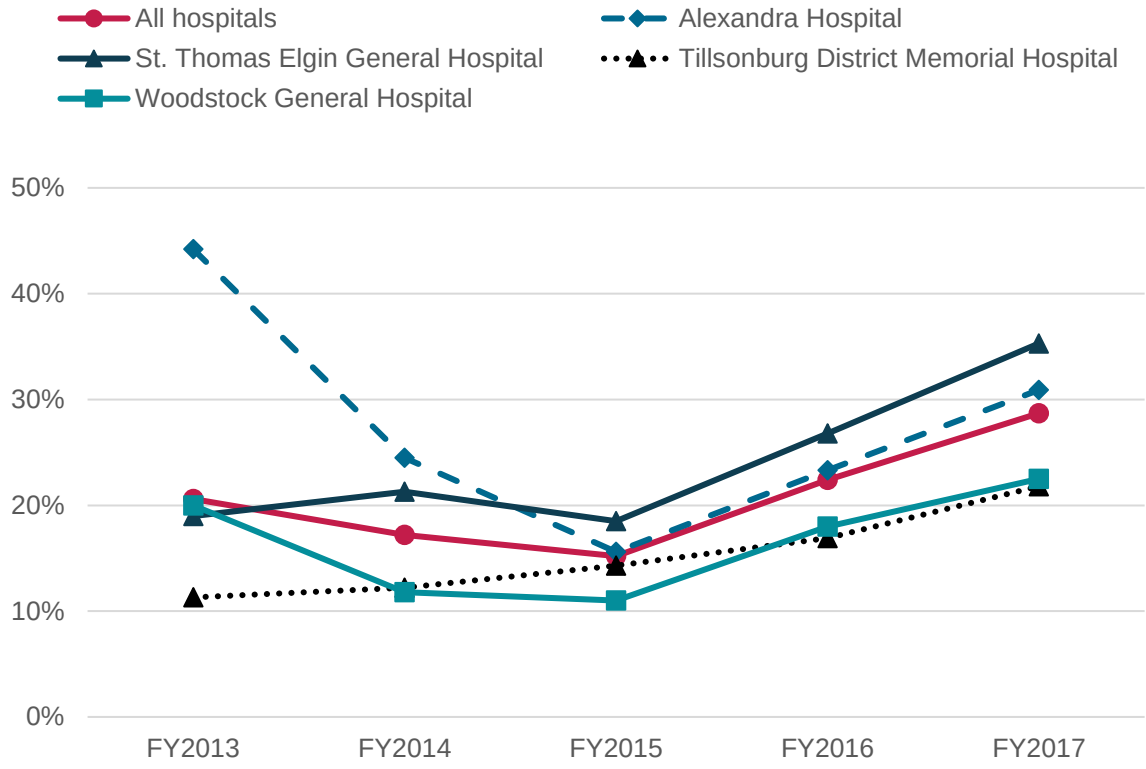
From 2015 to 2016, 2.5%[d] (95% CI: 1.6-4.1) of people aged 19 years and older living in the SWPH region met or exceeded the low-risk alcohol drinking guidelines (LRADGs) 1 or 2, were current (daily or occasional) cigarette smokers and reported using cannabis at least once per week.[6]

## Repeat emergency department visits for substance use

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

In the 2017 fiscal year, 28.7% of emergency department visits for substance use at local SWPH region hospitals had an unplanned repeat visit(s) within 30 days (Figure 41). This proportion was higher than the Ministry of Health and Long-Term Care target of 22.4%.[7] The rate of repeat unplanned emergency department visits for substance use in the SWPH region appears to be increasing since the 2015 fiscal year.

**Figure 41. Repeat unplanned emergency department visits for substance use, Southwestern Public Health hospitals, FY2013-FY2017***




**Note:** The repeat visit could be for substance use or mental health and occur in any Ontario hospital within 30 days
*The fiscal year is from March 1 to February 28/29 to account for the 30 days when a re-visit could occur. 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: November 14, 2018.

# Injury Prevention

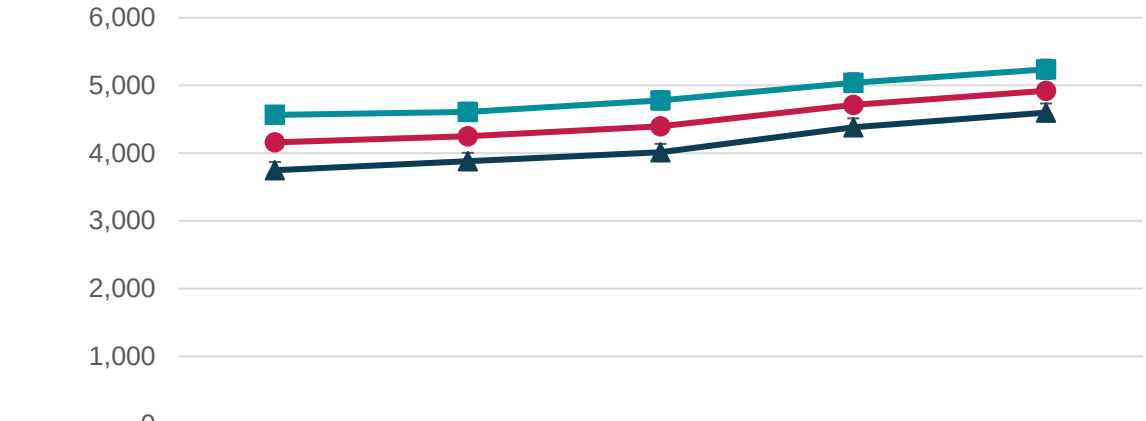
The injury prevention section of the report includes data related to falls, transportation (such as motor vehicle collisions and cycling injuries), unintentional poisonings and neurotrauma. These injuries were selected because they were some of the most common injuries seen among people seeking hospital-based care in the SWPH region or the rates of these injuries were higher in the SWPH region than in Ontario.[1]

# Falls

## Emergency department visits

The rate of emergency department visits for falls in the SWPH region was higher in 2017 compared to 2013 to 2015 (Figure 42). The rates of emergency department visits for falls were consistently higher among females compared to males (error bars not shown).

**Figure 42. Crude rate of emergency department visits for falls (per 100,000 population), by sex, Southwestern Public Health, 2013-2017**

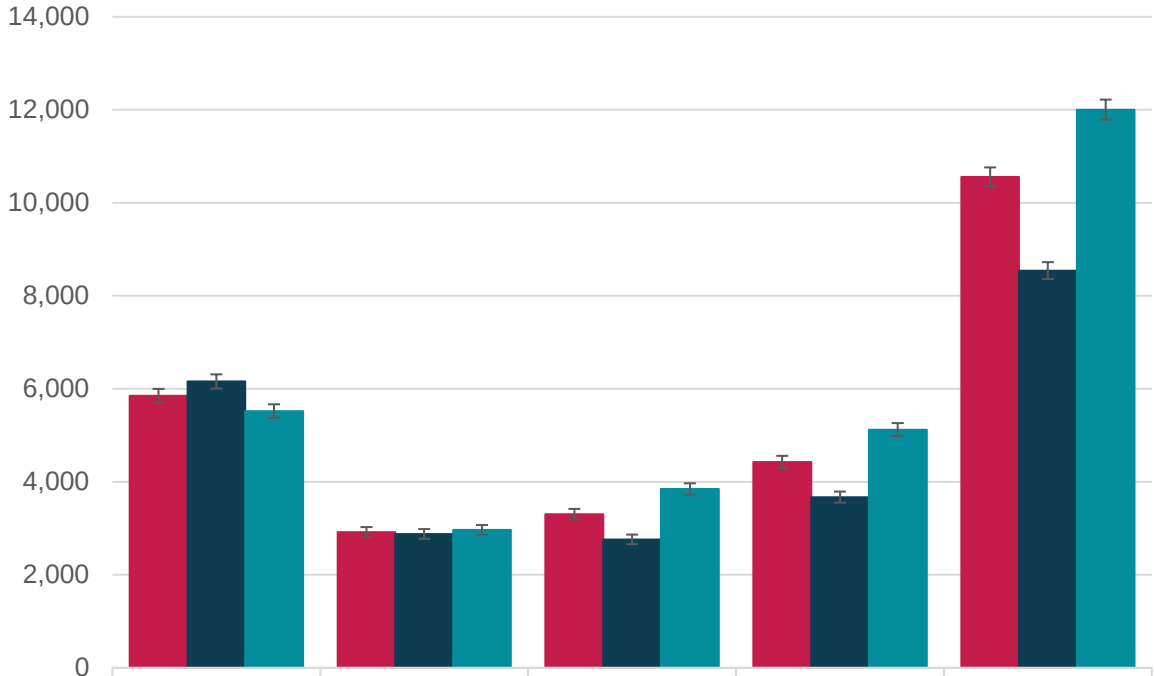



| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Overall | 4160.0 | 4248.8 | 4398.4 | 4714.3 | 4921.7 |
| Males | 3748.3 | 3881.8 | 4012.3 | 4383.2 | 4599.2 |
| Females | 4565.5 | 4610.1 | 4777.7 | 5039.3 | 5238.1 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 8, 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 falls was highest among people aged 75 years and older followed by people aged less than 20 years old (Figure 43). Among people aged 45 years and older, the rate of emergency department visits was higher among females compared to males whereas among people less than 20 years old, the rate was higher among males compared to females. There was no difference between males and females in the 20- to 44-year age group, which also had the lowest rate of emergency department visits for falls.

**Figure 43. Five-year average rate of emergency department visits for falls (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)**



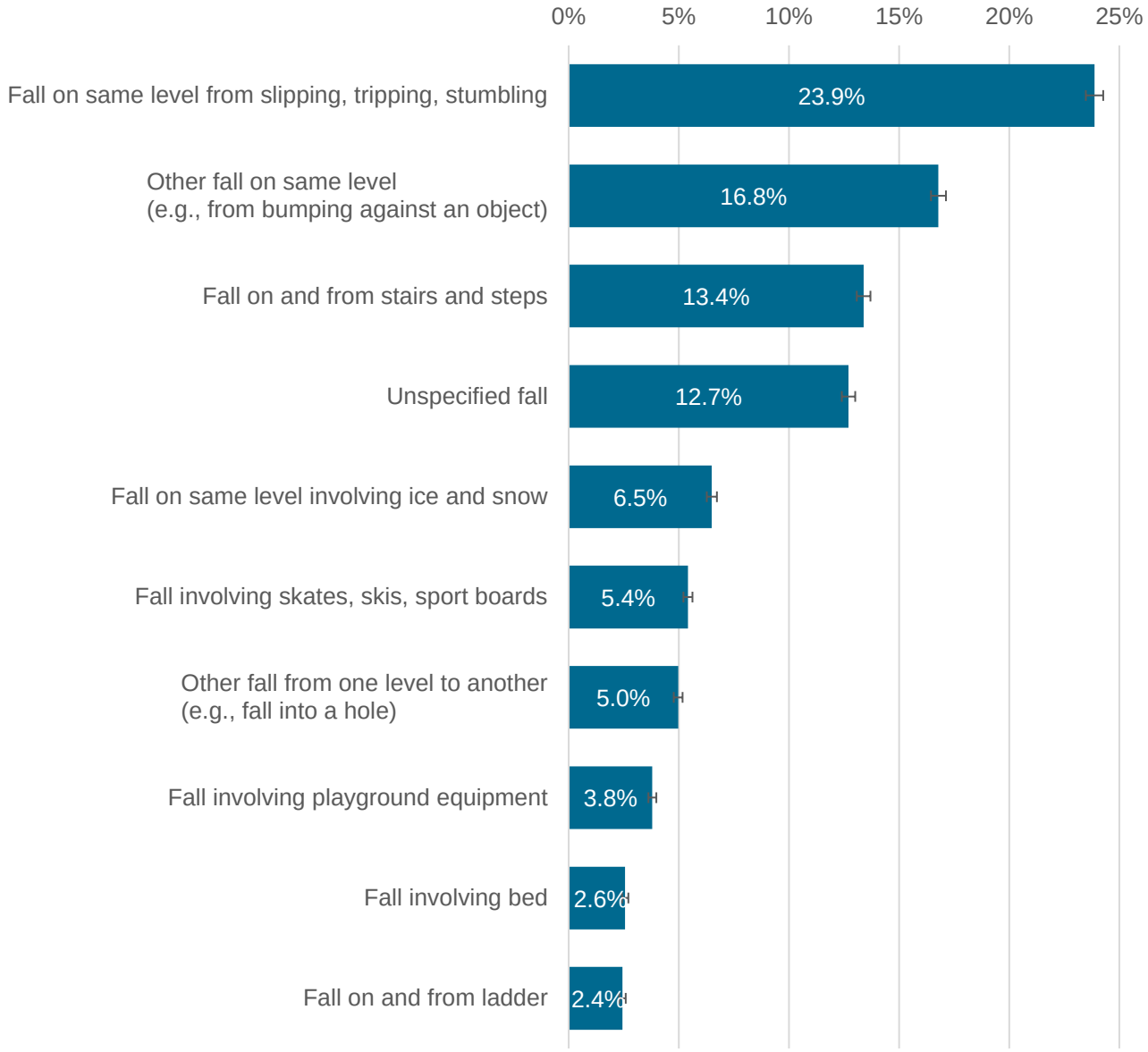

| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 5848.0 | 2920.7 | 3304.0 | 4427.7 | 10558.5 |
| Males | 6156.5 | 2878.5 | 2761.1 | 3671.4 | 8541.4 |
| Females | 5520.1 | 2963.1 | 3846.7 | 5122.2 | 12004.0 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 8, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019.

Between 2013 and 2017, over half (61.4%) of these falls occurred in an unknown or unspecified location and 18.7% occurred at home. A smaller proportion occurred at schools/other institutions and public areas (4.7%), residential institutions (4.1%), sports and athletic areas (3.6%), trade and service areas (2.8%), streets and highways (2.4%), industrial and construction areas (1.8%) and on farms (0.4%).

Between 2013 to 2017, almost one-quarter (23.9%) of emergency department visits for falls were for falls that happened on the same level from slipping, tripping or stumbling, but not falls caused by ice or snow (Figure 44).

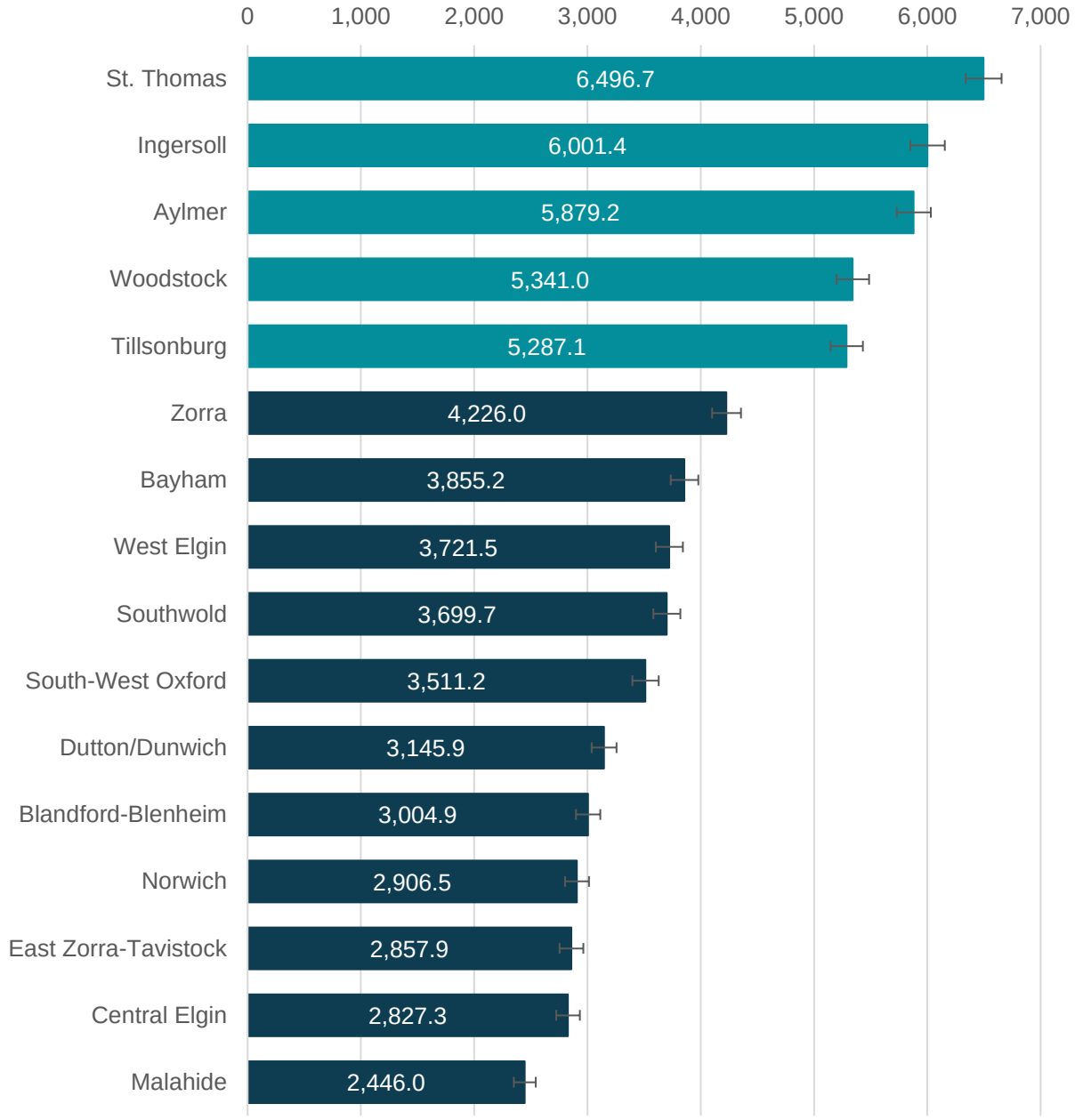
**Figure 44. Proportion of emergency department visits for falls by top ten causes, Southwestern Public Health, 2013-2017 (combined)**




**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 8, 2019.

The crude rate of emergency department visits for falls was highest in the urban municipalities, particularly in St. Thomas followed by Ingersoll and Aylmer (Figure 45).

**Figure 45. Crude rate of emergency department visits for falls (per 100,000 population) by municipality, Southwestern Public Health, 2016**



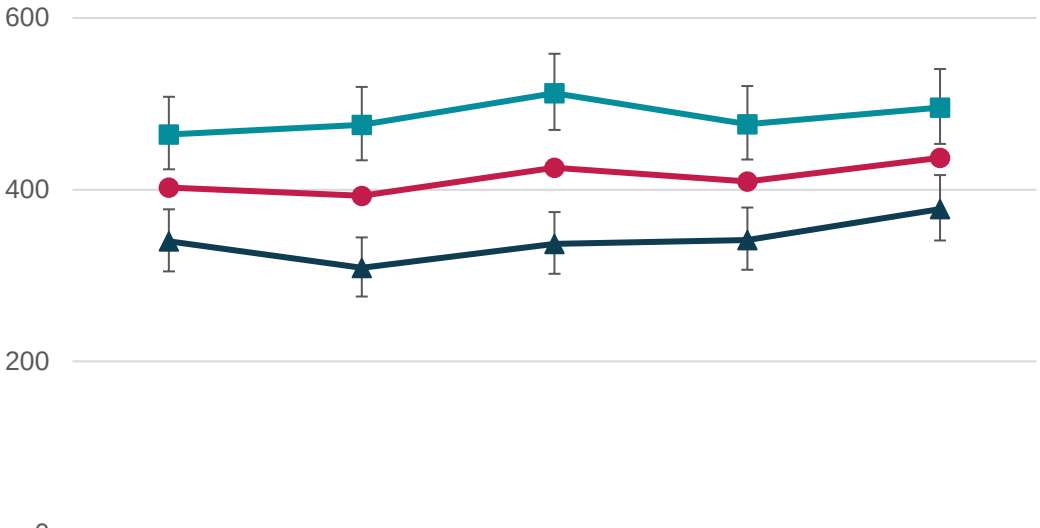

**Note:** the urban municipalities are highlighted using a lighter blue compared to the rural municipalities which are shown using a darker blue.

**Source:** Ambulatory Emergency External Cause (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 8, 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.

## Hospitalizations

The rates of hospitalizations for falls in the SWPH region were similar between 2013 to 2017 (error bars not shown; Figure 46). The rates of hospitalizations for falls were consistently higher among females compared to males.

**Figure 46. Crude rate of hospitalizations for falls (per 100,000 population), by sex, Southwestern Public Health, 2013-2017**

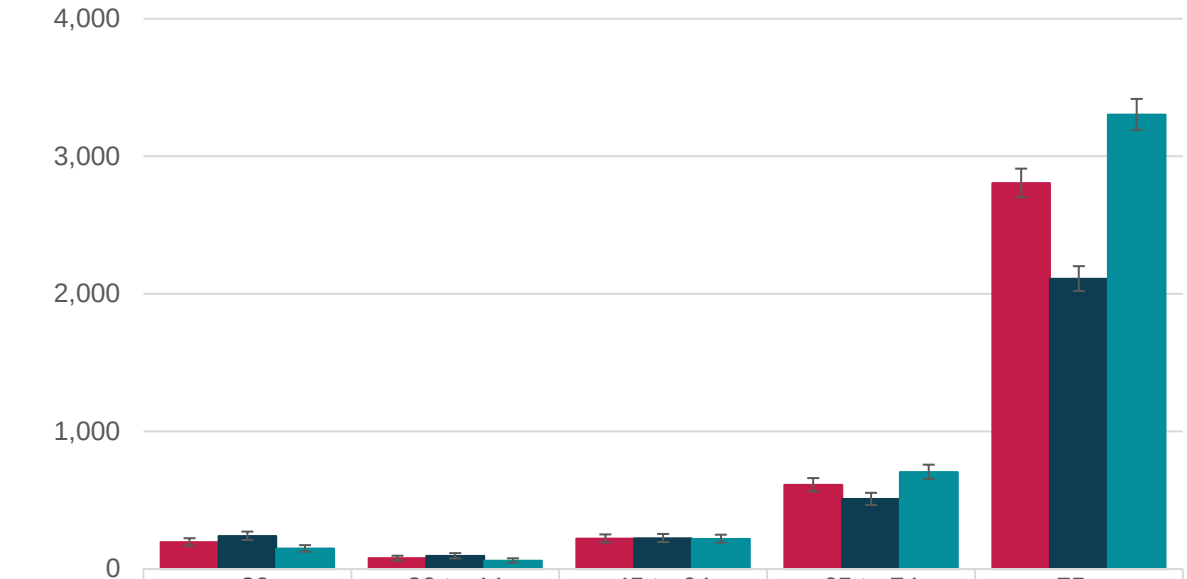



| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Overall | 402.4 | 392.9 | 425.4 | 409.4 | 437.1 |
| Males | 339.7 | 309.0 | 336.9 | 341.4 | 377.4 |
| Females | 464.3 | 475.5 | 512.4 | 476.2 | 495.8 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 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 falls was highest among people aged 75 years and older followed by people aged 65 to 74 years (Figure 47). Among people aged 65 years and older, the rate of hospitalizations was higher among females compared to males whereas among people less than 20 years old, the rate was higher among males compared to females. There were no differences between males and females in the 20- to 44-year age group and the 45- to 64-year age group.

**Figure 47. Five-year average rate of hospitalizations for falls (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)**



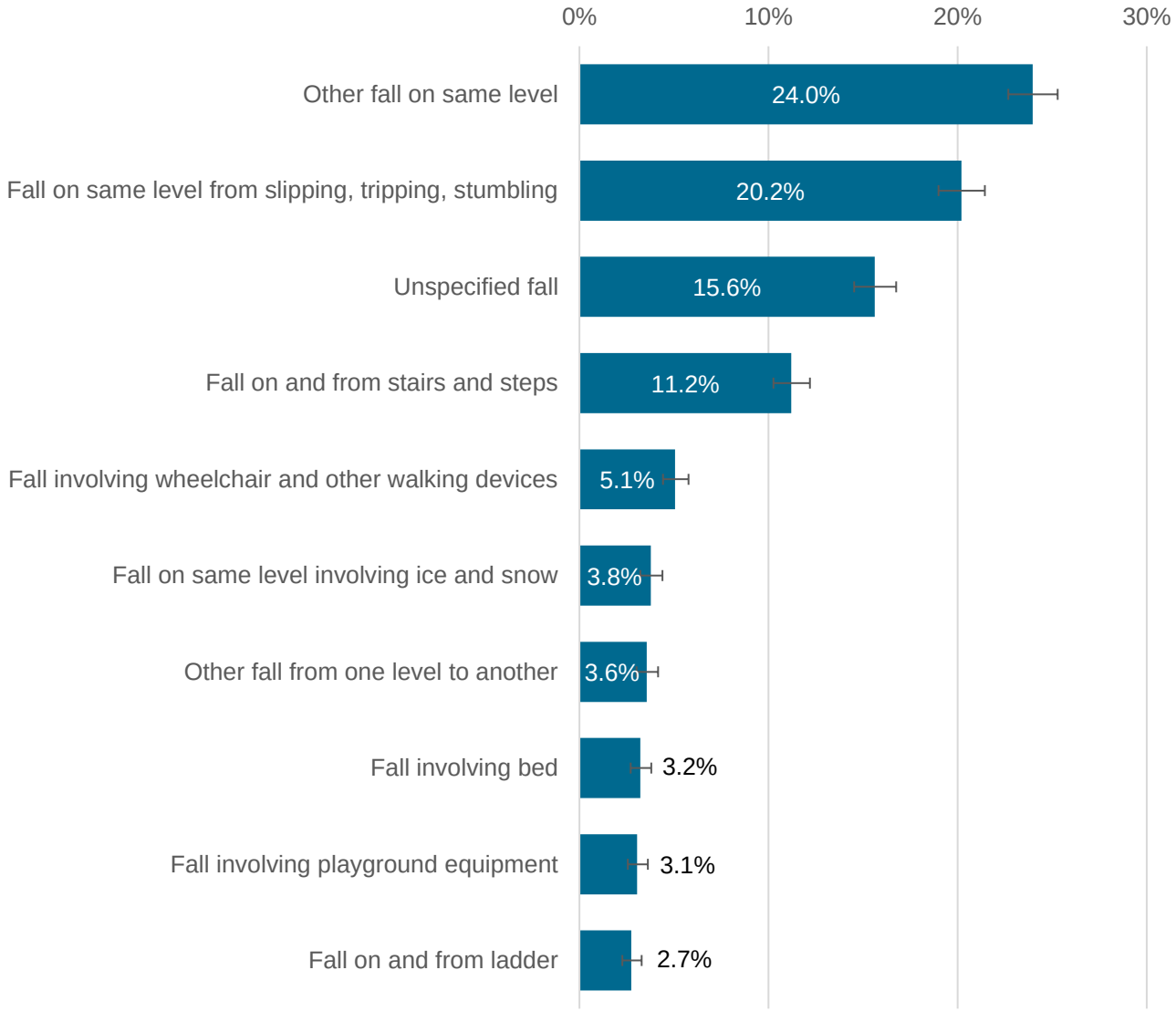

| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 195.9 | 78.3 | 221.8 | 611.2 | 2805.7 |
| Males | 240.7 | 95.2 | 224.0 | 508.6 | 2110.4 |
| Females | 148.3 | 61.3 | 219.7 | 705.4 | 3303.9 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019.

Between 2013 and 2017, 40.7% of these falls occurred at home, 36.9% occurred in an unknown or unspecified location and 12.5% occurred in a residential institution. A smaller proportion occurred at trades and service areas (2.6%), schools/other institutions and public areas (2.2%), on streets and highways (2.2%), at sports and athletic areas (1.4%), at industrial and construction areas (0.7%) and on farms (0.7%).

Between 2013 to 2017, almost one-quarter (24.0%) of hospitalizations for falls were for other types of falls that happened on the same level, such as from bumping against an object or from falling off the toilet (Figure 48).

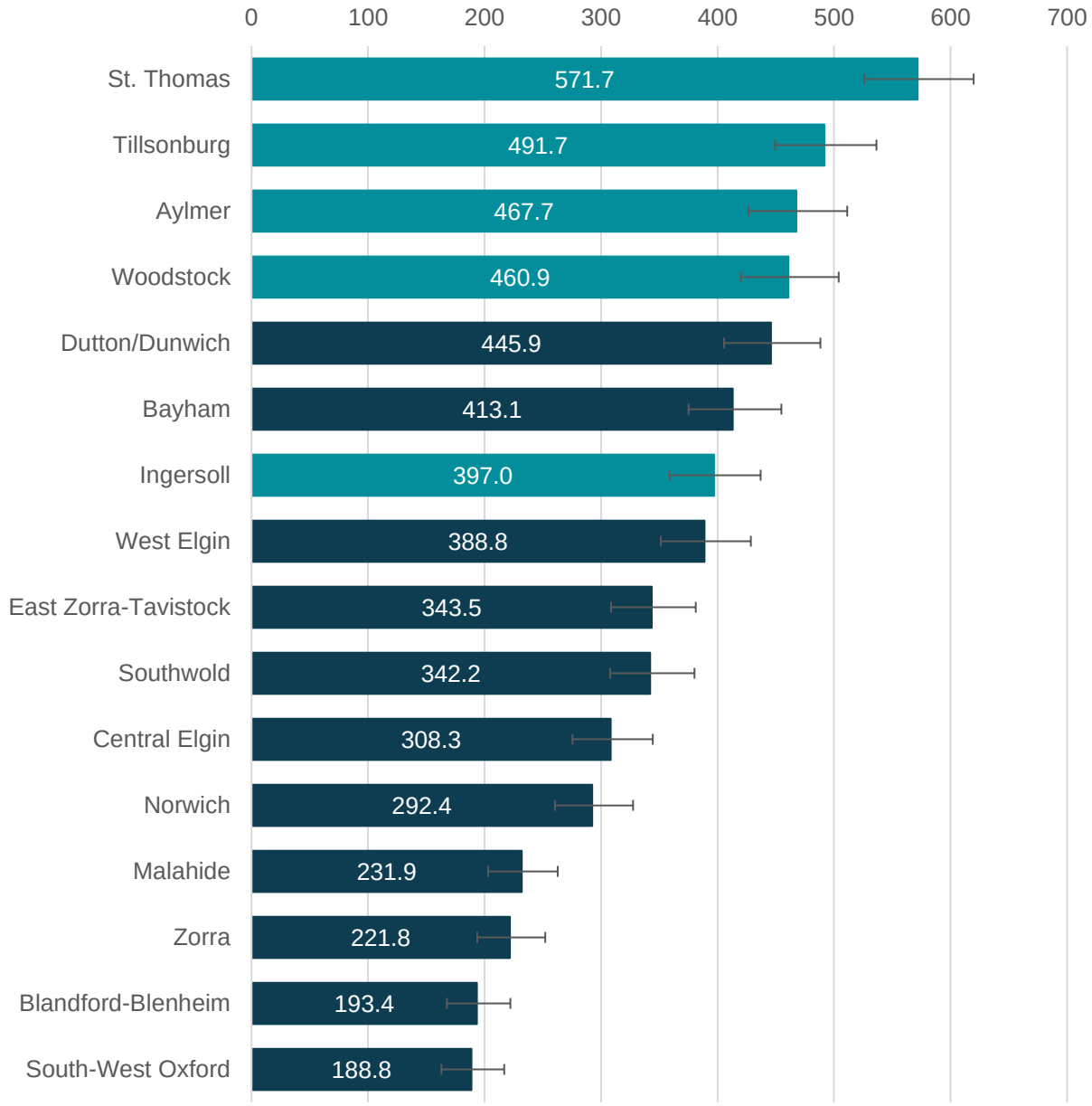
**Figure 48. Proportion of hospitalizations for falls by top ten causes, Southwestern Public Health, 2013-2017 (combined)**




**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 2019.

The crude rate of hospitalizations for falls was highest in the urban municipalities, except for Dutton/Dunwich and Bayham (Figure 49).

**Figure 49. Crude rate of hospitalizations for falls (per 100,000 population) by municipality, Southwestern Public Health, 2016**



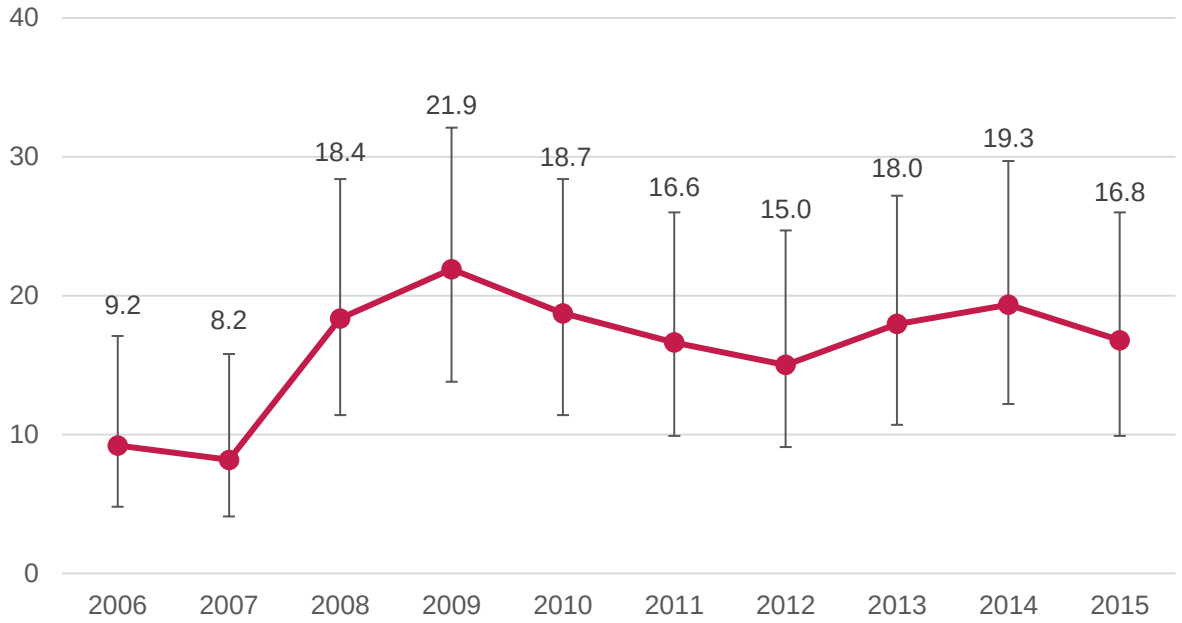

**Note:** the urban municipalities are highlighted using a lighter blue compared to the rural municipalities which are shown using a darker blue.

**Source:** Ambulatory Emergency External Cause (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 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.

## Deaths

The rates of deaths from falls in the SWPH region were similar between 2006 to 2015 (Figure 59). Over this time period, the rates of deaths from falls were similar between females and males.

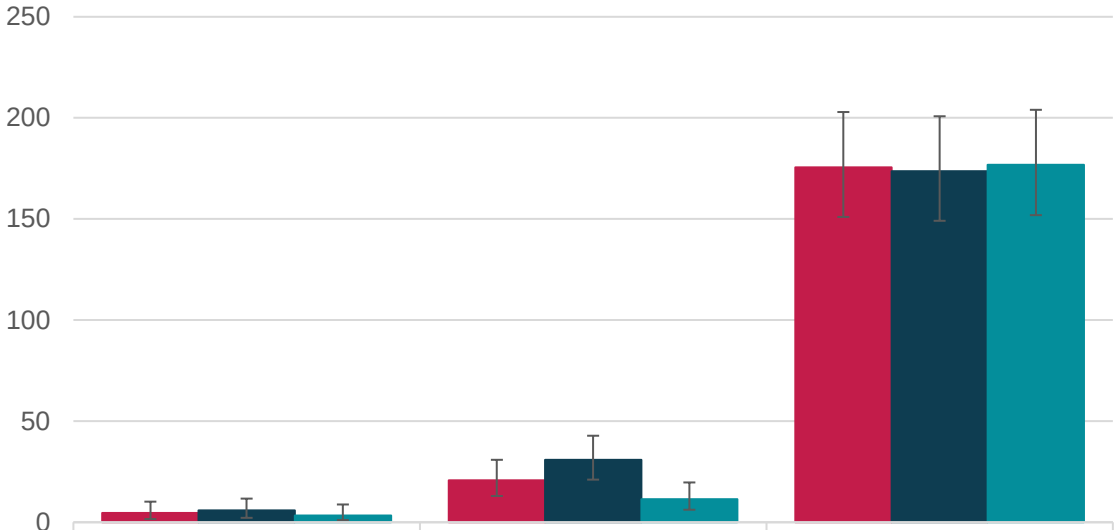
**Figure 50. Crude rate of deaths from falls (per 100,000 population), by sex, Southwestern Public Health, 2006-2015**




**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

Using combined data from 2006 to 2015, the rate of deaths from falls was highest among people aged 75 years and older (Figure 51). Among people aged 65 to 74 years old, the rate of death was higher among males compared to females. However, there were no differences between males and females in the other age groups. Data for people younger than 45 years old is not presented due to the small number of deaths from falls in those age groups.

**Figure 51. Ten-year average rate of deaths from falls (per 100,000 population) by sex and age group, Southwestern Public Health, 2006-2015 (combined)**



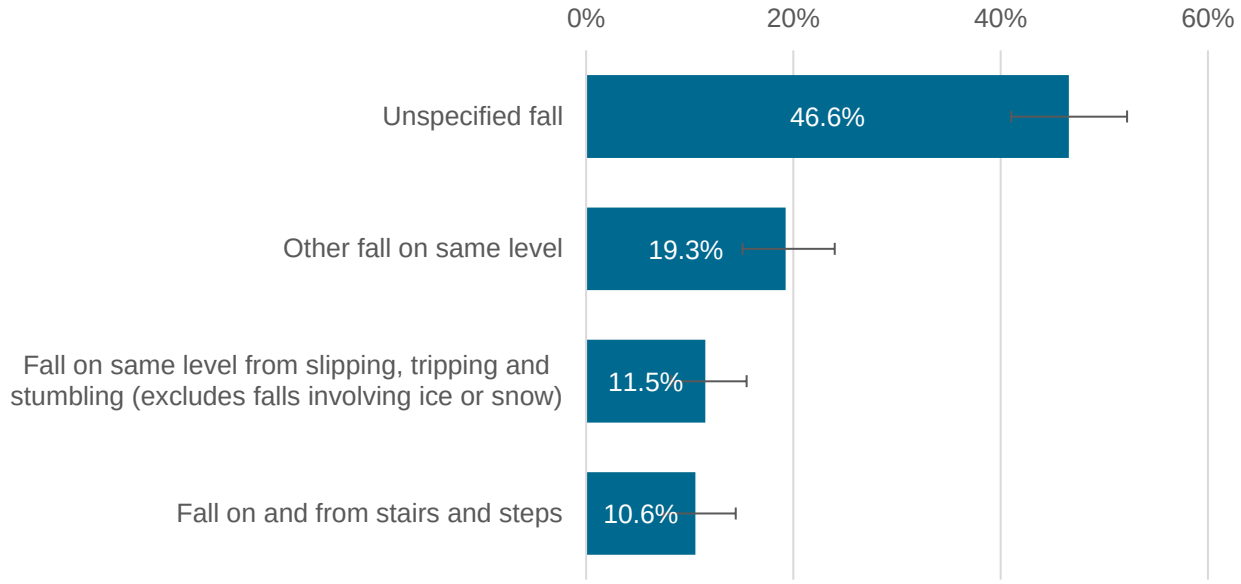

| | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|
| Overall | 4.6 | 20.7 | 175.6 |
| Males | 5.8 | 30.9 | 173.7 |
| Females | 3.3 | 11.3 | 176.9 |

**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

Between 2006 and 2015, 56.8% of fatalities from falls occurred at home, 26.1% occurred in a residential institution, 7.1% occurred in unknown locations and 6.5% occurred at school or another institution or public administrative area.

Between 2006 to 2015, almost half (46.6%) of fatalities from falls were from unspecified falls and about one-fifth (19.3%) were from other falls on the same level, including from bumping against an object and falling from or off a toilet (Figure 52).

**Figure 52. Proportion of deaths from falls by most common causes, Southwestern Public Health, 2006-2015 (combined)**

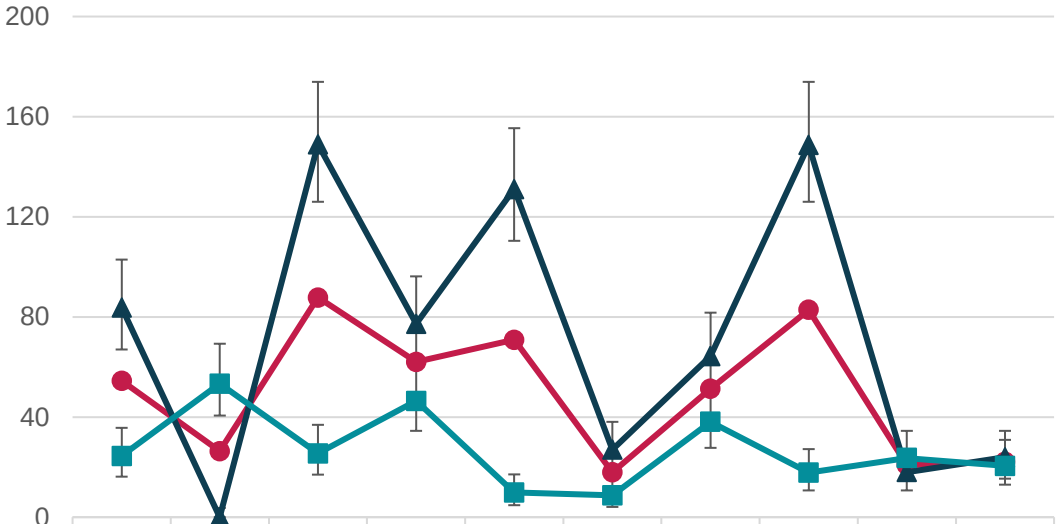



**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 2019.

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.[8] Therefore, the convention of using a 75-year cut-off likely underestimates the PYLL from premature deaths.

In 2015, there were 22 PYLL due to falls per 100,000 population aged less than 75 years old (Figure 53). The rate of PYLL due to falls varied from year to year between 2006 and 2015 (error bars not shown for total rates each year; Figure 53). The rate of PYLL due to falls was often higher among males than females, except in 2007, 2012, 2014 and 2015.

**Figure 53. Crude rate of potential years of life lost (PYLL) to deaths from falls (per 100,000 population), by sex, residents less than 75 years old, Southwestern Public Health, 2006-2015**




| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| Overall | 54.5 | 26.4 | 87.8 | 62.0 | 70.9 | 17.9 | 51.3 | 82.8 | 20.8 | 22.2 |
| Males | 83.8 | 0.0 | 148.9 | 77.3 | 131.1 | 27.0 | 64.4 | 148.7 | 18.0 | 23.9 |
| Females | 24.5 | 53.3 | 25.5 | 46.5 | 9.9 | 8.7 | 38.1 | 17.8 | 23.6 | 20.6 |

**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 20, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

The crude rate of deaths due to falls was similar between people living in the rural municipalities of the SWPH region compared to the urban municipalities (Figure 54).

**Figure 54. Crude rate of deaths from falls (per 100,000 population) by rural or urban residence, Southwestern Public Health, 2006-2015 (combined)**

Between 2006 and 2015, there were on average 19.8 (95% CI: 12.2-29.7) deaths due to falls per 100,000 population per year living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

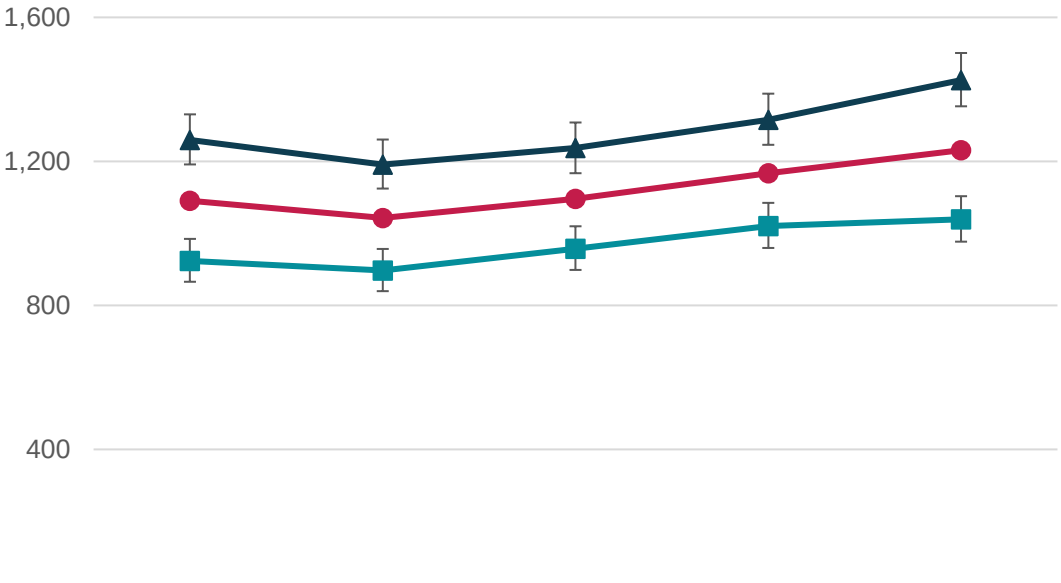
Between 2006 and 2015, there were on average 11.6 (95% CI: 6.2-19.7) deaths due to falls per 100,000 population per year living in the rural municipalities of Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford.

# Transportation-related injuries

## Emergency department visits

The rate of emergency department visits for transportation-related injuries in the SWPH region was higher in 2017 compared to 2013 to 2015 (error bars not shown for total rates; Figure 55). The rates of emergency department visits for transportation-related injuries were consistently higher among males than females.

**Figure 55. Crude rate of emergency department visits for transportation-related injuries (per 100,000 population), by sex, Southwestern Public Health, 2013-2017**

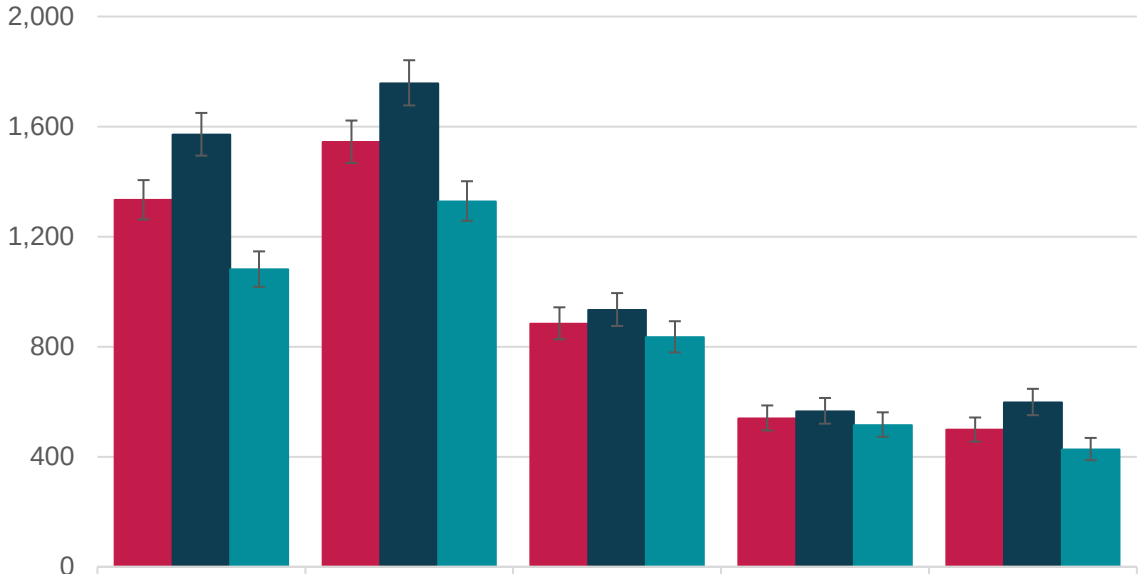



| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Overall | 1090.1 | 1042.7 | 1095.9 | 1166.8 | 1230.9 |
| Males | 1259.1 | 1191.0 | 1237.1 | 1315.8 | 1425.7 |
| Females | 923.6 | 896.8 | 957.1 | 1020.5 | 1038.9 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 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 transportation-related injuries was highest among people aged 20 to 44 years followed by people aged less than 20 years (Figure 56). Among people less than 44 years old and 75 years and older, the rate of emergency department visits was higher for males than females.

**Figure 56. Five-year average rate of emergency department visits for transportation-related injuries (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)**

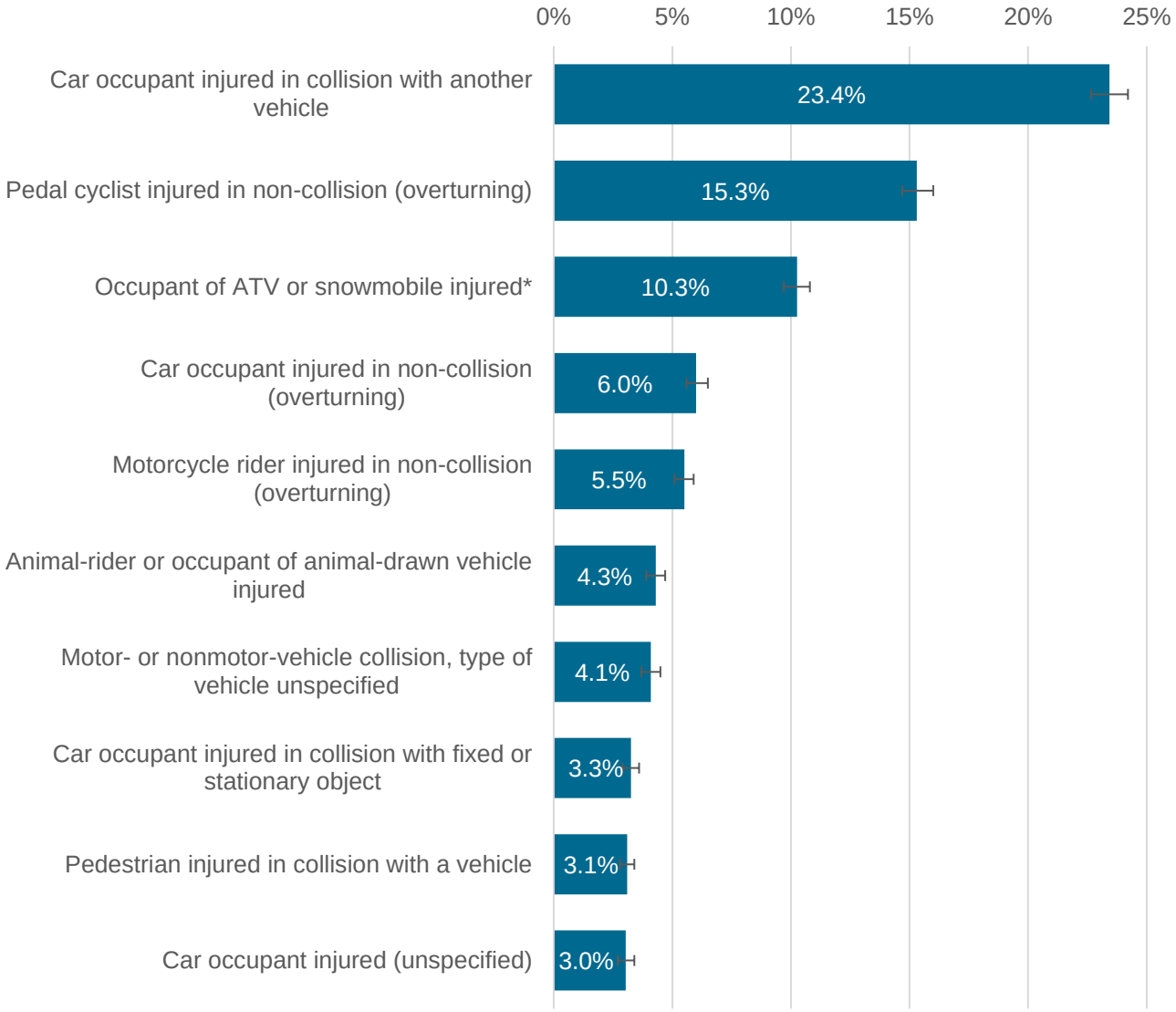



| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 1332.9 | 1543.8 | 883.8 | 539.1 | 497.9 |
| Males | 1570.5 | 1757.3 | 933.2 | 565.1 | 597.8 |
| Females | 1080.5 | 1328.0 | 834.5 | 515.1 | 426.2 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019.

Almost one-quarter (23.4%) of emergency department visits for transportation-related injuries were due to a car occupant being injured in a collision with a car, pick-up truck or van (Figure 57). The second most common transportation-related injury resulting in emergency department visits was pedal cyclists being injured in non-collisions, such as falls or overturning (15.3%).

**Figure 57. Proportion of transportation-related injury emergency department visits by top ten causes, Southwestern Public Health, 2013-2017 (combined)**

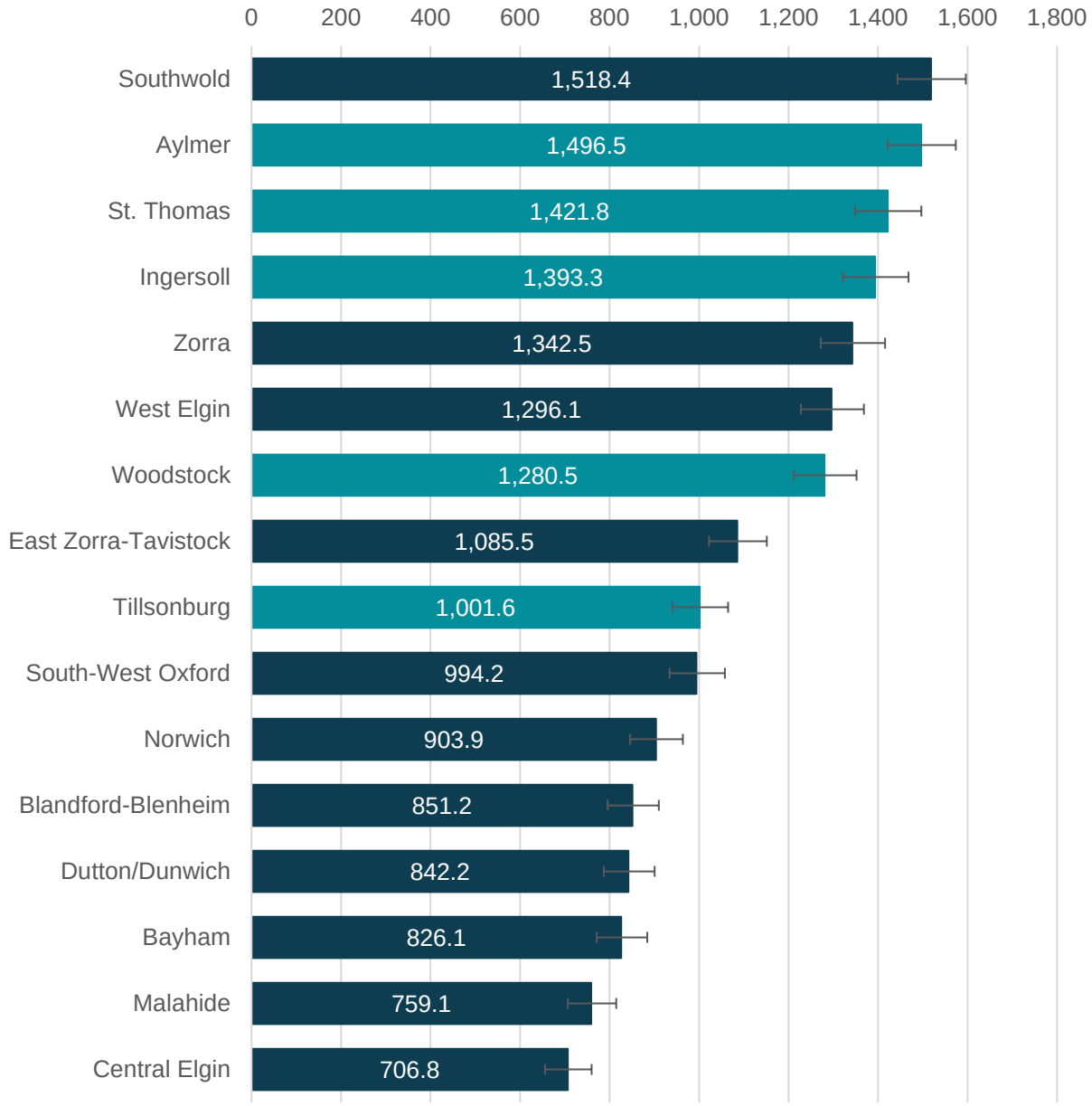



***63.4% of these visits were for non-traffic injuries (e.g., land collision or falling through ice) and 21.5% were for unspecified non-traffic injuries. The data cannot distinguish if injuries were more common among ATV occupants compared to snowmobile occupants.

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019.

The crude rate of emergency department visits for transportation-related injuries was highest in Southwold followed by Aylmer and St. Thomas (Figure 58).

**Figure 58. Crude rate of emergency department visits for transportation-related injuries (per 100,000 population) by municipality, Southwestern Public Health, 2016**



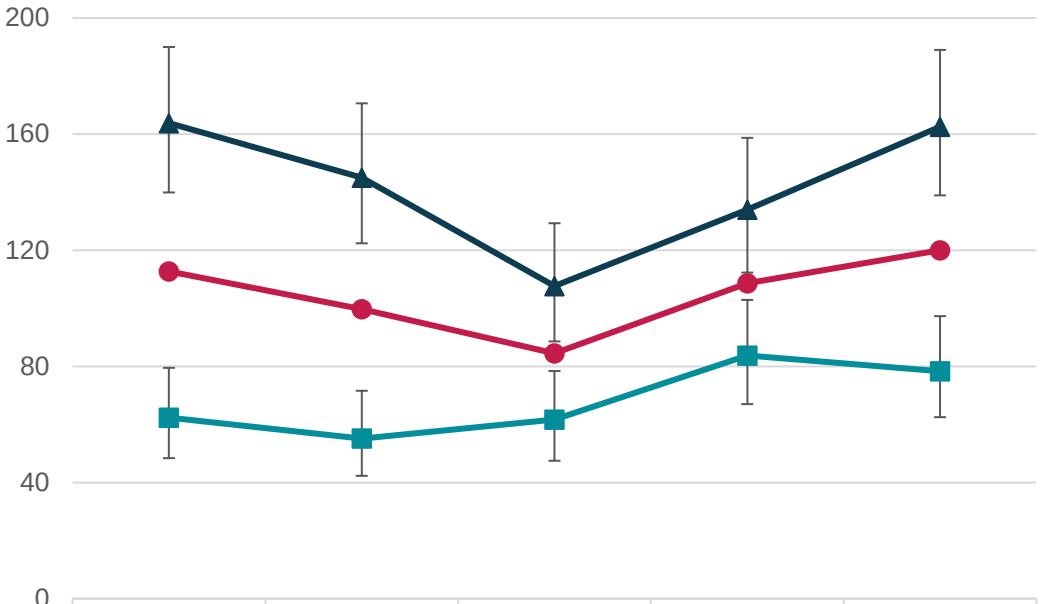

**Note:** the urban municipalities are highlighted using a lighter blue compared to the rural municipalities which are shown using a darker blue.

**Source:** Ambulatory Emergency External Cause (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 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.

## Hospitalizations

The rate of hospitalizations from transportation-related injuries among people living in the SWPH region has remained similar between 2013 and 2017 (error bars not shown). Over this time period, males consistently had higher rates of hospitalizations than females (Figure 59).

**Figure 59. Crude rate of hospitalizations for transportation-related injuries (per 100,000 population), by sex, Southwestern Public Health, 2013-2017**

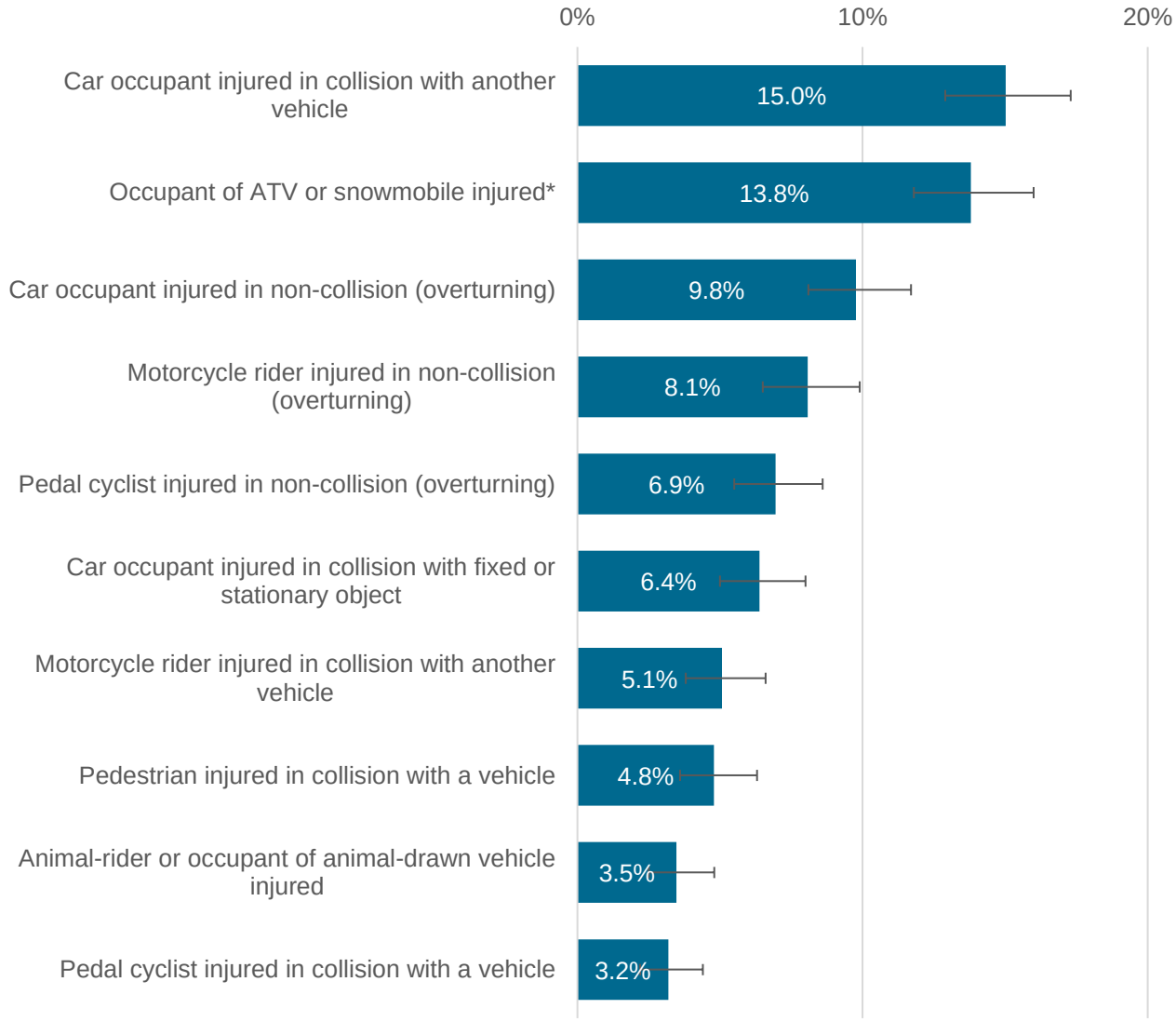



| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Overall | 112.7 | 99.7 | 84.5 | 108.6 | 120.0 |
| Males | 163.8 | 145.0 | 107.7 | 134.0 | 162.6 |
| Females | 62.4 | 55.1 | 61.7 | 83.7 | 78.3 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 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.

Among SWPH residents admitted to the hospital for transportation-related injuries, the most common reasons were due to a car occupant being injured in a collision with a vehicle (15.0%) and an occupant of an ATV or snowmobile being injured (13.8%; Figure 60).

**Figure 60. Proportion of transportation-related injury hospitalizations by top ten causes, Southwestern Public Health, 2013-2017 (combined)**

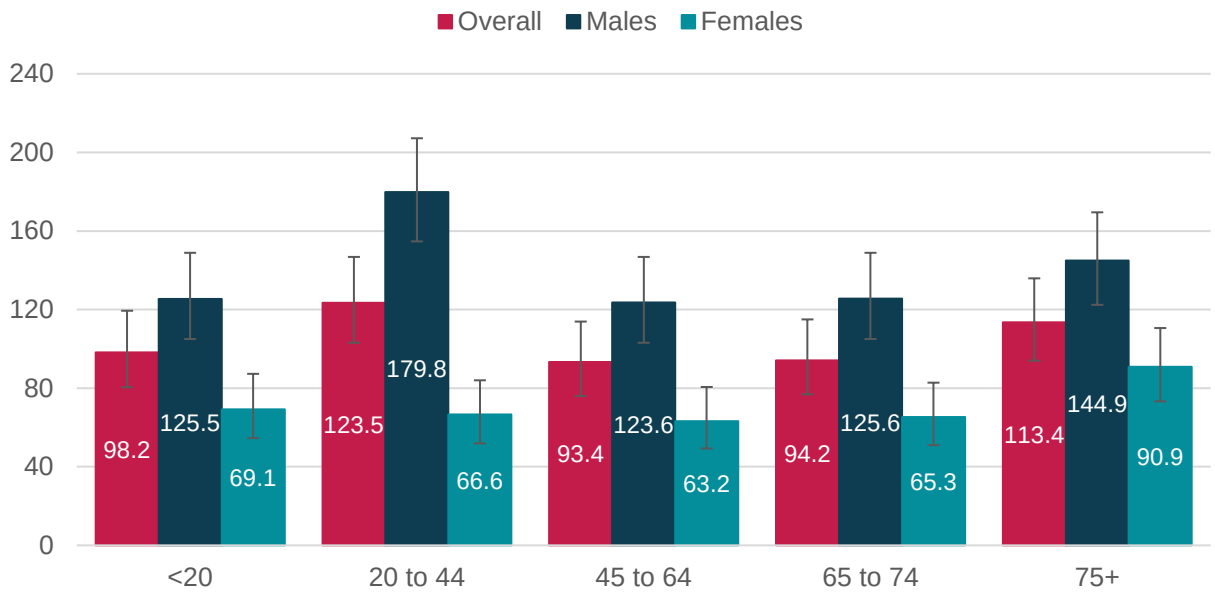



***66.0% of these visits were for non-traffic injuries (e.g., land collision or falling through ice). The data cannot distinguish if injuries were more common among ATV occupants compared to snowmobile occupants.

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019.

The rate of hospitalizations for transportation-related injuries was similar across age groups. However, males aged 20 to 44 years had the highest rate of hospitalizations, which was higher than all males except for those aged 75 years and older. (Figure 61).

**Figure 61. Five-year average rate of hospitalizations for transportation-related injuries (per 100,000 population) by sex and age group, 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 15, 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 due to transportation-related injuries was similar between people living in the urban and rural municipalities (Figure 62).

**Figure 62. Crude rate of hospitalizations for transportation-related injuries (per 100,000 population) by urban or rural residence, Southwestern Public Health, 2016**

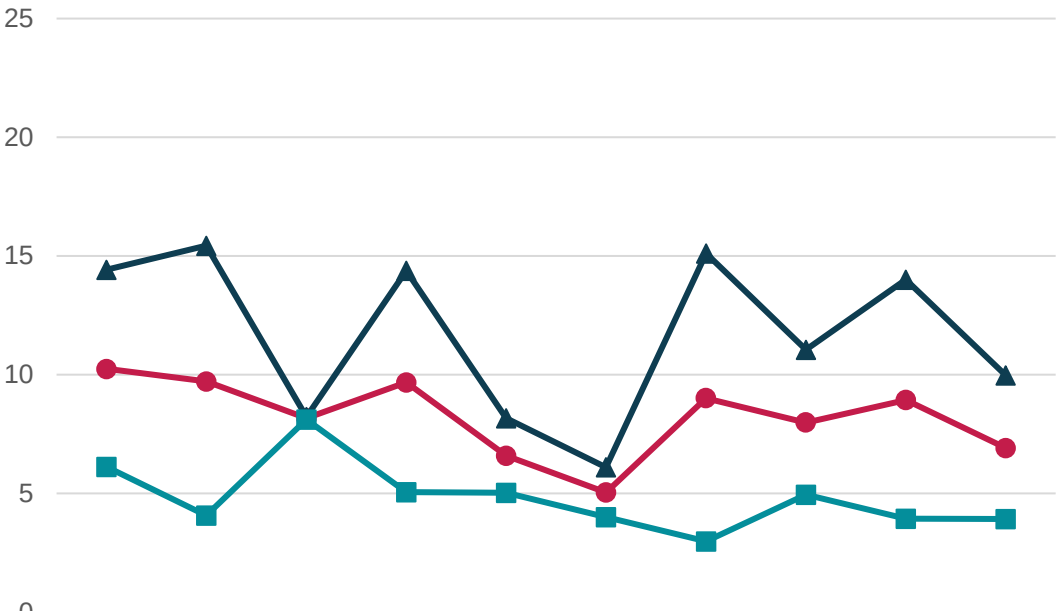
In 2016, there were 113.3 (95% CI: 94.0-135.9) hospitalizations per 100,000 population due to transportation-related injuries among people living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

In 2016, there were 102.3 (95% CI: 84.1-123.8) hospitalizations per 100,000 population due to transportation-related injuries among 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.

## Deaths

The rate of deaths due to transportation-related injuries has remained similar between 2006 and 2015 (error bars not shown; Figure 63). The yearly rates of death due to transportation-related injuries were similar between males and females, except in 2012 when the rate was higher among males (error bars not shown).

**Figure 63. Crude rate of deaths due to transportation-related injuries (per 100,000 population), by sex, Southwestern Public Health, 2006-2015**

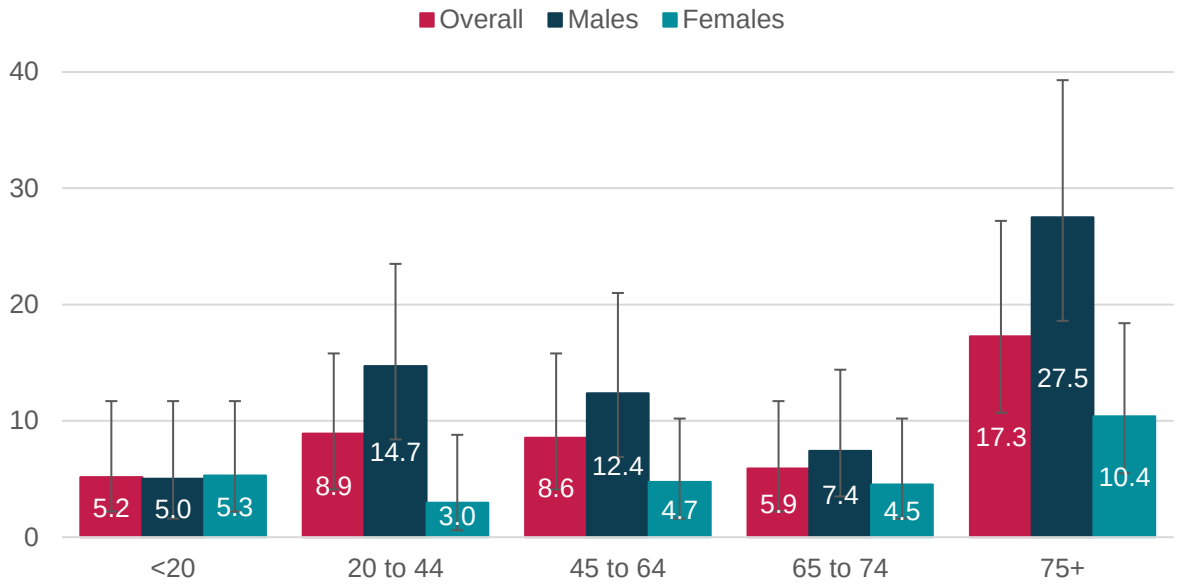



| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| Overall | 10.2 | 9.7 | 8.2 | 9.7 | 6.6 | 5.0 | 9.0 | 8.0 | 8.9 | 6.9 |
| Males | 14.4 | 15.4 | 8.2 | 14.4 | 8.2 | 6.1 | 15.1 | 11.1 | 14.0 | 10.0 |
| Females | 6.1 | 4.1 | 8.1 | 5.1 | 5.0 | 4.0 | 3.0 | 4.9 | 3.9 | 3.9 |

**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

The rates of death due to transportation-related injuries were similar across age groups and between males and females. However, among males, the rate was higher among people aged 75 years and older compared to people aged 65 to 74 years old and people less than 20 years old (Figure 64).

**Figure 64. Ten-year average rate of deaths due to transportation-related injuries (per 100,000 population) by sex and age group, Southwestern Public Health, 2006-2015 (combined)**

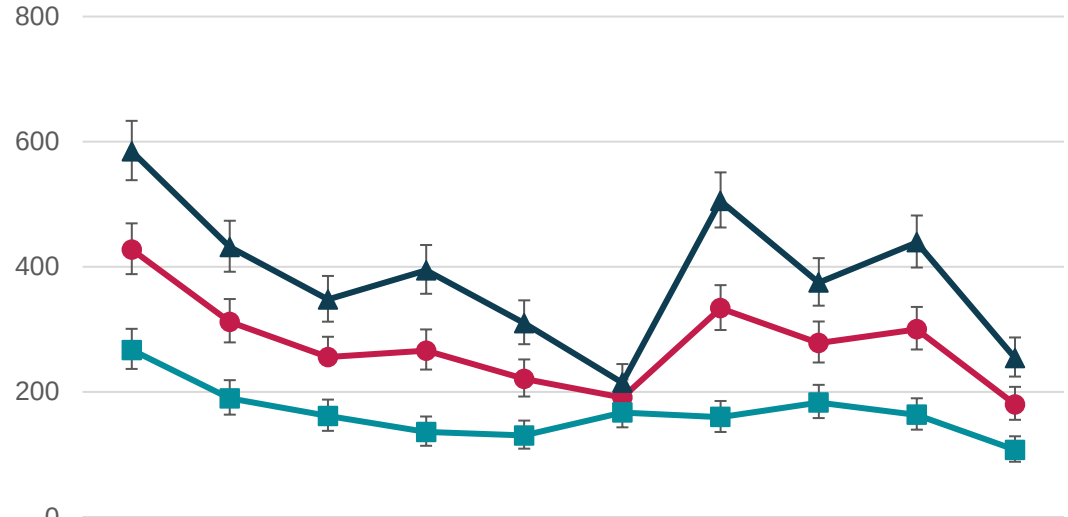



**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

Deaths among people less than 75 years old are commonly considered premature deaths and can be measured by PYLL. As explained above, the convention of using a 75-year cut-off likely underestimates the PYLL from premature deaths.

In 2015, there were 180 PYLL due to transportation-related injuries per 100,000 population aged less than 75 years old, which was lower than all other years except 2010 and 2011 (Figure 65). The rate of PYLL due to transportation-related injury deaths was typically higher among males than females (except in 2011).

**Figure 65. Crude rate of potential years of life lost (PYLL) to deaths from transportation-related injuries (per 100,000 population), by sex, residents less than 75 years old, Southwestern Public Health, 2006-2015**




| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| Overall | 427.9 | 312.3 | 255.8 | 266.1 | 221.0 | 191.1 | 333.7 | 278.3 | 300.1 | 180.3 |
| Males | 584.7 | 431.9 | 347.9 | 394.2 | 310.0 | 214.8 | 505.2 | 374.8 | 439.0 | 254.2 |
| Females | 267.4 | 190.0 | 161.8 | 136.0 | 130.8 | 167.2 | 159.9 | 183.1 | 163.4 | 107.8 |

**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

The crude rate of deaths due to transportation-related injuries was similar between people living in rural municipalities compared to urban municipalities (Figure 66).

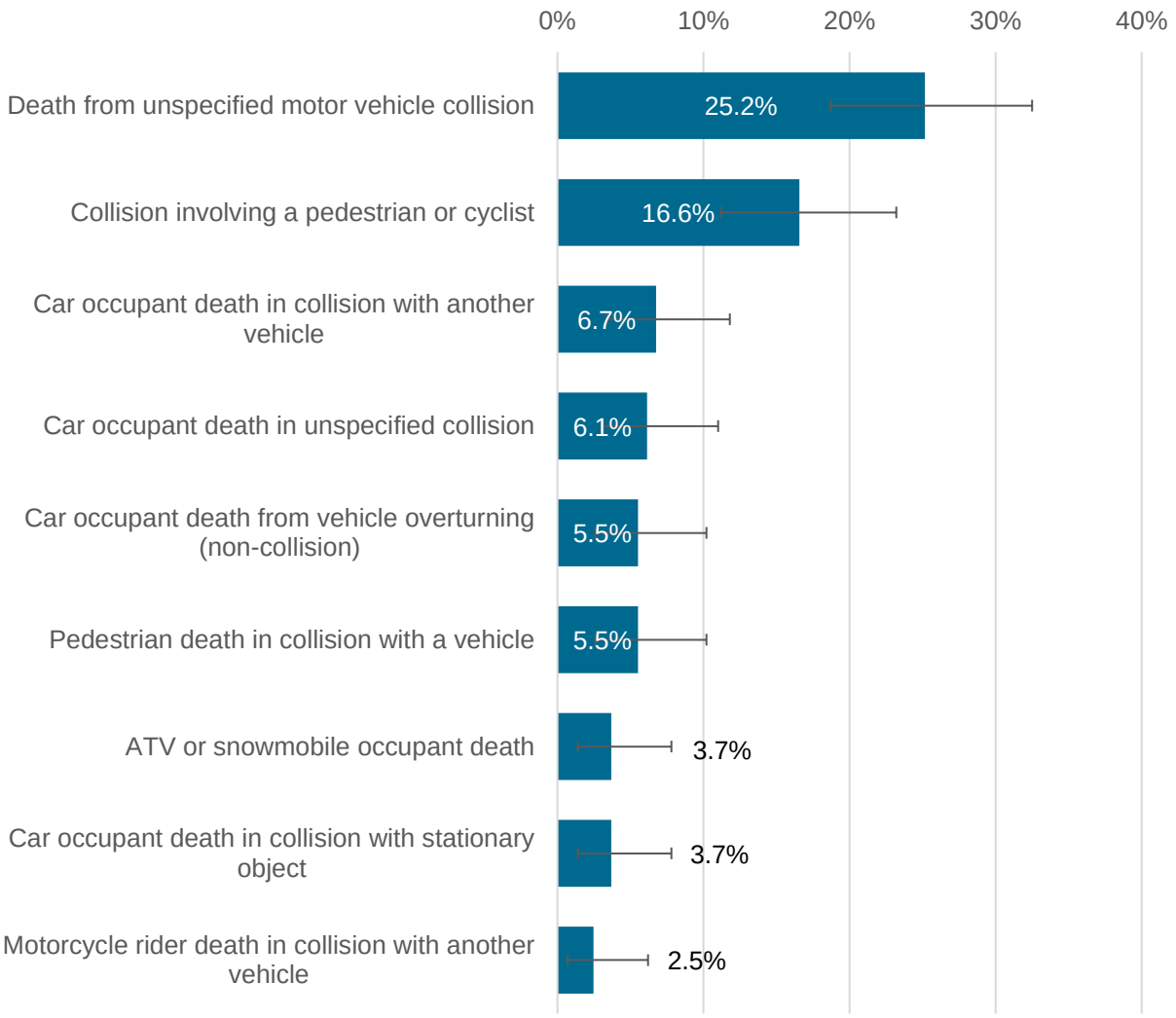
**Figure 66. Crude rate of deaths from transportation-related injuries (per 100,000 population) by urban or rural residence, Southwestern Public Health, 2006-2015 (combined)**

Between 2006 and 2015, there were on average 6.3 (95% CI: 2.8-13.1) deaths due to transportation-related injuries per 100,000 population per year living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

Between 2006 and 2015, there were on average 10.8 (95% CI: 5.5-18.4) deaths due to transportation-related injuries per 100,000 population 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.

Between 2006 and 2015, one-quarter (25.2%) of transportation-related injury deaths in the SWPH region were due to unspecified motor vehicle collisions and less than one-fifth (16.6%) were due to collisions involving a pedestrian or cyclist (Figure 67).

**Figure 67. Deaths due to transportation-related injuries by cause, Southwestern Public Health, 2006-2015 (combined)**



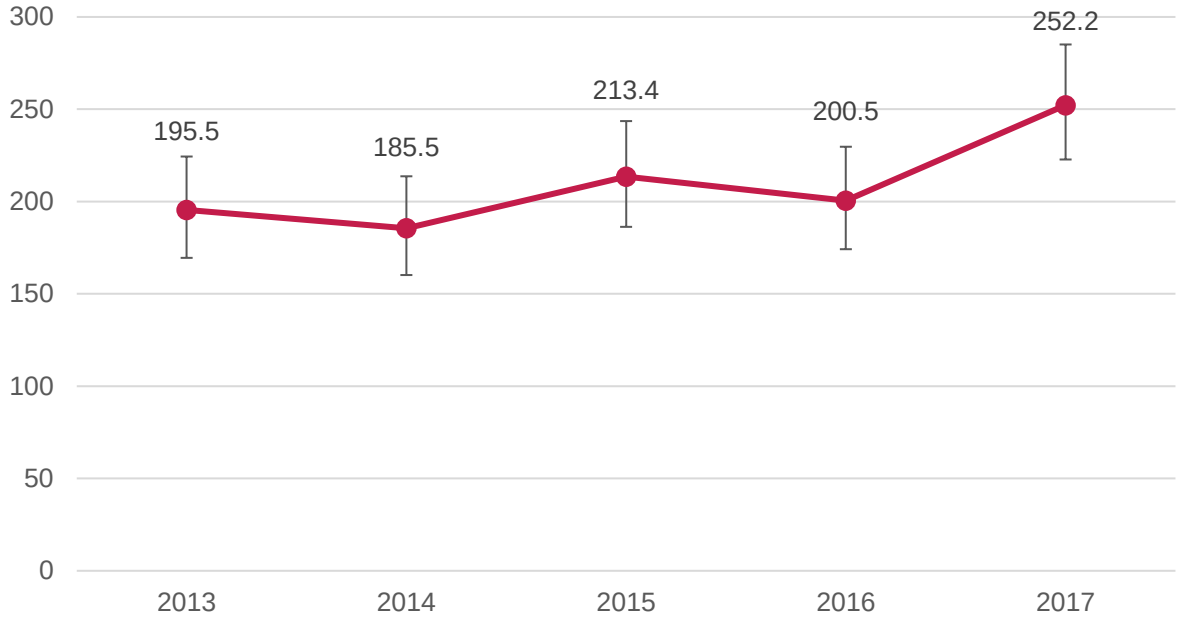

**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019.

# Unintentional poisonings

## Emergency department visits

The rate of emergency department visits for unintentional poisonings in the SWPH region was higher in 2017 compared to 2014 (Figure 68). However, this increase may be partly due to the recent provincial focus on unintentional opioid poisonings and therefore may reflect an increase in detection rather than an increase in prevalence. Over time this period, the rates of emergency department visits for unintentional poisonings were similar between males and females.

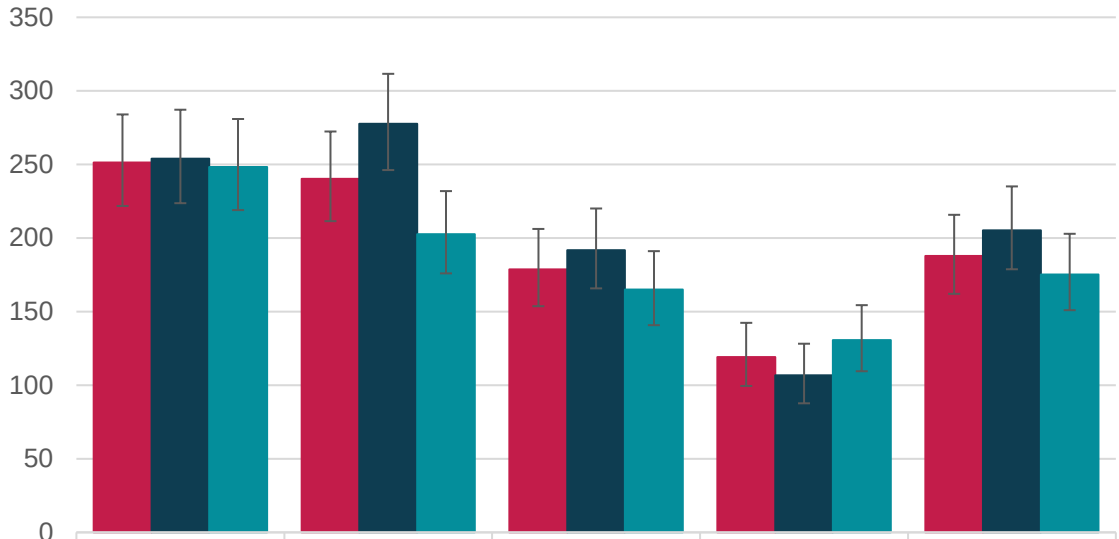
**Figure 68. Crude rate of emergency department visits for unintentional poisonings (per 100,000 population), Southwestern Public Health, 2013-2017**




**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 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 unintentional poisonings was lowest among people aged 65 to 74 years and was otherwise similar across age groups (Figure 69).

**Figure 69. Five-year average rate of emergency department visits for unintentional poisonings (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)**

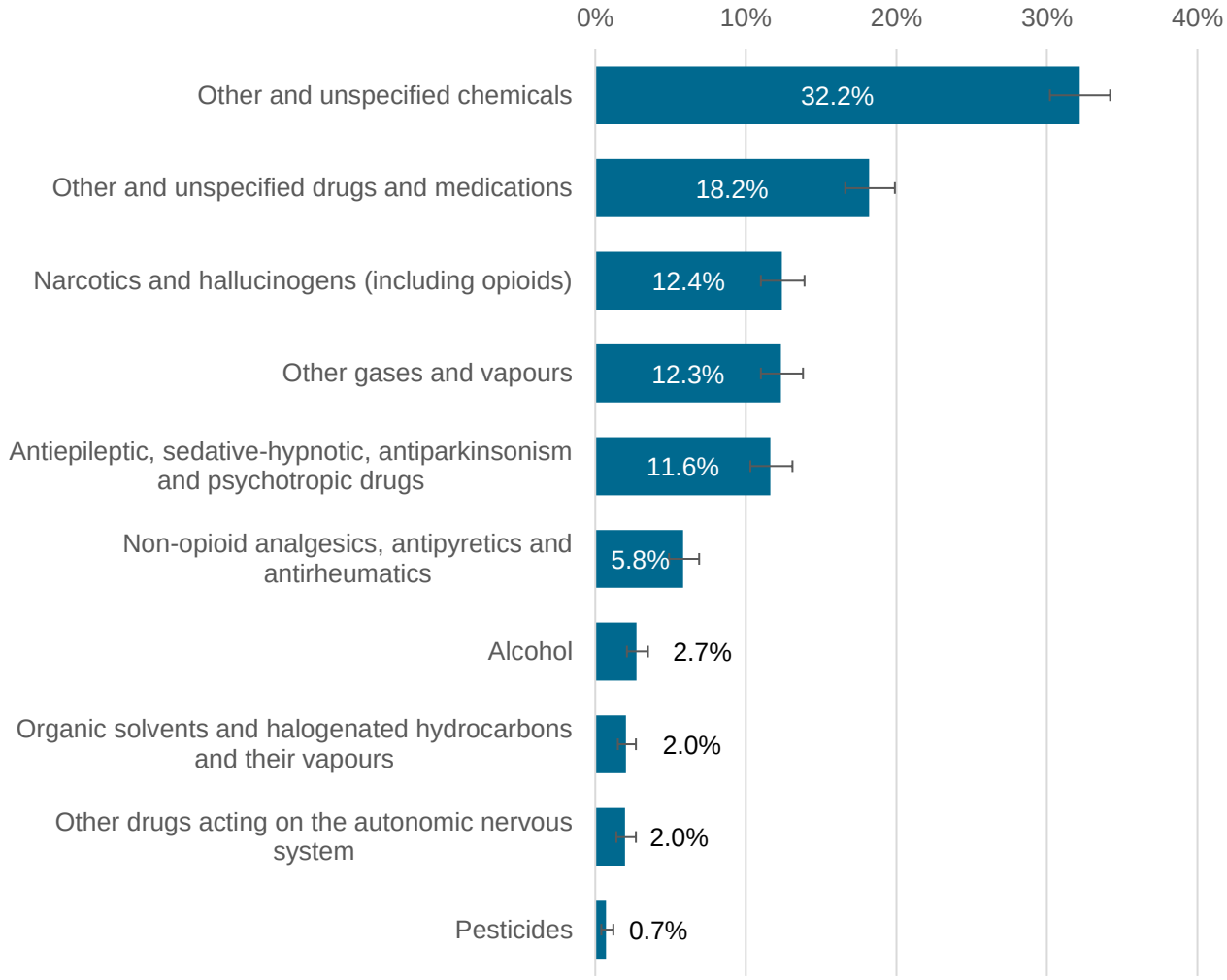



| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 251.2 | 240.3 | 178.7 | 119.2 | 187.8 |
| Males | 254.0 | 277.7 | 191.7 | 106.8 | 205.3 |
| Females | 248.3 | 202.6 | 164.9 | 130.7 | 175.3 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019.

In the emergency department, the cause of the unintentional poisoning is often unknown. About one-third (32.2%) of visits were from unspecified chemicals and almost one-fifth (18.2%) were from unspecified drugs and medications (Figure 70).

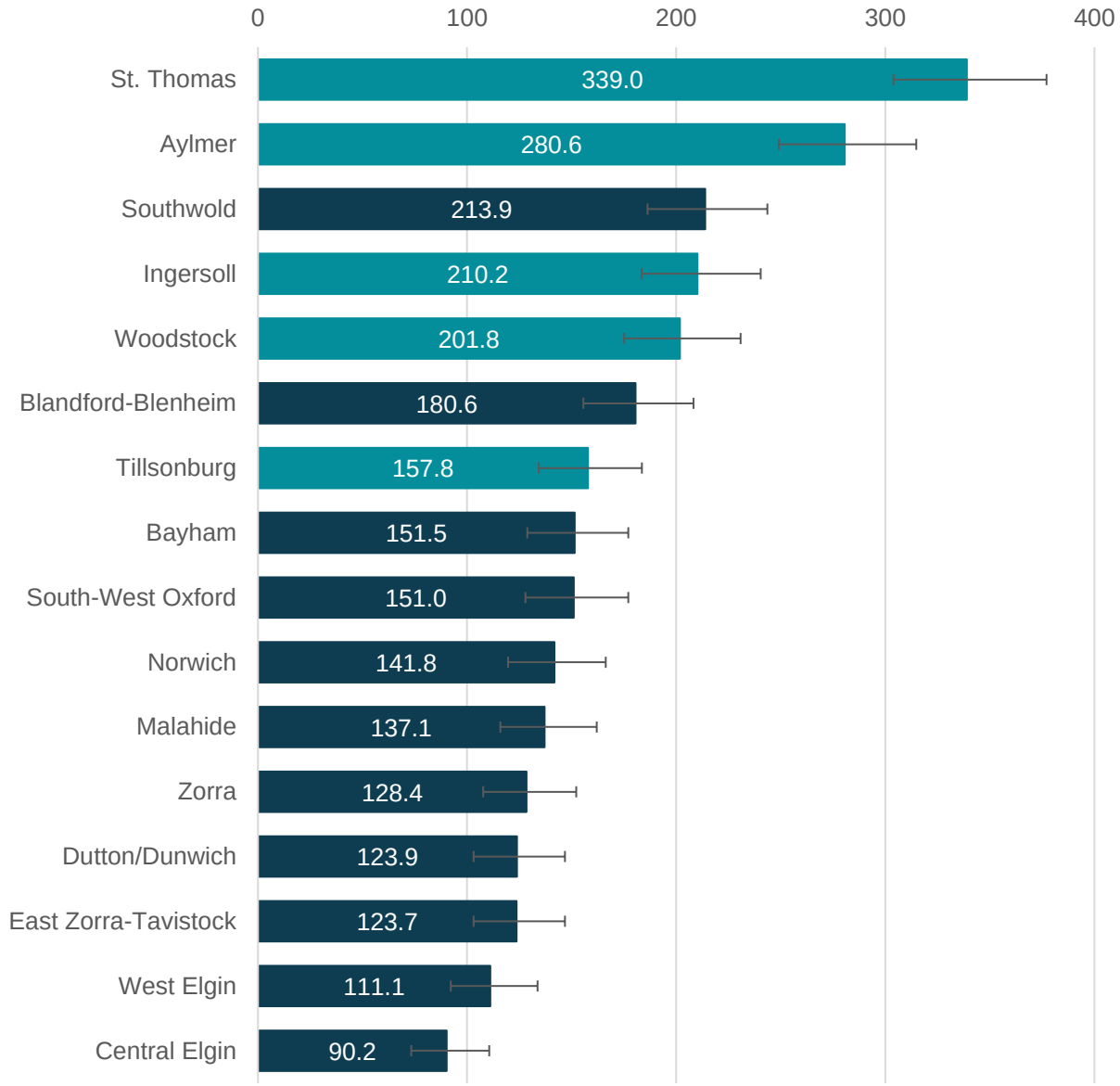
**Figure 70. Proportion of unintentional poisoning emergency department visits by type, Southwestern Public Health, 2013-2017 (combined)**




**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019.

The crude rate of emergency department visits for unintentional poisonings was highest in St. Thomas followed by Aylmer (Figure 71).

**Figure 71. Crude rate of emergency department visits for unintentional poisonings (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.

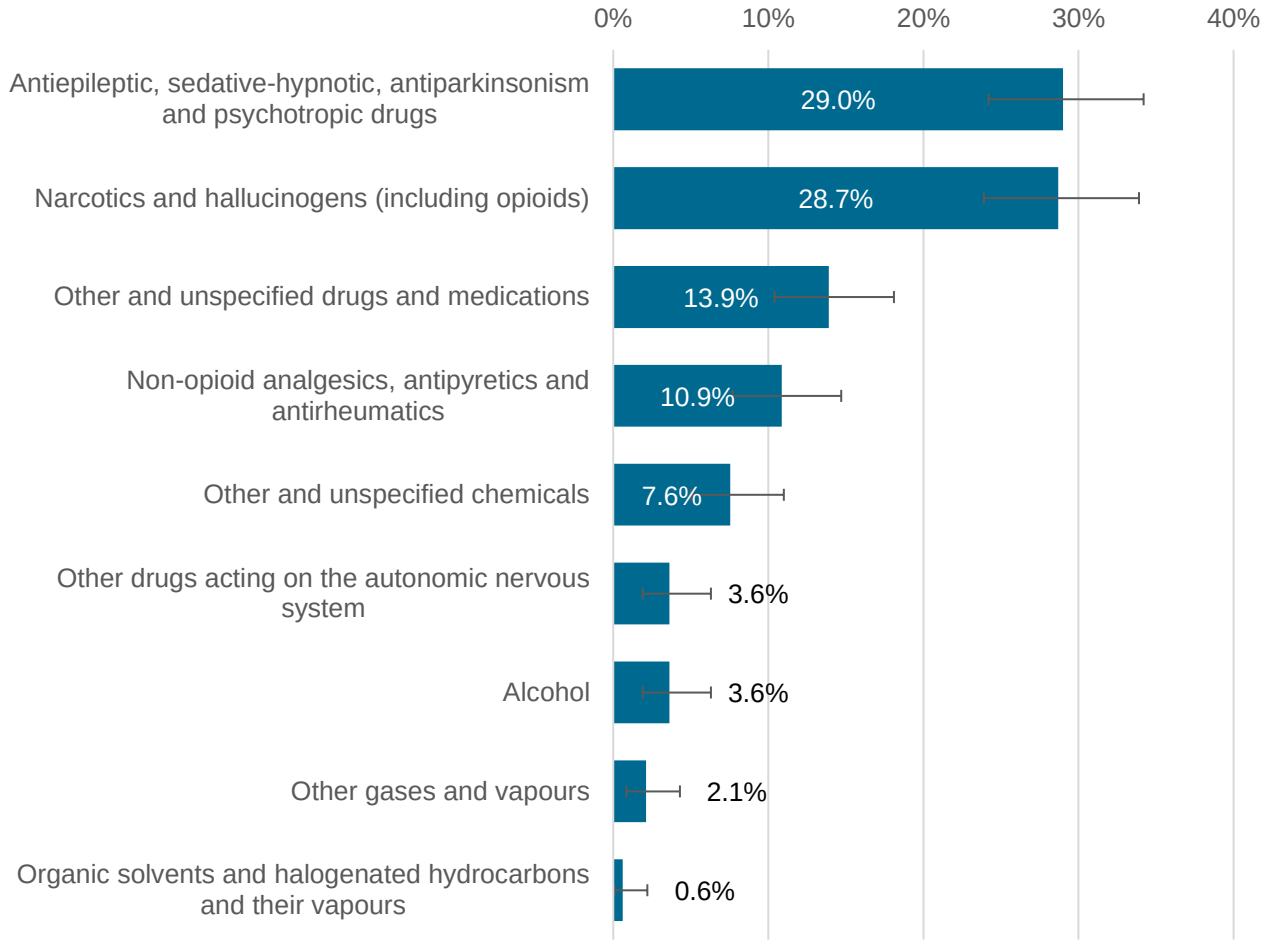
**Source:** Ambulatory Emergency External Cause (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & Ontario Mental Health Reporting System (2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 4, 2019 & Population Estimates (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018.

## Hospitalizations

The rate of hospitalizations for unintentional poisonings among people living in the SWPH region increased between 2013 and 2017, particularly in 2017.[1] However, this increase may be partly due to the recent provincial focus on unintentional opioid poisonings and therefore may reflect an increase in detection rather than an increase in prevalence.

Among SWPH residents admitted to the hospital for unintentional poisonings, the most common reason was due to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs (29.0%) followed by narcotics and hallucinogens, including cannabis, cocaine, codeine, heroin, LSD, mescaline, methadone, morphine and opium (28.7%; Figure 72).

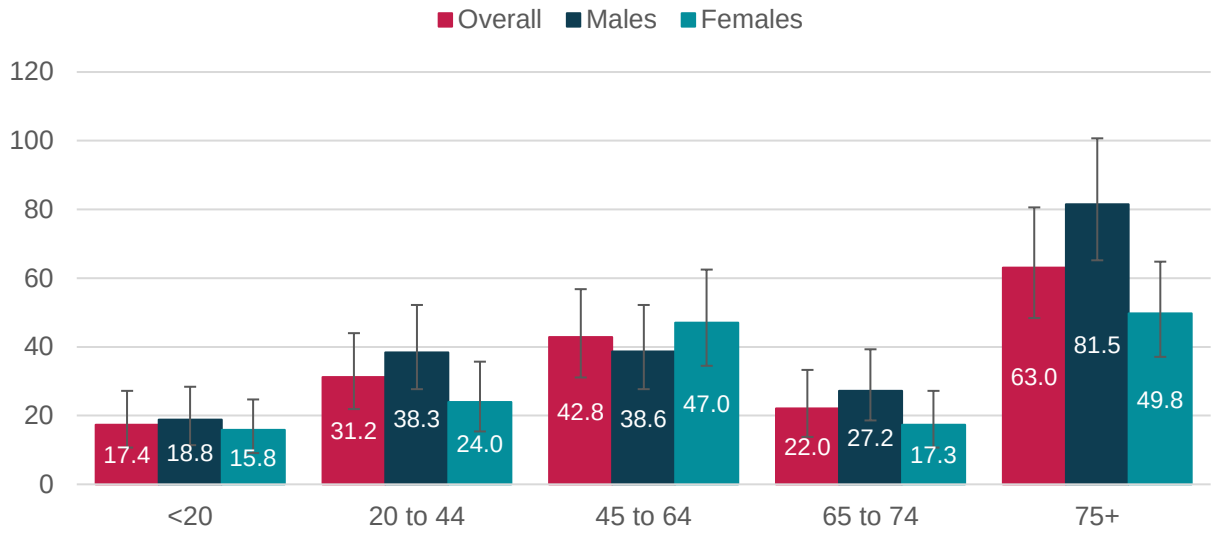
**Figure 72. Proportion of unintentional poisoning hospitalizations by type, Southwestern Public Health, 2013-2017 (combined)**




**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019.

The rate of hospitalizations for unintentional poisonings was similar across most age groups, except for people aged 75 years and older who had a higher rate of hospitalizations than people of all ages except those aged 45 to 64 years. The rates were also similar across age groups between males and females, except for people aged 75 years and older who had a higher rate of hospitalization among males compared to females (Figure 73).

**Figure 73. Five-year average rate of hospitalizations for unintentional poisonings (per 100,000 population) by sex and age group, 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 15, 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 due to unintentional poisoning was over three times higher among people living in urban municipalities than people living in rural municipalities (Figure 74).

**Figure 74. Crude rate of hospitalizations for unintentional poisonings (per 100,000 population) by urban or rural residence, Southwestern Public Health, 2016**

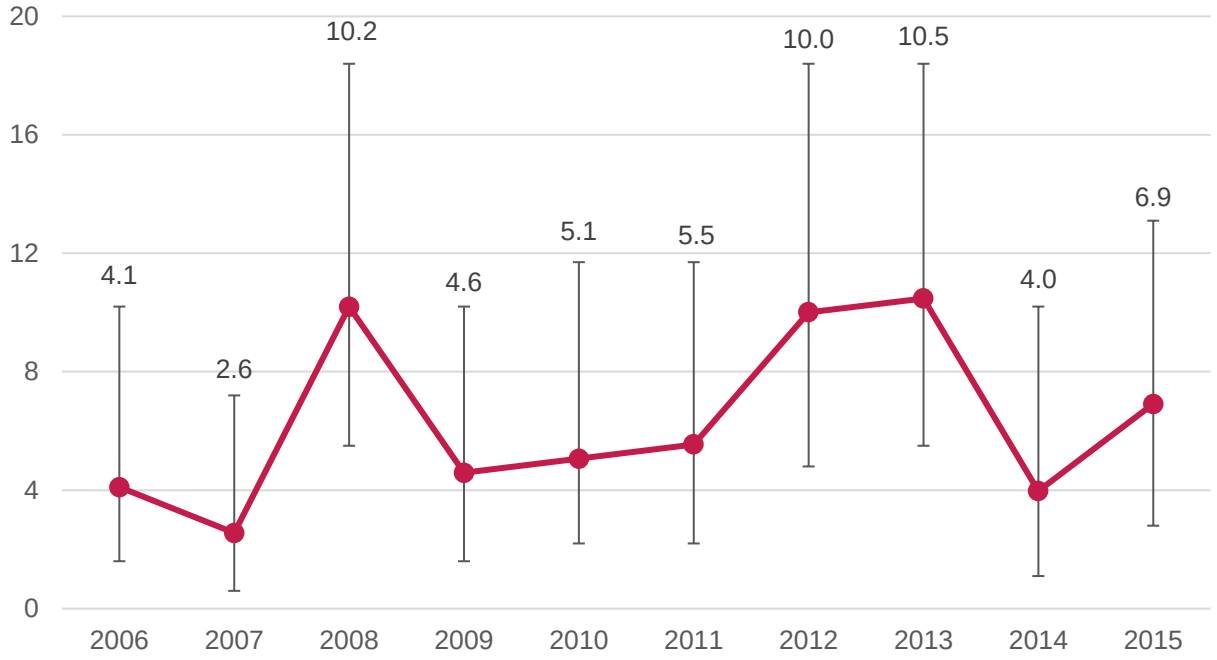
In 2016, there were 48.9 (95% CI: 36.3-63.6) hospitalizations per 100,000 population due to unintentional poisonings among people living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

In 2016, there were 14.9 (95% CI: 8.4-23.5) hospitalizations per 100,000 population due to unintentional poisonings among 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.

## Deaths

The rates of death due to unintentional poisoning were similar between 2006 and 2015 (Figure 75) and did not differ between males and females.

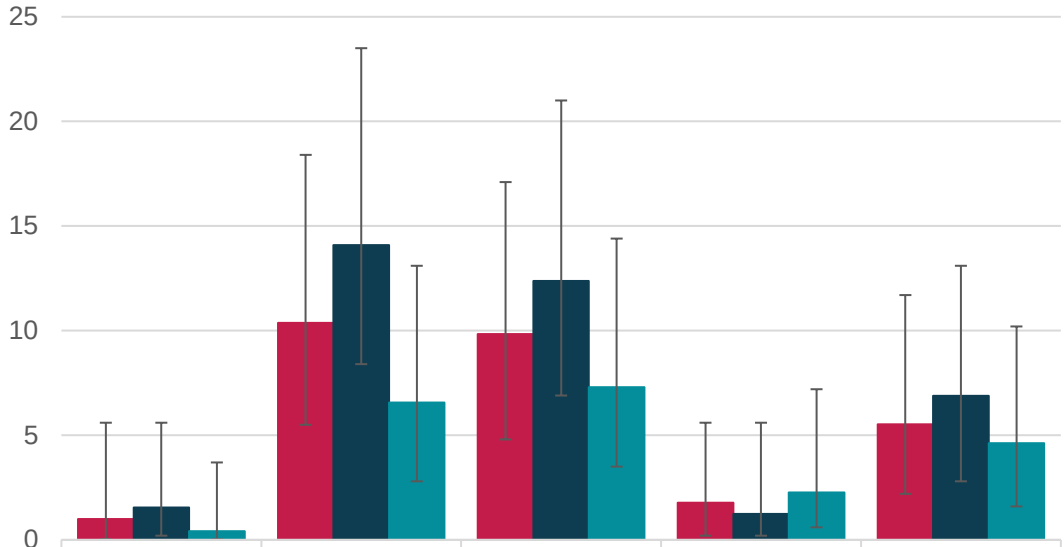
**Figure 75. Crude rate of deaths due to unintentional poisoning (per 100,000 population), Southwestern Public Health, 2006-2015**




**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

There were no differences in the rates of death due to unintentional poisonings between age groups when combining males and females (Figure 76). However, males aged 20 to 44 years old and males aged 45 to 64 years old had a higher rate of death compared to males aged less than 20 years old and males aged 65 to 74 years old.

**Figure 76. Ten-year average rate of deaths due to unintentional poisoning (per 100,000 population) by sex and age group, Southwestern Public Health, 2006-2015 (combined)**



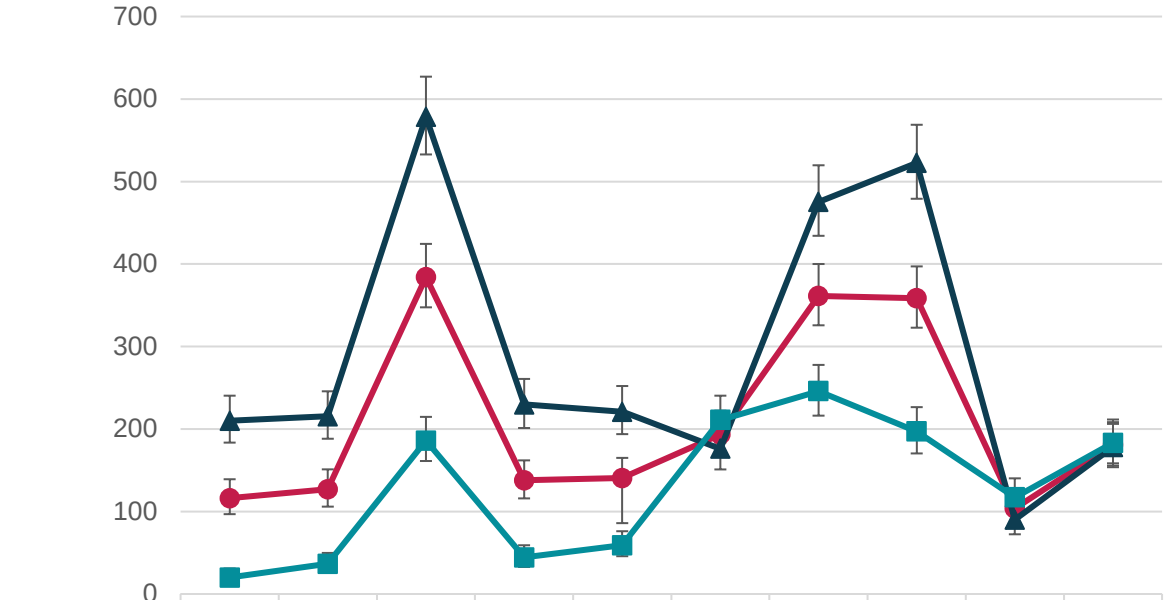

| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 1.0 | 10.4 | 9.8 | 1.8 | 5.5 |
| Males | 1.6 | 14.1 | 12.4 | 1.2 | 6.9 |
| Females | 0.4 | 6.6 | 7.3 | 2.3 | 4.6 |

**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

Deaths among people less than 75 years old are commonly considered premature deaths and can be measured by PYLL. As explained above, the convention of using a 75-year cut-off likely underestimates the PYLL from premature deaths.

In 2015, there were 181 PYLL due to unintentional poisoning per 100,000 population aged less than 75 years old (Figure 77). The PYLL was higher in some years compared to others; in 2008, 2012 and 2013. The PYLL among males was typically higher than among females, except in 2011, 2014 and 2015.

**Figure 77. Crude rate of potential years of life lost (PYLL) to deaths from unintentional poisoning (per 100,000 population), by sex, residents less than 75 years old, Southwestern Public Health, 2006-2015**




| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| Overall | 116.2 | 127.0 | 384.2 | 137.7 | 140.8 | 193.3 | 361.3 | 358.5 | 103.7 | 180.8 |
| Males | 210.2 | 215.4 | 578.4 | 229.8 | 221.1 | 175.9 | 475.2 | 522.5 | 90.0 | 178.4 |
| Females | 20.1 | 36.7 | 186.2 | 44.2 | 59.3 | 210.9 | 245.8 | 197.0 | 117.1 | 183.2 |

**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019 & Population Estimates (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018 & January 28, 2019.

The crude rate of deaths due to unintentional poisoning was similar among people living in the urban municipalities compared to the rural municipalities (Figure 78).

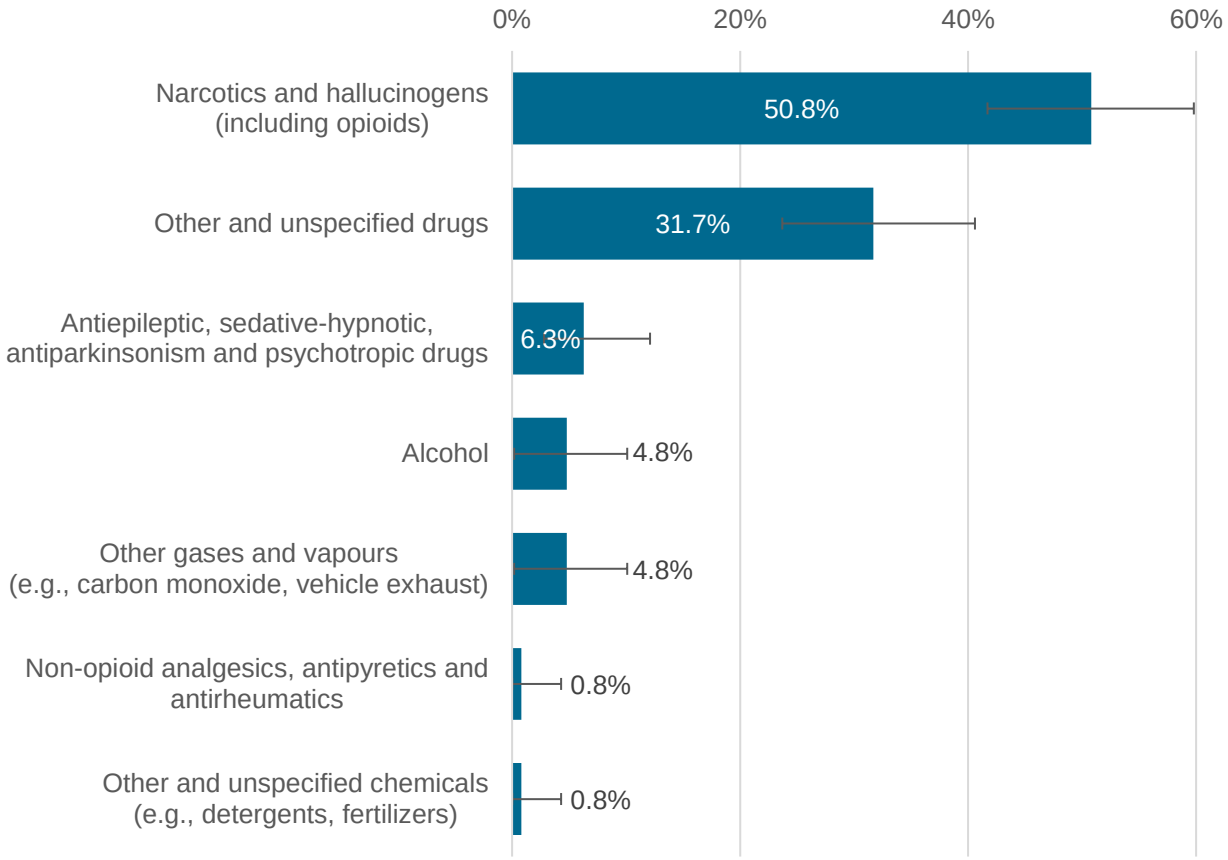
**Figure 78. Crude rate of deaths from unintentional poisoning (per 100,000 population) by urban or rural residence, Southwestern Public Health, 2006-2015 (combined)**

Between 2006 and 2015, there were on average 8.4 (95% CI: 4.1-15.8) deaths due to unintentional poisoning per 100,000 population per year living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

Between 2006 and 2015, there were on average 3.6 (95% CI: 1.1-8.8) deaths due to unintentional poisoning per 100,000 population 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.

Between 2006 and 2015, 50.8% of unintentional poisoning deaths in the SWPH region were due to narcotics and hallucinogens, including cannabis, cocaine, codeine, heroin, LSD, mescaline, methadone, morphine and opium (Figure 79).

**Figure 79. Deaths due to unintentional poisonings by cause, Southwestern Public Health, 2006-2015 (combined)**




**Source:** Ontario Mortality Data (2006-2015), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 15, 2019 & February 8, 2019.

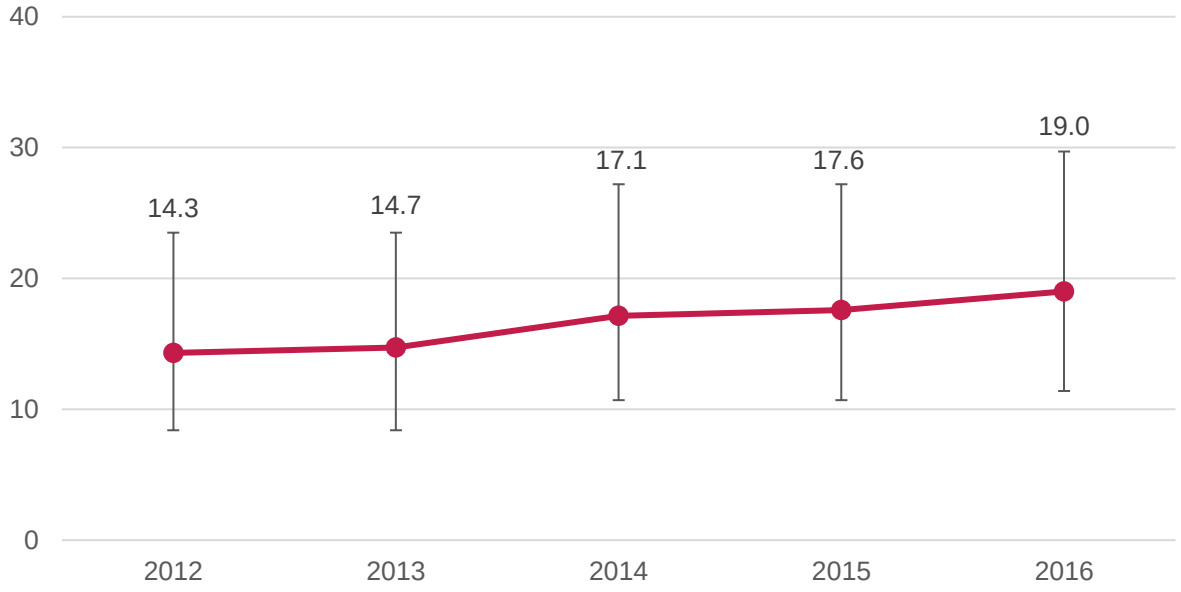
Over three-quarters (76.9%) of unintentional poisoning deaths between 2006 and 2015 occurred at home and 15.7% occurred at unknown locations.

# Neurotrauma

## Physician and nurse practitioner visits

In 2016, there were 19.0 visits for neurotrauma per 1,000 population, which remained similar over the last five years (2012 to 2016; Figure 80). Neurotrauma visits were based on OHIP-billing data for fractures of the facial bones, skull, vertebrae (with or without spinal cord damage) as well as concussions and other head injuries. These visits included ones to family doctors/general practitioners, nurse practitioners and pediatricians in a community office and through the Ontario Telemedicine Network, or in an unknown location other than a hospital setting. We do not know if these data also include visits to complete concussion protocol paperwork.

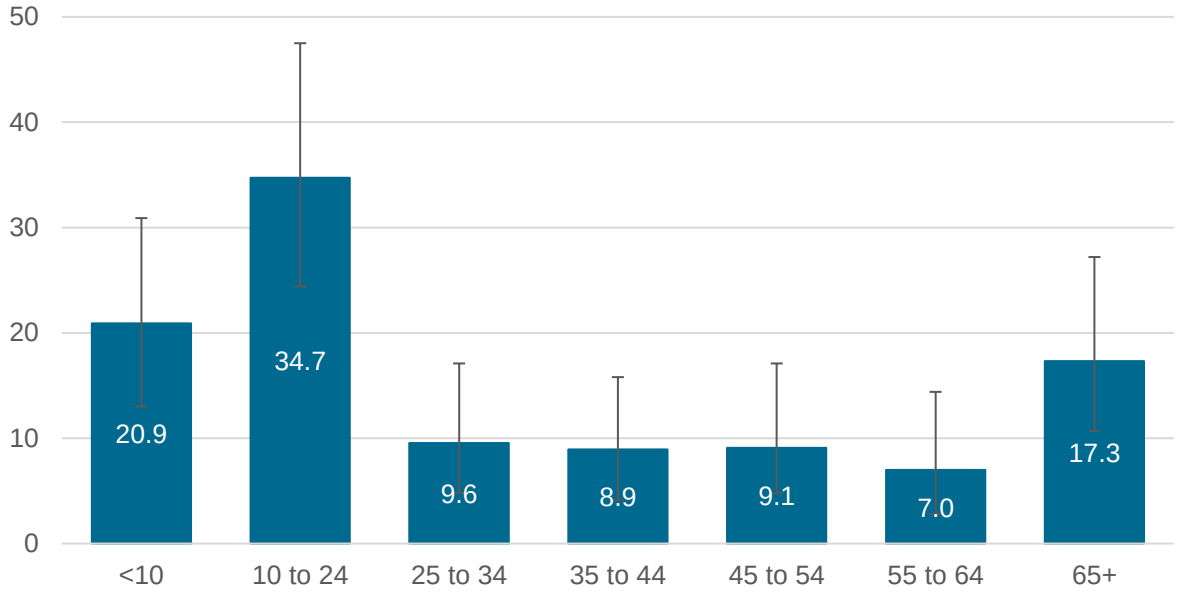
**Figure 80. Crude rate of physician and nurse practitioner visits for neurotrauma (per 1,000 population), Southwestern Public Health, 2012-2016**




**Source:** Medical Services (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 5, 2019 & Population Estimates (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018.

There were no differences in the rates of physician and nurse practitioner visits for neurotrauma by sex; however, youth (10 to 24 years) had a higher rate of physician and nurse practitioner visits for neurotrauma compared to all other age groups except children (less than 10 years) and people aged 65 years and older (Figure 81).

**Figure 81. Five-year average rate of physician and nurse practitioner visits for neurotrauma (per 1,000 population) by age group, Southwestern Public Health, 2012-2016 (combined)**

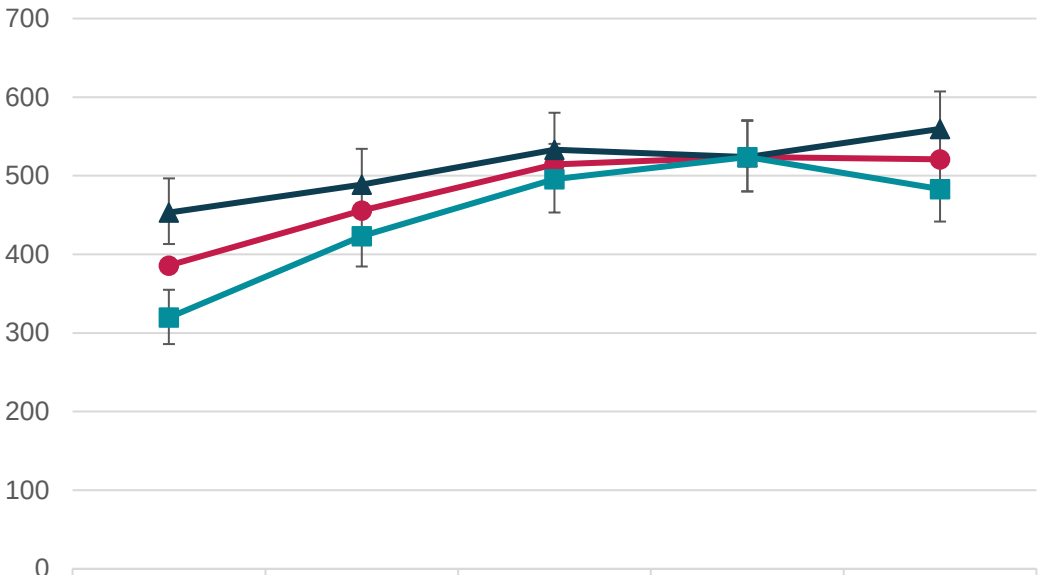



**Source:** Medical Services (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 5, 2019 & Population Estimates (2012-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: December 21, 2018.

## Emergency department visits

The rate of emergency department visits for neurotrauma in the SWPH region was higher in 2017 compared to 2013 (error bars not shown for total rates; Figure 82). The rates of emergency department visits for neurotrauma were typically similar between males and females, except in 2013 when the rate was higher among males compared to females.

**Figure 82. Crude rate of emergency department visits for neurotrauma (per 100,000 population), by sex, Southwestern Public Health, 2013-2017**

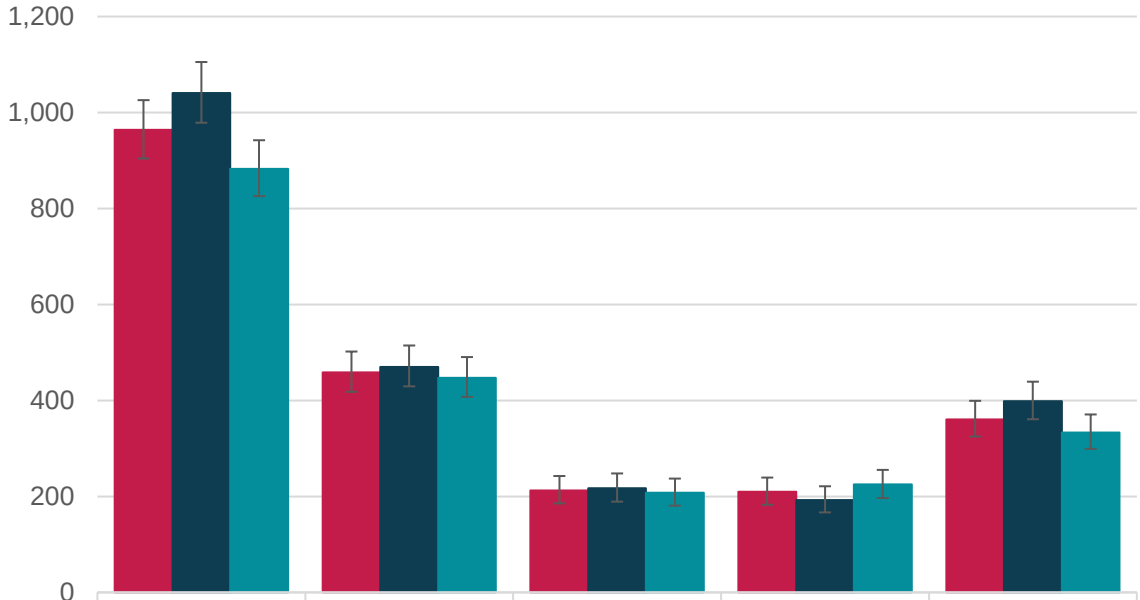



| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Overall | 386.0 | 455.9 | 514.3 | 523.9 | 521.1 |
| Males | 453.2 | 489.0 | 533.3 | 524.0 | 559.6 |
| Females | 319.7 | 423.3 | 495.7 | 523.9 | 483.2 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 7, 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 neurotrauma was highest among people aged less than 20 years old, followed by people aged 20 to 44 years and people aged 75 years and older (Figure 83). Among people less than 20 years old, the rate of emergency department visits for neurotrauma was higher among males than females.

**Figure 83. Five-year average rate of emergency department visits for neurotrauma (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)**

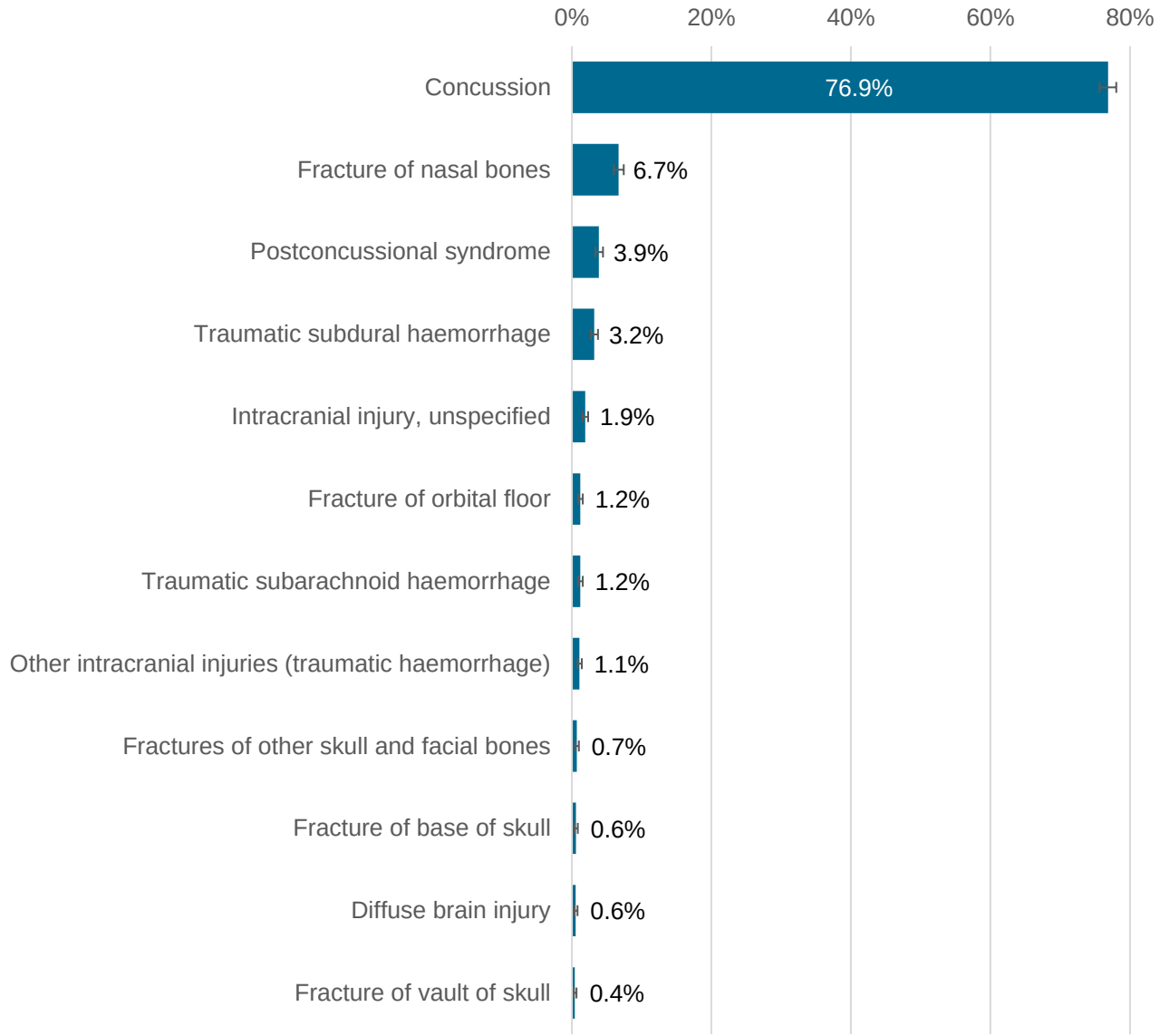



| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 963.8 | 458.6 | 212.4 | 209.4 | 360.5 |
| Males | 1040.5 | 470.1 | 217.0 | 192.6 | 398.5 |
| Females | 882.3 | 447.1 | 207.7 | 224.9 | 333.2 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 7, 2019 & Population Estimates (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019 & Population Projections (2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 28, 2019.

Between 2013 to 2017, over three-quarters (76.9%) of emergency department visits for neurotrauma were for concussions (Figure 84).

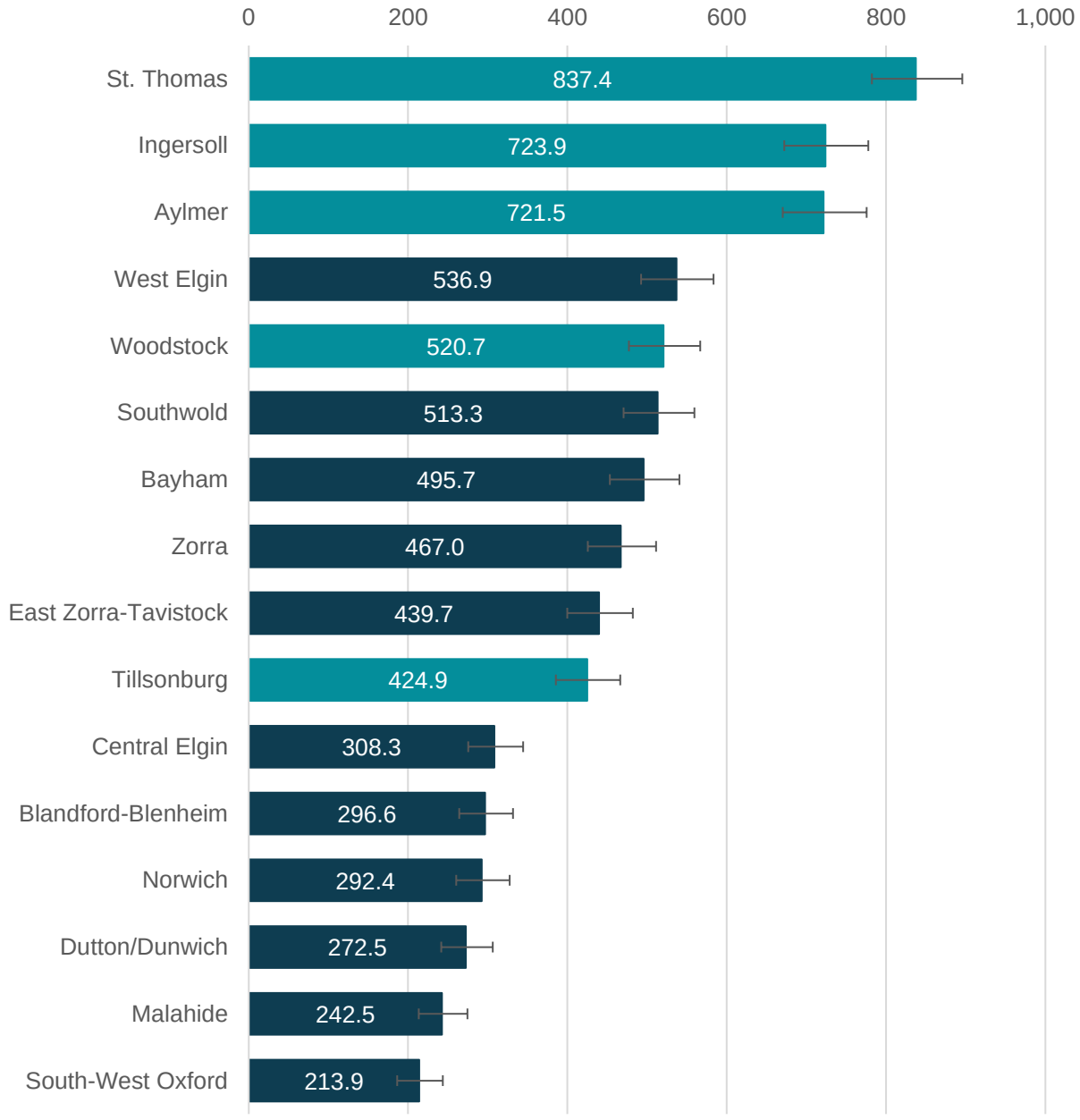
**Figure 84. Proportion of emergency department visits for neurotrauma by most common causes, Southwestern Public Health, 2013-2017 (combined)**




**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 7, 2019.

The crude rate of emergency department visits for neurotrauma was highest in St. Thomas followed by Ingersoll and Aylmer (Figure 85).

**Figure 85. Crude rate of emergency department visits for neurotrauma (per 100,000 population) by municipality, Southwestern Public Health, 2016**



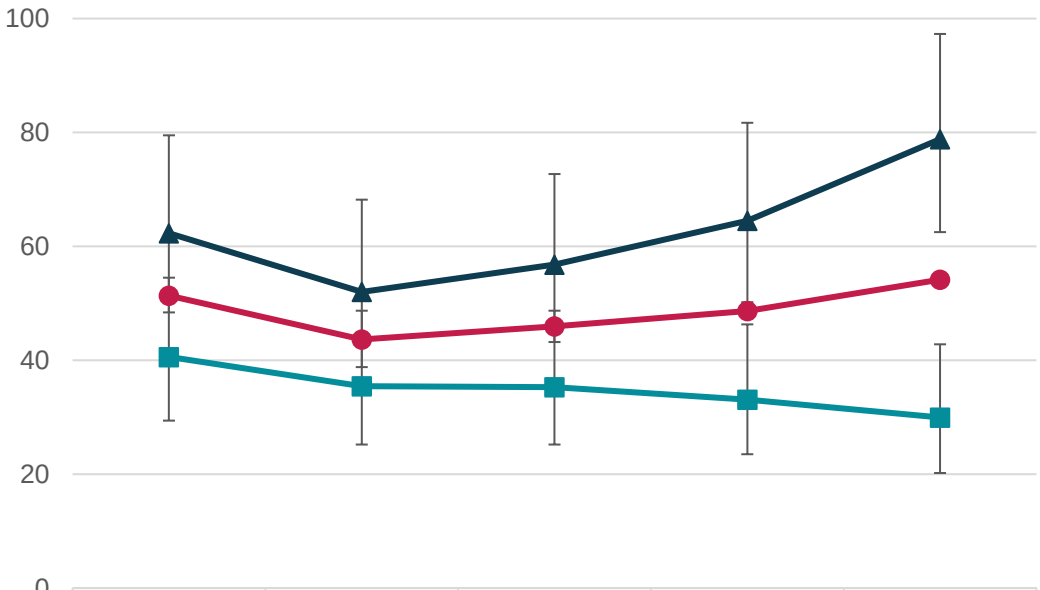

**Note:** the urban municipalities are highlighted using a lighter blue compared to the rural municipalities which are shown using a darker blue.

**Source:** Ambulatory Emergency External Cause (2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 7, 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.

## Hospitalizations

The rate of hospitalizations for neurotrauma among people living in the SWPH region was similar between 2013 to 2017 (error bars not shown for total rates; Figure 86). The rates of hospitalizations for neurotrauma were similar between males and females, except in 2016 and 2017 when the rates were higher among males than females.

**Figure 86. Crude rate of hospitalizations for neurotrauma (per 100,000 population), by sex, Southwestern Public Health, 2013-2017**

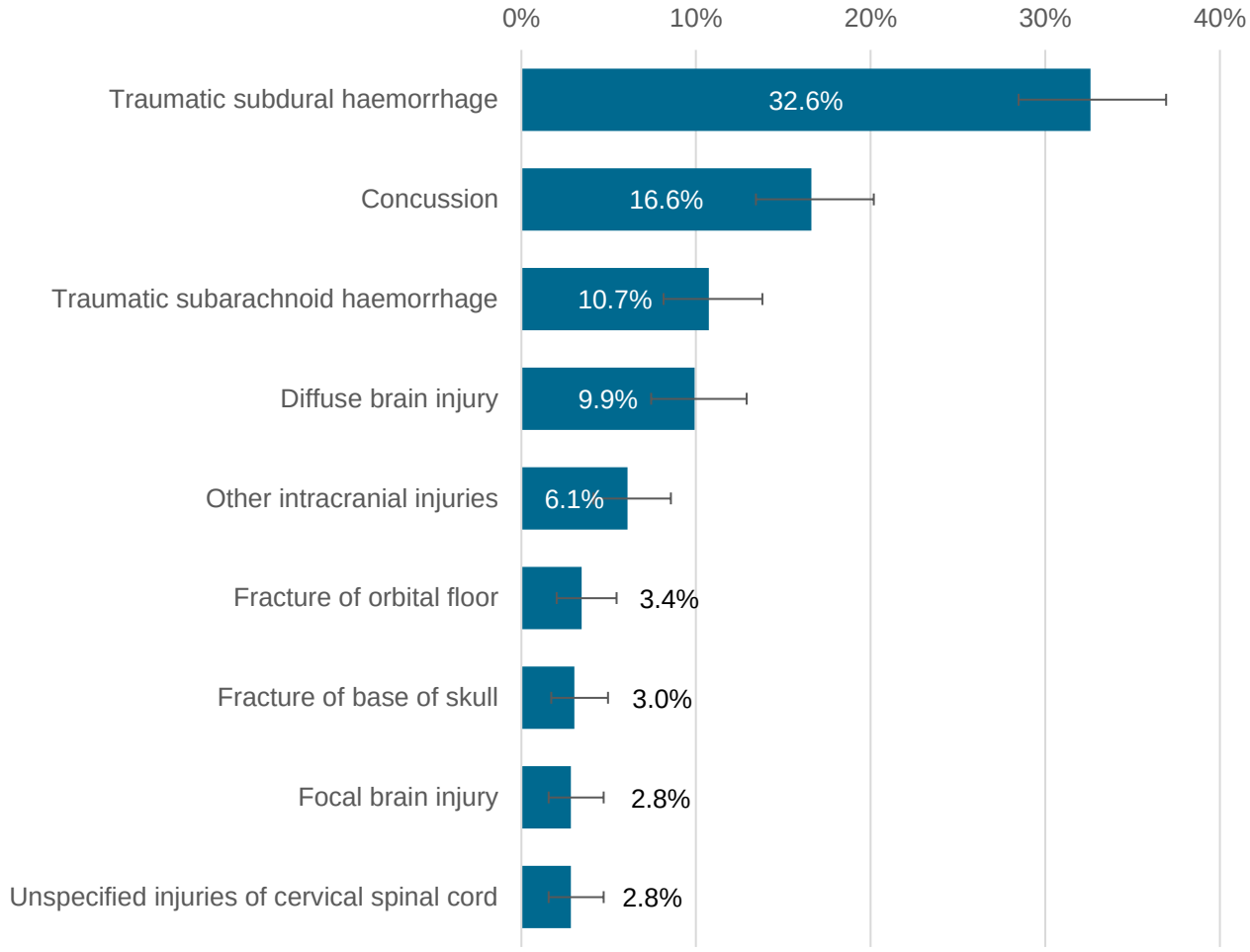



| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Overall | 51.4 | 43.7 | 45.9 | 48.7 | 54.2 |
| Males | 62.3 | 52.0 | 56.8 | 64.5 | 78.8 |
| Females | 40.6 | 35.4 | 35.3 | 33.1 | 30.0 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 7, 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.

Among SWPH residents admitted to the hospital for neurotrauma, the most common reason was due traumatic subdural haemorrhages (32.6%) followed by concussions (16.6%; Figure 87).

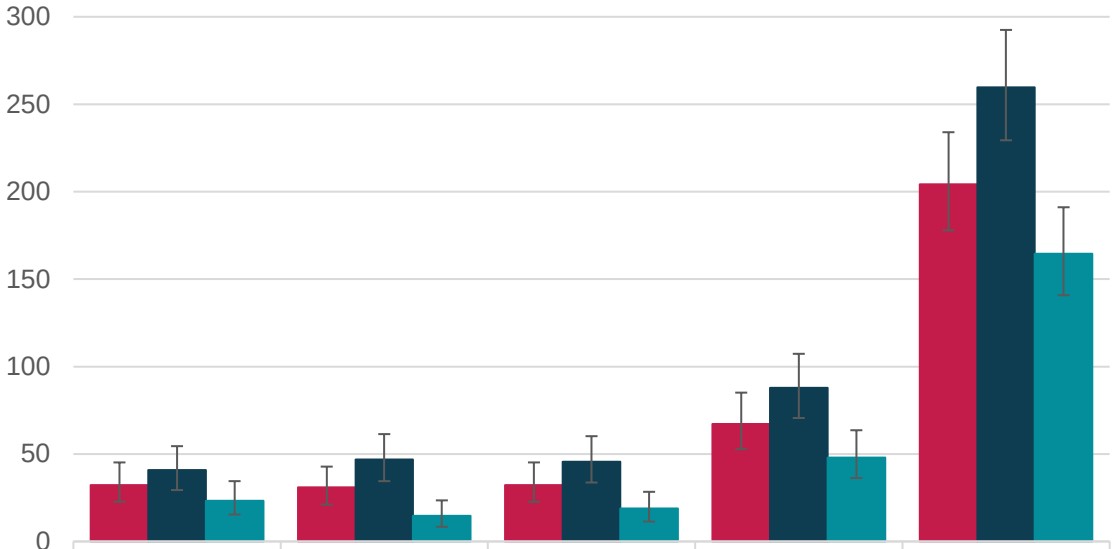
**Figure 87. Proportion of neurotrauma hospitalizations by type, Southwestern Public Health, 2013-2017 (combined)**




**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 7, 2019.

The rate of hospitalizations for neurotrauma was highest among people aged 75 years and older, followed by people aged 65 to 74 years. There were no differences by age group for people aged less than 65 years old. The rates of hospitalization were higher among males compared to females for all age groups except those less than 20 years old (Figure 88).

**Figure 88. Five-year average rate of hospitalizations for neurotrauma (per 100,000 population) by sex and age group, Southwestern Public Health, 2013-2017 (combined)**




| | <20 | 20 to 44 | 45 to 64 | 65 to 74 | 75+ |
|---|---|---|---|---|---|
| Overall | 32.3 | 30.9 | 32.3 | 67.1 | 204.2 |
| Males | 40.8 | 46.9 | 45.6 | 87.9 | 259.7 |
| Females | 23.3 | 14.7 | 18.9 | 48.1 | 164.4 |

**Source:** Ambulatory Emergency External Cause (2013-2017), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 7, 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 rates of hospitalization due to neurotrauma were similar among people living in urban municipalities compared to rural municipalities (Figure 89).

**Figure 89. Crude rate of hospitalizations for neurotrauma (per 100,000 population) by urban or rural residence, Southwestern Public Health, 2016**

In 2016, there were 57.5 (95% CI: 44.0-73.9) hospitalizations per 100,000 population due to neurotrauma among people living in the urban municipalities of St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock.

In 2016, there were 36.8 (95% CI: 26.1-49.8) hospitalizations per 100,000 population due to neurotrauma among 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.

# References


1. MacLeod M, Hussain H. Understanding our communities' health: current health status of people residing in the Southwestern Public Health region. Southwestern Public Health; 2019.

2. Ng E. The healthy immigrant effect and mortality rates [Internet]. Ottawa, ON: Statistics Canada; 2011 [cited 2018 Jul 17]. Available from: https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2011004/article/11588-eng.pdf?st=FpGBjvse.

3. Agic B. Mental health of Canada's immigrants [Internet]. Toronto, ON: Centre for Addiction and Mental Health; 2015 [cited 2018 Jul 17]. Available from: http://olip-plio.ca/wp-content/uploads/2015/08/Immigrant-Mental-Health_June22_Branka-Agic1.pdf.

4. Ministry of Health and Long-Term Care. Schedule of benefits: physician services under the Health Insurance Act (December 22, 2015 (effective March 1, 2016)) [Internet]. 2015 [cited 2019 Mar 5]. Available from: http://www.health.gov.on.ca/en/pro/programs/ohip/sob/physserv/sob_master20181115.pdf

5. U.S. Department of Health and Human Services. The health consequences of smoking: 50 years of progress. A report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center; 2014.

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

7. Central East Local Health Integration Network. Ministry/LHIN accountability agreement (MLAA) Central East LHIN MLAA performance indicator dashboard performance trend-tracking report. Ajax, ON: Central East LHIN; 2017.

8. Statistics Canada. Life tables, Canada, provinces and territories, catalogue no. 84-537-X: Accessed: January 2, 2019.

9. Sherk A, Stockwell T, Rehm J, Dorocicz J, Shield K. The International Model of Alcohol Harms and Policies (InterMAHP): a comprehensive guide to the estimation of alcohol-attributable morbidity and mortality. Version 1.0 [Internet]. Victoria, BC; Available from: www.intermahp.cisur.ca.

10. Matheson, FI; Ontario Agency for Health Protection and Promotion (Public Health Ontario). 2011 Ontario marginalization index: technical document. Toronto, ON: St. Michael's Hospital; 2017. Joint publication with Public Health Ontario.

11. Public Health Ontario. Snapshots: Health inequities in alcohol attributable hospitalizations. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 May 9.

# Appendix: 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 described 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. Only statistically significant differences between groups are presented in this report.

# National Ambulatory Care Reporting System (NACRS)

NACRS contains information about unscheduled emergency department visits. The data submitted by emergency departments is validated by CIHI and released to public health units on a quarterly basis through IntelliHEALTH ONTARIO. NACRS can also be used to obtain information about inpatients that were admitted from the emergency room to critical care units/operating rooms, other units within a hospital or to another acute care facility. This information was used to capture injury-related hospitalizations attributable to alcohol. Table 3 outlines the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA) codes included under injury hospitalizations attributable to alcohol. Many of the ICD-10-CA codes are external causes and an individual can have more than one external cause diagnosis for each hospitalization. However, only one hospitalization will be counted within each of the categories. There may be some overlap between categories.

**Table 3. Description of injury hospitalizations attributable to alcohol use**[9]

| Condition group | Condition | ICD-10-CA codes |
|---|---|---|
| Motor vehicle collisions | Motor vehicle collisions | V codes (please see the InterMAHP user guide for a complete list), Y85.0 |
| Unintentional injuries | Falls | W00-W19, Y30 |
| | Drowning | W65-W74 |
| | Fires | X00-X09, Y26 |
| | Unintentional poisoning by substances other than alcohol | T36-T50, T52-T65, T96-T97, X40-X44, X46-X49, Y10-Y14, Y16-Y19 |
| | Unintentional poisoning by alcohol | T51, X45, Y15 |
| | Other unintentional injuries | V codes, W20-W64, W75-W84, X10-X33, Y20, Y22-Y25, Y27-Y29, Y31-Y34, Y85.9, Y86, Y87.2, Y89.9 |
| Intentional injuries | Intentional self-poisoning by substances other than alcohol | T36-T50, T52-T65, T96-T97, X60-X64, X66-X69 |
| | Intentional self-poisoning by alcohol | T51, X65 |
| | Other intentional self-harm | X70-X84, Y87.0 |
| | Assault or homicide | X85-Y09, Y87.1 |
| | Other intentional injuries | Y35, Y89.0 |

NACRS was also used to capture emergency department visits and hospitalizations from injuries (excluding neurotrauma; Table 4) and emergency department visits for cannabis-related health outcomes (Table 5).

**Table 4. ICD-10-CA codes used to categorize emergency department visits and hospitalizations due to injuries**

| Description | ICD-10-CA codes |
|---|---|
| Falls | W00–W19 |
| Transportation-related injuries | V01–V99 |
| Unintentional poisonings | X40–X49 |

**Table 5. ICD-10-CA codes for cannabis-related emergency department visits**

| Description | ICD-10-CA codes |
|---|---|
| Poisoning by cannabis (derivatives) | T40.7 |
| Mental and behavioural disorders due to use of cannabinoids | F12 |

# 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 when comorbidities are present. The ICD-10-CA codes used to capture injury deaths were the same used in NACRS (Table 4). Table 5 includes the ICD-10-CA codes used to capture deaths caused by smoking tobacco. The ICD-10-CA codes used to capture alcohol-attributable deaths are the same as those outlined in Table 3. In some cases, five or ten years of combined data was presented due to the small number of deaths reported and the variability over time. This was especially the case when reporting rates for subgroups of the population (e.g., by age groups and sex). Notably, no death data is available for neurotrauma because Chapter XIX: Injury, Poisoning and Certain Other Consequences of External Causes (ICD-10-CA codes: S00-T98) are not included in the Ontario Mortality Data as underlying causes of death.

**Table 6. ICD-10-CA codes used to categorize smoking-attributable deaths**[5]

| | Description | ICD-10-CA codes |
|---|---|---|
| Malignant neoplasms (cancers) | Lip, oral cavity, pharynx | C00–C14 |
| | Esophagus | C15 |
| | Stomach | C16 |
| | Pancreas | C25 |
| | Larynx | C32 |
| | Trachea, lung, bronchus | C33–C34 |
| | Cervix uteri | C53 |
| | Kidney and renal pelvis | C64–C65 |
| | Urinary bladder | C67 |
| | Acute myeloid leukemia | C92.0 |
| Cardiovascular diseases | Ischemic heart disease | I20–I25 |
| | Other heart disease | I00–I09, I26–I28, I29–I51 |
| | Cerebrovascular disease | I60–I69 |
| | Atherosclerosis | I70 |
| | Aortic aneurysm | I71 |
| | Other arterial disease | I72–I78 |
| Respiratory diseases | Influenza, pneumonia | J10–J11, J12–J18 |
| | Bronchitis, emphysema | J40–J42, J43 |
| | Chronic obstructive pulmonary disease (COPD) | J44 |

# Ontario Marginalization Index (ON-Marg)

Public Health Ontario used the ON-Marg to demonstrate how health equity impacts alcohol-related harms, specifically 100% alcohol-attributable hospitalizations. 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 6). The ON-Marg technical document outlines the methods in more detail, including how the four indicators were created.[10]

**Table 7. ON-Marg indicators, measures and data sources, 2011**[10]

| 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).

Alcohol-attributable hospitalizations were limited to conditions that are 100% attributable to alcohol among people 15 years and older. Table 8 outlines the ICD-10-CA codes and Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) codes used to

capture 100% alcohol-attributable hospitalizations. This data was obtained from the Discharge Abstract Database (DAD) and Ontario Mental Health Reporting System (OMHRS), which are described in more detail below.

**Table 8. Conditions considered 100% alcohol-attributable**[11]

| Data source | Condition | ICD-10-CA and DSM-IV codes |
|---|---|---|
| DAD | Mental and behavioural disorders due to alcohol | F10 |
| | Degeneration of the nervous system due to alcohol | G31.2 |
| | Alcoholic polyneuropathy | G62.1 |
| | Alcoholic myopathy | G72.1 |
| | Alcoholic cardiomyopathy | I42.6 |
| | Alcoholic gastritis | K29.2 |
| | Alcoholic liver disease | K70 |
| | Alcohol-induced acute pancreatitis | K85.2 |
| | Alcohol-induced chronic pancreatitis | K86.0 |
| | Fetus and newborn affected by maternal use of alcohol | P04.3 |
| | Fetal alcohol syndrome (dysmorphic) | Q86.0 |
| OMHRS | Alcohol intoxication delirium | 291.0 |
| | Alcohol withdrawal delirium and alcohol persisting amnestic disorder | 291.1 |
| | Alcohol persisting dementia | 291.2 |
| | Alcohol-induced psychotic disorder with hallucinations | 291.3 |
| | Alcohol-induced psychotic disorder with delusions | 291.5 |
| | Alcohol withdrawal | 291.81 |
| | Alcohol-induced sleep disorder | 291.82 |
| | Alcohol-induced mood disorder | 291.89 |
| | Alcohol-induced anxiety disorder, sexual dysfunction or disorder not otherwise specified | 291.9 |
| | Alcohol intoxication | 303.00 |
| | Alcohol dependence | 303.90 |
| | Alcohol abuse | 305.00 |

# Tell City Hall

Cannabis data (in addition to the CCHS) was obtained from a Tell City Hall (Advanis) survey about cannabis opinions and knowledge. This survey was conducted from May to June 2018 using random interactive voice response (IVR) to recruit people living in the SWPH region with a mobile phone. Those who agreed to participate in the survey were then sent a text message with a link to a mobile-optimized online survey. The SWPH region survey data was weighted based on Census data for age and gender to more closely represent the SWPH region population. However, almost half (48%) of participants reported that they live in Woodstock.

# 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. Importantly, an individual may be hospitalized and discharged for the same reason more than once over the time period. The data submitted by hospitals is validated by CIHI and released to public health units on a quarterly basis through IntelliHEALTH ONTARIO. DAD was used to capture cannabis-related hospitalizations (Table 5) as well as non-injury alcohol-attributable hospitalizations (Table 9).

**Table 9. Description of hospitalizations for conditions attributable to alcohol use**[9]

| Condition group | Condition | ICD-10-CA codes |
|---|---|---|
| Communicable diseases | Tuberculosis | A15-A19 |
| | HIV | B20-B24, Z21 |
| | Lowe respiratory tract infections | J09-J22 |
| Cancer | Oral cavity and pharynx cancer | C00-C05, C08-C10, C12-C14, D00.0 |
| | Esophageal cancer, squamous cell carcinoma | C15, D00.1 |
| | Colorectal cancer | C18-C21, D01.0-D01.4 |
| | Liver cancer | C22, D01.5 |

| | | |
|---|---|---|
| | Pancreatic cancer | C25, D01.7 |
| | Laryngeal cancer | C32, D02.0 |
| | Breast cancer | C50, D05 |
| Endocrine conditions | Type 2 diabetes mellitus | E11, E13, E14 |
| | Alcohol-induced pseudo-Cushing's syndrome | E24.4 |
| Neuropsychiatric conditions | Alcoholic psychoses | F10.0, F10.3-F10.9 |
| | Alcohol abuse | F10.1 |
| | Alcohol dependence syndrome | F10.2 |
| | Degeneration of nervous system due to alcohol | G31.2 |
| | Epilepsy | G40, G41 |
| | Alcoholic polyneuropathy | G62.1 |
| | Alcoholic myopathy | G72.1 |
| Cardiovascular conditions | Hypertension | I10-I15 |
| | Ischaemic heart disease | I20-I25 |
| | Alcoholic cardiomyopathy | I42.6 |
| | Atrial fibrillation and cardiac arrhythmia | I47-I49 |
| | Haemorrhagic stroke | I60-I62, I69.0-I69.2 |
| | Ischaemic stroke | I63-I67, I69.3-I69.4 |
| | Esophageal varices | I85 |
| Digestive conditions | Alcoholic gastritis | K29.2 |
| | Liver cirrhosis | K70, K74 |
| | Acute pancreatitis | K85.0, K85.1, K85.8, K85.9 |
| | Chronic pancreatitis | K86.1-K86.9 |
| | Alcohol-induced pancreatitis | K85.2, K86.0 |

## 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. Since OMHRS is an admission-based system, it includes people still being treated at the time of reporting. The DSM-V codes used to capture cannabis use disorder hospitalizations are: 304.30 cannabis dependence and 305.20 cannabis abuse.

## 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.


**Southwestern Public Health**
www.swpublichealth.ca

**St. Thomas Site**
1230 Talbot Street
St. Thomas, ON N5P 1G9

**Woodstock Site**
410 Buller Street
Woodstock, ON N4S 4N2