Timiskaming Health Stats

Health Status Report for the Timiskaming Health Unit Area

July 2025

Introduction

Understanding the health status of our community is essential for shaping effective policies, planning responsive programs, and setting informed priorities. Data-driven insights offer a clear picture of where we are, highlight areas for improvement, and help guide action toward better health outcomes for everyone in Timiskaming. This report provides a snapshot of the community's health through key indicators such as mortality (death), morbidity (illness), infectious diseases, mental health, and climate-related health impacts.

It is important to recognize that health is shaped by far more than health care alone. The social determinants of health, including income, education, employment, housing, and so on, are powerful drivers of health and well-being. These factors create the conditions in which people live, work, and age, and contribute significantly to health outcomes across the lifespan. While this report focuses on health outcomes and health system data, a broader understanding of our community's health must also consider these foundational social factors.

Similarly, individual lifestyle and behavioral risk factors—such as diet, physical activity, smoking, and alcohol use—play a crucial role in long-term health. These are not covered in detail in this report but are essential to consider when interpreting patterns of disease and developing prevention strategies.

By examining the patterns and trends presented across these chapters, we aim to support local decision-makers, health providers, community partners, and the public in identifying gaps, setting priorities, and working together to improve the health and quality of life in Timiskaming.

Notes

Reference to Timiskaming means the Timiskaming Health Unit area, which includes the District of Timiskaming and the Municipality of Temagami.

Crude rates are calculated by dividing the number of people with a disease by the total number of people in that population (the number of people in Timiskaming). Where the number of cases was large enough to conduct age standardization accurately, rates were age-standardized to the 2011 standard Canadian population. This allows for a more accurate comparison across populations by accounting for the differences among age structures. Instances where the rates were age-standardized are clearly noted in the report and otherwise are crude rates.

Since our population are sometimes small in Timiskaming, several analyses combine more than one year to improve the precision of estimates.

In this report, a statistical difference is one that is likely not due to chance alone, more specifically that there is only a one in twenty chance that the difference is not true. Smaller case counts, as often seen in Timiskaming, make it more difficult to detect statistical differences as there is more uncertainty around the precision of the estimate.

Mortality

Mortality data describes the distribution and occurrence of deaths in a population over time and are a significant measure of population health.[1] This chapter will present common indicators of mortality such as life expectancy, all-cause mortality, premature mortality, and cause-specific mortality in Timiskaming and in comparison, to Ontario.

Life expectancy

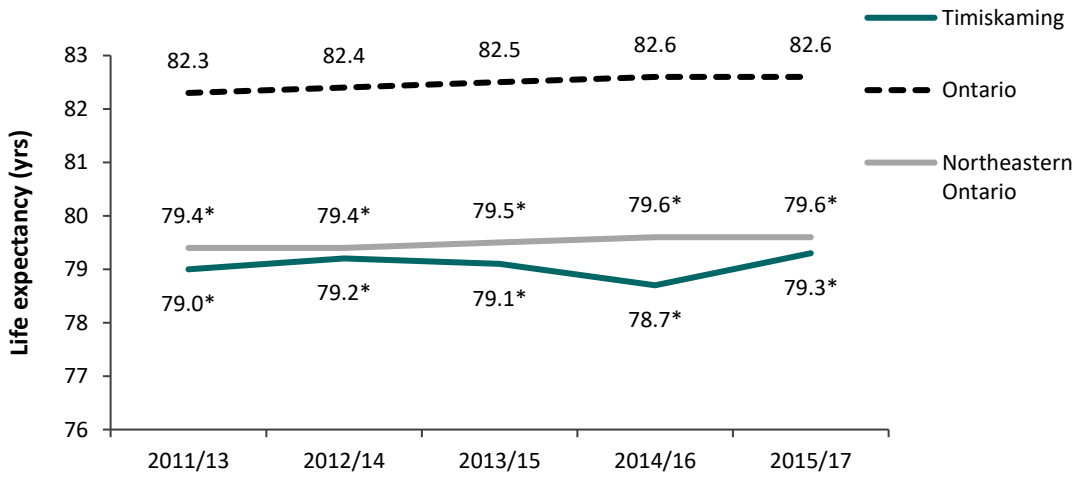
Life expectancy at birth refers to the average number of years a newborn is expected to live if the current death trends continue. Individuals with low income and living in poorer neighbourhoods tend to have shorter life expectancies.[2]

Timiskaming residents live about *3 years less* than Ontario residents.

A resident in Timiskaming born between 2015 and 2017 can expect to live 79.3 years, which is not statistically different from the 79.6 years of Northeastern Ontario residents. However, the life expectancy in Timiskaming is statistically lower than the 82.6 years that an Ontario resident can expect to live.[3]

Overall, life expectancy in Ontario is marginally increasing over time. Timiskaming's life expectancy in 2015-2017 is slightly higher than it was in 2011-2013 and has been relatively stable over time except for a slight decline in 2014-16.[3] The general pattern of increased life expectancy over time can be attributed to improved nutrition, decreases in infant and child mortality, focuses on health promotion and advocacy, and other medical interventions.[4]

Figure 1: Life expectancy at birth, Timiskaming, Northeastern Ontario, & Ontario, 2011–2017[3]



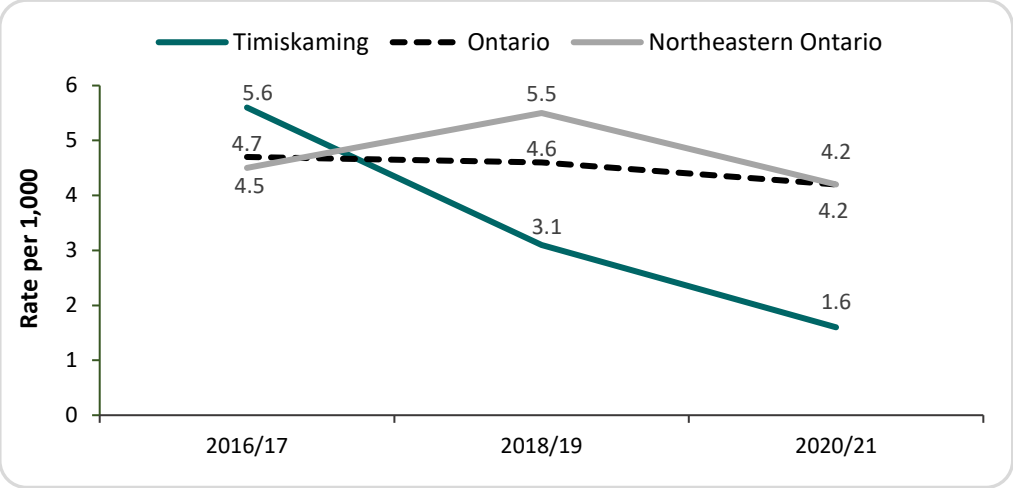
**Statistically different from Ontario*

Infant mortality

Infant mortality refers to the number of deaths of babies that occur from birth to one year of age. High infant mortality and low birth rates negatively impact the population growth of an area.

Overall, a decreasing trend is observed in infant mortality rates over the years for Timiskaming, the Northeast, and Ontario.[5] Infant mortality rates in Timiskaming are statistically comparable to that of Ontario.[5]

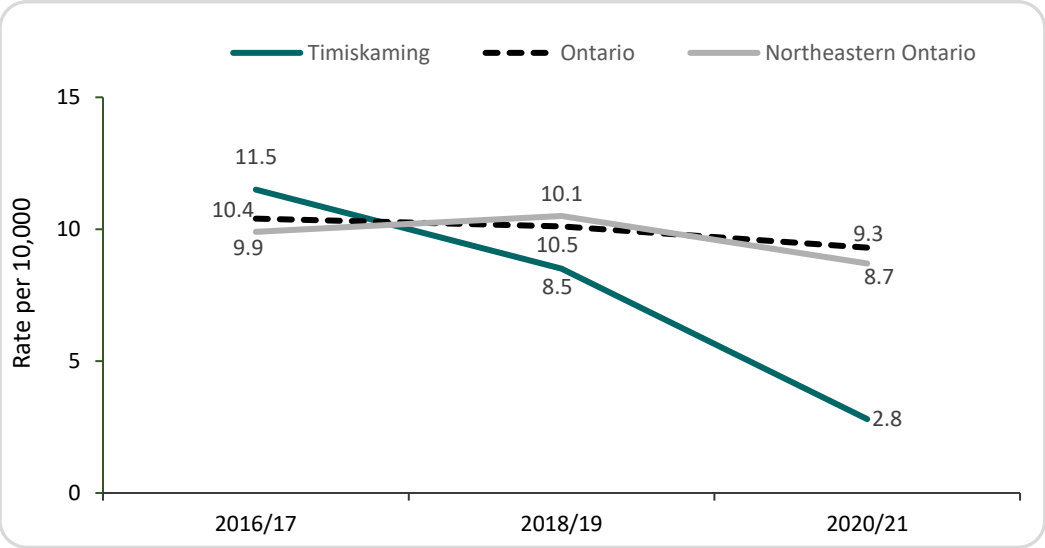
Figure 2: Infant mortality, Timiskaming, Northeastern Ontario, & Ontario, 2016–2021[5]



Mortality in children under five years

Since the 1900s, mortality in children under five years has decreased significantly mostly due to gains in preventing infant deaths. The mortality rates in children under five years in Timiskaming have been on par with Northeastern Ontario and Ontario over the years where no statistical differences are observed.[5] Fluctuations in rates in areas with small populations like Timiskaming are common. Below, the graph visually appears to be decreasing for Timiskaming, but there was no statistical difference over time.

Figure 3: Mortality under five, Timiskaming, Northeastern Ontario, & Ontario, 2016–2021[5]



Mortality from avoidable causes, preventable, and treatable causes

Mortality from avoidable causes refers to deaths that should not happen with effective health care and public health prevention interventions, which includes deaths from preventable causes and treatable causes. Deaths from preventable causes are deaths that could have been averted using health promotion and prevention efforts such as injury prevention campaigns, vaccination, and lifestyle changes (e.g. exercise, healthy diet, and smoking cessation). Deaths from treatable causes could potentially be prevented through effective screening (e.g. cancer, HIV) and disease treatment. Avoidable mortality indicators are useful in telling us how effective our health care and public health (health promotion and disease prevention) systems have been in preventing deaths among people aged 75 and less. Decreases in mortality from avoidable causes can help extend the life expectancy of a given population.

In both Timiskaming and Ontario, the rate of mortality from avoidable causes is driven by preventable deaths. Overall, the rates of mortality from avoidable causes in 2021 was significantly higher in Timiskaming compared to Ontario. Similarly, males in Timiskaming have a higher rate of mortality from avoidable causes than males in Ontario. Among females however, there is no statistically significant difference between those in Timiskaming and Ontario.[5]

Deaths from both preventable and treatable causes are higher in males compared to females in both Timiskaming and Ontario in 2021.[5] When compared by area, mortality rates from preventable causes are significantly higher in Timiskaming compared to Ontario. On the other hand, mortality rates from treatable causes are statistically similar for both Timiskaming and Ontario.

Over the period of 2016 to 2021, except for 2017, Timiskaming's rate of avoidable mortality has consistently been about 1.5 times the rate of Ontario.[5]

Table 1: Mortality rates from avoidable, preventable, & treatable causes by sex, Timiskaming & Ontario, 20215

	Timiskaming			Ontario		
	All	Male	Female	All	Male	Female
Mortality from Avoidable Causes	282.2*	365.8*	198.9	187.2	240.3	136.6
Mortality from Preventable Causes	209.6*	280.0*	139.4*	123.9	171.0	78.8
Mortality from Treatable Causes	72.6	85.8	59.5	63.3	69.3	57.8

**Statistically different than Ontario*

While Timiskaming has made some gains with mortality from treatable causes as shown by the 2021 data presented above, by investing in more public health promotion and prevention interventions, there is still a chance of not only improving the overall health outcomes, but also reducing mortality from avoidable causes such as injury and cancer.

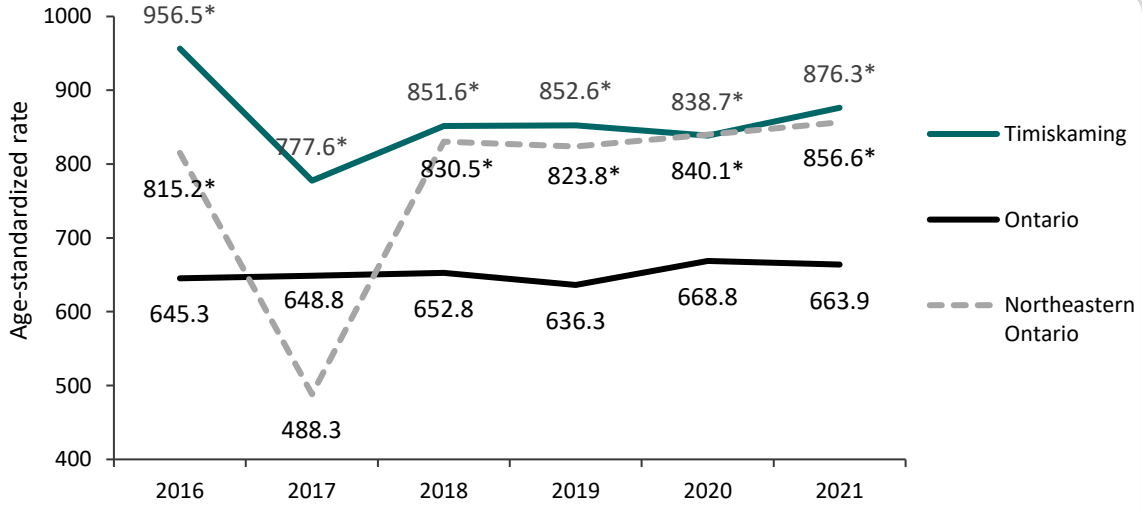
All-cause mortality over time

Due to the aging population, the crude death rate across Ontario is increasing each year. However, a standardized rate that adjusts for age shows a different trend; **the death rate is decreasing over time in Ontario and Timiskaming alike**. This decreasing rate shows that the health of our society overall is improving. According to a mortality report by Population Health Analytics Laboratory, "Ontario's health systems and broader policies around the determinants of health have been increasingly successful and prevented deaths, particularly early deaths, over time".[6] The decrease in mortality rate, however, differs based on various factors like sex, geography, and socioeconomic status.[6]

From 2016 up to 2020, Timiskaming's mortality rate is seen to have experienced a remarkable decline, albeit still statistically higher than Ontario's.

Both Timiskaming's and Northeastern Ontario's mortality rates are statistically higher than Ontario's rate every year except for Northeastern's rate in 2017 (*Figure 4*).

Figure 4: Mortality rate (per 100,000), Timiskaming, Northeastern Ontario & Ontario, 2016–2021[5]



**Statistically different from Ontario*

Lead causes of mortality

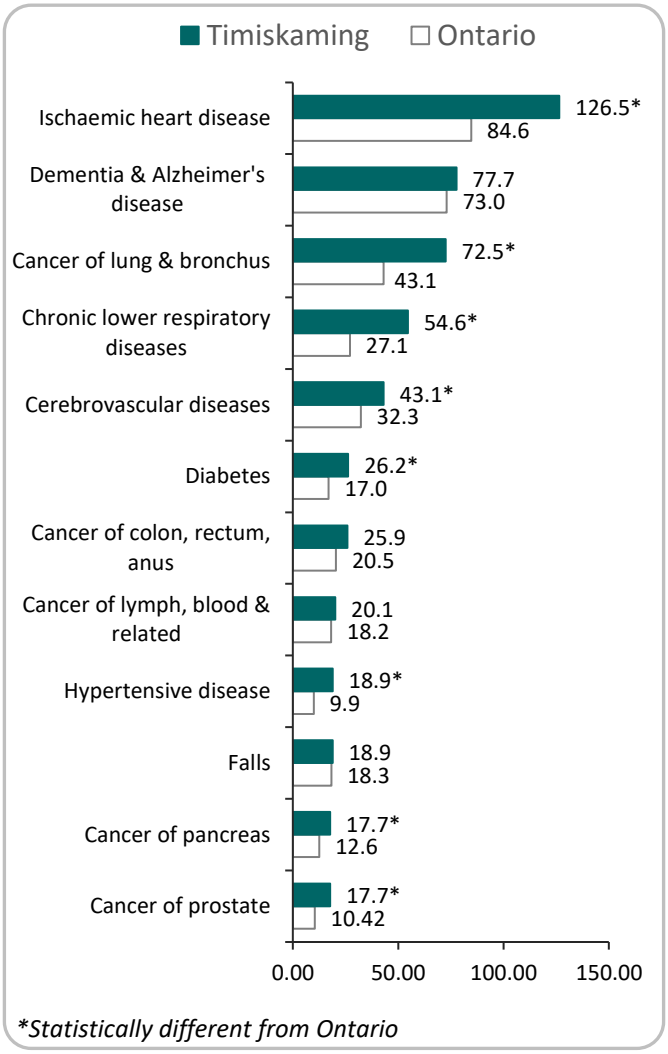
Between 2016 and 2021, there were 2,414 deaths in Timiskaming, an average of 402 deaths per year.[7] The lead cause of death in Timiskaming is ischaemic heart disease, accounting for 16.3% of all deaths with an average of 59 deaths per year. The next leading cause of death is dementia and Alzheimer's disease, accounting for 10.4% of total deaths with an average of 37 deaths per year.[7] *Table 2* outlines percentages and average number of deaths due to each leading cause of death in Timiskaming.

Table 2: Average number per year and percentage of deaths from lead causes, Timiskaming, 2016–2021[7]

	Average number of deaths	Percentage
Ischaemic heart disease	59	14.6%
Dementia & Alzheimer's disease	37	9.2%
Cancer of the lung and bronchus	34	8.3%
Chronic lower respiratory diseases	26	6.4%
Cerebrovascular diseases	20	5.0%
Cancer of the colon, rectum, & anus	12	3.1%
Diabetes	12	2.9%
Cancer of the lymph, blood, & related	9	2.2%
Falls	9	2.2%
Hypertensive disease	9	2.1%
Cancer of prostate (males)	8	2.0%
Cancer of pancreas	8	2.0%

Overall, Timiskaming's rates of death (age-adjusted) are statistically higher than Ontario's rates for many lead causes of death (*Figure 5*). These include some national leading causes of death such as ischaemic heart disease, cancer of the lung, chronic lower respiratory diseases, and hypertensive disease.[7]

Figure 5: Age-standardized mortality rates (per 100,000), by lead causes, Timiskaming & Ontario, 2016–2021[7]



**Statistically different from Ontario*

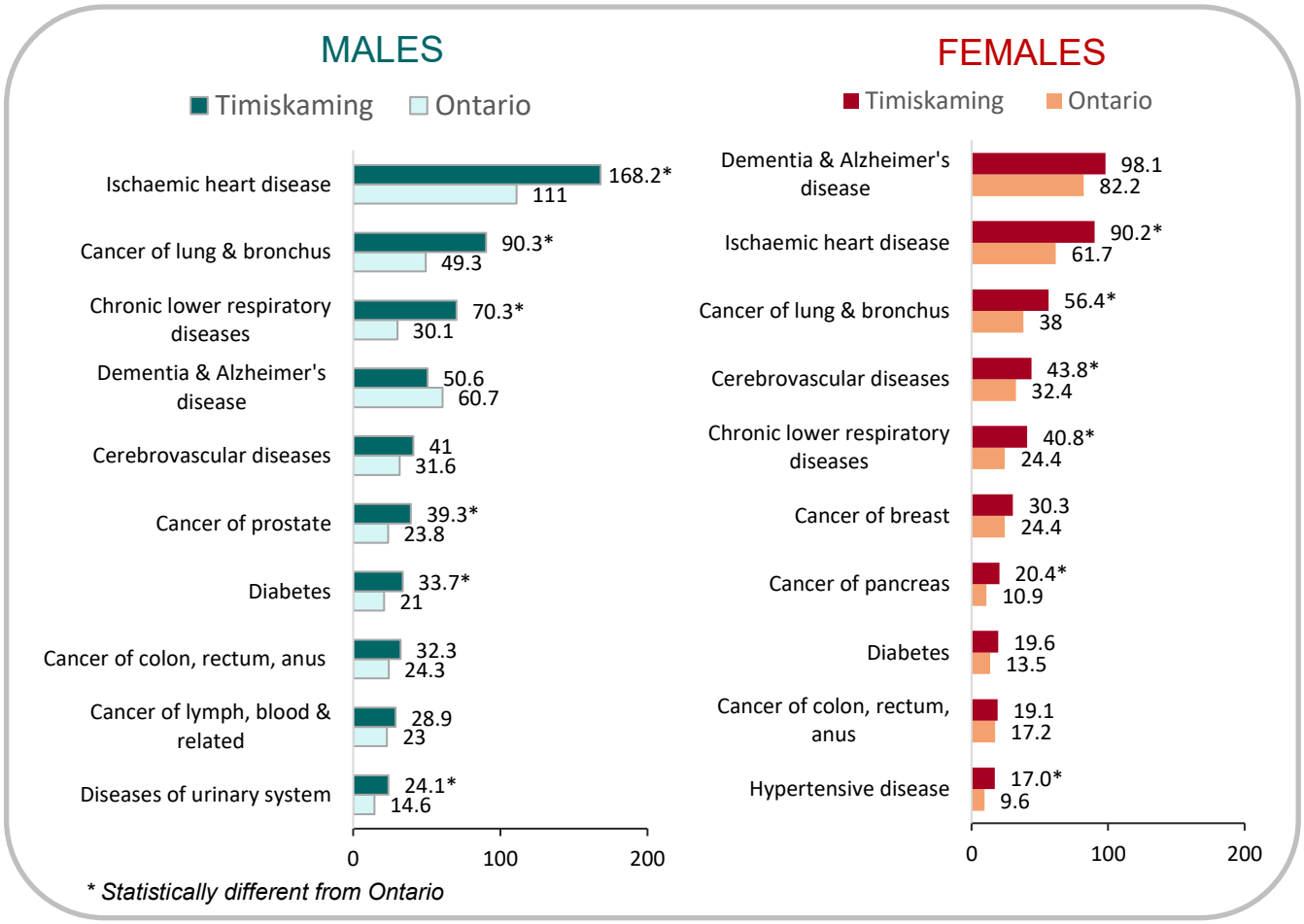
Lead causes of mortality by sex

Many factors, including sex, results in differences in mortality rates even among the most common causes of death. The leading causes of deaths in Timiskaming for both males and females between the 2016 to 2021 were similar. However, when ranked, for males the first three leading causes of deaths were ischaemic heart diseases, cancer of the lungs and bronchus, and chronic lower respiratory disease. For Timiskaming females on the other hand, the first three leading causes of deaths are dementia and Alzheimer's disease, ischaemic heart diseases, and cancer of the lungs and bronchus. [7] Mortality rates for all leading causes in Timiskaming and Ontario can be found in *Figure 6*.

For males in Timiskaming, ischaemic heart disease makes up 16.2% of all deaths, and an average of 35 deaths per year. Lung cancer makes up 9.1% of all deaths, and an average of 20 deaths per year.[7]

For females in Timiskaming, dementia and Alzheimer's disease makes up 14.2% of all deaths, an average of 26 deaths per year. Ischaemic heart disease makes up 12.8% of all deaths, an average of 23 deaths per year. [7]

Figure 6: Rates of leading causes of mortality (per 100,000), by sex, Timiskaming & Ontario, 2016–2021[7]



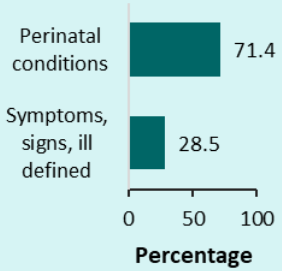
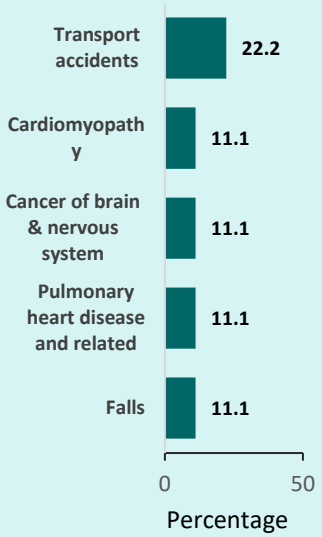
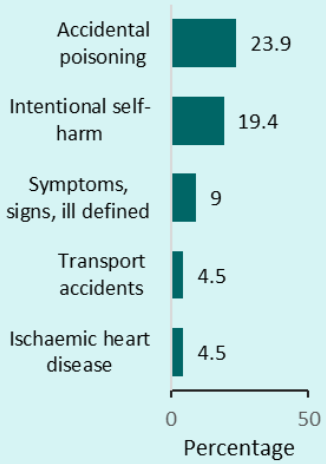
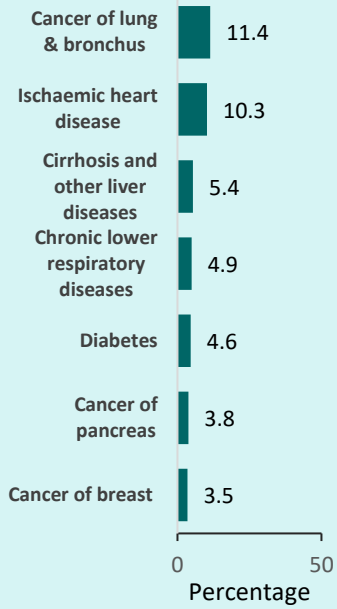
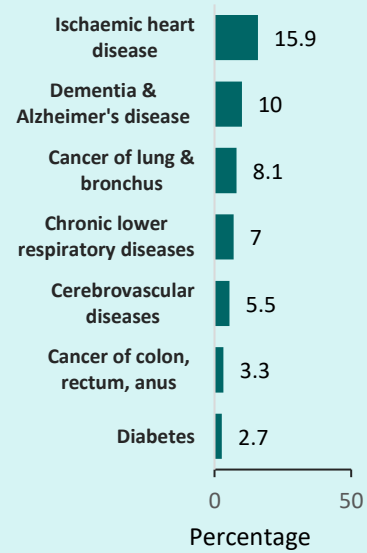
Lead causes of mortality by age group

As with sex, the leading causes of mortality also differ by age group in Timiskaming:[7]

- Children (aged 1−19 years) are more likely to die in land transportation collisions, which account for 22.2% of all deaths in this age group
- Adults (aged 20−44) are more likely to die from accidental poisoning (including drug poisoning), which accounts for 24% of all deaths in this age group
- Older adults (aged 45−64 years and aged 65+) are more likely to die from lung and bronchus cancer (11.3% of all deaths) and ischaemic heart disease (16% of all deaths) in these age groups respectively

As might be expected, older adults (aged 65+) make up the highest percentage of deaths in Timiskaming (81%) and children (aged 19 and under) made up the least (0.7%). The average number of deaths and percentages per year and lead causes of death by age group in Timiskaming are outlined in *Table 3* on the next page.

Table 3: Rates of leading causes of mortality, by age group, Timiskaming, 2016–2021[7]

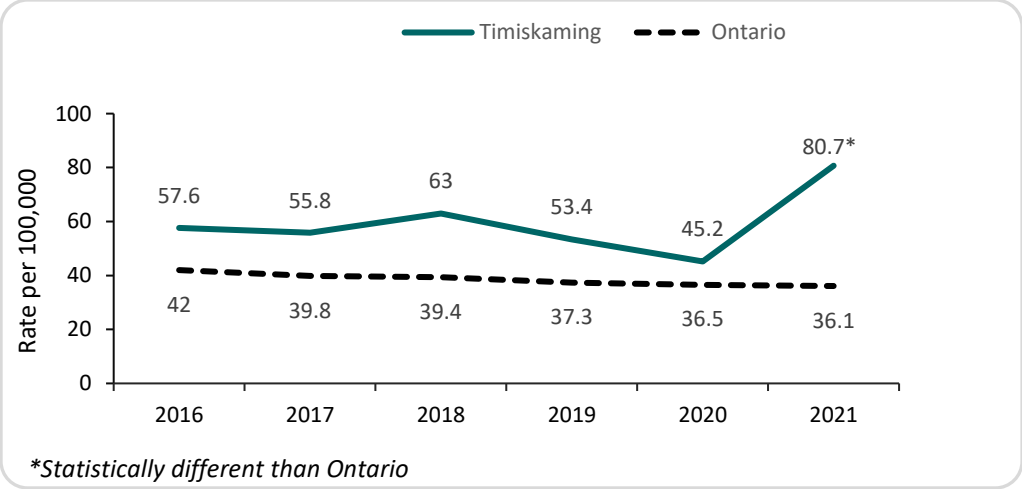
Age Group	Less than 1 year	1 to 19 years	20-44 years	45-64 years	65 years and over
Average number of deaths per year	2	2	11	62	327
Percentage of deaths	0.3%	0.4%	3%	15%	81%
Lead causes of death					

Selected preventable disease mortality

Cancer

Cancer is one of the leading causes of death in Timiskaming. The age-adjusted rates of all-cancer mortality for Timiskaming has been comparable to Ontario's from 2016 to 2020. However, a significantly higher rate is observed in 2021 (see figure 7 below). Similar trends are reported for males in Timiskaming versus males in Ontario where rates are comparable from 2016 to 2020 with an elevated increase in 2021. For females, there has been no significant differences between Timiskaming and Ontario from 2016 to 2021.

Figure 7: Age-standardized cancer mortality rates (per 100,000), Timiskaming & Ontario, 2016–2021[5]



**Statistically different than Ontario*

In Timiskaming, 31.5% of all cancer deaths for the 2016 to 2021 period was due to cancer of the lungs and bronchus, whiles in Ontario, cancer of the lungs and bronchus was responsible for 25.3% of all cancer deaths for the same period.[7]

Overall, the three leading types of cancer deaths in Timiskaming are from cancer of the lungs and bronchus, cancer of the colon, rectum, anus, and cancer of lymph, blood, and related. These three leading types of cancer are the same for Ontario. Table 4 (below) shows the percentages of deaths by cancer types for Timiskaming and Ontario for the combined period of 2016 to 2021.[7]

Table 4: Leading cancer types in Timiskaming & Ontario, 2016-20217

Timiskaming		Rank	Ontario	
Percentage of deaths	Cancer Type		Percentage of deaths	Cancer Type
31.5	Cancer of lung & bronchus		25.3	Cancer of lung & bronchus
11.6	Cancer of colon, rectum, anus	2	12.0	Cancer of colon, rectum, anus
8.5	Cancer of lymph, blood & related	3	10.7	Cancer of lymph, blood & related
7.7	Cancer of pancreas	4	7.6	Cancer of breast
7.7	Cancer of prostate	4|5	7.4	Cancer of pancreas
6.4	Cancer of breast	5|6	6.2	Cancer of prostate

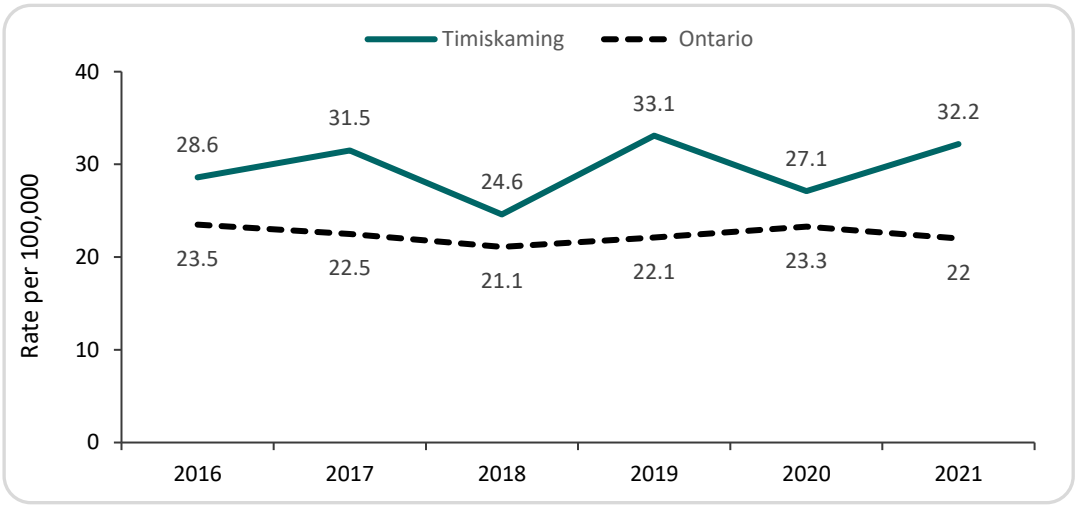
Cardiovascular (heart) disease

Cardiovascular disease refers to conditions affecting the heart and blood vessels. In both Timiskaming and Ontario, ischaemic heart disease is the most common type of cardiovascular disease resulting in deaths accounting for 58% and 53% of all cardiovascular deaths, respectively, for the period of 2016 to 2021.[7] In second and third places are cerebrovascular disease and heart failure, accounting for 19.8% and 5.8% of all cardiovascular deaths respectively for Timiskaming and 20.5% and 8.5%, respectively, for Ontario.[7]

While many cardiovascular diseases can be prevented by being more physically active, cutting down on alcohol and smoking and ensuring proper nutrition, medical intervention can also decrease premature deaths arising from cardiovascular diseases.[8]

Mortality rates across the years for Timiskaming has however been fluctuating, while that of Ontario's has remained relatively stable over time. Overall, the rate of mortality from cardiovascular disease for Timiskaming from 2016 to 2021 is not statistically different from Ontario. Similar trends are noted for males and females in Timiskaming in comparison with Ontario for the same period.[7]

Figure 8: Age-standardized cardiovascular mortality rates (per 100,000), Timiskaming & Ontario, 2016–2021[7]



Respiratory disease

Respiratory diseases are conditions affecting parts of the respiratory system (e.g. lungs, airways, throat) and could be either chronic or acute. Examples of respiratory disease include asthma, pneumonia, influenza, and chronic obstructive pulmonary disease (COPD).

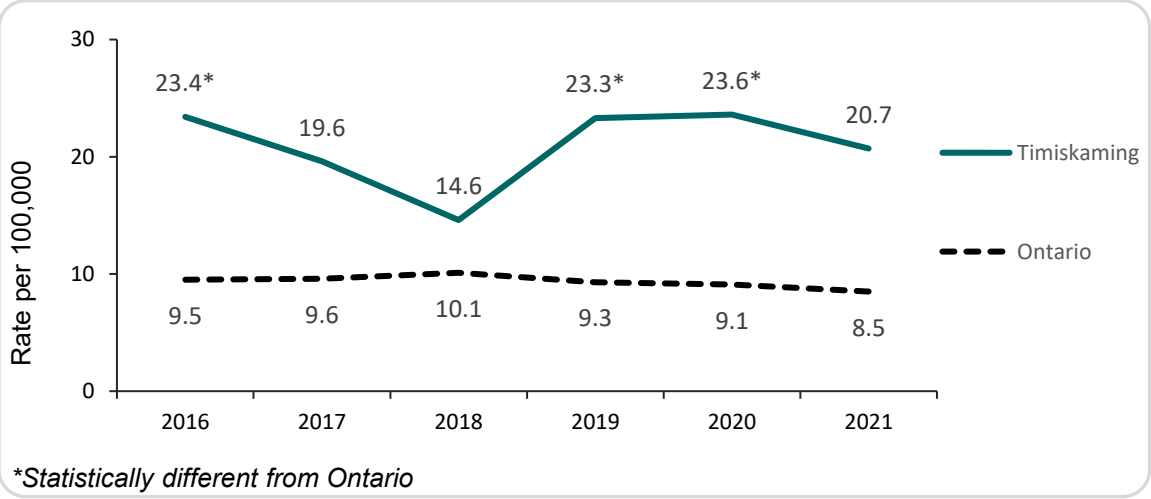
In Timiskaming, the mortality rate from respiratory diseases between 2016 and 2021 fluctuated but overall, experienced a decrease. Ontario, on the other hand has had a relatively stable rate over the same period.[5]

Comparatively, respiratory mortality rates for Timiskaming were significantly higher than that of Ontario's in 2016, 2019, and 2020. The remaining years (2017, 2018, 2021) have statistically similar rates for both Timiskaming and Ontario.[5]

For females, there is no significant difference between Ontario and Timiskaming over the 2016 to 2021 period.

Timiskaming males however, experienced statistically higher respiratory mortality rates compared to Ontario males in 2020 and 2021, periods corresponding with the COVID-19 pandemic.

Figure 9: Age-standardized Respiratory Mortality rates (per 100,000), Timiskaming & Ontario, 2016-2021.[5]



Injury-Related Mortality

All deaths in Ontario are registered and coded according to the cause and the circumstances surrounding the event. In this report, deaths are classified by leading cause based on recommendations from Becker et al. (2006), with modifications by the Association of Public Health Epidemiologists in Ontario.[9,10] The following injury categories were not included in this analysis: complications from medical procedures and medical care, adverse drug events, and injuries from legal intervention such as operations of war.

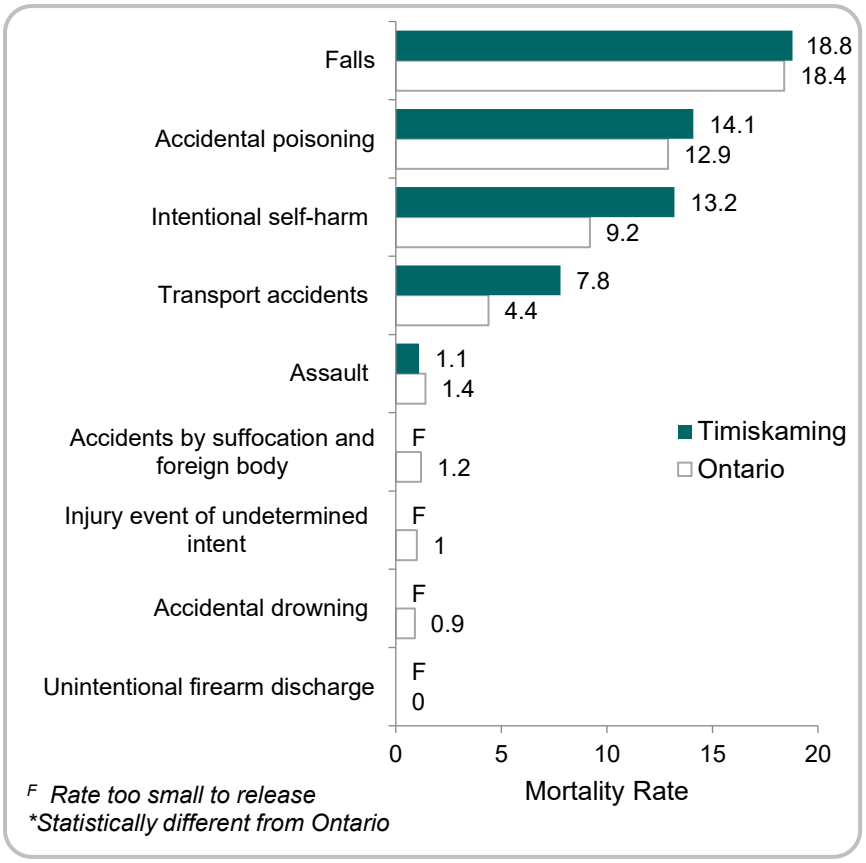
Overall injury-related mortality

There were on average 21 deaths in Timiskaming per year between 2016 and 2021.[7] This equates to a rate of injury causing death of 56.8 deaths a year (per 100,000 population), which is not statistically different than the provincial rate of 49.4 (per 100,000 population).[7]

Injury-related mortality by lead cause

The leading causes of injury-related mortality in Timiskaming and Ontario are illustrated in *Figure 10.* The leading cause of injury-related mortality in Timiskaming is falls with an average of nine deaths per year, followed by accidental poisoning with an average of four deaths per year. Timiskaming's rate of injury-related mortality due to suffocation, event of undetermined intent, accidental drowning, and unintentional firearm discharge has too few deaths over the six-year span to calculate a rate.[7] Timiskaming's rates are statistically not different for all the leading causes of injury-related mortality for Ontario.[7]

Figure 10: Injury-related mortality rate (per 100,000), by leading cause, Timiskaming & Ontario, 2016–2021[7]



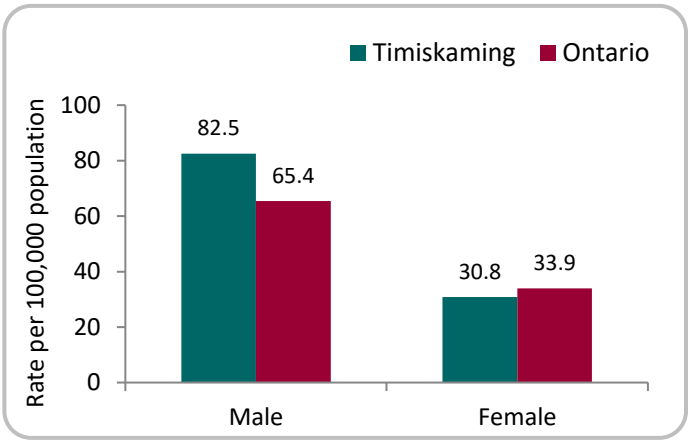
F Rate too small to release
**Statistically different from Ontario*

Injury-related mortality by sex

In Timiskaming, males have almost three times the rate of death by an injury compared to females. Specifically, males have an overall death rate of 82.5 per 100,000 population, which is statistically higher than the female rate of 30.8 per 100,000 population.[7]

The injury-related mortality rates are statistically comparable between Ontario and Timiskaming overall, and by sex (*Figure 11*).[7]

Figure 11: Injury-related mortality rate (per 100,000), by sex, Timiskaming & Ontario, 2016–2021[7]

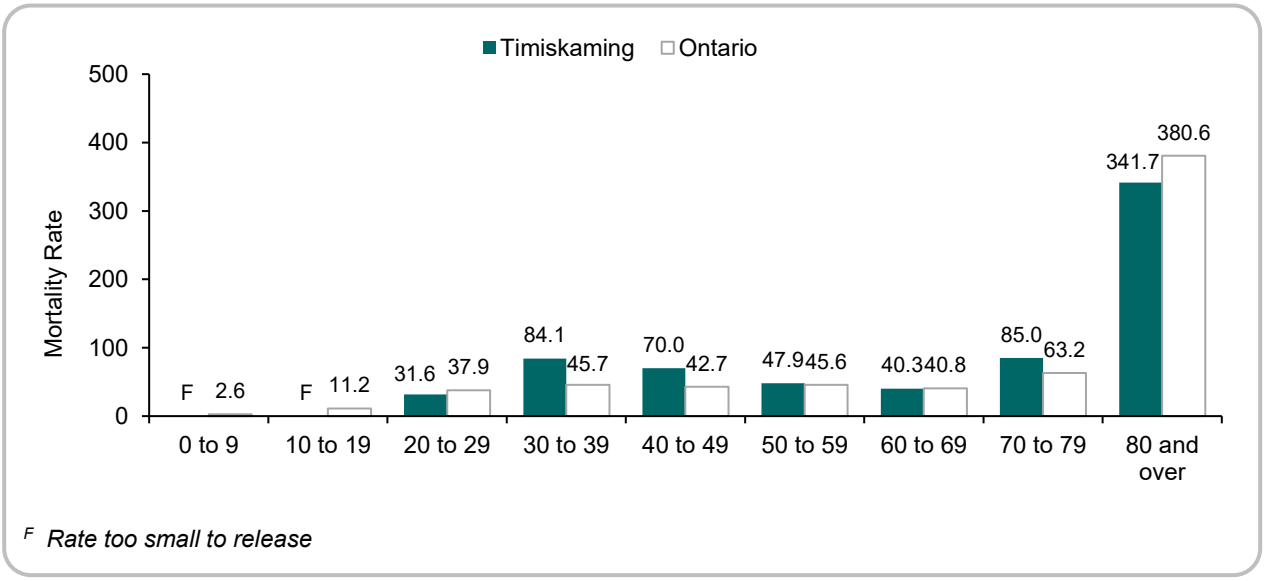


Injury-related mortality by age group

In Timiskaming, the 80 years and over age group has the highest rate of death due to injury with a rate of 341.7 per 100,000 population. This age group has more than 10 times the injury rate of the age group (20 to 29) with the lowest rate (31.6) (*Figure 12*).

None of the Timiskaming age group's injury-related mortality rate is statistically different from Ontario's.[7] Timiskaming's 0 to 9 and 10 to 19 age group has too few deaths to calculate a rate.

Figure 12: Injury-related mortality rate (per 100,000), by age group, Timiskaming & Ontario, 2016–2021[7]



[F] *Rate too small to release*

Morbidity

Emergency Department Visits

Emergency department (ED) visits are counted based on the main condition assessed and diagnosed during the visit. This condition is then classified into health categories using the International Classification of Diseases codes, tenth revision (ICD-10), and the International Shortlist for Hospital Morbidity Tabulation (ISHMT). It is important to note that data may include the same person several times if they returned to the ED or visited another hospital for the same reason. Data does not include those who had health issues but did not seek treatment in the emergency department.

When interpreting and comparing Timiskaming's to Ontario's rates, it is necessary to note that differences in health service delivery can influence the rates. For instance, Timiskaming residents may be more likely to visit the ED as there are limited options for seeking care, whereas residents in city centers may have access to other health care services such as walk-in clinics.

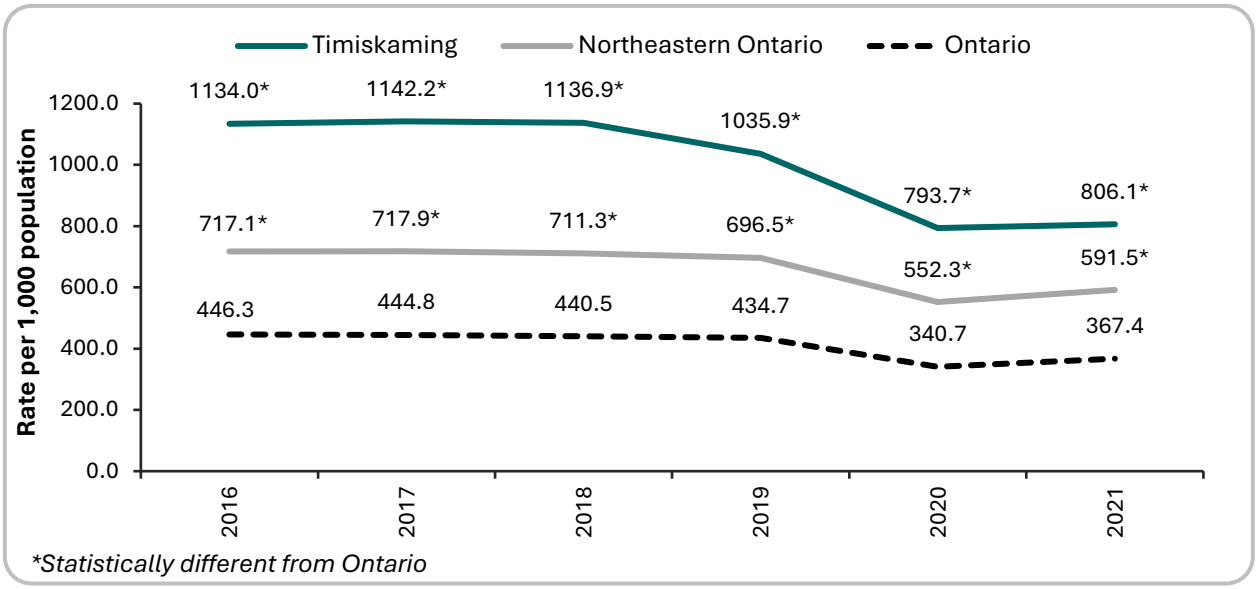
Emergency department visits over time

In 2021, Timiskaming residents made 23,931 emergency department visits, accounting for an age standardized ED visits rate of 806.1 per 1,000 population.[11] Residents between the ages of 20-29 (14.5%) followed by 60-69 (14.2%) recorded the highest proportion of ED visits in Timiskaming (not shown).

As with life expectancy and mortality rates, it is normal for the ED visit rate in an area with a small population to fluctuate over time, which is the case in Timiskaming. From 2016 to 2018, Timiskaming, Northeastern Ontario, and Ontario recorded relatively stable ED visit rates, followed by a significant decline in rates in 2019 and 2020.[11] Decreases in ED visits in 2020 coincides with the COVID-19 pandemic which was accompanied by public health measures such as lockdown and social distancing, individuals' reluctance to visit the ED due to the fear of contracting COVID-19, and the increased use of telemedicine for non-emergent care.[12,13] These changes may have impacted health care seeking behaviour resulting in the decrease recorded.

A significant increase in rates is recorded in 2021 for both Northeastern Ontario and Ontario but not Timiskaming. Both Timiskaming's and Northeastern Ontario's ED rates are statistically higher than Ontario's consistently across the years (*Figure 13*).[11]

Figure 13: ED visit rate (per 1,000), Timiskaming, Northeastern Ontario, Ontario, 2016–2021[11]



Emergency department visits overall and by lead cause

Timiskaming's emergency department rates, categorized by lead cause, are generally statistically higher than Ontario's. However, there are three exceptions where no statistically significant differences were observed: congenital malformations, deformations, and chromosomal anomalies; certain conditions originating in the perinatal period; and diseases of the blood and blood-forming organs, and certain disorders involving the immune mechanism (*Table 5)*.[11]

In 2021, injury and poisoning and certain other consequences of external causes was the lead cause of ED visits in both Timiskaming (149.5 visits per 1,000 population) and Ontario (84.6 visits per 1,000 population) followed by symptoms, signs and abnormal clinical and lab findings, and diseases of musculoskeletal system and connective tissue (*Table 5*).[11]

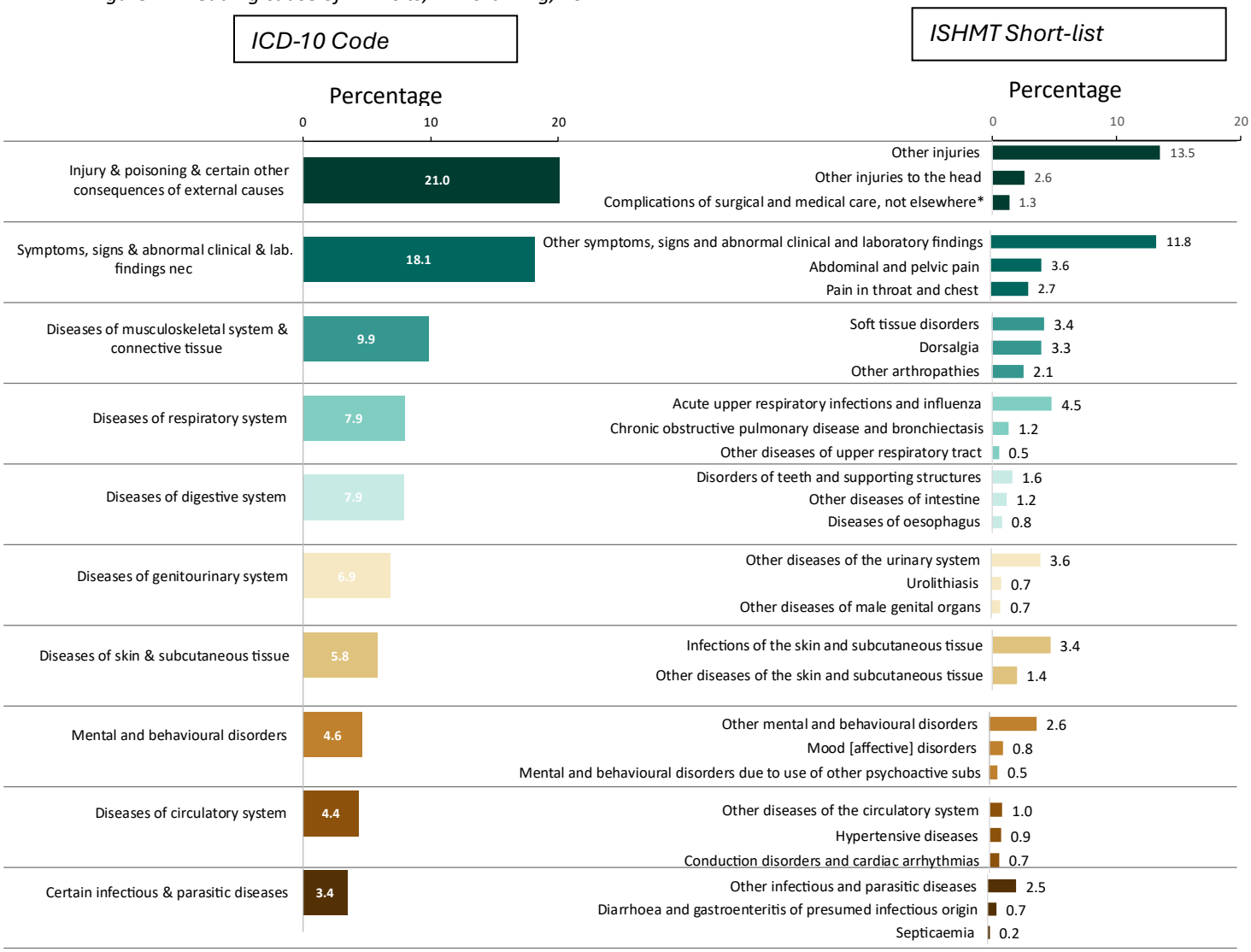
Table 5: ED visit rates per 1,000 by lead cause (ICD-10), Timiskaming, Ontario, 2021[11]

Lead Cause	Timiskaming	Ontario
Injury & poisoning & certain other consequences of external causes	149.5*	84.6
Symptoms, signs & abnormal clinical & lab. findings	122.3*	83.9
Diseases of musculoskeletal system & connective tissue	66.8*	24.8
Diseases of respiratory system	56.9*	21.2
Diseases of digestive system	54.2*	22.2
Diseases of genitourinary system	46.7*	20.3
Diseases of skin & subcutaneous tissue	40.3*	14.3
Mental and behavioural disorders	34.5*	18.7
Diseases of circulatory system	25.1*	14.1
Diseases of the ear & mastoid process	24.6*	7.0
Certain infectious & parasitic diseases	24.3*	11.3
Diseases of nervous system	11.9*	5.6
Pregnancy, childbirth & the puerperium	10.3*	4.7
Diseases of the eye and adnexa	9.4*	5.5
Endocrine, nutritional & metabolic diseases	8.7*	4.1
Neoplasms	3.0*	1.8
Diseases of blood & blood-forming organs & certain disorders involving the immune mechanism	1.9	1.9
Certain conditions originating in perinatal period	0.5	0.6
Congenital malformations, deformations & chromosomal anomalies	0.2	0.2

**Statistically higher than Ontario's rate*

Figure 14 illustrates ED visits by lead cause as percentage of total ED visits rather than rate of ED visits. As touched upon above, the leading cause of ED visits in Timiskaming is injury and poisonings, accounting for 21.0% of all ED visits.[11] A general category called 'symptoms, signs, and abnormal clinical and laboratory findings not elsewhere classified' is the next leading cause, accounting for 18.1% of ED visits, followed by diseases of the musculoskeletal system and connective tissue that make up 9.9% of the visits.[11]

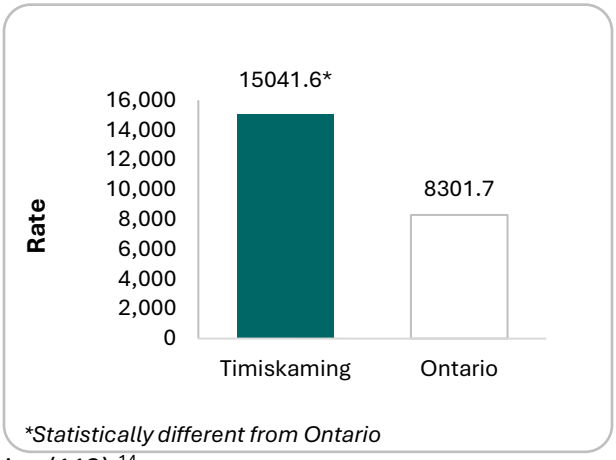
Figure 14: Leading cause of ED visits, Timiskaming, 2021[11]



Injury-related emergency department visits

Injuries are the leading causes of ED visits in Timiskaming, accounting for an average of 5,015 ED visits per year.[14] Overall, between 2020 and 2021, the rate of injury-related ED visits in Timiskaming was 15,041.6 per 100,000 population, almost twice the rate of Ontario (8,301.7 per 100,000 population). (*Figure 15)*

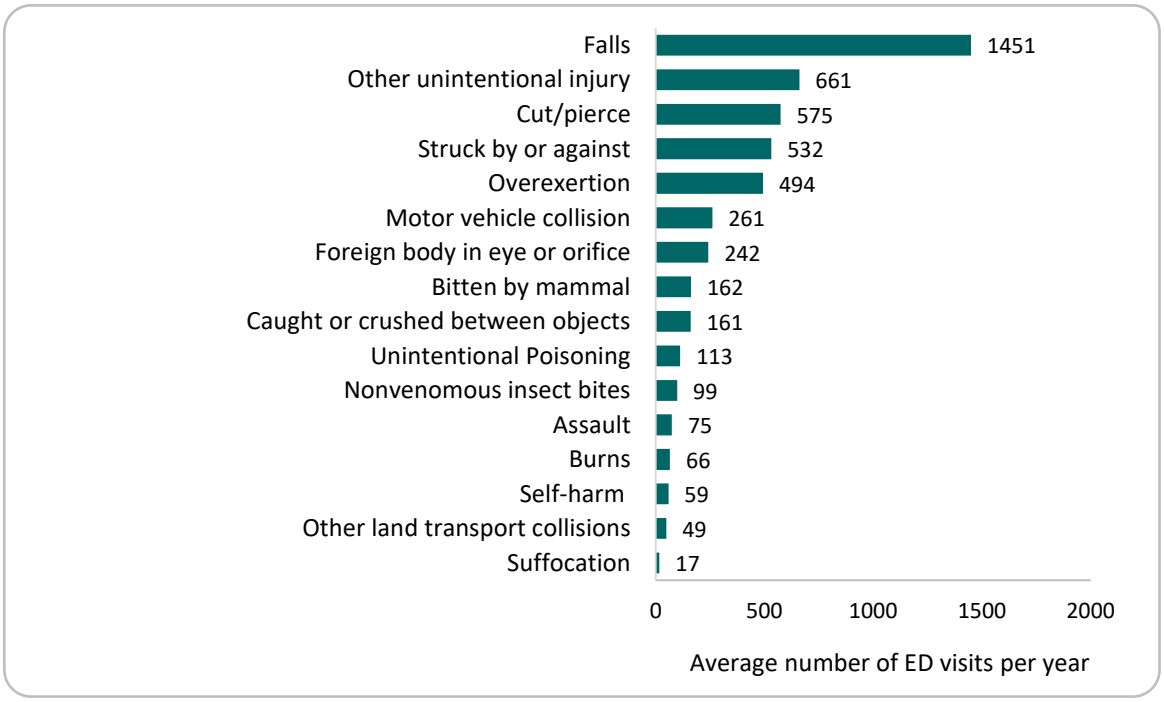
Figure 15: Injury-related ED visit rate (per 100,000), Timiskaming, Ontario, 2020–2021[14]



Injury-related emergency department visits by lead cause

Figure 16 outlines the leading causes of injury-related ED visits in Timiskaming. Falls were the leading cause of injury in Timiskaming with an average of 1,451 ED visits per year, followed by 'other unintentional injury' with an average of 661 ED visits per year, and cut/pierce with an average ED visit of 575 per year. Other notable causes of injury with high average ED visits per year include motor vehicle collision (261) and unintentional poisoning (113).[14]

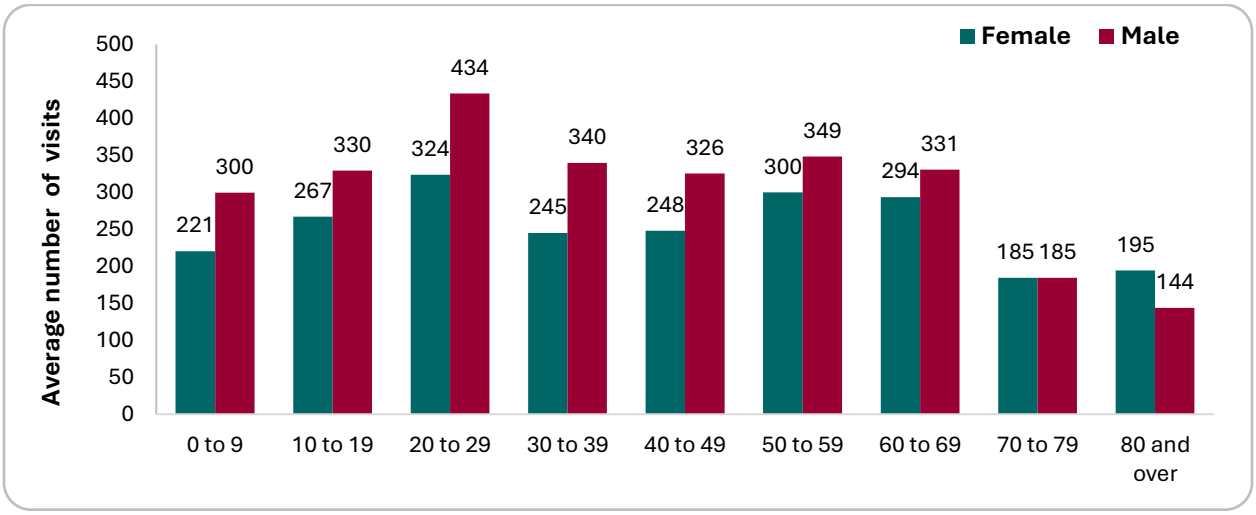
Figure 16: Average number of injury-related ED visits (per year), by lead cause Timiskaming, 2020–2021[14]



Injury-related emergency department visits by sex and age group

In Timiskaming, approximately 2,737 males and 2,277 females visit the emergency department each year for injury-related reasons. The average number of injury-related ED visits by age group and sex is illustrated in *Figure 17*. Across all the age groups, males recorded higher number of yearly injury-related ED visits than females. The groups with the highest number of ED visits are males aged 20 to 29 (434 visits/yr), followed by males aged 50 to 59 (349 visits/yr), and males aged 30 to 39 (340 visits/yr).[14] Similarly, in females, those aged 20 to 29 reported the highest number of ED visits, followed by those aged 50 to 59 and those aged 60 to 69.

Figure 17: Average number of injury-related ED visits (per year), by sex and age group, Timiskaming, 2020–2021[14]



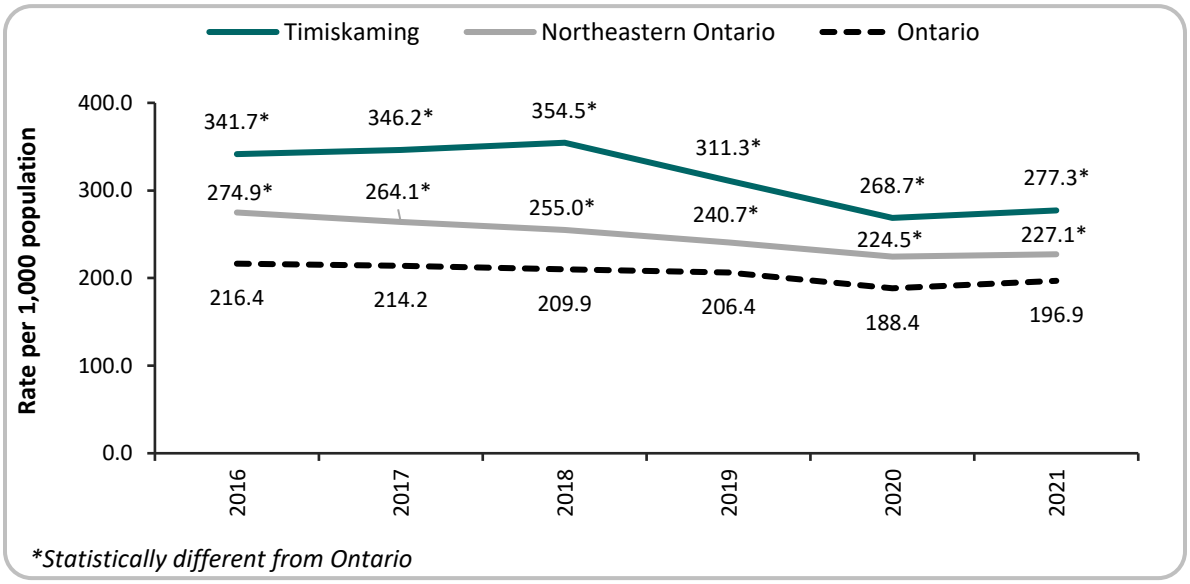
Hospitalization

Hospitalizations, just like emergency department visits, are useful indicators of the health status of the population. Many factors including access to primary care and preventative care may account for differences in hospitalization rates. This section will provide the overall rates of hospitalizations in Timiskaming in comparison with Ontario and Northeastern Ontario, the leading causes of hospitalizations, as well as the gender and age differences. Hospitalization is any death, discharge, or transfer of a patient from a healthcare facility.[15] Due to changes in the reporting of mental disorders, discharges with a mental disorder diagnosis is excluded from all hospitalization data reported here.[15]

Hospitalizations over time

Overall, there has been a decreasing trend in the hospitalization rates across Timiskaming, Ontario and Northeastern Ontario.[16] Timiskaming has, however, recorded some fluctuations in rates in comparison to Ontario and Northeastern Ontario. From 2016 to 2021, the rate of hospitalization has been consistently significantly higher in both Timiskaming and Northeastern Ontario in comparison to Ontario.[16] (See figure 18).

Figure 18: Hospitalization rate (per 1,000), Timiskaming, Northeastern Ontario, Ontario, 2016-2021[16]

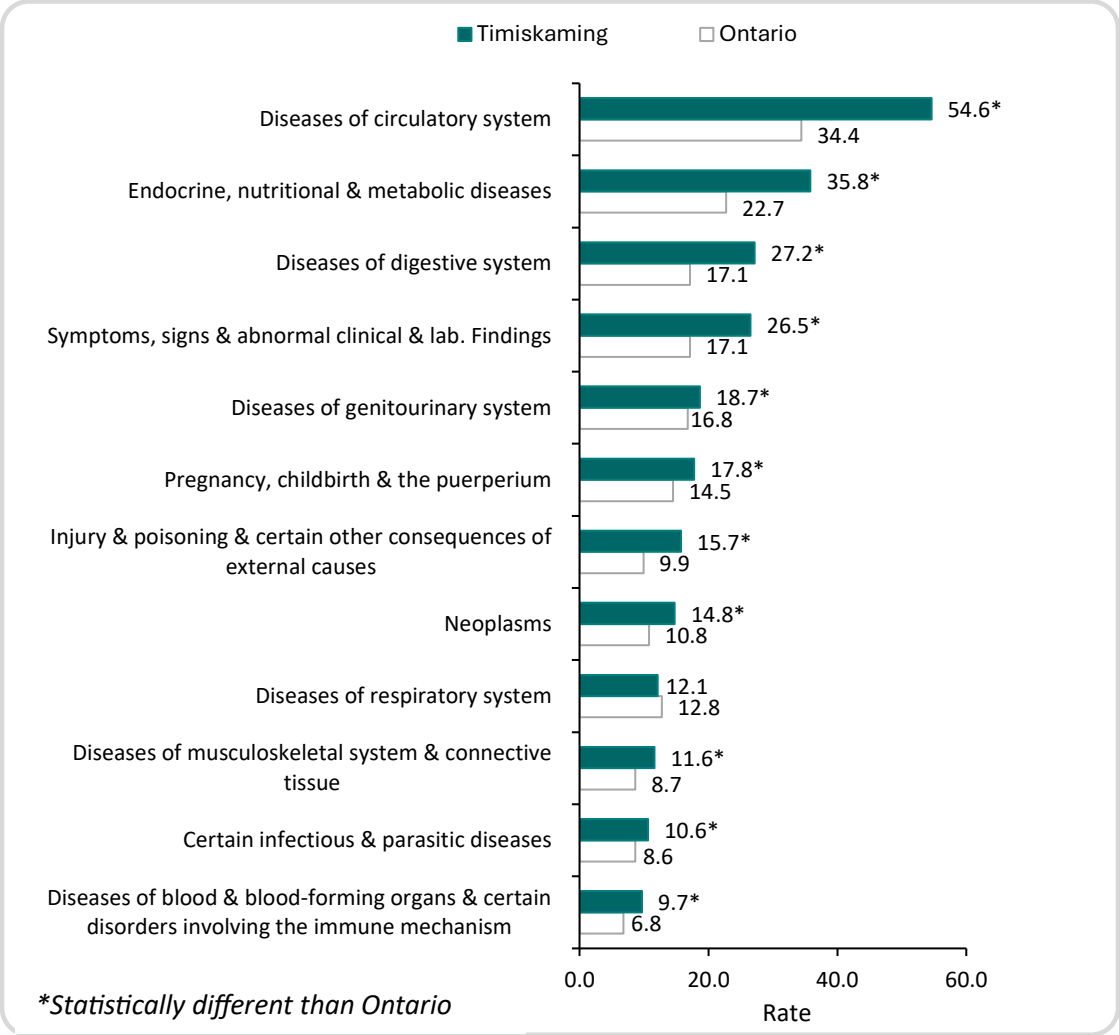


Leading causes of hospitalizations

Figure 19 below presents the leading causes of hospitalization in Timiskaming compared to Ontario. The leading cause of hospitalizations in Timiskaming is diseases of the circulatory system accounting for a rate of 54.6 hospitalizations per 1000 people, followed by endocrine, nutritional, and metabolic diseases with a rate of 35.8 per 1000 people, and diseases of the digestive system at 27.2 per 1000 people.[16] In all the leading causes of hospitalization, rates were statistically higher in Timiskaming compared to Ontario

except for diseases of the respiratory system, diseases of the ear and mastoid process, diseases of the eye and adnexa, and congenital malformations, deformations and chromosomal anomalies (not shown), where no statistical differences are reported.[16]

Figure 19: Rate of hospitalizations by lead cause, 2021, Timiskaming & Ontario[16]



Leading causes by age and sex

In 2021, the leading causes of hospitalization differed by age group and sex in Timiskaming:[16]

- Children (aged 0-19) were more likely to be hospitalized from certain conditions originating in perinatal period, accounting for 38.3% of all cases of hospitalization, followed by diseases of the digestive system, responsible for 9.1% and symptoms, signs, and abnormal clinical and 'lab findings not elsewhere classified' responsible for 8.9% of all hospitalizations.

- Adults (aged 20-44) were more likely to be hospitalized from pregnancy, childbirth and the puerperium, accounting for 36.6% of all hospitalizations, followed by diseases of digestive system (10.9%), and endocrine, nutritional and metabolic diseases (8.6%).
- Older adults (aged 45-64 and 65+) were more likely to be hospitalized for diseases of the circulatory system, accounting for 22.0% and 26.3% of total hospitalizations in the respective age groups.

Table 6: Leading causes of hospitalization in Timiskaming by sex, 2021[16]

Females		Rank	Males	
Percentage	**Leading Cause**		**Percentage**	**Leading Cause**
18.6	Diseases of the circulatory system	**1**	24.4	Diseases of the circulatory system
13.4	Endocrine, nutrition, & metabolic diseases	**2**	13.0	Endocrine, nutrition, & metabolic diseases
9.6	Diseases of the digestive system	**3**	10.0	Symptoms, signs & abnormal clinical & lab findings not elsewhere classified
9.2	Symptoms, signs & abnormal clinical & lab findings not elsewhere classified	**4**	9.6	Diseases of the digestive system
8.7	Pregnancy, childbirth & the puerperium	**5**	6.7	Diseases of genitourinary system
7.6	Diseases of the genitourinary system	**6**	6.6	Neoplasms

In both males and females in Timiskaming, the leading causes of hospitalization are similar. The top two leading causes of hospitalizations are diseases of circulatory system accounting for 18.6% and 24.4% of all hospitalizations in females and males respectively, and endocrine, nutrition, and metabolic diseases accounting for 13.4% in females and 13% in males.[16] (See Table 6).

Infectious Diseases

Infectious diseases remain an important part of public health because they can mostly be prevented through public health interventions, such as hand hygiene, vaccinations, promotion of safer sex, and safer drug-using practices.[17] This section presents an overview of reportable diseases in Timiskaming residents. These diseases are reportable under the *Health Protection and Promotion Act*.[18] Public Health monitors these cases to track trends, reduce community transmission, and identify infection sources where possible.

All diseases in this report meet Ontario Public Health Standards' confirmed case definitions, typically based on positive laboratory tests.[18] Cases are assigned by episode date (estimated onset) and by the individual's health unit of residence at that time. Counts may change due to data-cleaning and updates to case definitions and testing practices. Some infections may also be underreported, especially if symptoms are mild and do not lead to healthcare visits.

Additionally, the COVID-19 pandemic may have affected data through changes in healthcare access, capacity, and priorities. First Nations communities have separate reporting systems and are not included in this section.

Summary of diseases of public health significance

The table below contains the following summary information for each disease of public health significance: the average number of cases over the 2019 to 2023 period, the number of cases divided by the population (rates) for both Timiskaming and Ontario, and whether there was a statistical difference between Timiskaming's and Ontario's rates.[19,20]

The population denominators were modified accordingly for newer diseases of public health significance. Powassan virus, babesiosis, and anaplasmosis were new as of July 1, 2023, mpox as of June 16, 2022, and COVID-19 (diseases caused by a novel coronavirus) was new as of January 22, 2020.[20]

The list of diseases of public health significance excludes diseases that are only reportable in outbreak situations such as *Clostridium difficile* in hospitals, and gastroenteritis and respiratory infection outbreaks in institutions and public hospitals. This list also excludes diseases that are reported both as individual counts and in aggregate (such as varicella). Foodborne illnesses include those acquired through the consumption of contaminated food or water but are not classified as a 'disease of public health significance'.

Table 7: Timiskaming Health Unit 2018 diseases of public health significance, average number of cases per year and rates (2019-2023) compared to Ontario.[19,20]

	Average number of cases per year	*Timiskaming's rate per 100,000*	*Ontario's rate per 100,000*	*Timiskaming's rate difference compared to Ontario*
Acute Flaccid Paralysis	0	0.0	0.0	**Lower**
AIDS	0	0.6	0.4	Similar
Amebiasis	0	0.0	0.4	**Lower**
Anaplasmosis	0	0.0	0.2	**Lower**
Anthrax	0	0.0	0.0	Similar
Babesiosis	0	0.0	0.1	**Lower**
Blastomycosis	0	0.0	0.6	**Lower**
Botulism	0	0.0	0.0	**Lower**
Brucellosis	0	0.0	0.0	**Lower**
Campylobacter enteritis	5	15.8	16.3	**Lower**
Carbapenemase-producing Enterobacteriaceae	0	0.6	3.2	Similar
Chancroid	0	0.0	0.0	Similar
Chlamydia	59	173.0	280.0	**Lower**
Cholera	0	0.0	0.0	**Lower**
COVID-19	1005	3067.9	3381.2	**Lower**
Creutzfeldt-Jakob disease	0	0.0	0.1	**Lower**
Cryptosporidiosis	3	8.2	3.7	**Higher**
Cyclosporiasis	0	0.6	2.7	Similar
Diphtheria	0	0.0	0.0	Similar
Echinococccus multilocularis	0	0.0	0.0	**Lower**
Encephalitis	0	0.0	0.2	**Lower**
Encephalitis/meningitis	0	1.2	0.9	Similar
Food poisoning, all causes	1	2.9	0.3	**Higher**
Giardiasis	3	7.6	6.4	Similar
Gonorrhoea	2	7.0	75.1	**Lower**
Group A streptococcal disease, invasive	4	12.3	7.9	**Lower**
Group B streptococcal disease, neonatal	0	0.0	0.3	**Lower**
Haemophilus influenzae disease, invasive	1	2.3	1.5	Similar
Hantavirus pulmonary syndrome	0	0.0	0.0	Similar
Hemorrhagic fevers	0	0.0	0.0	**Lower**
Hepatitis A	0	0.6	0.8	Similar
Hepatitis B, acute	1	2.3	0.6	Similar
Hepatitis B, chronic	0	0.6	10.1	Similar
Hepatitis C	10	29.8	24.7	**Lower**
HIV	0	0.6	6.2	**Lower**
Influenza	17	48.5	69.9	**Lower**
Lassa fever	0	0.0	0.0	Similar

Table 7: Timiskaming Health Unit 2018 diseases of public health significance, average number of cases per year and rates (2019-2023) compared to Ontario.[19,20]

	Average number of cases per year	Timiskaming's rate per 100,000	Ontario's rate per 100,000	Timiskaming's rate difference compared to Ontario
Legionellosis	0	0.0	2.4	**Lower**
Leprosy	0	0.0	0.0	**Lower**
Listeriosis	0	0.6	0.5	Similar
Lyme disease	0	1.2	9.2	**Lower**
Measles	0	0.0	0.0	**Lower**
Meningitis	0	1.2	0.9	Similar
Meningococcal disease, Invasive	0	0.0	0.2	**Lower**
Mpox	0	0.0	9.0	**Lower**
Mumps	0	0.0	0.2	**Lower**
Ophthalmia neonatorum	0	0.6	0.0	Similar
Paralytic shellfish poisoning	0	0.0	0.0	Similar
Paratyphoid fever	0	0.0	0.3	**Lower**
Pertussis (whooping cough)	16	45.6	1.3	**Higher**
Plague	0	0.0	0.0	Similar
Poliomyelitis, acute	0	0.0	0.0	Similar
Powassan virus	0	0.0	0.0	Similar
Psittacosis/ornithosis	0	0.0	0.0	Similar
Q fever	0	0.0	0.1	**Lower**
Rabies	0	0.0	0.0	Similar
Rubella	0	0.0	0.0	Similar
Rubella, congenital syndrome	0	0.0	0.0	Similar
Salmonellosis	4	10.5	12.4	Similar
Severe acute respiratory syndrome (SARS)	0	0.0	0.0	Similar
Shigellosis	0	0.0	1.5	**Lower**
Smallpox	0	0.0	0.0	Similar
Streptococcus pneumoniae, invasive	6	16.4	7.3	**Lower**
Syphilis	2	7.0	29.7	**Lower**
Tetanus	0	0.0	0.0	**Lower**
Trichinosis	0	0.0	0.0	**Lower**
Tuberculosis	0	1.2	5.1	**Lower**
Tuberculosis infection, latent	8	22.8	38.6	**Lower**
Tularemia	0	0.0	0.0	**Lower**
Typhoid fever	0	0.0	0.6	**Lower**
Varicella (chickenpox)	0	0.6	2.4	Similar
Verotoxin producing E. coli, including HUS	0	1.2	1.2	Similar
West nile virus illness	0	0.0	0.2	**Lower**
Yersiniosis	0	1.2	1.5	Similar

Figure 20 illustrates the average number of cases per year ranked from highest to lowest. Not shown on the graph is COVID-19, which had an average of 1,005 confirmed cases per year (since March 2020). COVID-19 cases are no longer a 'disease of public health significance'.[20]

Figure 20: Average number of confirmed cases per year (2019-2023).20

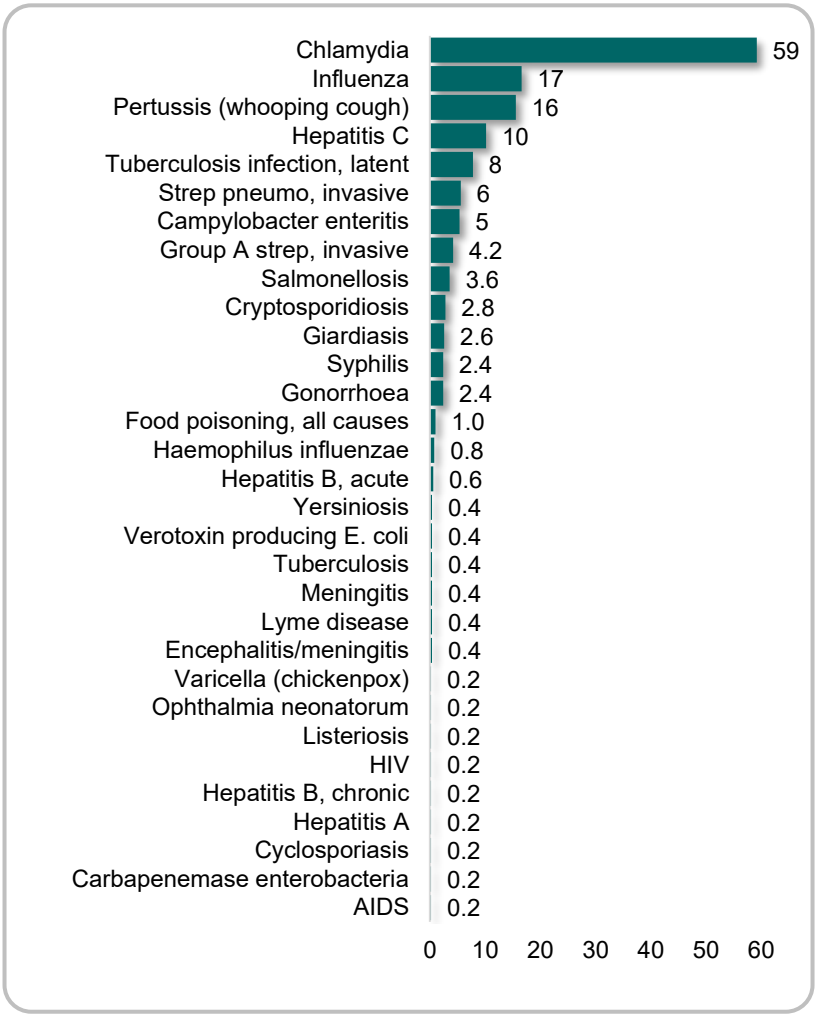
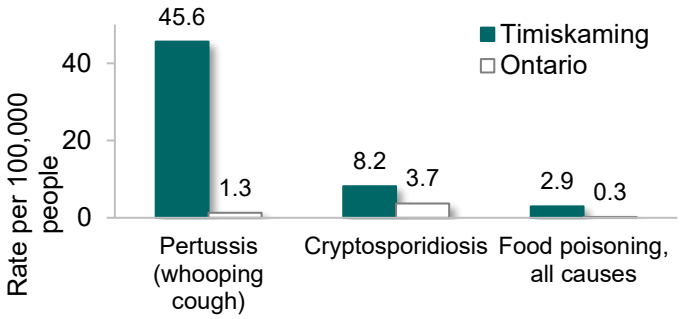


Figure 21: Rates of diseases where Timiskaming had a statistically higher rate than Ontario, 2019-2023.[19,20]

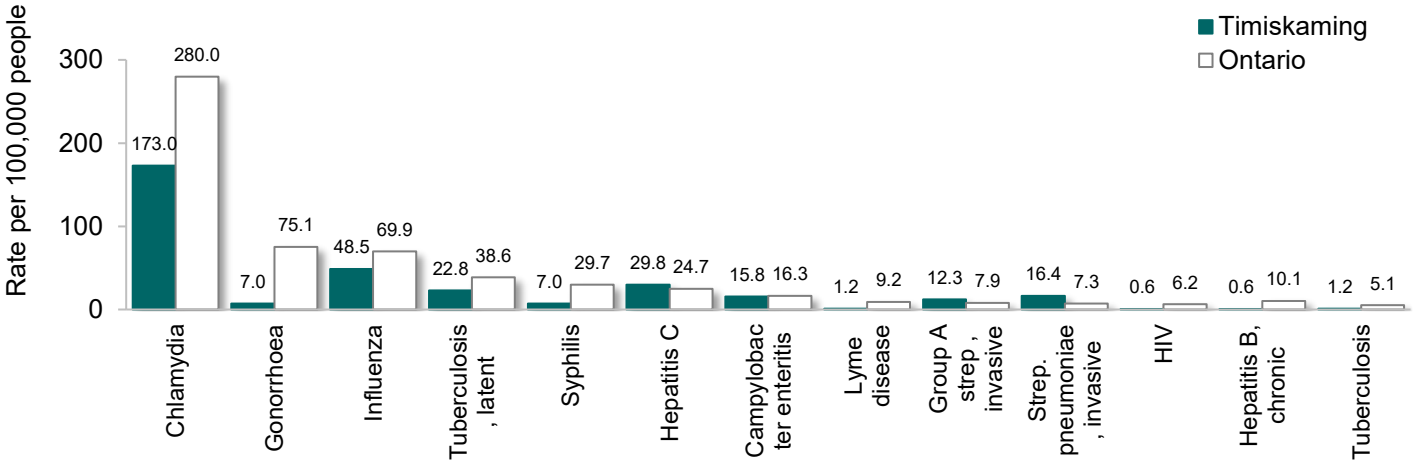


The pertussis rate was high in Timiskaming primarily due to a large outbreak in 2023. This outbreak had 34 confirmed cases. The high level of transmission was likely due to low vaccination rates.

Cryptosporidiosis is generally higher in Timiskaming, likely due to exposure to nature and farming. However, a portion of the increase in rate was due to an outbreak in 2023 involving exposure to ill livestock. This outbreak consisted of 8 laboratory-confirmed cases and 2 cases with symptoms that were linked to the outbreak.

There were 2 community gastroenteritis (**food poisoning**) outbreaks in 2022. One outbreak had 76 people with symptoms, and the other had 33. Both outbreaks were likely due to ill food handlers.

***Figure 22*: Rates of diseases where Timiskaming had a statistically lower rate than Ontario, 2019-2023.[19,20]**



**COVID-19 is not shown in the graph above. However, Timiskaming had a rate of 3,067.9 per 100,000 people, which was statistically lower than Ontario's rate of 3,381.2 people.[19,20]*

Mental Health and Substance Use

Emergency department visits due to mental health and substance use disorders

Mental health and substance use emergency department (ED) visits provides insight into the people seeking mental health services at the emergency department but do not represent the entire population with mental health conditions. People with mental health needs sometimes do not seek care due to a myriad of reasons including lack of access to health care services, lack of mental health knowledge, cost of treatment, or may have preferences for seeking care at other healthcare facilities such as their physician's office.[21,22]

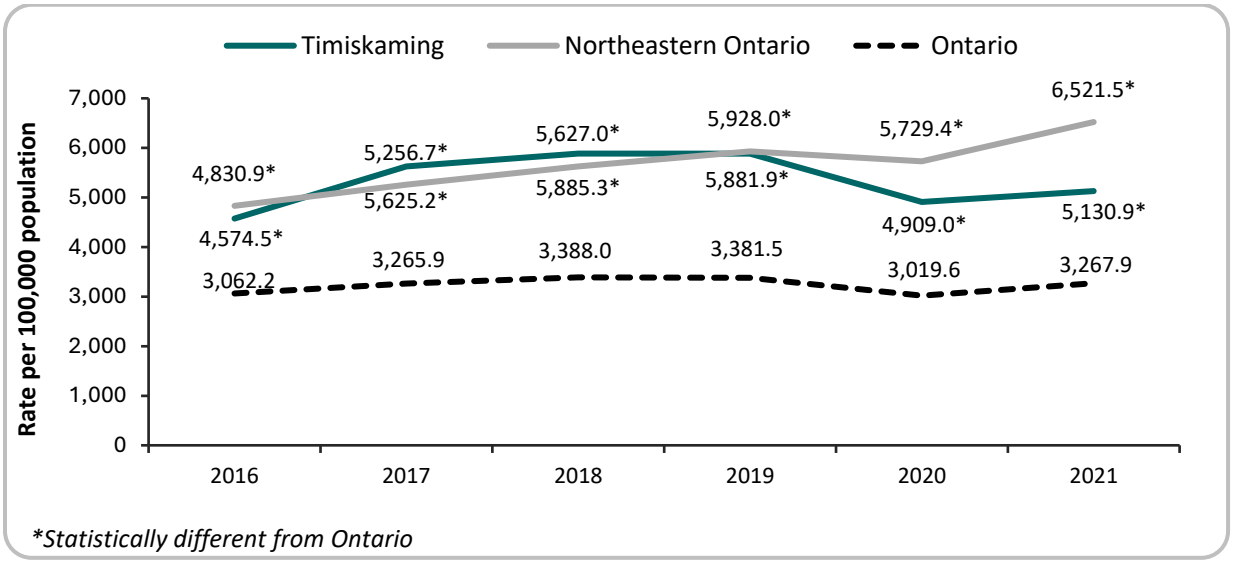
When interpreting and comparing Timiskaming's to Ontario's rates, it is necessary to note that differences in health service delivery can influence the rates. For instance, Timiskaming residents may be more likely to visit the ED as there are limited options for seeking care, whereas residents in city centers may have access to other health care services such as walk-in clinics.

Emergency department visits over time

From 2016 to 2019, Timiskaming, Northeastern Ontario, and Ontario recorded an increasing trend in rates of ED visits due to mental health and substance use, followed by a significant decline in rates in 2020, and then an increase in rates in 2021 for Timiskaming, Northeastern Ontario, and Ontario. In 2021, there were a total of 1,416 ED visit due to mental health and substance use in Timiskaming. The rates recorded in 2021 for Timiskaming and Ontario are similar to the rates recorded pre-pandemic, but the rate recorded in Northeastern Ontario was significantly higher than what was recorded pre-pandemic.[23] Across the years, the rates of ED visits due to mental health and substance use was significantly higher in both Timiskaming and Northeastern Ontario in comparison to Ontario's rate (*See figure 23 below*).

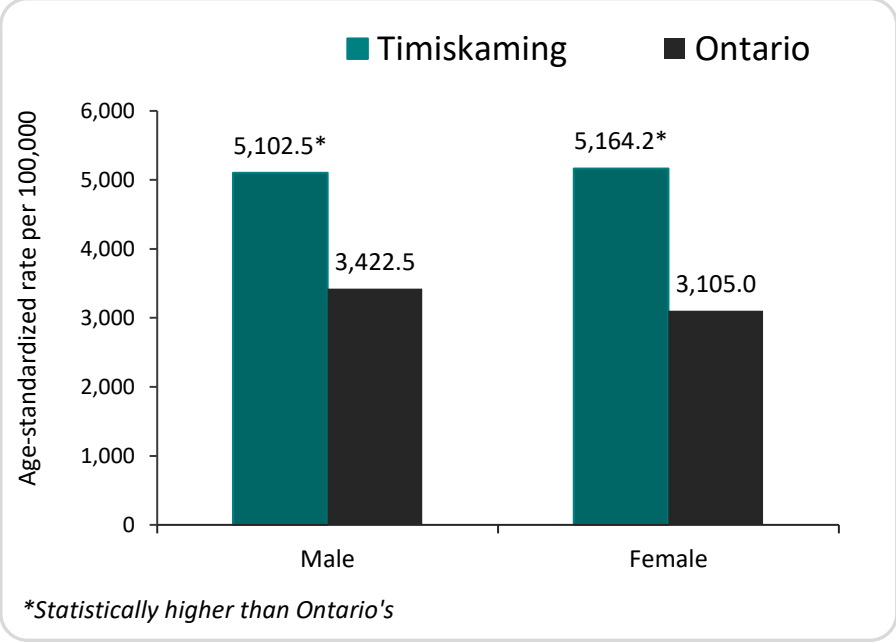
Decreases in ED visits in 2020 coincides with the COVID-19 pandemic which was accompanied by public health measures such as lockdown and social distancing, individuals' reluctance to visit the ED due to the fear of contracting COVID-19, and the increased use of telemedicine for non-emergent care.[24,25] These changes may have impacted health care seeking behaviour resulting in the decrease recorded.

Figure 234: Age-standardized rate (per 100,000) of ED visits due to mental health and substance use disorders, Timiskaming, Northeastern Ontario, Ontario, 2016-2021[23]



Mental health and substance use emergency department visits by sex

Figure 24: Mental health and substance use ED visit rate by sex, Timiskaming and Ontario, 2021[23]



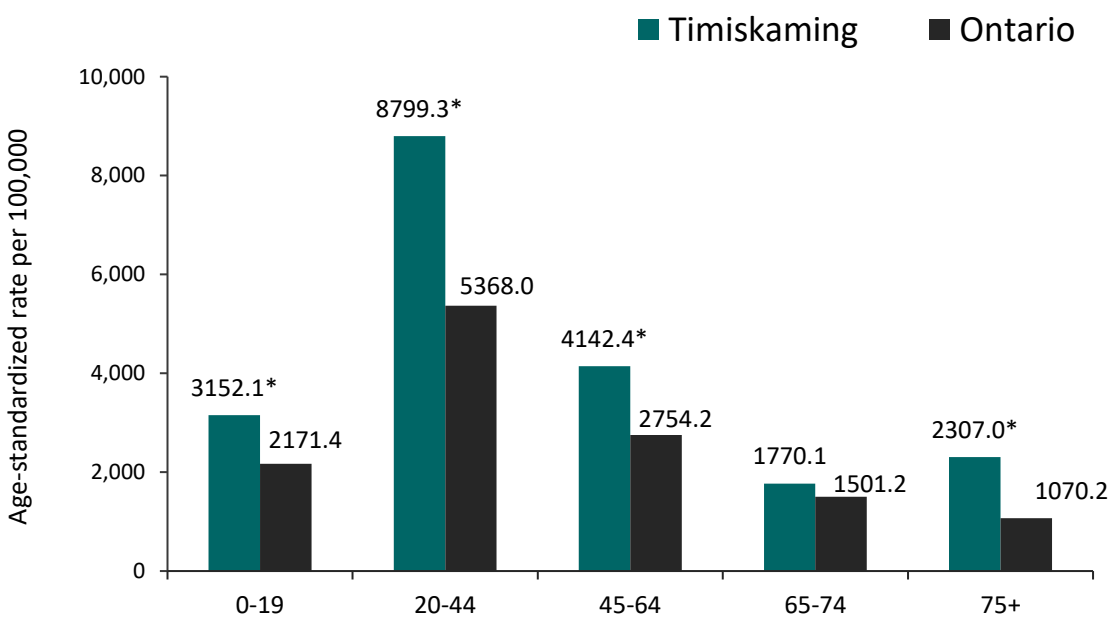
In 2021, the rate of mental health and substance use emergency department visits was not statistically different between males and females in Timiskaming. However, in Ontario, the rate was statistically higher among males compared to females.[23]

The rate of ED visits due to mental health and substance use was 1.5 times higher in Timiskaming males in comparison to Ontario males and 1.7 times higher in Timiskaming females compared to females in Ontario [23] (See figure 24).

Mental health and substance use emergency department visits by age group

In both Timiskaming and Ontario, the rate of mental health and substance use ED visits was highest in the 20–44 age group, followed by the 45-64 age group, and then the 0-19 age group. The age group with the lowest rate was 75+ for Ontario and 65-74 for Timiskaming. Across all age groups, the rate of mental health and substance use ED visits was statistically higher in Timiskaming in comparison to Ontario, except for the 65-74 age groups where there was no statistically significant difference.[23]

Figure 25: Age specific rates of mental health and substance use ED visits, Timiskaming and Ontario, 2021[23]



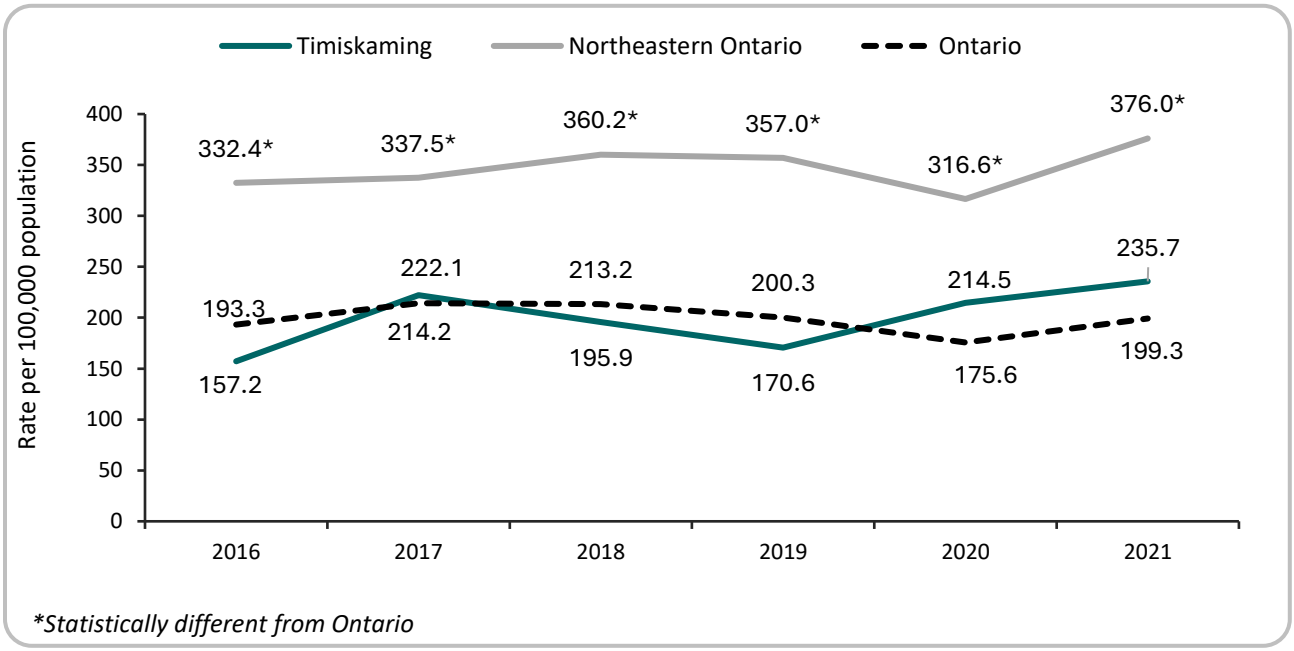
**Statistically higher than Ontario's*

Emergency department visits due to self-harm

Self-harm is when an individual harms themselves purposefully, regardless of the reason.[26] In Ontario, the rate of ED visits due to self-harm has been fairly stable while Timiskaming's and Northeastern Ontario's rate has experienced some fluctuations. On average, Timiskaming records 62 ED visits due to self-harm per year.[23] In Timiskaming, the rate of ED visits due to self-harm increased from 157.2 per 100,000 reported in 2016 to 235.7 per 100,000 reported in 2021. Similarly, in Northeastern Ontario, the rate of ED visits due to self-harm increased from 332.4 per 100,000 reported in 2016 to 376.0 per 100,000 reported in 2021.[23]

From 2016 to 2021, the rate of ED visits due to self-harm in Timiskaming has been consistently not significantly different from Ontario's rate. On the other hand, Northeastern Ontario's rate has been significantly higher than Ontario's rates across the years (See figure 26).

Figure 265: Age-standardized rate (per 100,000) of ED visits due to self harm, Timiskaming, Northeastern Ontario, & Ontario, 2016-2021[23]



**Statistically different from Ontario*

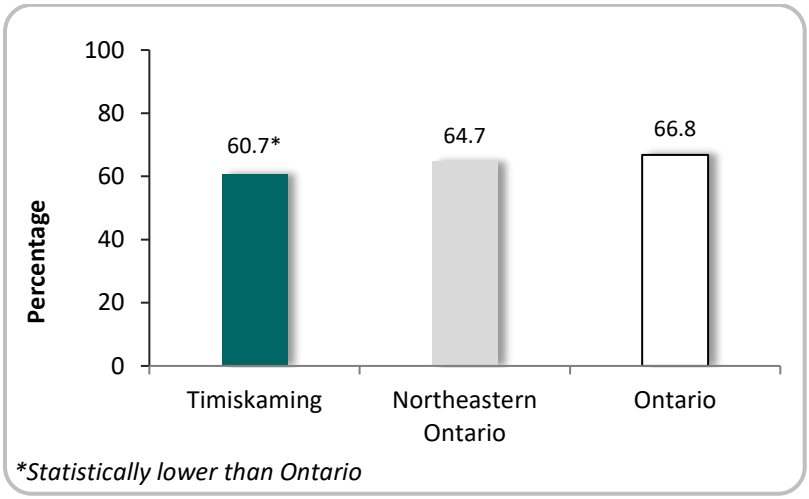
Perceived mental health

This section presents the percentage of Timiskaming residents aged 12 years and older in comparison to Northeastern Ontario and Ontario who perceived their mental health as very good or excellent.

Overall mental health

A smaller percentage of people in Timiskaming, 60.7%, reported perceiving their own mental health status as very good or excellent compared to 64.7% in Northeastern Ontario and 66.8% in Ontario.[27] (Figure 27)

Figure 67: Percentage of people aged 12 years and older who perceived their mental health as very good or excellent, 2017-20.[27]



**Statistically lower than Ontario*

About this indicator

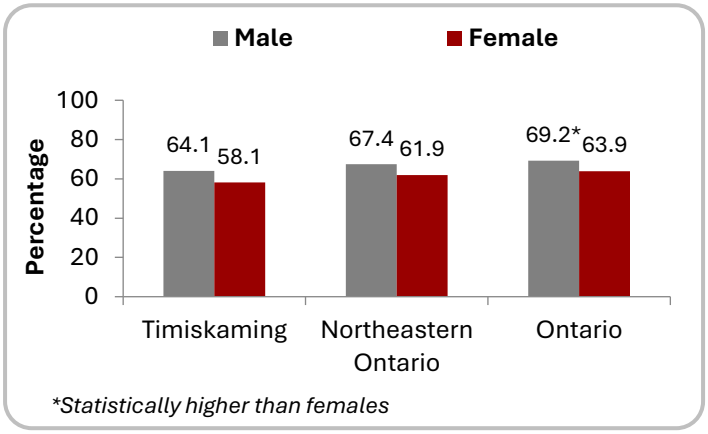
This indicator was created using self-reported data from the Canadian Community Health Survey (CCHS).[27] Survey respondents were asked to choose whether they perceive their own mental health as 'excellent', 'very good', 'good', 'fair' or 'poor'. This section focuses on those who perceived their mental health as being excellent or very good as an indicator of positive mental health. Perceived mental health is meant to provide a general indication of the population suffering from a mental disorder, distress, or mental or emotional problems.

Information about interpreting data in this section and about data sources can be found at the end of this section.

Mental health by sex

In Timiskaming and Northeastern Ontario, there were no statistically significant differences between males and females in how they perceived their mental health. In Ontario, a greater percentage of males (69.2%) compared to females (63.9%) perceived their mental health to be very good or excellent.[27] (Figure 28).

Figure 28: Percentage of people aged 12 years and older who perceived their mental health as very good or excellent, by sex, 2017-20.[27]

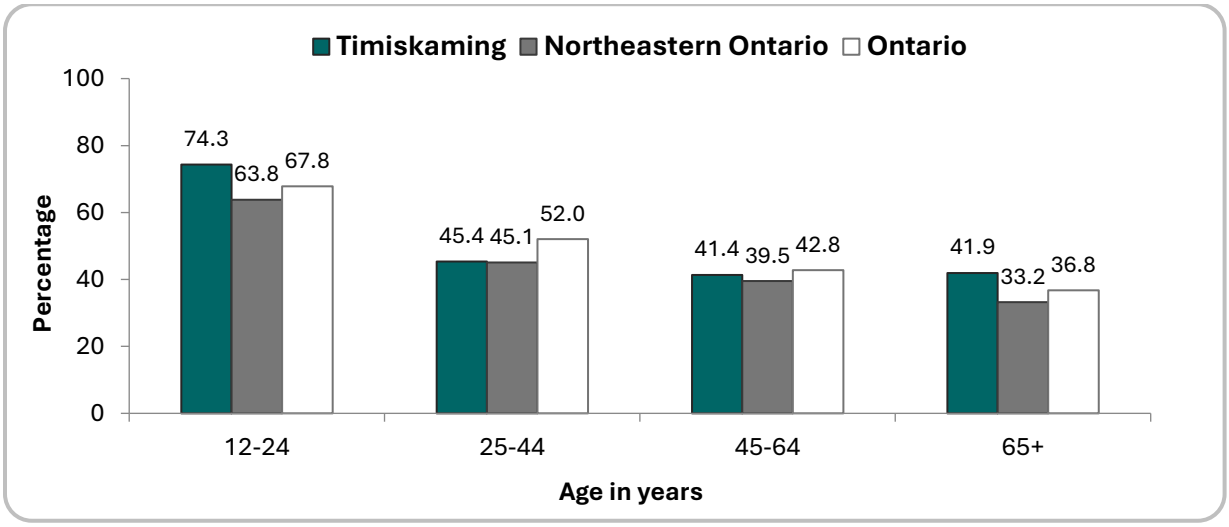


Mental health by age

In Timiskaming, there was no statistical difference in perceived mental health between age groups. This was not the same for Northeastern Ontario and Ontario. A greater percentage of Northeastern Ontario residents aged 12 to 24 years (63.8%) compared with the other age groups in the area perceived their mental health as very good or excellent. In addition, a statistically significantly lower percentage of Northeastern residents aged 65+ compared to those aged 12-24 and 25-44 perceived their mental health as very good or excellent. For Ontario, the percentage of residents who perceived their mental health as very good or excellent significantly decreased as age increased.[27]

There were no statistical differences found when comparing each age groups by location.[27]

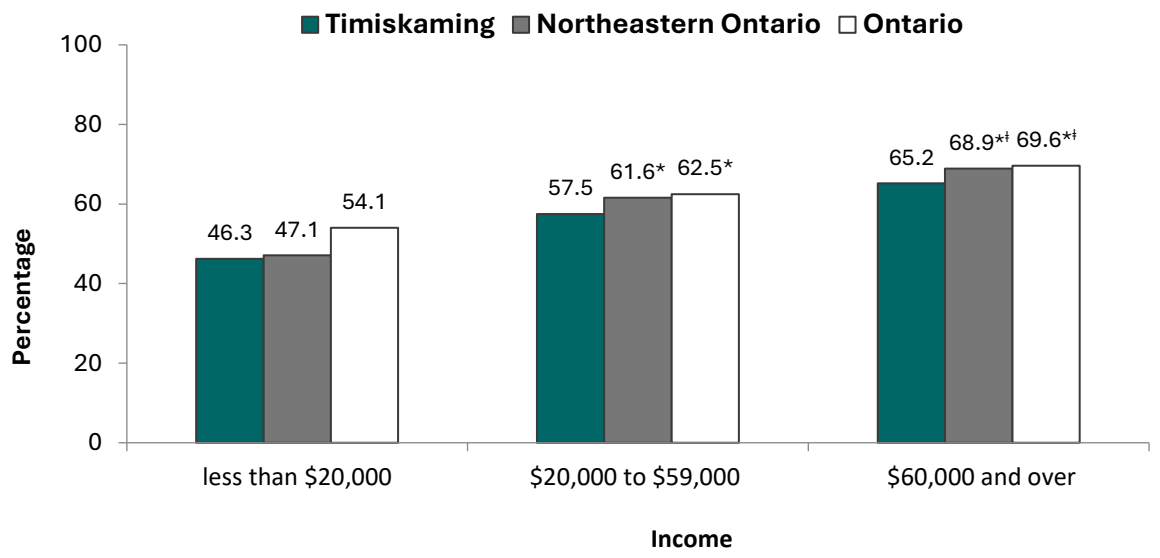
Figure 29: Percentage of people aged 12 years and older who perceived their mental health as very good or excellent, by age, 2017-20.[27]



Mental health by income

There were no statistical differences in Timiskaming between income categories and self-rated mental health (Figure 30). However, there were differences in both Northeastern Ontario and Ontario whereby as income increased, the percentage of people who perceived their mental health as very good or excellent increased. More specifically, in Northeastern Ontario, 46.3% of people in the lowest income group rated their mental health as very good or excellent, compared to 61.6% and 68.9% in the middle and highest income categories, respectively. In Ontario, 54.1% of people with low-level income rated their mental health as very good or excellent, compared to 61.6% and 69.6% of those in the middle and highest income category, respectively.[27]

Figure 30: Percentage of people aged 12 years and older who perceived their mental health as very good or excellent, by income, 2017-20[27]

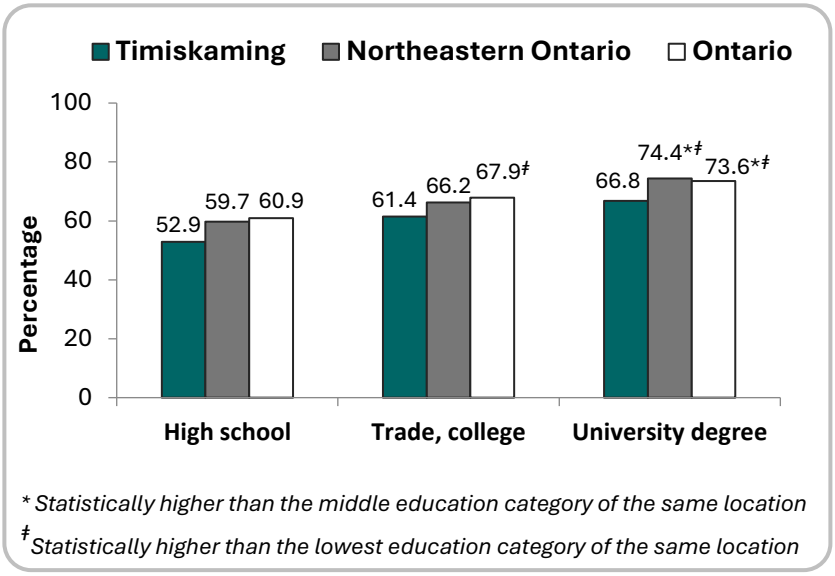


** Statistically higher than the lowest income category of the same location*

ǂ Statistically higher than the middle income category of the same location

Mental health by education

Figure 31: Percentage of people aged 12 years and older who perceived their mental health as very good or excellent, by education, 2017-20.[27]



** Statistically higher than the middle education category of the same location*

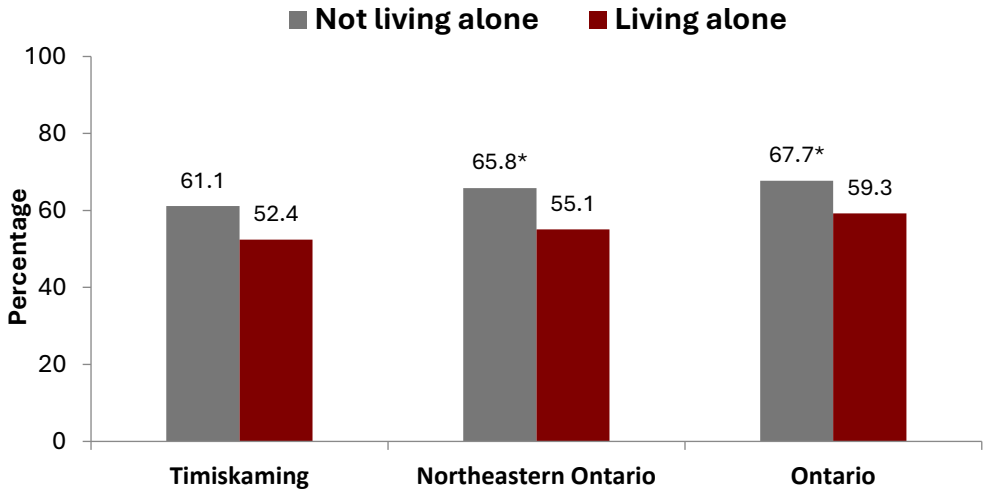
ǂ Statistically higher than the lowest education category of the same location

Although there were no statistical differences in Timiskaming, in both Northeastern Ontario and Ontario, a higher percentage of people perceived their mental health as very good or excellent as their education level increased. More specifically, in Northeastern Ontario, 74.4% of residents with a university degree compared to 59.7% of those with a high school diploma and 66.2% of those with a trade or college diploma rated their mental health as very good or excellent. Similarly, in Ontario, 73.6% of residents with a university degree rated their mental health as very good or excellent compared to the 60.9% with a high school diploma and 67.9% of those with a trade or college diploma. Unlike Northeastern Ontario, there was a statistical difference in the perceived mental health between those with high school diplomas and those with trade or college diplomas in Ontario.27 (Figure 31).

Mental health by unattached individuals living alone

In both Northeastern Ontario and Ontario, a lower percentage of those who reported living alone rated their mental health as very good or excellent compared to those who did not live alone. There were no statistical differences found in Timiskaming.[27]

Figure 32: Percentage of people aged 12 years and older who perceived their mental health as very good or excellent, by unattached individuals living alone, 2017-20.[27]



**Statistically different from living alone*

Data notes

The CCHS is a cross sectional survey by Statistics Canada which collects health information about the Canadian population. It surveys a large number of respondents and is designed to provide reliable estimates at the health region level. CCHS data are collected from persons aged 12 and over living in private dwellings. The survey excludes individuals living on Indian Reserves and on Crown lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions. For more information, visit http://www.statcan.gc.ca.

Since the CCHS only surveys a small proportion of the population, these analyses combined several years of data to increase sample sizes and improve the precision of estimates. Instances where sample sizes remained small are noted with an [E], which means these data must be interpreted with caution. When sample sizes are too small for the results to be released it is indicated with an [F].

Climate and health

Climate change refers to long-term changes in the average weather conditions of a region caused mostly by human activities such as burning of fossil fuels. Increasing temperatures and severe weather events such as floods, droughts and wildfire smoke are some of the noticeable shifts in weather patterns that characterizes climate change.

All over the world, the changing climate has brought with it a myriad of challenges that impacts human life in varied forms. For instance, with increment in warming temperatures come the increase in zoonotic and infectious diseases due to the altering conditions of disease-causing pathogens and vectors,[28] increased disruption of food system and water insecurity.[29] Additionally, direct links to severe and moderate health outcomes such as increased healthcare utilization (emergency department visits & hospitalization) and deaths from mental health, cardiovascular and respiratory diseases can be made with climate change.

As with many diseases and health outcomes, the impact of climate change is not equally distributed across the population. Individuals and communities' experiences of the impacts of climate change is influenced by factors such as degree of exposure and sensitivity to climatic variations as well as their adaptive capacity.[30] Research has shown that certain individuals and groups such as isolated seniors, people living in poverty or homelessness, people living with underlying chronic conditions, and children are among the most vulnerable population that are disproportionately impacted by climate change.[31] Understanding the sections of the population disproportionately burdened by the impacts of climate change helps to effectively address and respond to the threats.

This chapter presents how some climate change hazards such as extreme heat and air pollution impact the health of the people living in Timiskaming and Northeast Ontario.

Extreme temperature-related health impacts

Extreme temperatures have been linked with negative health outcomes such as heat exhaustion, dehydration, and heat stroke.29 Instances such as prolonged and intense exposure to extreme heat could potentially lead to cardiovascular events and deaths. Due to the negative health impacts of extreme heat, public health units are mandated to communicate heat warnings and appropriate health protective measures to the public as well as conduct surveillance of local heat related health impacts.

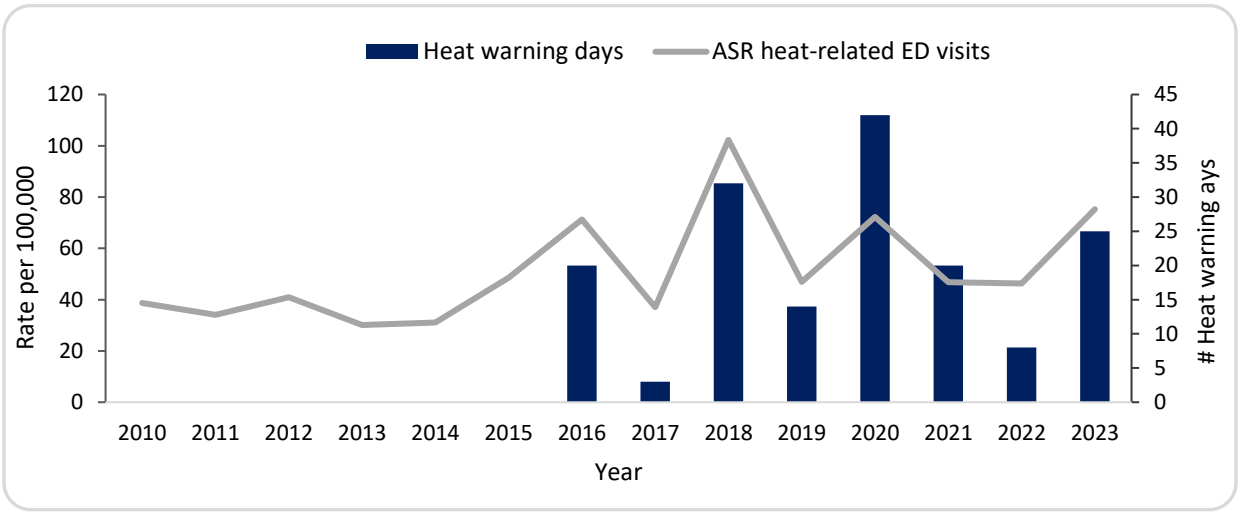
In Northern Ontario, heat warnings are issued when the daily maximum temperature is 29°C or more and the minimum nighttime temperature is 18°C or more for a duration of two or more days.

The number of heat warning days are increasing over time. In Timiskaming, since 2016, there have been an average of 13 heat warning days per year and in 2020 alone, there were 29 heat warning days.[32] Between 2020 and 2023, Timiskaming experienced a total of 60 heat warning days.

Due to small population sizes, combined data for Timiskaming and Porcupine Health Units are presented as Northeast Ontario here forth.

In Northeast Ontario, overall, there is an increasing trend in the number of heat warning days and the number of heat related emergency department (ED) visits.32,33 In other words, the years with the greatest number of heat warning days tend to record a higher rate of heat-related emergency department visits which goes to show how extreme temperatures impact the health of population. (*See figure 33*)

Figure 33: Number of heat warning days and age standardized rate (ASR) of heat-related ED visits for Northeast Ontario, 2010 to 2023.[32,33]



The rate of heat related emergency department visits in Northeast Ontario in 2023 was 75 per 100,000 people which is statistically significantly higher than 2022's rate of 46 per 100,000 people33. This significant change also corresponds with an increase in the number of heat warning days from 8 in 2022 to 25 in 2023.32

Risk factors for heat-related illnesses

The burden of heat-related illnesses just like many other diseases mentioned in this report is not equally distributed across the population. Certain individuals and sections of the population are more impacted than others during extreme heat events. For instance, children who tend to spend more time outside engaging in recreational activities (play, sports) are less likely to rehydrate, also have bodies that are still developing and trouble regulating internal temperature are at an increased risk of heat-related illnesses compared to adults.

Additionally, outdoor (e.g. construction, agriculture) workers are at an increased risk of heat-related illnesses as these jobs require intense physical exertion, and the use of personal protective equipment and clothing that trap heat and prevent cooling. People with pre-existing conditions such as mental health, cardiovascular disease also tend to experience significant impacts of extreme heats. Older

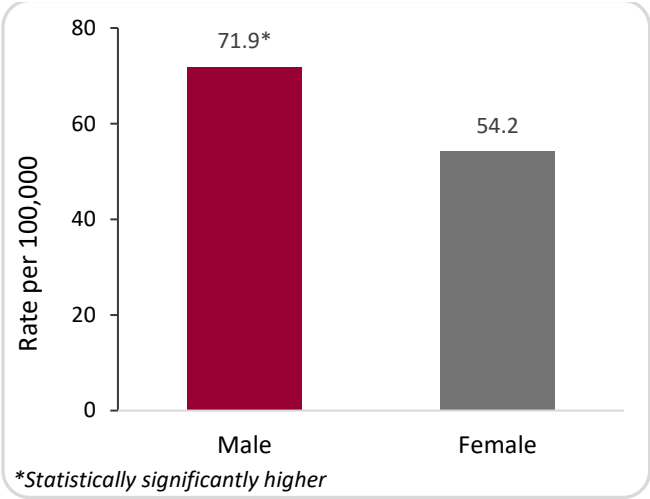
people, especially those living in isolation also tend to have pre-existing comorbidities which exacerbate the effects of extreme heat. Finally, individuals living in poverty or homelessness and indigenous people are also at greater risk of heat-related illnesses.

Sex differences in the burden of heat-related illnesses

Heat-related illnesses affect the opposite sexes differently. In Northeast Ontario, from 2018 to 2023, the rate of heat-related emergency department visit was 1.3 times higher in men (71.9 per 100,000) compared to women (54.2 per 100,000).33 (See figure 34)

The increased rates among men could mostly be accounted for by the increased tendency for men to be engaged in outdoor sports and or outdoor occupations. While our current data limits us in explaining the sex differences observed, research has shown that being outdoor engaging in sports, recreation or work is associated with greater risk for heat-related illnesses[34].

Figure 34: Sex specific rate of heat-related ED visits, Northeast Ontario, 2018 – 2023[33]



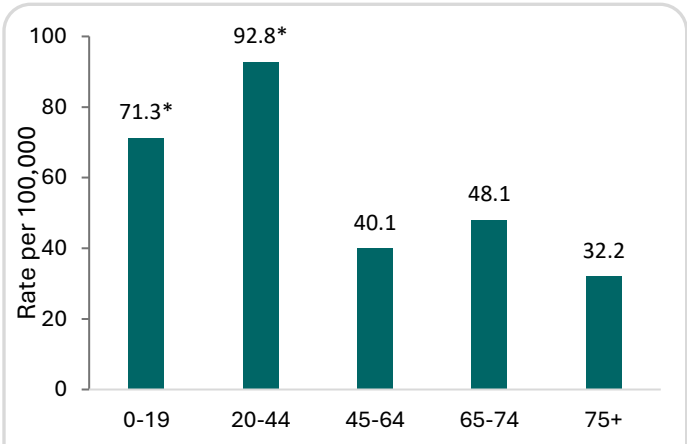
**Statistically significantly higher*

Age group differences in the burden of heat-related illnesses

In Northeast Ontario, for the combined period of 2018 to 2023, children and seniors (65+) are among the age groups with the highest rates of heat-related ED visits.[33] (*See figure 35*)

The rate of heat-related ED visits was about 2 times higher in the 0 to 19 age group (71.3 per 100,000) compared to the 75+ year (32.2 per 100, 000) and almost 3 times higher in the 20-44 age group (92.8 per 100,000) in comparison to the 75+ age group (32.2 per 100,000).[33]

Figure 357: Age-specific rate of heat-related ED visits, Northeast Ontario, 2018 - 2023[33]



**Statistically higher than 75+ age group*

Extreme cold-related health impacts

Extreme cold events occur when winter temperatures fall significantly below the average temperatures known for that time of the year. Generally, cold temperatures limit our abilities to keep warm as it causes the body to quickly lose heat, and even more so, during exposure to extreme cold temperatures, our risks to harmful effects such as frostbites, windburn, and hypothermia increases significantly, especially when the windchill values are below -27°C. In Northern Ontario, Environment and Climate Change Canada (ECCC) issues an extreme cold alert when the temperature or windchill is expected to reach minus 40°C for at least two hours.

Outdoor workers, children, homeless people, people living in homes with inadequate insulation, seniors, and people with underlying chronic conditions are among the most susceptible to the negative effects of extreme cold exposure.

The graphs below illustrate the changes in the number of cold days in Northeast Ontario and how the health of its population is impacted. Due to small population sizes, combined data for Timiskaming and Porcupine Health Units are presented as Northeast Ontario.

Extreme cold days

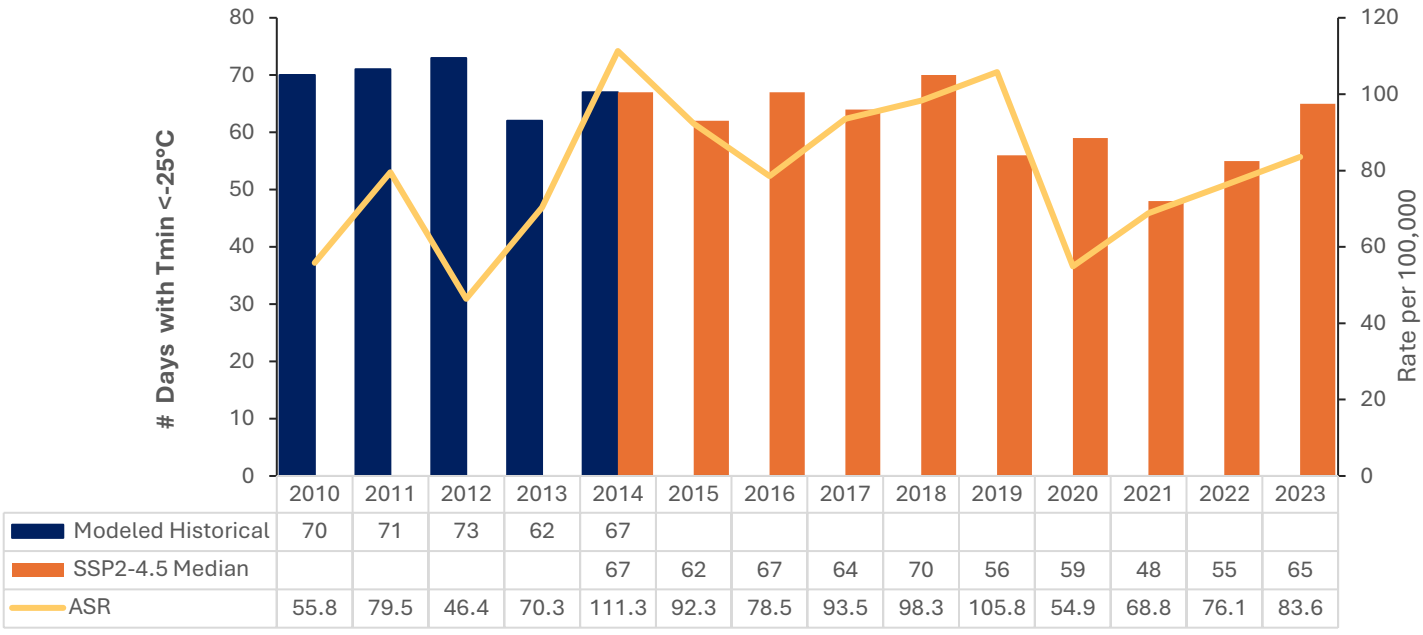
The bars in *figure 4* show the modeled historical and projected number of extreme cold days (Tmin <-25°C) in Northeast Ontario under the climate scenario of moderate emissions (SSP2-4.5). This scenario assumes that "greenhouse gas emissions will continue to increase (but more slowly than they are today) until mid-century and then stabilize until the end of the century."[35] While climate change is projected to lead to decreases in extreme cold, there is still ongoing periodic bouts of extreme cold events.[35,36]

In Northeast Ontario, the number of extreme cold days ranges from 48 to 73 between the period of 2010 to 2023. The years with the highest number of extreme cold days are 2012 with 73 days, followed by 2011 with 71 days, and 2010 and 2018, each with 70 days.[33] (*See figure 36*)

Extreme cold-related ED visits

The line in figure 36 represents the yearly age-standardized rate of cold-related ED visits in Northeast Ontario. Overall, the rate of extreme cold-related ED visits has been increasing in Northeast Ontario with yearly fluctuations between the period of 2010 to 2023. The rate ranges from 46.4 per 100,000 recorded in 2012 to 111.3 per 100,000 recorded in 2014. The second highest rate is reported in 2018 at 105.8 per 100,000 people.[33] (*See figure 36*)

Figure 36: Age-standardized rate (ASR) of cold-related ED visits, Northeast Ontario, 2010 – 2023[33]



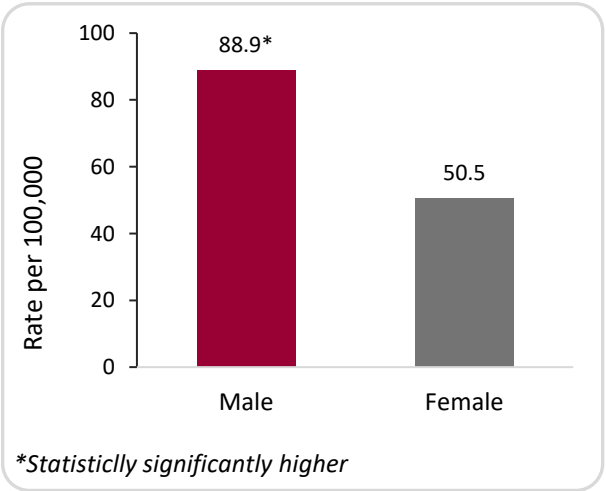
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Modeled Historical	70	71	73	62	67									
SSP2-4.5 Median					67	62	67	64	70	56	59	48	55	65
ASR	55.8	79.5	46.4	70.3	111.3	92.3	78.5	93.5	98.3	105.8	54.9	68.8	76.1	83.6

Age group and sex differences in the burden of cold-related illnesses

Like heat-related illnesses, there are age differences with respect to extreme cold impacts. Factors such as physiological characteristics, behavior and adaptive capacities inform the severity of health outcomes resulting from extreme cold exposure.

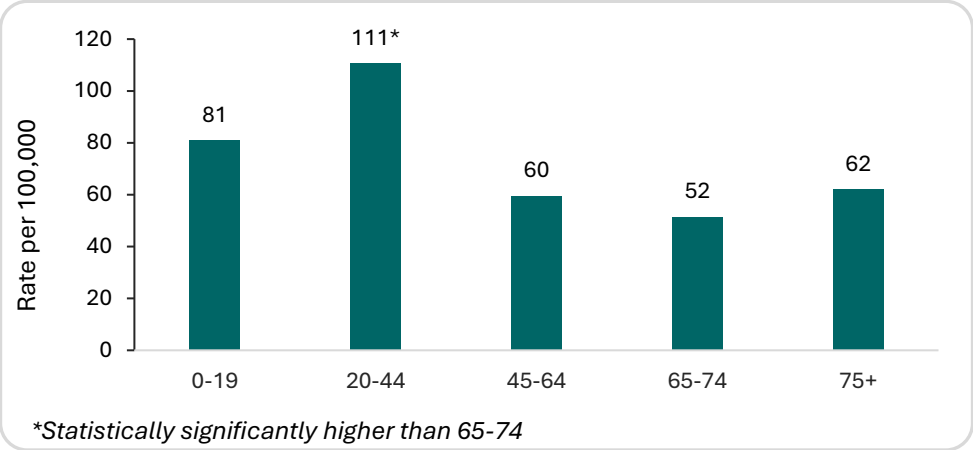
In Northeast Ontario between 2018 and 2022, men experienced a higher rate of cold-related emergency department visits (88.9 per 100,000) compared to women (50.5 per 100,000), with men's rate being 1.8 times higher.[33] (*See figure 37*)

Figure 37: Sex specific rate of cold-related ED visits, Northeast Ontario, 2018-2022[33]



In Northeastern Ontario, the rate of cold-related ED visits is recorded mostly in individuals between the ages of 20 to 44. In fact, the rate of cold-related ED visits is two times higher in the 20-44 age group compared to the 65-74 age group and about 1.7 times higher compared to the 45-64 and 75+ age groups. Individuals aged 65+ (seniors) are also more susceptible to the health impacts of extreme cold events.[33] (*See figure 38*).

Figure 38: Age-specific rate of cold-related ED visits, Northeast Ontario, 2018 - 202233



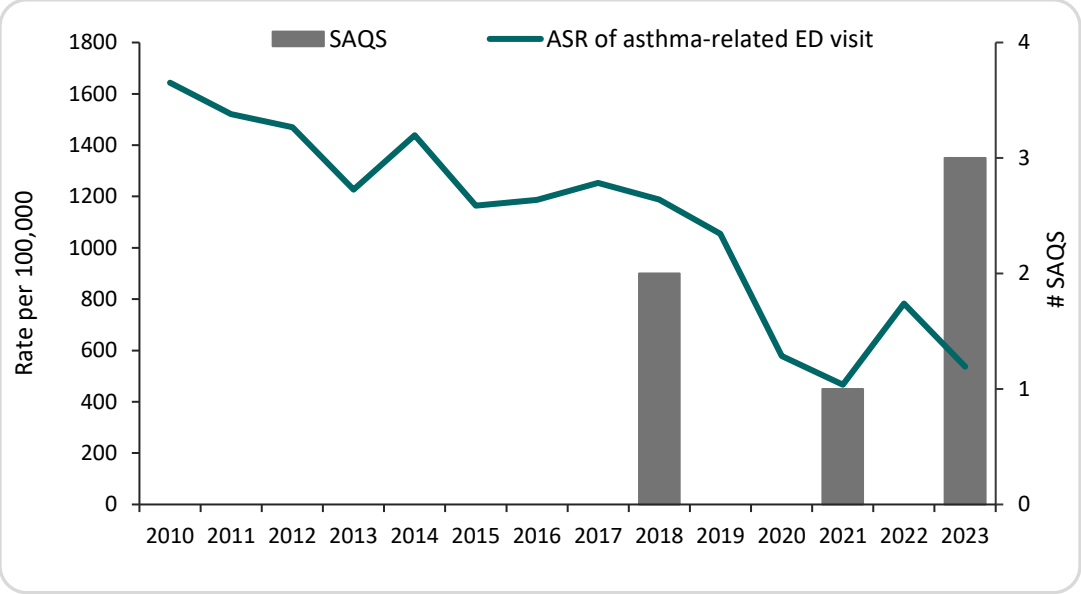
**Statistically significantly higher than 65-74*

Air quality and health

Outdoor air quality has significant impact on health. Exposure to harmful substances such as particulate matter (PM 10 and PM 2.5), ozone, nitrogen dioxide, and carbon dioxide etc. present in the air can cause and or exacerbate several health outcomes such as asthma and chronic obstructive pulmonary disease (COPD) morbidity and mortality.[37]

In Ontario, *Special Air Quality Statements (SAQS)* and *Smog and Air Health Advisories* (SAHAs) are issued jointly by the Ontario Ministry of Environment, Conservation and Parks, and Environment and Climate Change Canada as an advance warning when air quality is suspected to pose a threat to health to minimize the impact.[38] As of May 2024, the SAHAs have been replaced by Air quality Advisory (AQA), issued when the Air Quality Health Index (AQHI) is forecast to reach or has reached the very high-risk category (AQHI of 10+) due to wildfire smoke. SAQs are issued when the AQHI is forecast to reach the high-risk category (AQHI 7 - 10).

Figure 39: Number of special air quality statements (SAQS) and age-standardized rate (ASR) of asthma-related ED visits, Timiskaming, 2010-2023 33,39



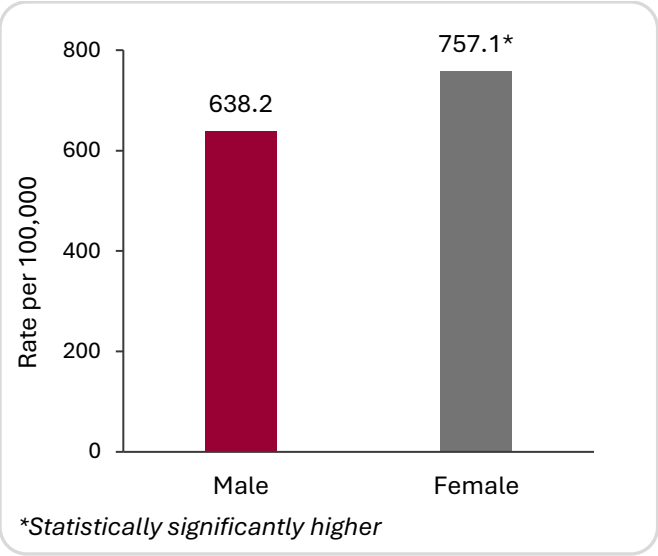
In Timiskaming, there has been a total of six SAQS and zero SAHA since 2015. (*See figure 39*). The number of SAQS range from zero (recorded in 2015 to 2017, 2019 to 2020, and 2022). The highest number of SAQS ever recorded was three, in 2023.[33,39]

Since 2010, the rate of asthma-related ED is decreasing over time in Timiskaming. While there have been yearly fluctuations in the rate of asthma-related ED visits, from the figure 39 above, there appears to be higher rates of asthma-related ED visits in years with more SAQS.[33,39] Additionally, the significant decline

in rate of asthma-related ED visits in 2020 and 2021 also coincides with the Covid-19 pandemic which restricted many non-essential outdoor activities.

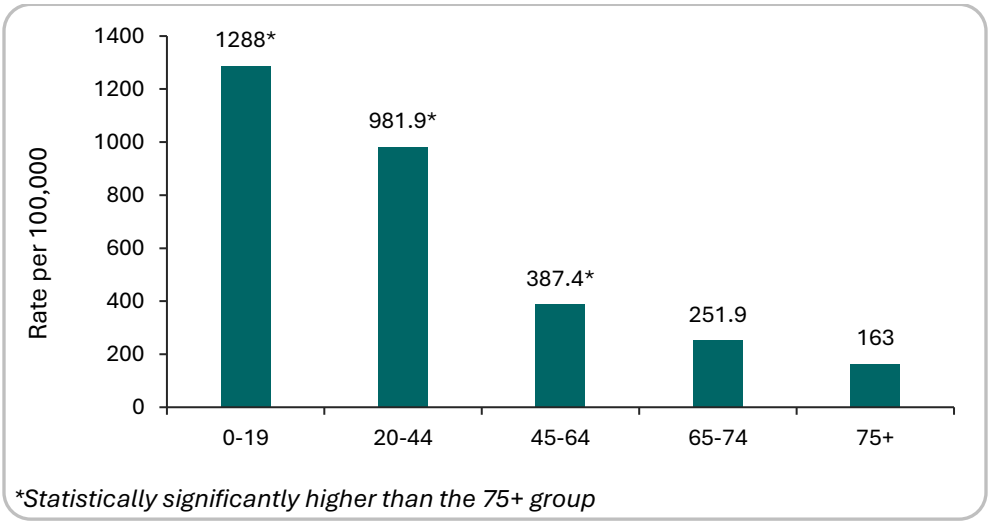
Between 2018 and 2023, the rate of asthma-related ED visits in Timiskaming was higher for females than for males. Among females, there were 757 asthma-related ED visits per 100,000 people, whereas in males, there were 638 visits per 100,000 people.33

Figure 408: Sex-specific rate of asthma-related ED visits, Timiskaming, 2018 – 202333



Among all the age groups, the rate of asthma-related ED visits was highest in the 0-19 age category, followed by the 20-44 group. The rate of asthma-related ED visits for the 0-19 group is 1288 per 100,000 people which is statistically seven times higher than the 75+ group.[33] (*See figure 41*)

Figure 41: Age-specific rate of asthma-related ED visits, Timiskaming, 2018 - 202333



**Statistically significantly higher than the 75+ group*

Conclusion

This health status report provides a broad overview of the health of the Timiskaming population across several key areas, including mortality, morbidity, infectious diseases, mental health, and climate-related health impacts. The data presented highlight both the strengths and challenges facing our community and serve as a foundation for identifying priorities and supporting informed decision-making.

Improving health outcomes requires a coordinated approach that extends beyond the health care system. Continued attention to the social determinants of health—such as housing, education, income, and access to services—is essential. In addition, lifestyle and behavioral risk factors remain important areas for prevention and health promotion efforts.

By using this report to guide planning, policy, and collaboration, we can work together toward a healthier, more equitable future for everyone in Timiskaming.

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