

Injury in the Northwest Territories, 2000-2009

September 2015



Acknowledgements

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Minister's Message



I am pleased to present the NWT Injury Data Report. This report provides an overview of intentional and unintentional injuries in the NWT between 2000 and 2009. It examines trends and patterns in injuries over time and will be extremely useful in developing injury prevention policies, strategies, and programs.

The development of this report has taken considerable commitment by various GNWT partners under the Healthy Choices Framework. It is representative of what we can achieve when we work together to help NWT residents lower their risk of injury.

Injury is a leading cause of death among NWT residents between the ages of one and 44. The data in this report focus on the top five reasons for injury-related deaths and hospitalizations.

The good news is that injury-related deaths and hospital admissions have decreased over the past 20 years. Only through the collective effort of governments, community groups, and Aboriginal organizations will we be able to reduce the number and severity of injuries.

The Department of Health and Social Services is committed to helping reduce injury-related deaths and hospitalizations through the use of innovative and evidence-based practices.

Minister Glen Abernethy

Message from the Chief Public Health Officer

Residents of the NWT are affected by injuries every day. The impact of injury is significant in terms of personal loss, economic costs, and loss of years of productive life. Yet most injuries are both predictable and preventable.

The *Northwest Territories Injury Data Report (2000-2009)* contains valuable information on trends over a ten-year period. It can assist program planners and service providers to identify key areas for education, skills training, and raising public awareness. It provides business leaders with the evidence to increase availability and access to equipment for safety, and influences community leaders and decision makers to develop policies and legislation to reduce fatalities and the severity of injuries. The report will also impact enforcement strategies for risk-reducing behaviours.

The prevention of injuries is a complex challenge. Injuries occur in many places, have multiple causes, and happen to people of all ages and ethnicities. However, injuries do occur in patterns: infants and children are at particular risk for poisoning and suffocation while teens and young adults are at highest risk for suicide and attempted suicides and older adults suffer more severe falls than other age groups. A public health approach is needed to address the complexity of injuries and how they can be prevented. This approach takes into consideration the full spectrum of risk and protective factors and their interactions. These factors include income, social support networks, employment, personal practices and coping skills, education, and culture.

It is encouraging that injury-related deaths and hospital admissions have decreased over the past 20 years. However, injuries remain the leading cause of death for NWT residents aged 1 to 44 years and occur at approximately twice the rate of the national average. This indicates the need for continued investment in prevention. Concentrated and collective efforts by community groups, businesses, governments, and aboriginal organizations are key to reducing the number and severity of injuries.

The Department of Health and Social Services remains committed to high standards for managing injury data and improving reporting processes to the public and decision makers. It is through these processes that we can support evidence-based practices and policies for a healthy and safe Northwest Territories .

Dr. Andre Corriveau, MD, MBA, FRCPC
Chief Public Health Officer

Executive Summary

Injury prevention requires knowledge of the type and frequency of injury events. The purpose of the Injury Data Report is to support evidence-based decision making at the community level in order to develop and implement effective injury prevention programs.

The present report focuses on injury data from hospitalizations and deaths reported from 2000 to 2009. This is the second report consolidating 10 years of available Northwest Territories (NWT) injury data. The report focuses on the top five causes of injury-related deaths and hospital admissions. Due to the number of injuries reported annually from the relatively small NWT population (estimated around 40,000), several years of injury data are required for analysis with statistical validity.

Report highlights for 10 year period 2000-2009:

Injury is one of the most serious public health concerns in the NWT. It is the leading cause of death among those aged 1 to 44 years and the second leading cause of hospitalizations.

While many people believe that injuries happen as a result of chance, research has shown that injuries are predictable and preventable. Therefore, it is important to understand the nature of injuries in order to reduce risks to residents of the NWT and support healthy and safe choices.

In the NWT between 2000-2009

- The leading causes of injury-related deaths and hospitalizations were: suicide, unintentional poisoning, drowning, falls, violence/self -and purposely-inflicted injury , and motor vehicle traffic-related and non-traffic off-road transport injury.
- 308 people died as a result of injuries.
- Suicide and violence-related injuries accounted for over one-third of the injuries.
- 4822 people were hospitalized due to injuries.
- Falls were the main reason for injury-related hospitalizations.

Suicide, attempted suicide/self-inflicted, and violence/purposely inflicted injuries:

- Suicide, attempted suicide/self-inflicted, and violence/purposely inflicted injuries accounted for 33% of deaths and 31% of hospitalizations.
- Suicide was the leading cause of injury-related death, and violence/purposely inflicted injury was the leading cause of injury-hospitalizations.
- There were 83 suicides and 648 attempted suicides.
- Males accounted for the 82% of suicide deaths while females accounted for 69% of hospitalizations for attempted suicide.
- Suicide rates have fluctuated over the years, but there has been a downward trend since 2000.

Unintentional poisoning-related injuries:

- Unintentional poisoning-related injuries were the second leading cause of injury-related deaths and fifth leading cause for injury-related hospitalizations.
- There were 35 deaths due to unintentional poisoning, and 229 unintentional poisoning-related hospitalizations.
- Alcohol accounted for 63% of the poisoning-related deaths.
- Medications accounted for 52% of poisoning-related hospitalizations.

Motor vehicle traffic-related injuries and non-traffic land transport/non-traffic off-road injuries:

- Motor vehicle traffic-related injuries were the third leading cause of injury-deaths with 32 deaths related to a motor vehicle driven on a public highway.
- Non-traffic land transport/non-traffic off-road injuries refer to injuries which occurred in any place other than a public highway. There were 335 non-traffic land transport injuries requiring hospital admission and 228 (68%) of those admissions were due to snowmobile or all-terrain vehicle use.

Drowning:

- Drowning was the fourth leading cause of death with 30 drownings reported between 2000-2009.
- Drowning related deaths occurred equally across all age groups.
- Males accounted for 90% of all drownings.

Falls:

- Falls were the fifth leading cause of death but the leading cause for injury-related hospital admissions.
- Fall-related hospital admissions occurred in all age groups, contrasting with fall-related deaths which occurred only among those aged 40 and older.
- The majority of fall-related hospital admissions were due to slipping or tripping on the same level (36%).

Conclusion

All NWT residents are at risk for injuries, regardless of age, gender or place of residence. While overall trends show that injury-related deaths and hospital admissions rates have decreased over the 20 year period from 1990 to 2009, injury remains the leading cause of death for those aged 1 to 44 years.

Injuries are not just “accidents.” They are predictable and preventable. Public education, policy development and legislation have made an impact in reducing injuries. By continuing collaborative efforts among NWT residents, governments, aboriginal organizations, and community agencies, we will be able to make a difference in the health and safety for all.

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About this Report:

Purpose of the report

The present report focuses on injury data from hospitalizations and deaths reported from 2000 to 2009. This is the second report consolidating 10 years of available NWT injury data. Due to the small number of injuries reported annually from the relatively small NWT population estimated around 40,000, it requires several years of injury data for analysis with statistical validity.

The NWT Injury Report 2000-2009 is the second formal review of injury hospitalizations and deaths in the NWT. Injury prevention requires knowledge of type and frequency of injury events. The purpose of this review is to support evidence-based decision making in order to develop and implement effective injury prevention programs.

Objectives

The Report's objectives are:

- to provide a review of the major causes of injury hospitalization and death in the NWT;
- to update injury prevention programming with more recent and relevant data.

Definition of injury

An injury results from the exchange of energy with human tissue outside of human tolerance. The energy exposure can be of many forms:

- mechanical/kinetic (e.g. motor vehicle collision)
- thermal (e.g. burns)
- chemical (e.g. poisoning)
- electrical (e.g. electrocution)
- radiation (e.g. radiation sickness from excessive exposure)
- The absence of necessary energy, such as oxygen or heat (e.g. suffocation/drowning or hypothermia).¹

Injuries are either intentional or unintentional. Intentional injuries occur when harm is intended, either to self as in suicide or attempted suicide, or to others, as in the case of assaults. Unintentional injuries are harmful acts that happen without intention to cause damage to oneself or others. Examples of unintentional injuries include falls off a ladder, motor vehicle collisions, and drowning.

¹ Haddon, W. 1980. Advances in the Epidemiology of Injuries as a Basis for Public Policy. Public Health Reports 95 (5): 411-421.

Presentation of the Data

Numbers, Percentages, Rates, Age-Standardization

The data in this report are:

- numbers of injury deaths and hospitalizations
- age-standardized injury rates per 100,000 population years

Comparisons between different jurisdictions and across years are made possible by direct age-standardization of rates. This approach controls for potential sources of bias resulting from variations in age distribution of populations over time and regions. See Appendix A for detailed methodology.

Confidence Intervals

Confidence intervals are presented for most rates to underscore that observed rates are estimates of the 'true' rates which cannot be directly observed. The degree of variability associated with each rate is represented by the width of the confidence interval. The true rate will fall between the upper and lower confidence limits 19 times out of 20 (95 per cent confidence.)

Graphically, confidence intervals are shown as thin, vertical lines on the end of bars in each graph.

Residence Type

Residence data in this report are grouped by community type and region. Community type refers to the place of permanent residence at the time of hospitalization or death. For comparison purposes, the community types are: Yellowknife, Regional Centres (Hay River, Fort Smith and Inuvik), and Smaller Communities (all remaining communities in the NWT). For regional comparison purposes, the groupings are: Beaufort Delta, Sahtu, Deh Cho, Tlicho, Yellowknife (Yellowknife, Dettah, N'dilo), and South Slave (Hay River, Hay River Reserve, Fort Smith, Enterprise, Fort Resolution, Lutsel k'e). Detailed regional information is found in Appendix A.

Count and Analysis of Injuries

The analysis of injury mortality and morbidity included all NWT residents who died from or were admitted for injury in the NWT along with NWT residents who died or were hospitalized for injury in other jurisdictions. The count of injury-related hospitalizations included all NWT residents hospitalized in NWT acute care hospitals along with NWT residents hospitalized in acute care hospitals in Alberta after being transferred out from the territory and NWT residents hospitalized in Fort Nelson, British Columbia. A more detailed explanation of data analysis is found in Appendix A.

- Codes from the International Classification of Diseases, 9th Revision (ICD 9) and the International Classification of Diseases and Related Health Problems, 10th Revision (ICD10) were used to abstract data from the NWT Vital Statistics for injury related deaths.
- Hospitalization data was obtained from the Discharge Abstract Database provided by the Canadian Institute for Health Information using codes from the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) and the International Classification of Diseases and Related Health Problems, 10th Revision, Canadian (ICD-10-CA). See Annex 1 for detailed classification and data source information.

Data sources

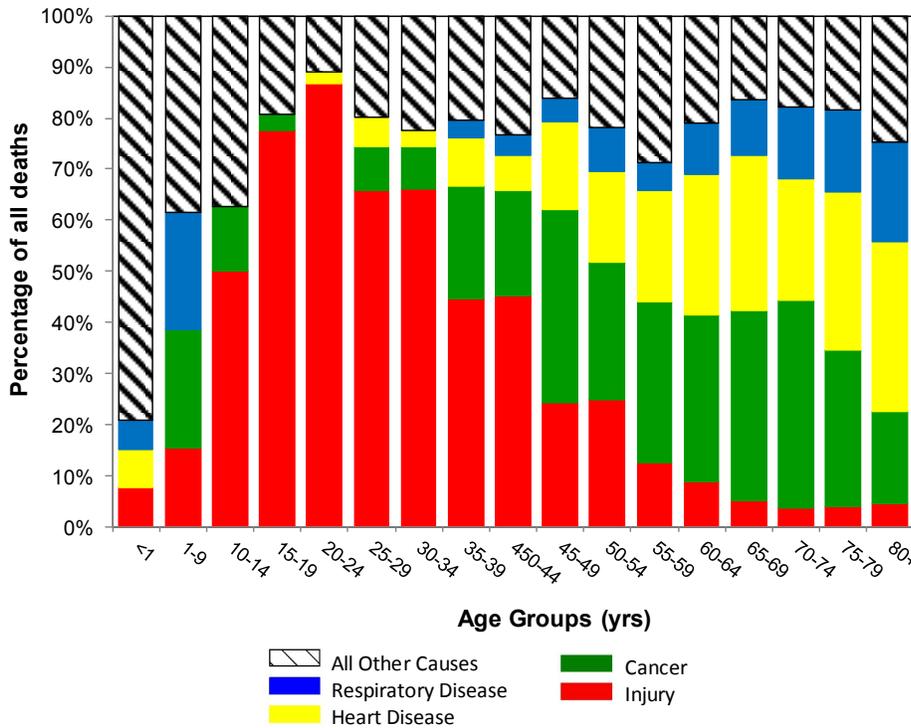
- This report presents only data from injuries resulting in hospitalization or death.
- This report does not include injuries that are treated in hospital emergency rooms, physician's offices, occupational health emergency sites, or in health centers. The NWT does not have a comprehensive surveillance program to capture such events; therefore, no data sources are available for analysis.
- As the majority of injuries do not result in either hospitalization or death, the absence of this data is significant. It would be incorrect to infer that the most frequent causes of injuries resulting in hospitalization or death are also those which result in a visit to the health center or the emergency room (e.g. burns).

Data Limitations

Overview of Injuries in the Northwest Territories

overview

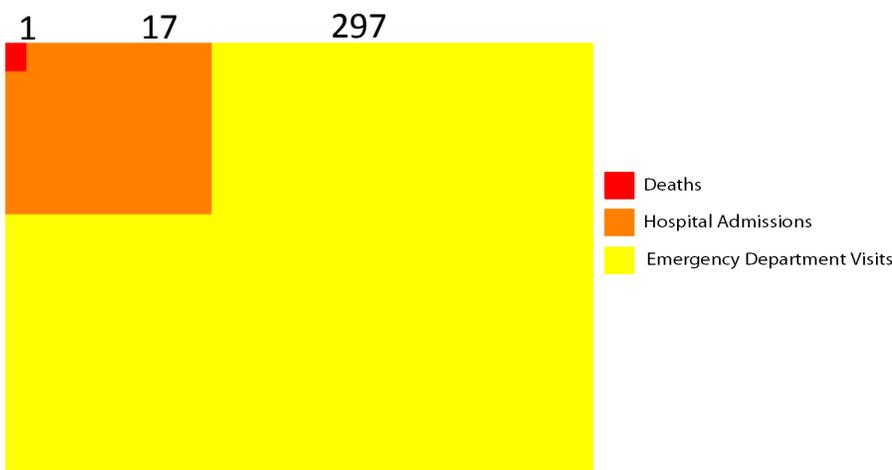
Deaths by Major Causes, NWT 2000-09



Deaths by Major Cause, NWT 2000-09

Injury is the third leading cause of death in the NWT. Injury is the leading cause of death among those aged 1 to 44 years. Among those less than one year of age, the most common causes of death are due to congenital malformations and conditions arising during the perinatal period. At 45 years, the leading cause of death transitions to cancer until the age of 74 when both cancer and heart disease become the prevailing causes of death. At 80 years, heart disease leads mortality. As shown in red, injuries make up a significant proportion of the deaths in the youngest age groups, but most prominently in those aged 10-19 years and 20 to 29 years, accounting for 72% and 78% of deaths respectively.

Injury Deaths, Hospital Admissions, and Emergency Department Visits Ratios, Yellowknife 2000, 2002, and 2003

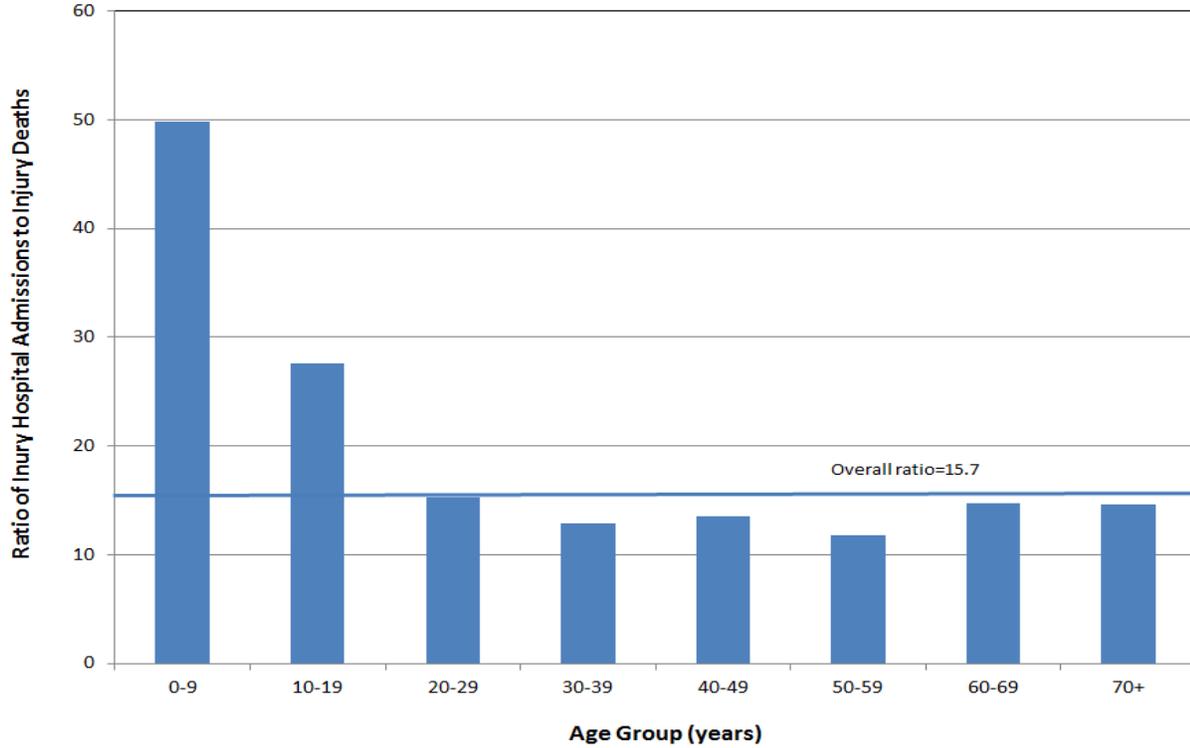


Injury Deaths, Hospital Admissions, and Emergency Department Visits Ratios, Yellowknife 2000, 2002, and 2003

For every injury that resulted in death, there was an average of 17 injury hospitalizations and 297 injury-related emergency room visits.¹

¹ This ratio only reflects residents of Yellowknife and not the rest of the Northwest Territories. This is especially true since individuals residing in the other communities are more likely to visit health centres or primary care physicians. This ratio does not include injuries treated outside hospital settings (e.g., health centres, physician offices, occupational health sites or self-managed). Since there was insufficient data on emergency department visits for the Northwest Territories during this period, the ratio of emergency department visits per injury death was not calculated. However, data for emergency department visits was available from Stanton Territorial Hospital during the year 2000, 2002 and 2003. Using data from residents in Yellowknife, injury deaths, hospital admissions, and emergency department visit ratios were calculated.

Ratio of Hospital Admissions to Deaths by Age Group, NWT (2000-09)



With all age groups combined for all years, the overall ratio of hospital admissions to deaths from injury is 15.7. The peak among the youngest age group indicates that these children are more likely to be admitted to a hospital than be killed by an injury.

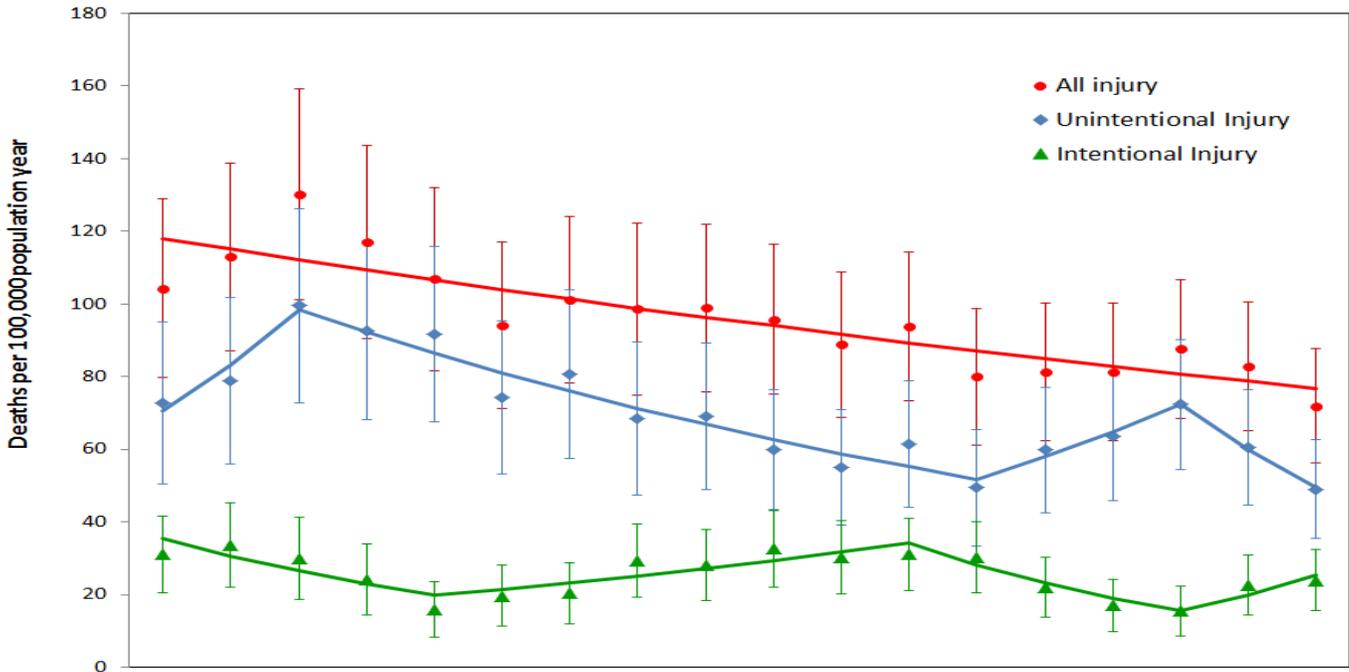
injury deaths

308 deaths

Between 2000 and 2009, 308 residents of the NWT died as a result of injuries, roughly equivalent to 30 injury-related deaths per year. The crude injury death rate in the NWT was 72 deaths per 100,000 population year.

Intentional injuries (suicides and violence/injury purposely inflicted) accounted for 33% (100 cases) of injury deaths whereas unintentional injuries accounted for 67% (205 cases).

Trends in Injury Deaths, NWT 1990-2009



Rate per 100,000 population	1990-1992	1991-1993	1992-1994	1993-1995	1994-1996	1995-1997	1996-1998	1997-1999	1998-2000	1999-2001	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009
All Injuries	104.2	113.0	130.2	117.0	106.8	94.0	101.2	98.6	98.9	95.8	88.8	93.7	79.9	81.3	81.2	87.7	82.8	71.9
Unintentional	72.6	78.8	99.5	92.7	91.6	74.2	80.7	68.4	69.0	59.9	55.1	61.3	49.4	59.7	63.6	72.3	60.6	49.0
Intentional	31.0	33.5	30.1	24.2	15.8	19.7	20.4	29.4	28.2	32.6	30.2	31.1	30.3	22.1	17.0	15.4	22.6	23.9

Trends in Injury Deaths, NWT (1990-2009)

Between 1990-92 and 2007-09, the rate of all injury deaths decreased, on average, 2.5% per three-year rolling period. For unintentional injuries, there was a significant decreasing trend with an average percent change of 6.2% per three-year rolling period between 1992-94 and 2002-04. For intentional injuries, there were three significant trends that took place. Between 1990-92 and 1994-96, there was a decreasing trend with an average percent change of 13.4% per three-year rolling period. This was followed by an upward trend between 1994-96 and 2001-03 with an average increase of 8.1 percent per three-year rolling period. Another downward trend occurred between 2001-03 and 2005-07 with an average decrease of 18 percent every three-year rolling period.

Number of Injury Deaths by Age Group and Sex, NWT (2000-09) (n=308)

Overall, males have a risk of dying from injury that is 2.4 times greater than females.² This gender difference was especially noted in all age categories between 20 and 59 years.

The number of injury deaths remained elevated from young adulthood to middle-age years (20 to 59 years of age). The highest number of injury-related deaths was seen in males aged 30 to 39 years.

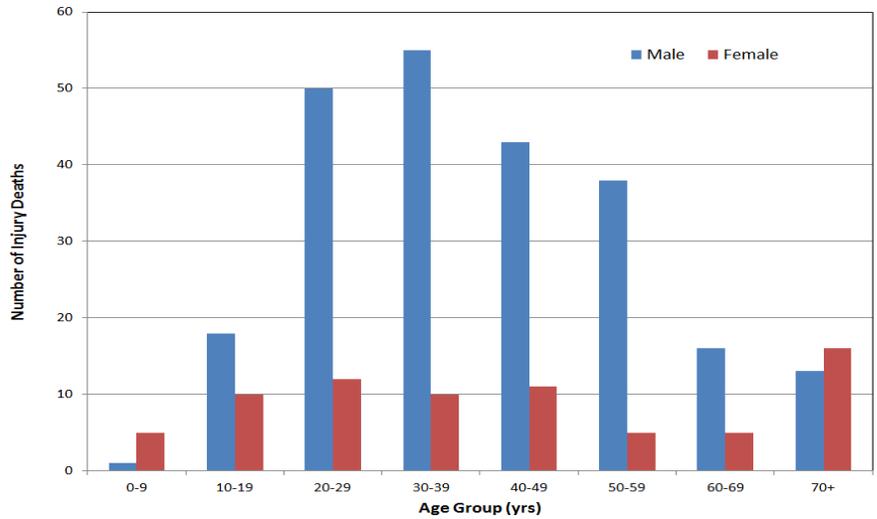
Rate of Injury Deaths by Age Group and Sex, NWT (2000-09)

Males had a tendency to have higher injury death rates than females, accounting for 76 percent of all injury deaths with an average of 23 deaths each year. Injury death rates increased with age.

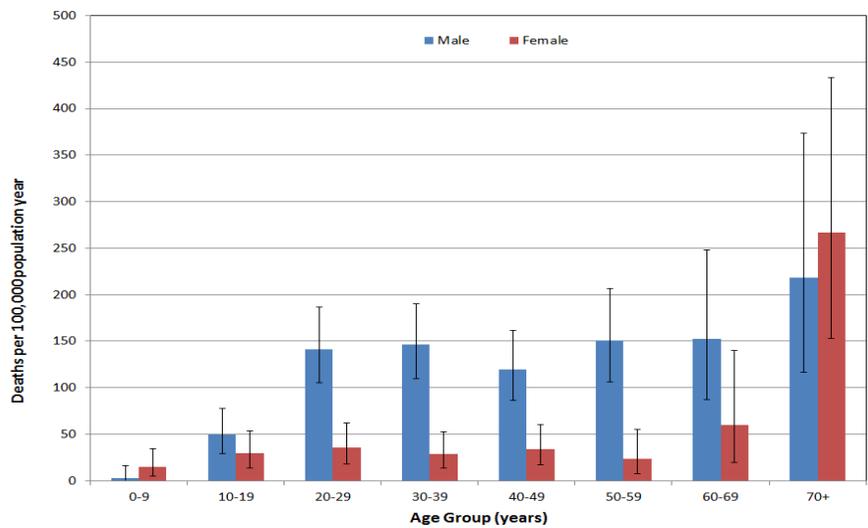
² Based on age-adjusted injury mortality rates for males and females.

Who Dies of Injuries?

Number of Injury Deaths by Age Group and Sex, NWT (2000-09)

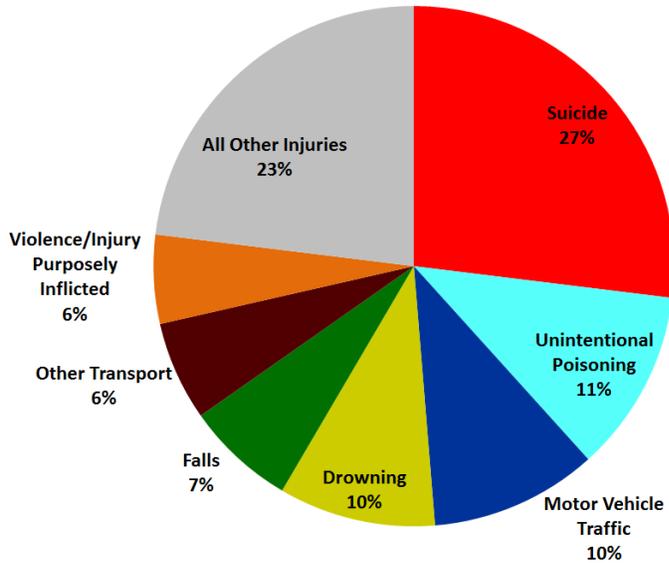


Rate of Injury Deaths by Age Group and Sex, NWT (2000-09)



Leading Cause of Injury Deaths

Leading Causes of Injury Deaths, NWT (2000-09)¹



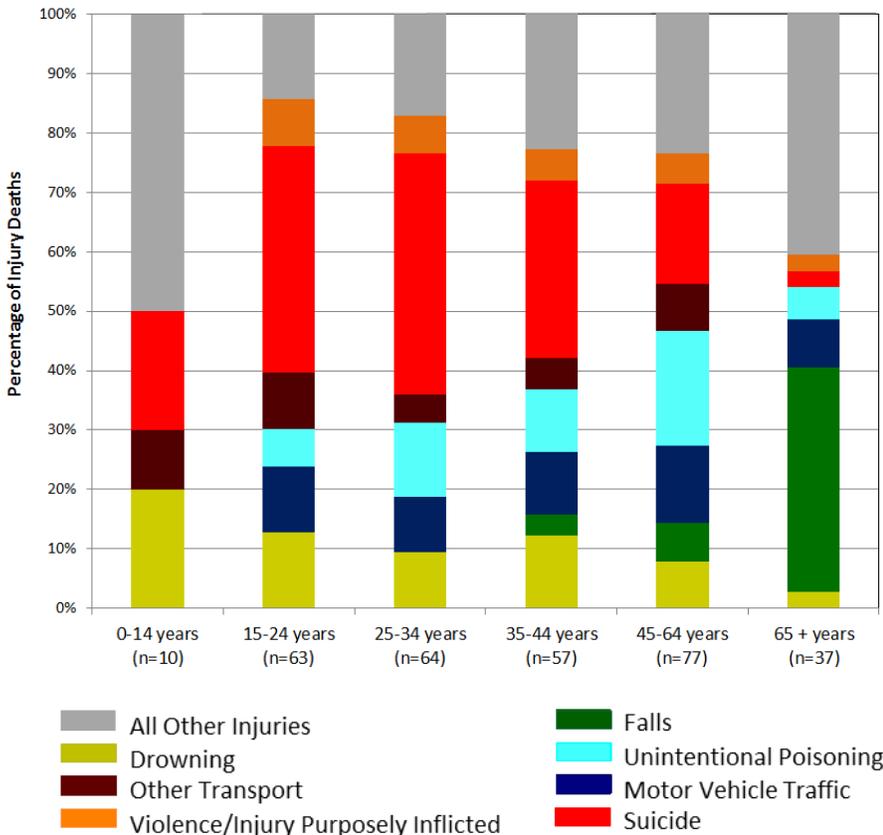
¹Based on age-adjusted injury mortality rates.

Leading Causes of Injury Deaths, NWT (2000-09)

The top five causes of injury-related deaths were:

1. Suicide
2. Unintentional Poisoning
3. Motor Vehicle Traffic-Related
4. Drowning
5. Falls

Injury Deaths by Age Group and Cause of Injury, NWT (2000-09)



Injury Deaths by Age Group and Causes of Injury, NWT (2000-09)

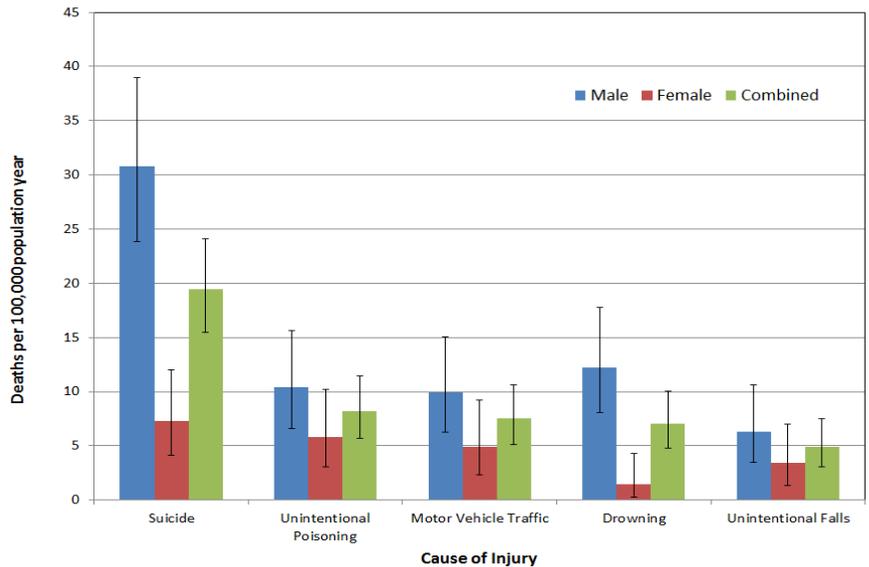
Suicide was the leading cause of injury death among those aged 15 to 44. Unintentional poisoning was the leading cause of injury death among ages 45 to 64. The majority of deaths in the oldest age group (65 years and older) were due to unintentional falls, while the youngest age group (0-14 year) had a greater proportion of deaths due to drowning and suicide.

Leading Causes of Injury Deaths, NWT (2000-09), crude rates

The largest gender differences among leading causes of injury death were drowning and suicide.

Males were 8.4 times more likely to be affected by drowning and 4.2 times more likely to die by suicide than females. For drowning and suicides, the data is shown as ratios of crude rates. The number of cases in females was too small to age-standardize.

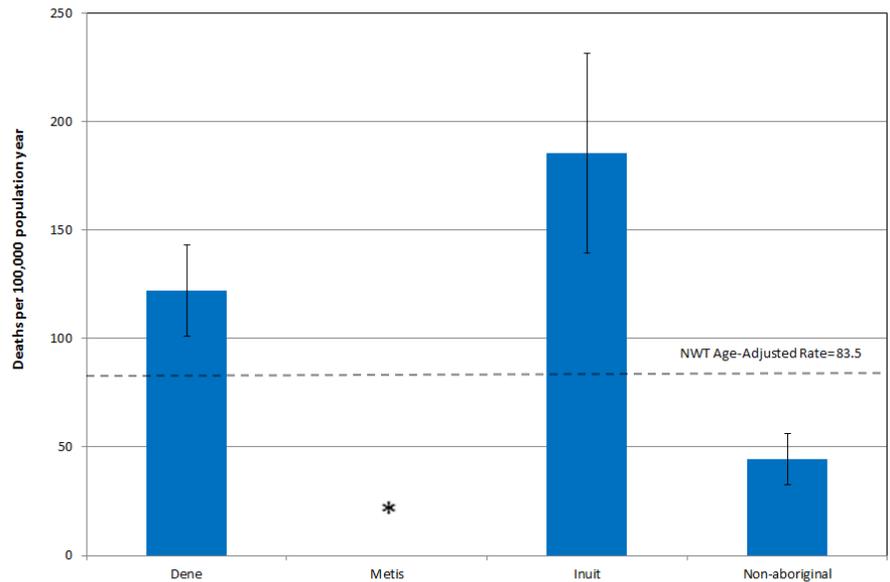
Leading Causes of Injury Deaths, NWT (2000-09), crude rates



Injury Death Rate by Ethnicity, NWT (2000-09)

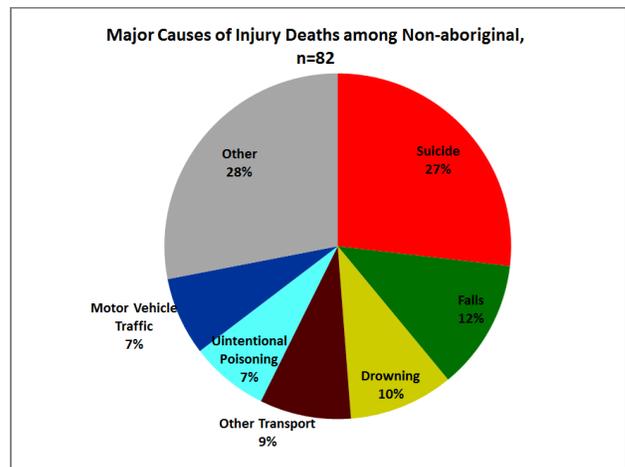
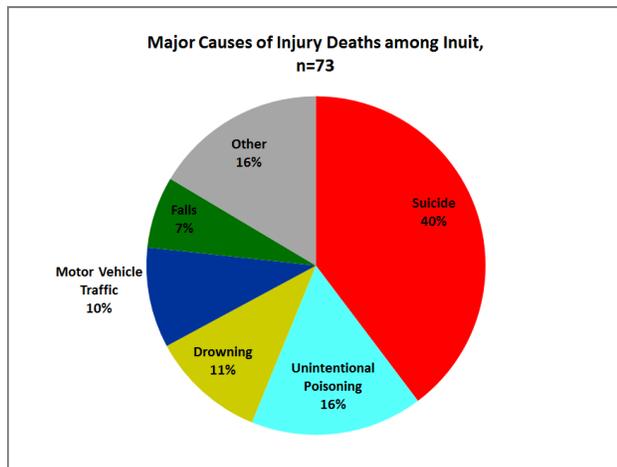
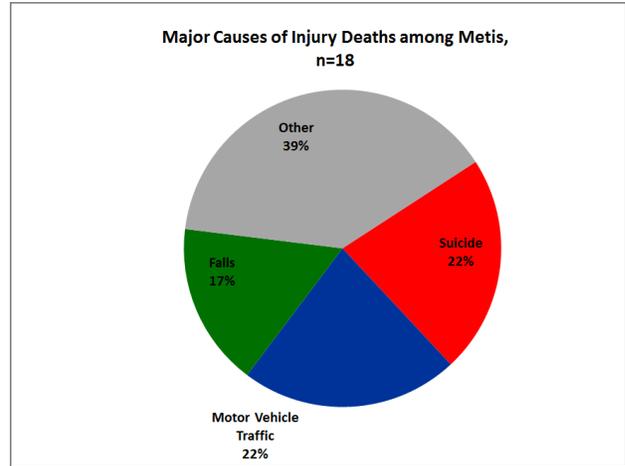
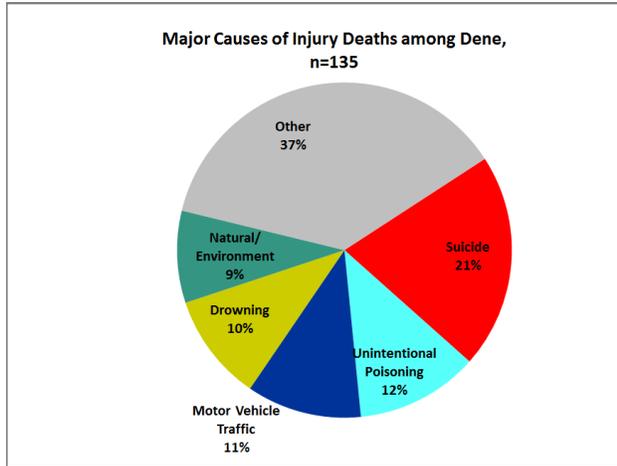
The age-adjusted injury death-rates for Dene and Inuit were 1.5 and 2.2 times higher than the territorial rate while the death-rate in non-Aboriginal people was lower, by nearly half the territorial rate. Among Métis, 18 injury deaths occurred in the 2000-2009 interval, too few to age-adjust the rates for comparison purposes. The crude rate for injury deaths among Métis was 46 deaths per 100,000 population year.

Injury Death Rate by Ethnicity, NWT (2000-09)



* The number of deaths in the Metis population was too small to age-standardize and thus excluded from this analysis.

Major Causes of Injury Deaths by Ethnicity, NWT (2000-09)



Major Causes of Injury Deaths by Ethnicity, NWT (2000-09)

Suicide was the leading cause of injury death in all ethnic groups. The leading cause of unintentional death was motor vehicle traffic in Métis people, unintentional poisoning in Inuit and Dene people, and falls among non-Aboriginal people.

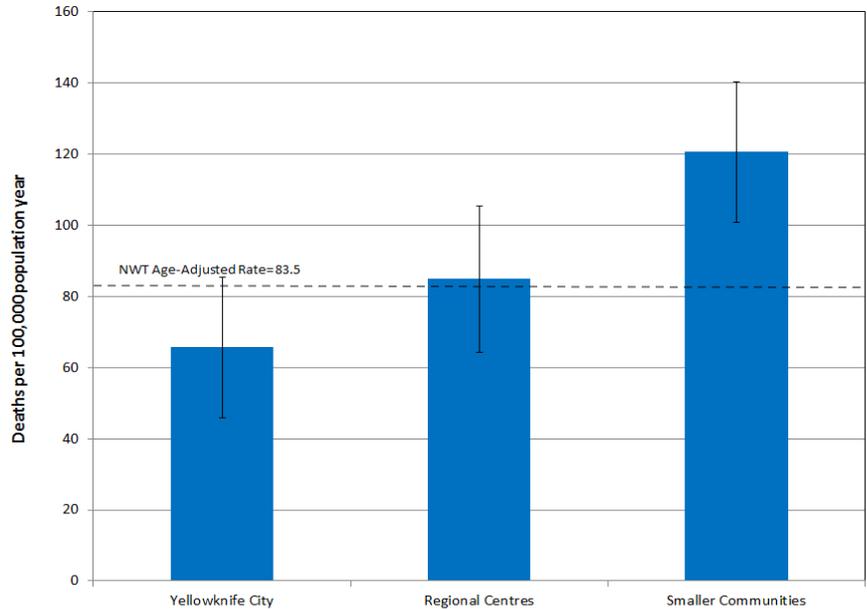
Injury Death Rate by Community Type, NWT (2000-09)

Smaller Communities had an age-adjusted injury death rate 44% higher than the territorial rate. Rates in Yellowknife City and Regional Centres were similar to the territorial rate.

Injury Deaths by Residence

Available health services and remoteness of a community affect risk factors for injury and severity. The analysis was performed by comparing Yellowknife to Regional Centers (Hay River, Fort Smith, Inuvik and Norman Wells) to Smaller Communities.

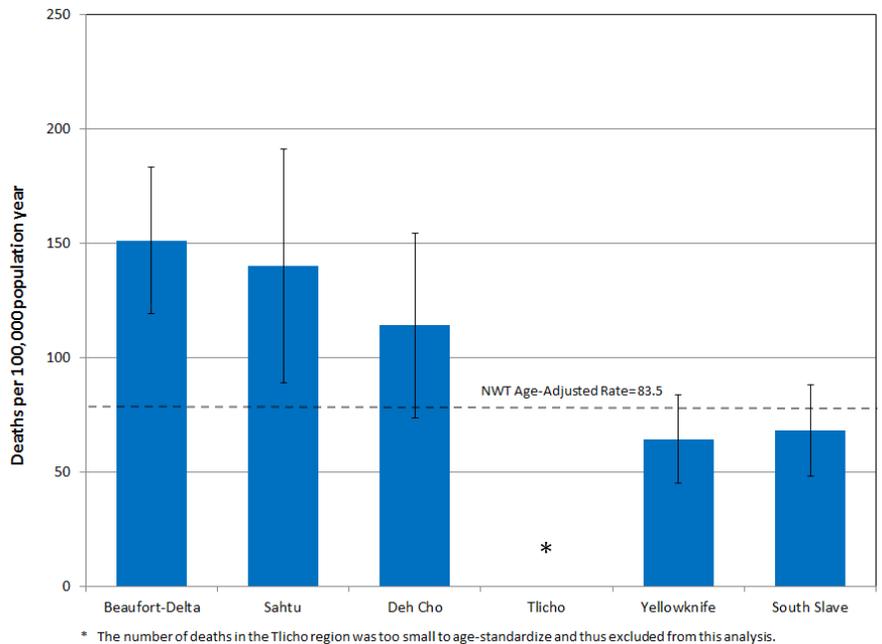
Injury Death Rate by Community Type, NWT (2000-09)



Injury Death Rate by Region, NWT (2000-09)

Injury death rates in the Beaufort-Delta and Sahtu regions were 1.8 and 1.7 times the territorial rate. Rates for the Deh Cho, Yellowknife, and South Slave regions were similar to that of the territorial rate. With only 16 deaths in the Tlicho region, rates were not age-adjusted for comparison purposes. The crude rate for the Tlicho region was 56 deaths per 100,000 population year.

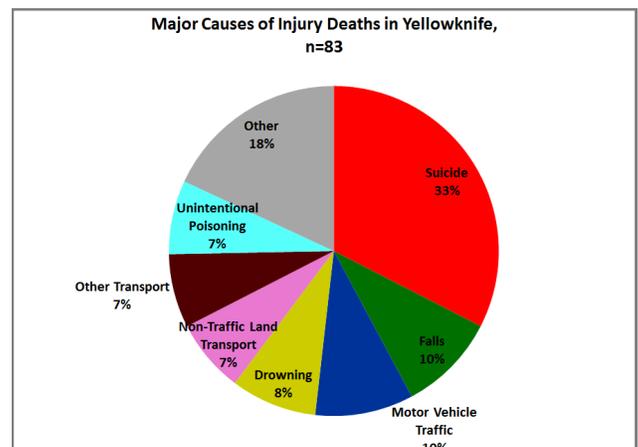
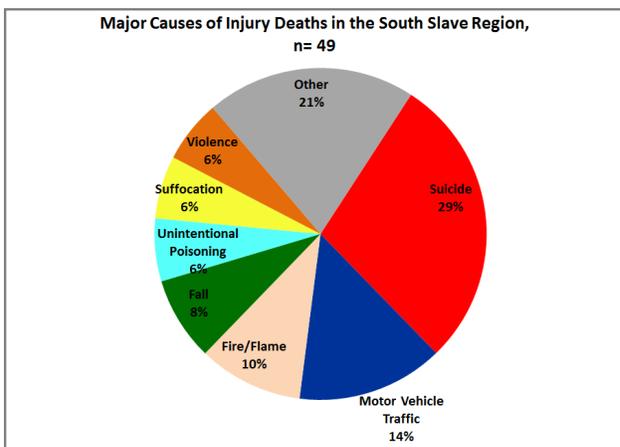
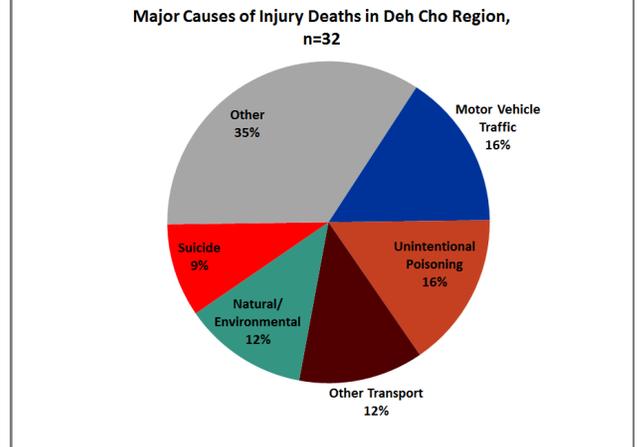
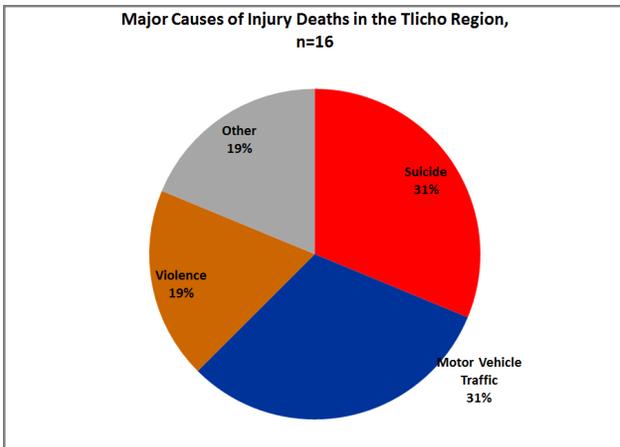
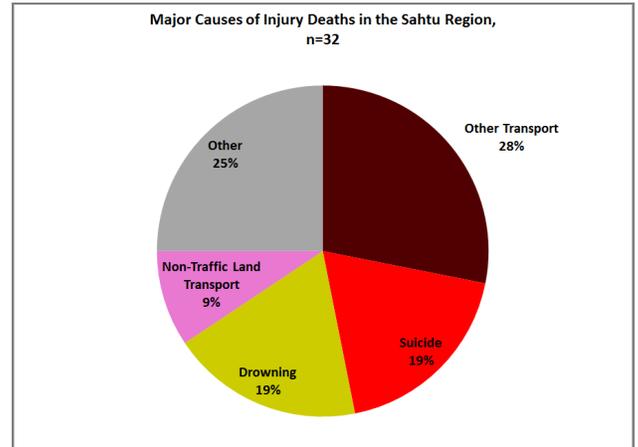
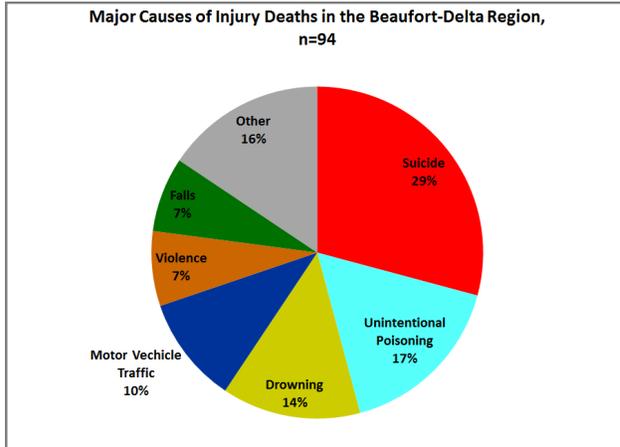
Injury Death Rate by Region, NWT (2000-09)



* The number of deaths in the Tlicho region was too small to age-standardize and thus excluded from this analysis.

injury deaths

Major Causes of Injury Deaths by Region, NWT (2000-09)



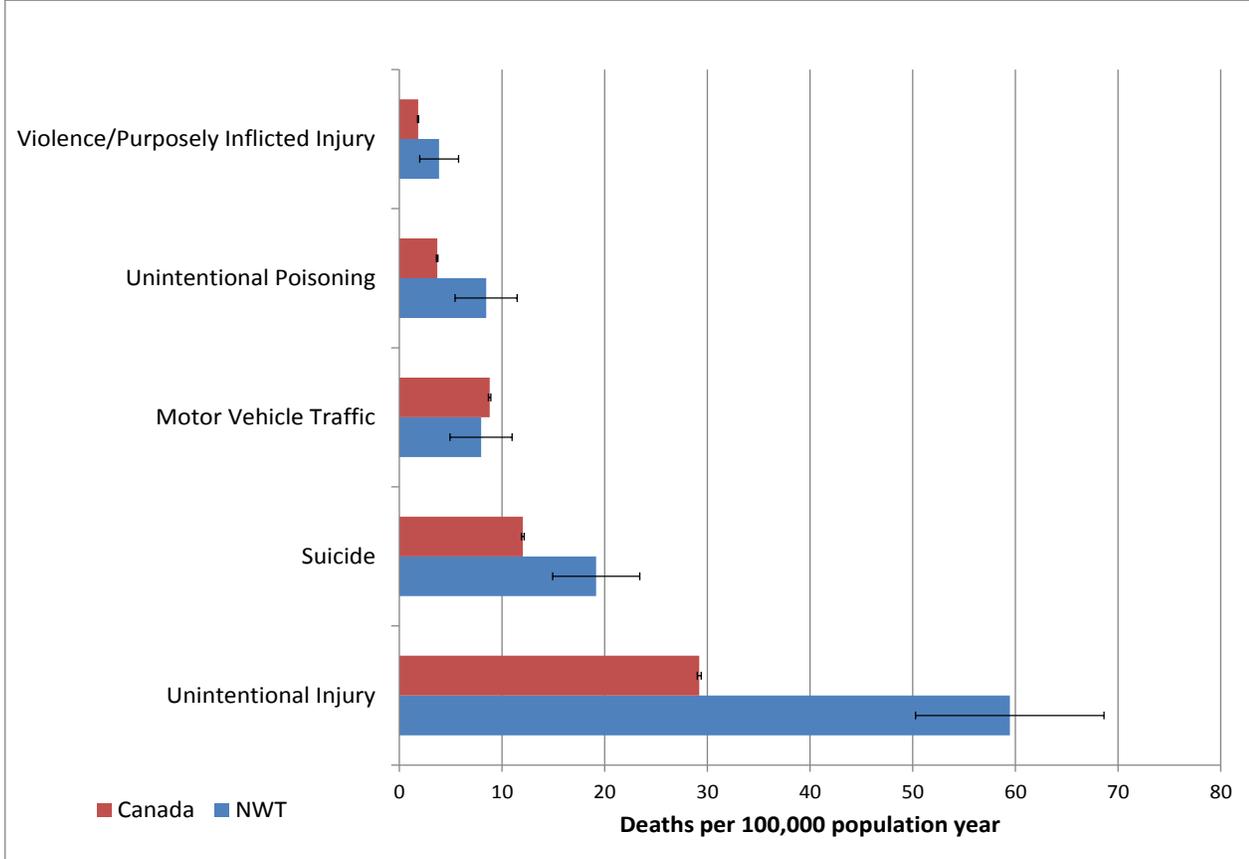
Major Causes of Injury Deaths by Region, NWT (2000-09)

Suicide was the leading cause of injury death in most regions.

An airplane crash in the summer of 2006 explains the majority of injury deaths due to other types of transport in the Sahtu region. In the Deh Cho region, both unintentional poisoning and motor vehicle traffic injuries were the leading causes of injury categories.

Injury Deaths Relative to Canada

Injury Deaths in NWT Compared to Canada



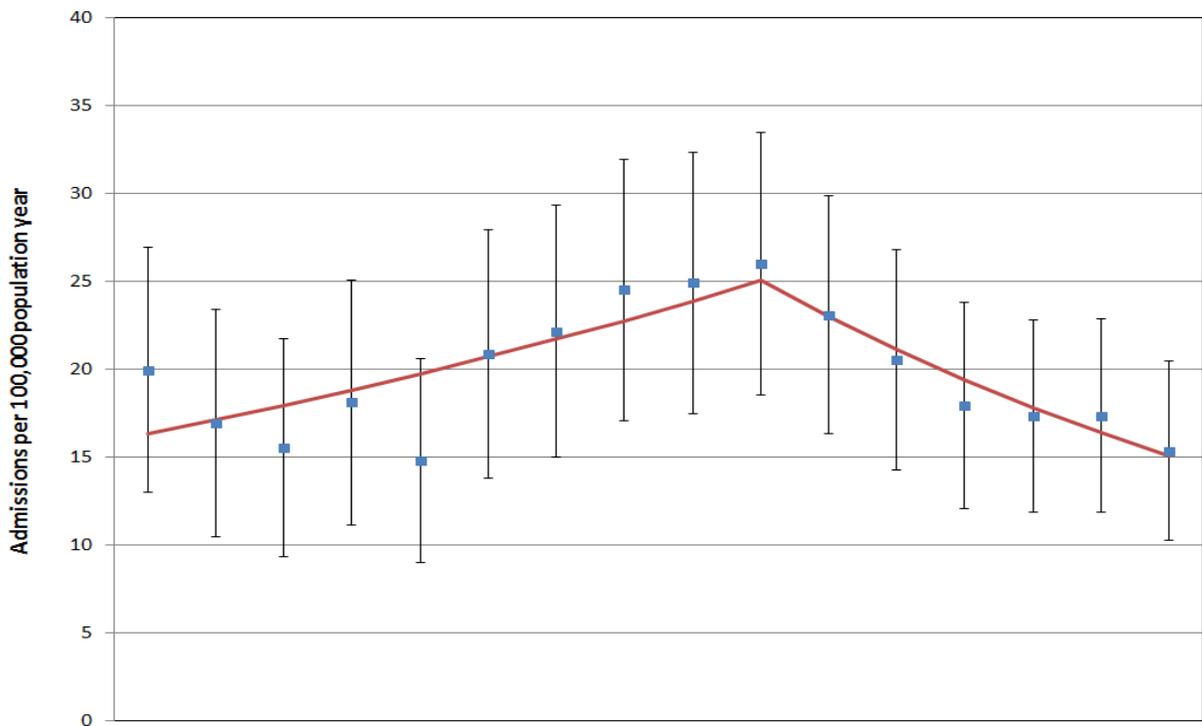
All listed mechanisms of injury death, except motor vehicle traffic, were significantly higher in the NWT compared to Canada. Deaths due to unintentional injuries in the NWT were twice the national rate. Likewise, deaths due to suicide were 1.6 times, unintentional poisoning was 2.3 times, and violence/purposely inflicted injury was 2.1 times the national rate.

suicide | deaths



Between 2000 and 2009, there were 83 suicides (an average of 8 suicides per year). Overall, suicide was the leading cause of death among all injury categories and accounted for 27 percent of all injury deaths. The crude death rate was 19.5 deaths per 100,000 population year.

Time Trend for Suicides NWT, 1990-94 to 2005-2009 (five year rolling average)



	1990-1994	1991-1995	1992-1996	1993-1997	1994-1998	1995-1999	1996-2000	1997-2001	1998-2002	1999-2003	2000-2004	2001-2005	2002-2006	2003-2007	2004-2008	2005-2009
Rate per 100,000 pop	20.0	16.9	15.5	18.1	14.8	20.9	22.1	24.5	24.9	26.0	23.1	20.5	17.9	17.3	17.4	15.3

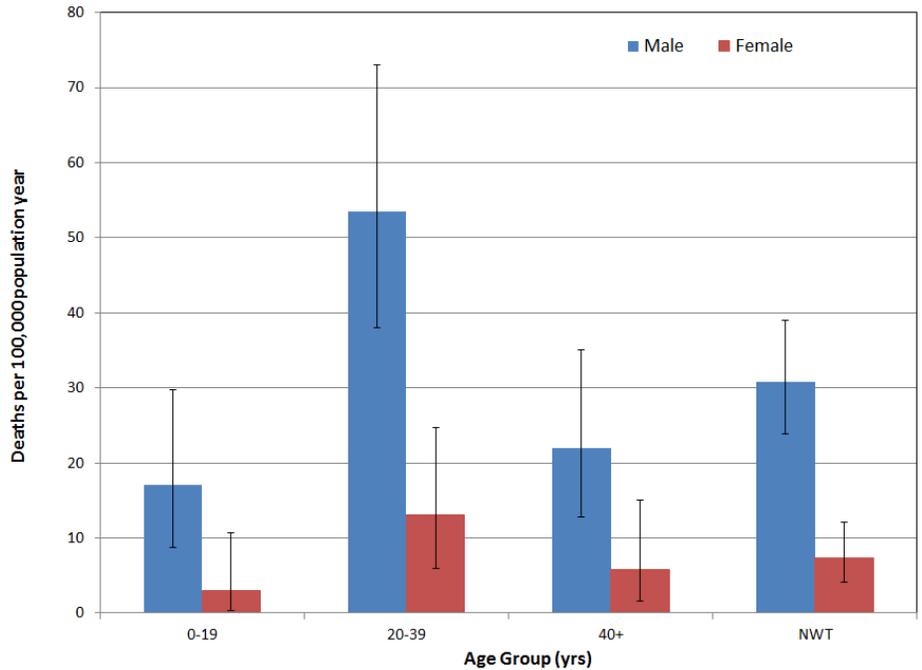
Time Trend of Suicides, NWT 1990-94 to 2005-2009 (five year rolling average)

Over the 20 year period, suicide rates have fluctuated and yet overall the rates are similar for the period of 1990-99 and of 2000-09. From 1990-94 to 1999-2003, there was an upward trend with an average increase of 4.9% per five-year rolling period. This was followed by a downward trend from 1999-2003 to 2005-09 in which there was an average decrease of 8.1% per five-year rolling period. The highest rate was during the 1999-2003 period while the lowest rate occurred in the 1994-1998 period.

Suicide Rates by Age Group and Sex, NWT (2000-09)

Among both males and females, the 20-39 year old age group had the highest rate of suicide. Males accounted for 82 percent of all suicide deaths and consistently had higher rates than females in all age categories. Using the crude rates, the overall rate among males was 4.2 times the female rate. The rates could not be age-adjusted for comparison due to the small number of cases among females. The rate among males aged 20 to 39 years is 74% higher than the overall male territorial rate.

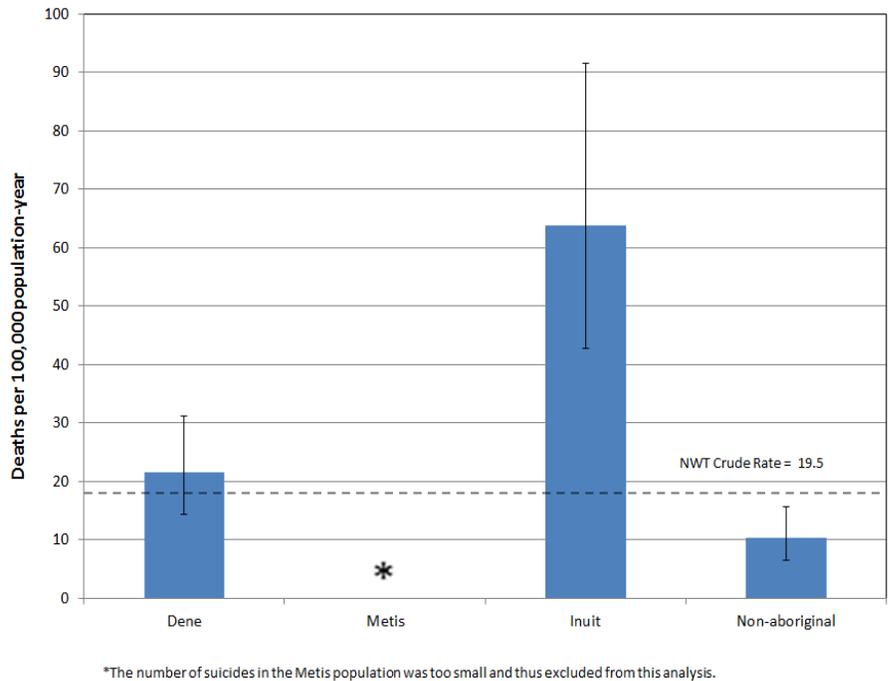
Suicide Rate by Age Group and Sex, NWT (2000-09)



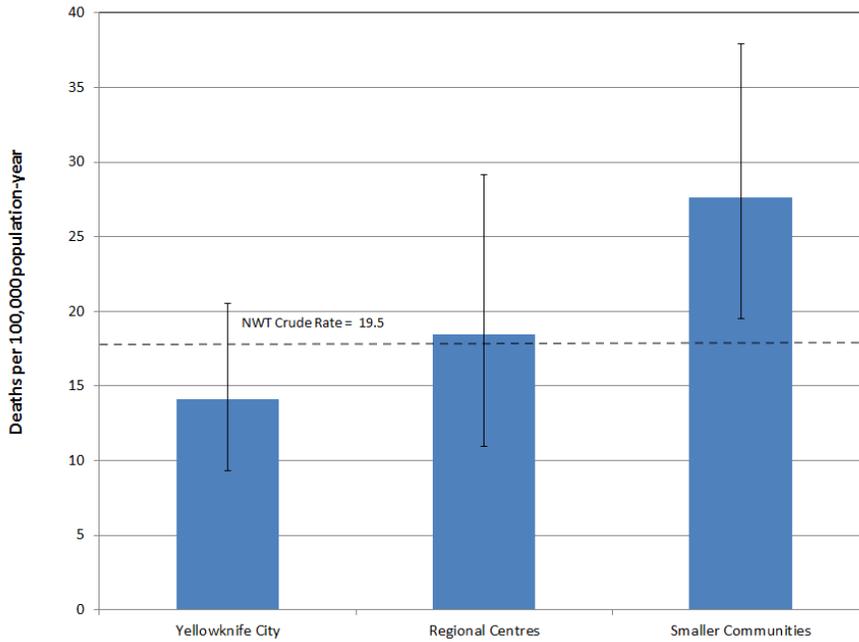
Suicide Rate by Ethnicity, NWT (2000-09), crude rates

Suicide rates were highest among the Inuit at more than three times the territorial rate. Representing only 11% of the population in the NWT, Inuit accounted for 35% of suicides. Dene accounted for 34% of suicides and non-Aboriginal people, 27%. There were a total of four suicides among Métis.

Suicide Rate by Ethnicity, NWT (2000-09), crude rates



Suicide Rates by Community Type, NWT (2000-09), crude rates

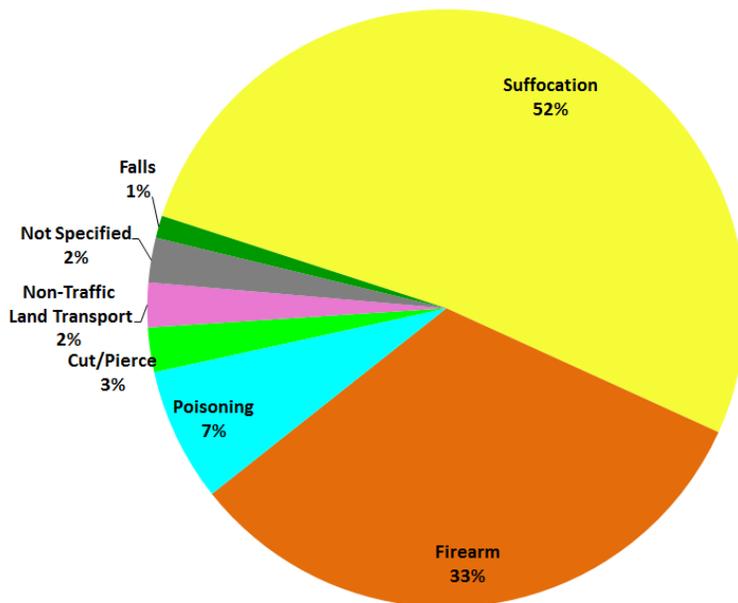


Suicide Rates by Community Type, NWT (2000-09), crude rates

The suicide rate in Smaller Communities was almost 42% higher than the territorial rate.

Nearly half (46%) of all suicides occurred among residents in Smaller Communities. There were nearly as many suicides in Smaller Communities as in Yellowknife and Regional Centers combined.

Method of Suicide, NWT (2000-09)



Method of Suicide, NWT (2000-09)

The most common method for suicide was suffocation (strangulation or hanging) accounting for 52% of all suicides. The second most common method was firearms, representing 33% of suicides.

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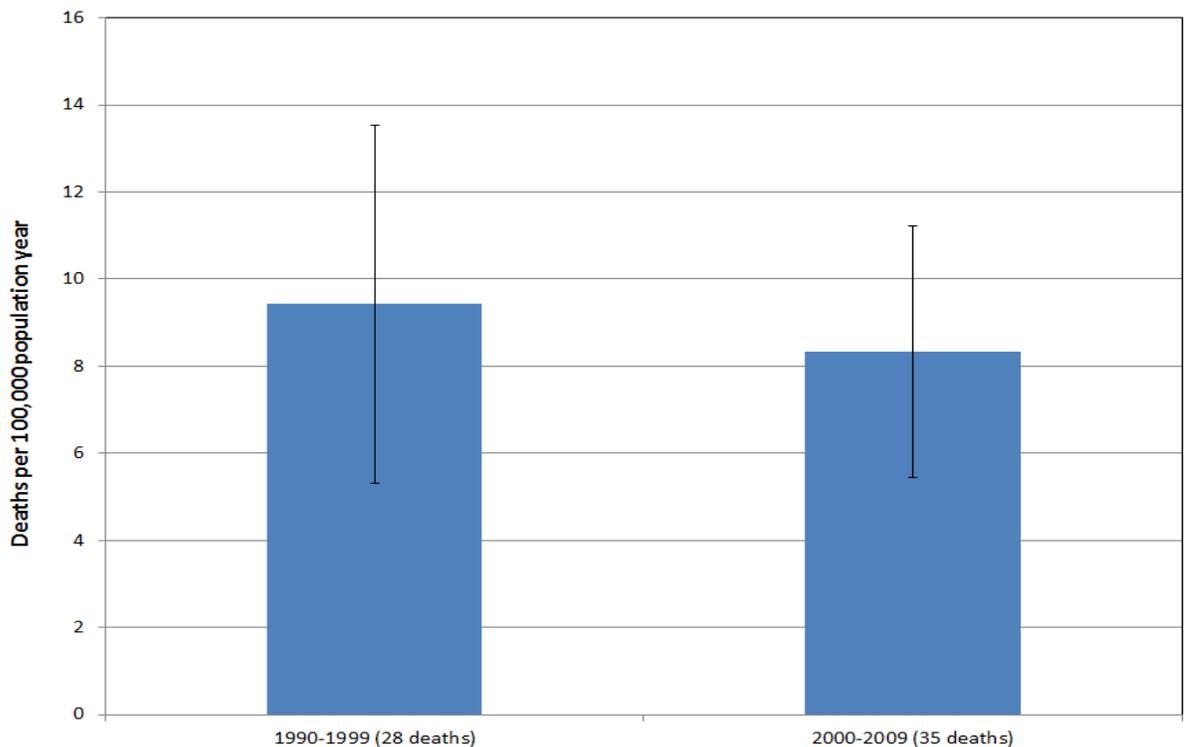
unintentional poisoning | deaths



Unintentional poisoning is defined as exposure to harmful substances when no harm was intended. Examples of unintended poisoning include ingestion of cleaning supplies, taking medications in error, and drinking large amounts of alcohol at one time (alcohol poisoning/ acute use of alcohol).

Between 2000 and 2009, unintentional poisonings accounted for 35 deaths (3.5 deaths per year on average). Overall, unintentional poisoning was the second leading cause and accounted for 11% of all injury deaths. The crude death rate was 8.2 deaths per 100,000 population year.

Time Trend for Unintentional Poisoning-Related Deaths, NWT (1990-99 vs. 2000-09)



Time Trend for Unintentional Poisoning-Related Deaths, NWT (1990-99 vs. 2000-09)

The age-adjusted rate for deaths due to unintentional poisonings during the 2000-2009 period is not significantly different to that of the 1990-1999 period. Between 1990 and 1999, there were 28 deaths due to unintentional poisoning.

Unintentional Poisoning-Related Deaths by Age Group, NWT (2000-09)

Males accounted for 66 percent of all unintentional poisoning-related deaths .

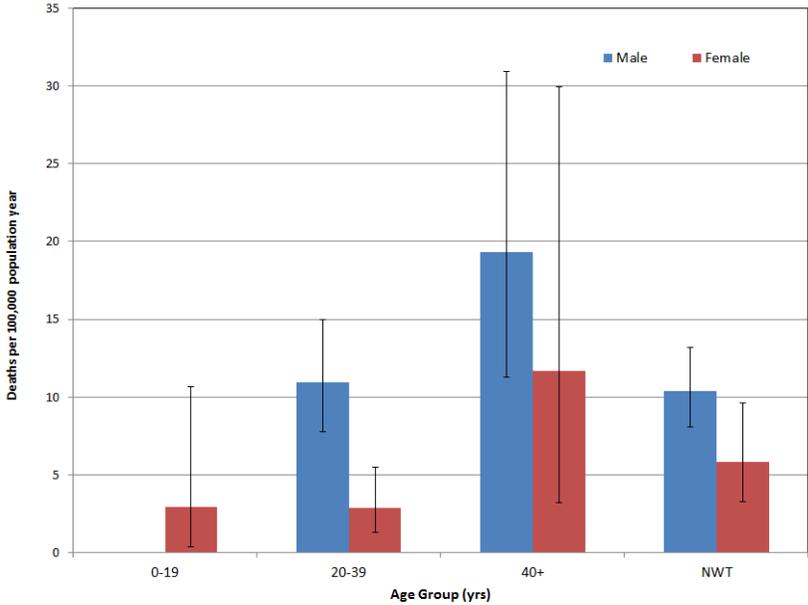
For males, deaths due to unintentional poisoning increased with age. In fact, the rate was almost two times greater in those aged 40 years and older than in those aged 20 to 39 years. The rate among females 40 years of age and older is four times that of females between 20 and 39 years of age.

The small number of deaths in this category caused large uncertainty in the measurements, as illustrated by the wide confidence intervals. Therefore, differences must be interpreted with caution.

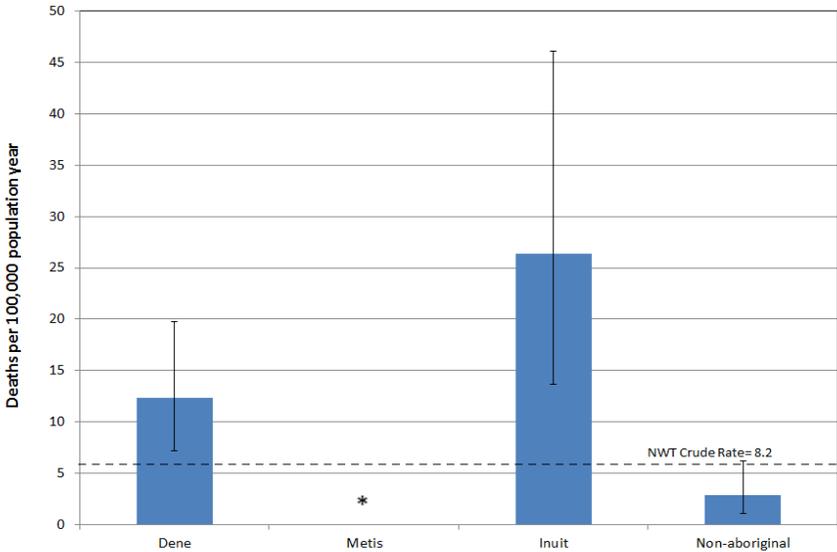
Unintentional Poisoning-related Deaths by Ethnicity, NWT (2000-09), crude rates

The rate of deaths due to unintentional poisoning among the Inuit was 3.2 times the territorial rate. The rate among non-aboriginals was two-thirds lower than the territorial rate. Since there was one death due to unintentional poisoning in Métis, rates were not calculated.

Unintentional Poisoning-related Deaths by Age Group, NWT (2000-09)



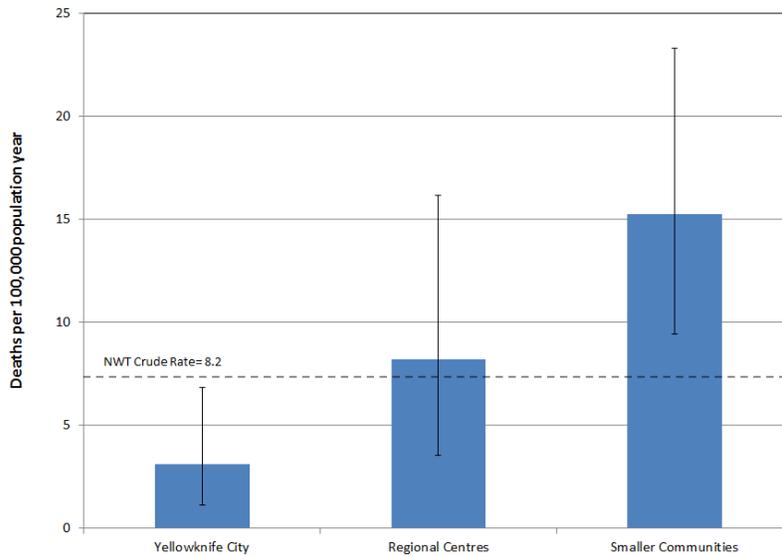
Unintentional Poisoning-Related Deaths by Ethnicity, NWT (2000-09), crude rates



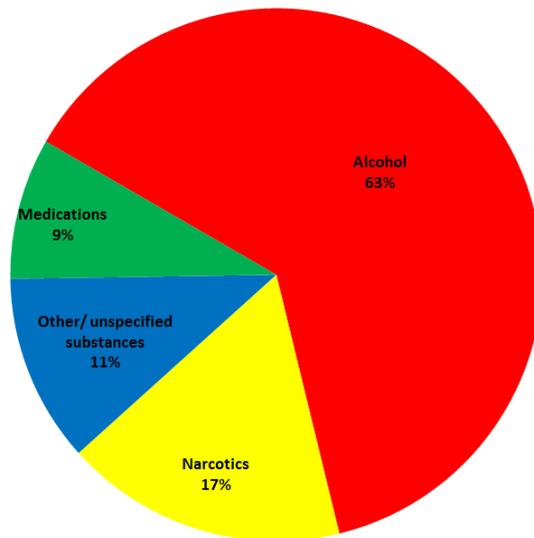
*The number of deaths in the Métis population was too small and thus excluded from this analysis.

unintentional poisoning | deaths

Unintentional Poisoning-Related Deaths by Community Type, NWT (2000-09), crude rates



Substance Associated with Death from Unintentional Poisoning, NWT (2000-09), n=35



Unintentional Poisoning-Related Deaths by Community Type, NWT (2000-09), crude rates

The crude death rate due to unintentional poisonings increased as the size of the community decreased. The rates in Smaller Communities were almost five times the rate in Yellowknife City and almost twice the territorial rate. The rate in Yellowknife City was 62% lower than the territorial rate.

Substance Associated with Death from Unintentional Poisoning, NWT (2000-09)

Alcohol (63%) was the predominant substance associated with unintentional deaths as a result of poisoning.

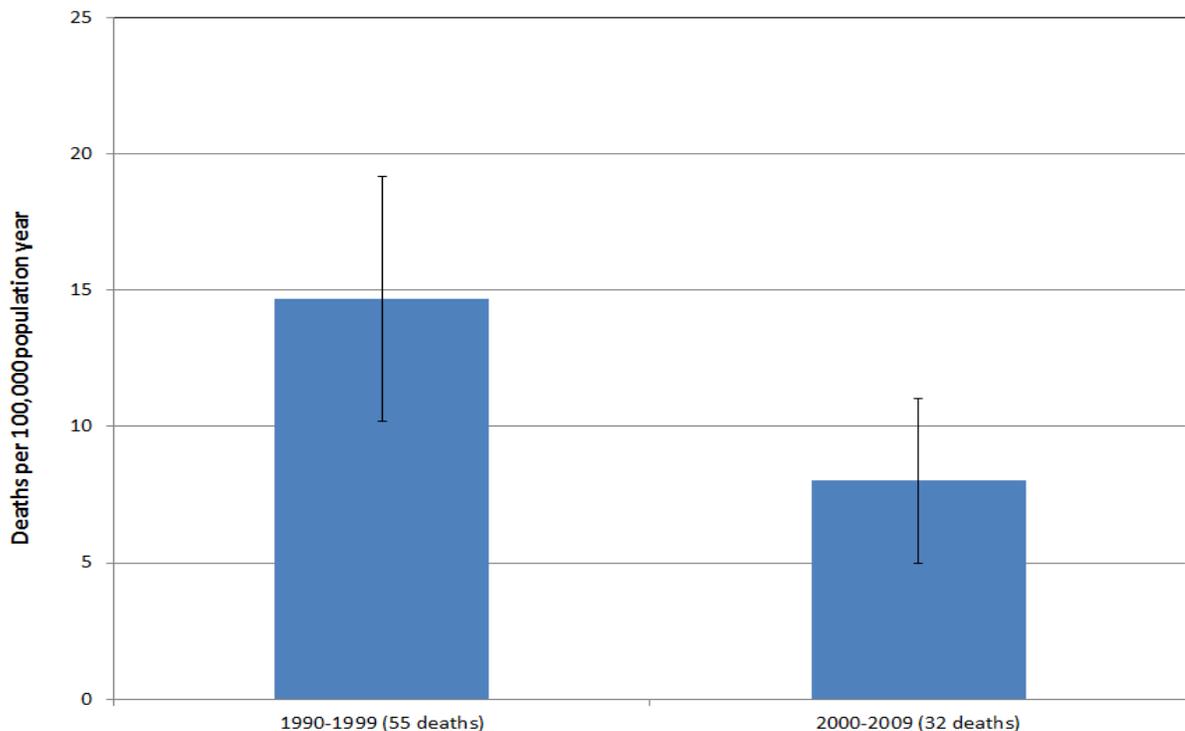
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A motor vehicle traffic death is defined as any death occurring on a public highway and involved a transportation vehicle used to convey persons or goods from one place to another.

Between 2000 and 2009, there were 32 deaths in relation to a motor vehicle driven on a public highway (an average of 3 motor vehicle traffic-related deaths per year). Overall, the motor vehicle traffic-related deaths were the third leading cause of death among all injury categories and accounted for ten percent of all injury deaths. The crude death rate during this period was 7.5 deaths per 100,000 population year.

Time Trend for Motor Vehicle Traffic - Related Deaths, NWT (1990-99 vs. 2000-09)



Time Trend for Motor Vehicle Traffic-Related Deaths, NWT (1990-1999 vs. 2000-09)

The age-adjusted rate for motor vehicle traffic-related deaths during the 2000-2009 period was 45% lower than the rate during the 1990-1999 period. Between 1990 and 1999, there were 55 fatalities related to motor vehicles on public highways.

Motor Vehicle Traffic-Related Deaths by Age and Sex Group, NWT (2000-09)

Males accounted for 69 percent of all motor vehicle traffic-related deaths.

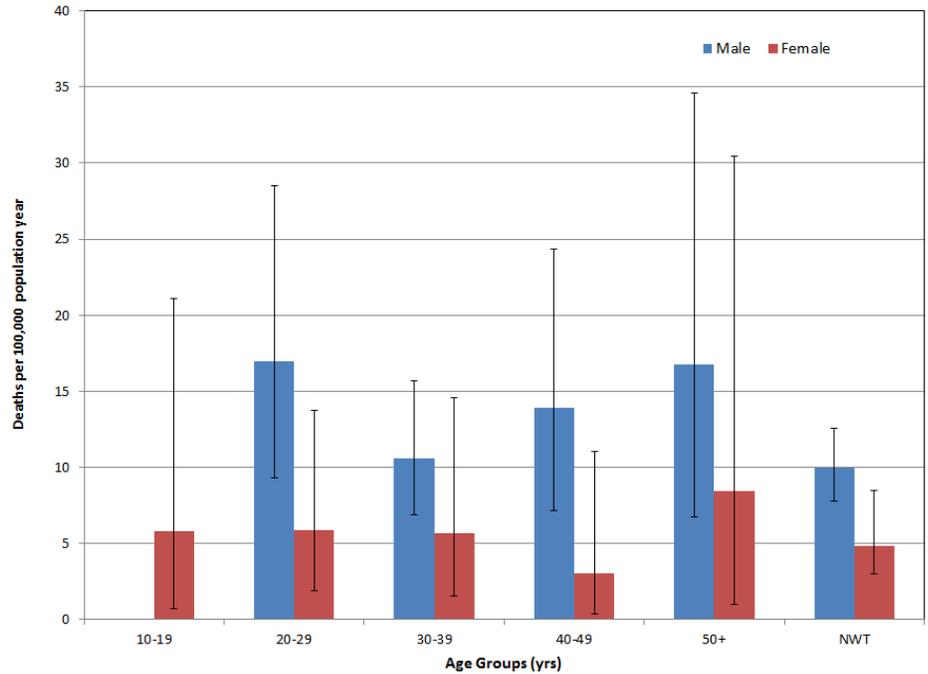
Males 20 to 29 years of age had a death rate almost three times that of females in the same age group.

The small number of deaths in this category caused large uncertainty in the measurements, as illustrated by the wide confidence intervals. Therefore, differences must be interpreted with caution.

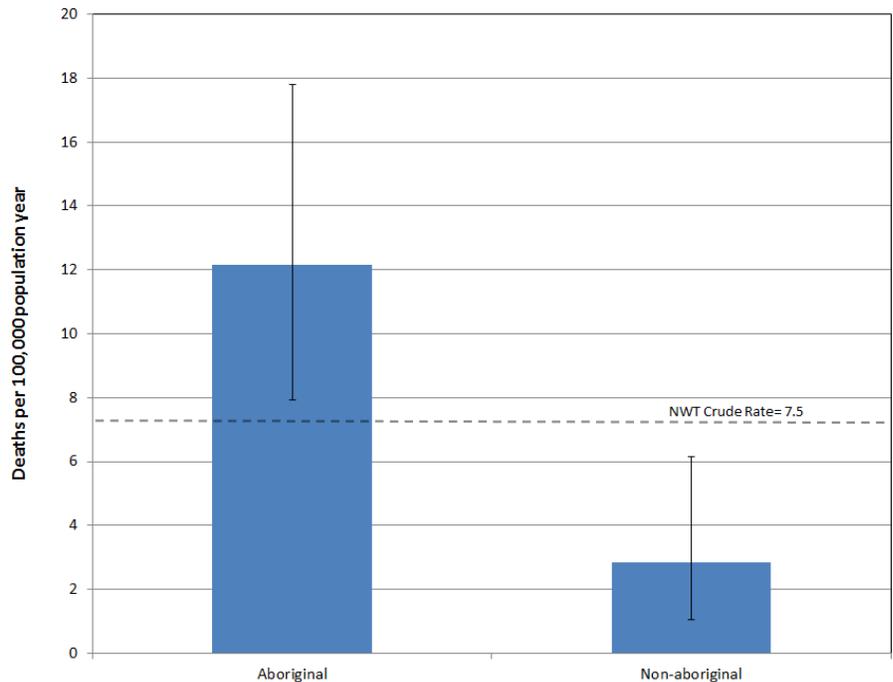
Motor Vehicle Traffic – Related Deaths by Ethnicity, NWT (2000-09), crude rates

The death rate due to motor vehicle traffic is more than four times higher in the aboriginal group compared to the non-aboriginal group. Due to the small numbers, the ethnic groups were categorized into aboriginal and non-aboriginal groups. Rates were not adjusted for age.

Motor Vehicle Traffic-Related Deaths by Age and Sex Group, NWT (2000-09)

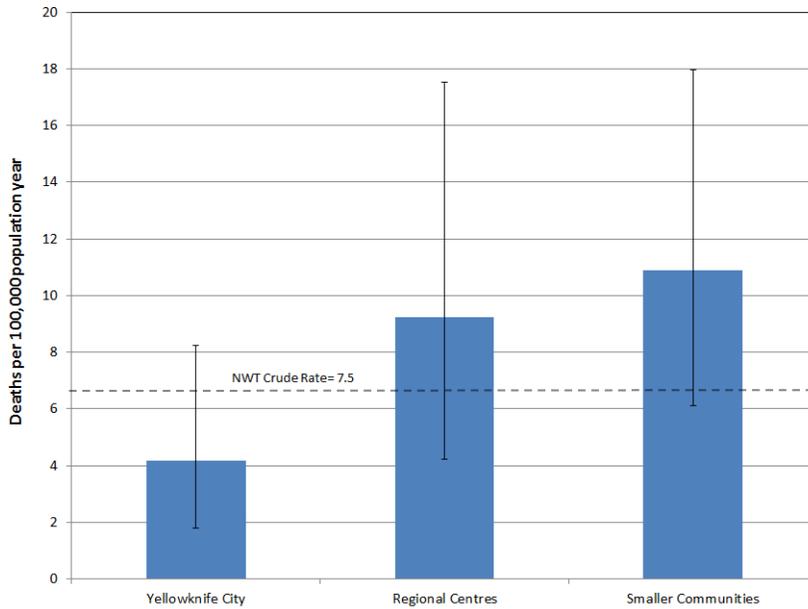


Motor Vehicle Traffic-related Deaths by Ethnicity, NWT (2000-09), crude rates

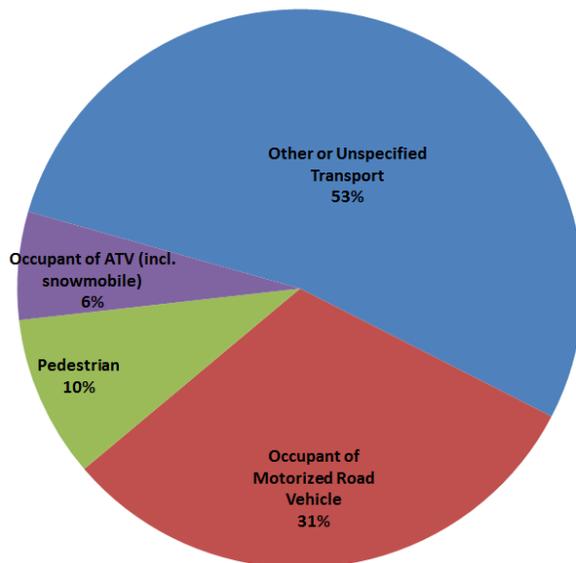


motor vehicle traffic deaths

Motor Vehicle Traffic-Related Deaths by Community Type, NWT (2000-09), crude rates



Motor Vehicle Traffic-Related Deaths by Injured Person’s Mode of Transportation, NWT (2000-09), n=32



Motor Vehicle Traffic-Related Deaths by Community Type, NWT (2000-09), crude rates

The crude rate due to motor vehicle traffic-related deaths for each community type was similar to the territorial rate. The crude rate in Smaller Communities was 2.6 times higher than Yellowknife City.

Motor Vehicle Traffic-Related Deaths by Injured Person’s Mode of Transportation, NWT (2000-09)

Half of motor vehicle traffic-related deaths were unspecified in terms of the victim’s mode of transportation. Where the mode of transportation was noted, most motor vehicle traffic accident victims were occupants of a motor vehicle (31%) as opposed to a bicycle, motorcycle, pedestrian, or occupant of another type of land transport.

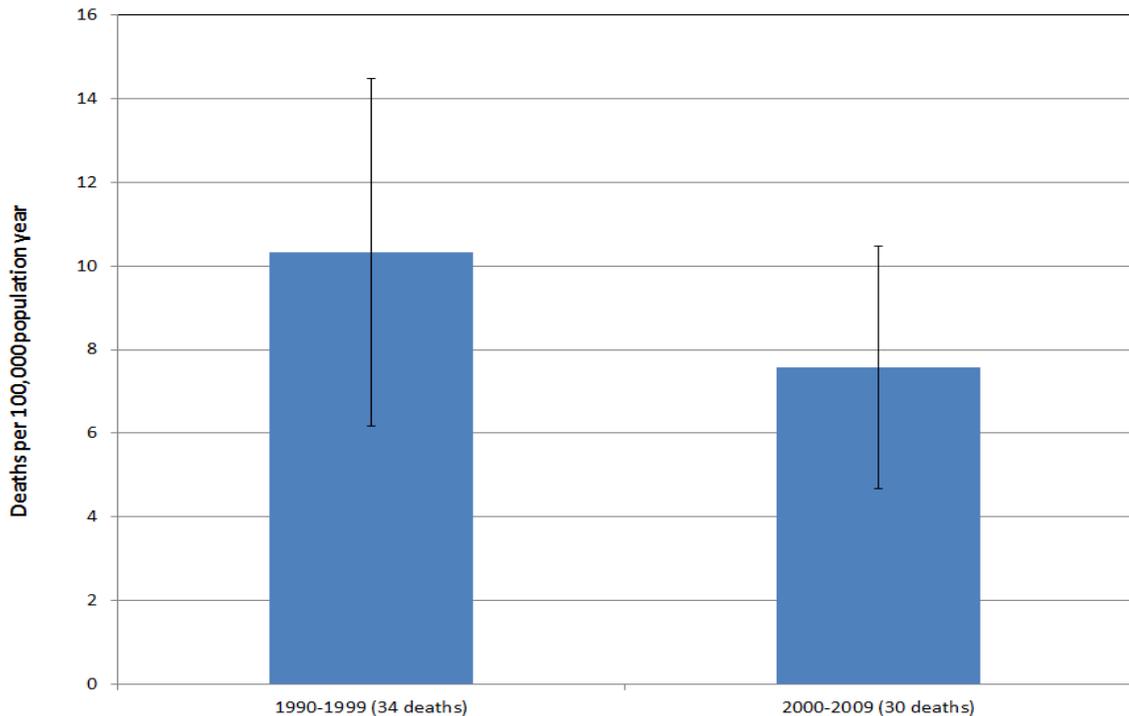
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Between 2000 and 2009, there were 30 deaths as a result of drownings (an average of 3 drownings per year). Drownings were the fourth leading cause and accounted for ten percent of all injury deaths. The crude death rate was 7 deaths per 100,000 population year.

Despite being the fourth leading cause of injury death, there were only eight admissions due to drowning-related occurrences. This is due to the nature of drownings whereby an individual who survives a drowning incident is rarely admitted to hospital.

Time Trends in Drowning-Related Deaths, NWT (1990-1999 vs. 2000-09)



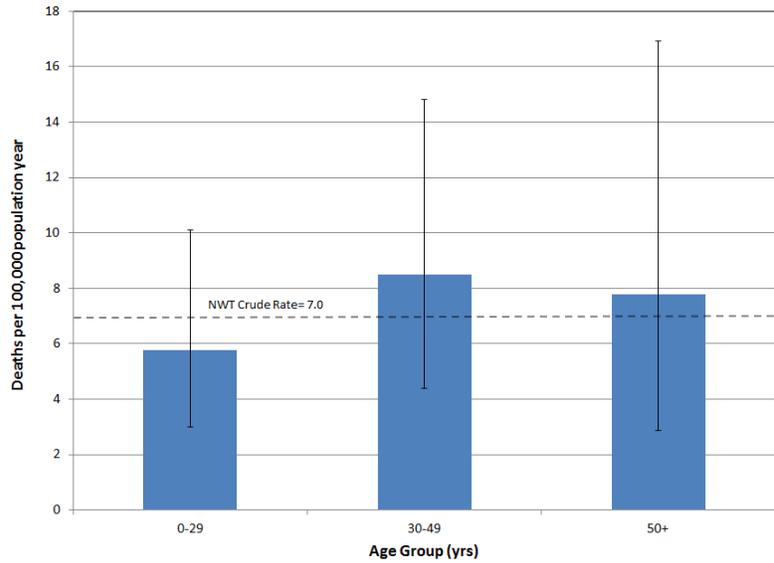
Time Trends in Drowning-related Deaths, NWT (1990-1999 vs. 2000-09)

The age-adjusted rate for drownings during the 2000-2009 period was not significantly different from the rate during the 1990-1999 period. Between 1990 and 1999, there were 34 drowning-related deaths.

Drowning-Related Deaths by Age Group, NWT (2000-09)

Drownings occurred equally across all five age groups.

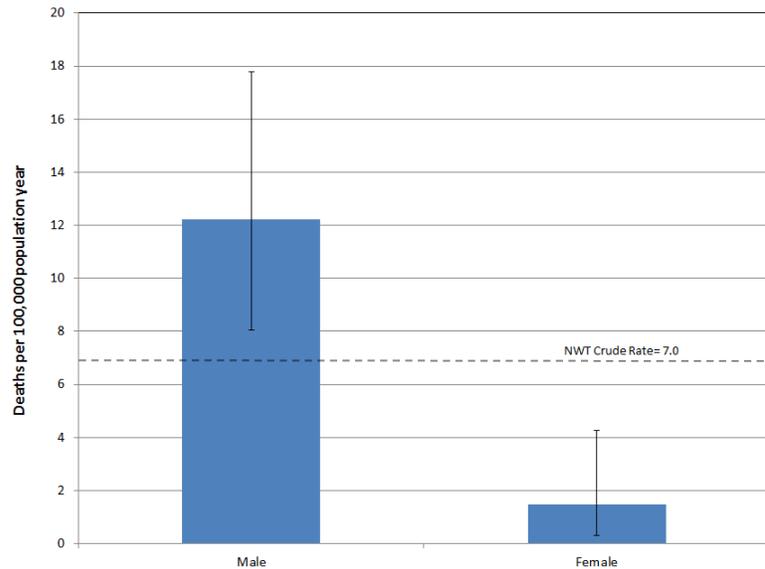
Drowning-Related Deaths by Age Group, NWT (2000-09)



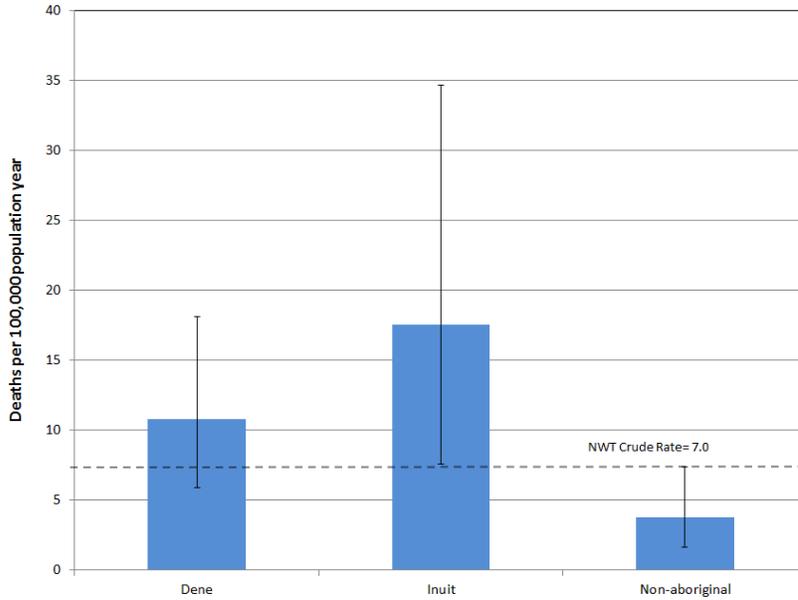
Drowning-Related Deaths by Sex, NWT (2000-09), crude rates

Males accounted for 90 percent of all drownings. The crude rate ratio for drowning among males was 8.4 times higher than females. Rates could not be age-adjusted for comparison purposes due to the small number of drownings among females (n=3).

Drowning-Related Deaths by Sex, NWT (2000-09), crude rates



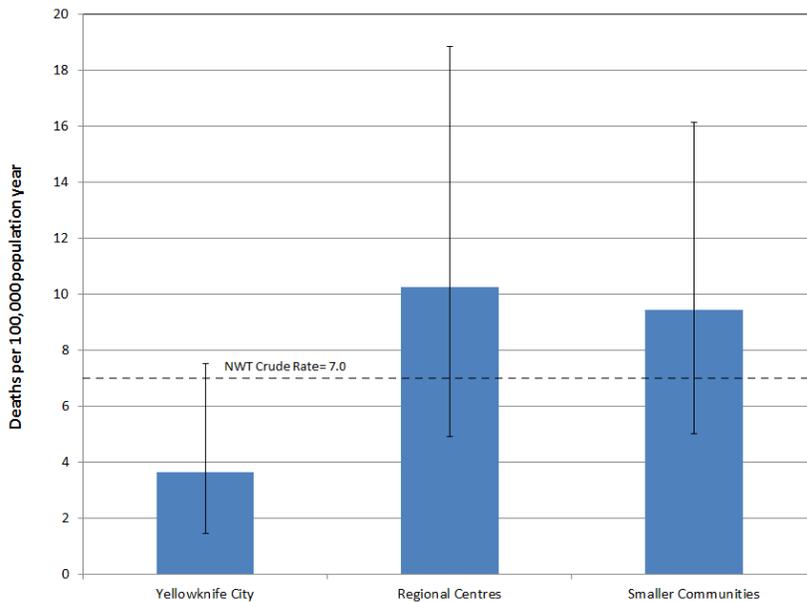
Drowning-Related Deaths by Ethnicity, NWT



Drowning-related Deaths by Ethnicity, NWT (2000-09), crude rates

Drowning among Inuit was 2.5 times higher than the territorial rate. The rate for drownings among non-aboriginal people was 80% less than that of Inuit and 65% less than that of Dene. Rates were not age-adjusted due to small numbers.

Drowning-Related Deaths by Community Type, NWT (2000-09), crude rates



Drowning-Related Deaths by Community Type, NWT (2000-09), crude rates

The crude drowning rate for each community type was similar to the territorial rate. Yellowknife City rates were 61% and 64% less than the Regional Centres and Smaller Communities, respectively.

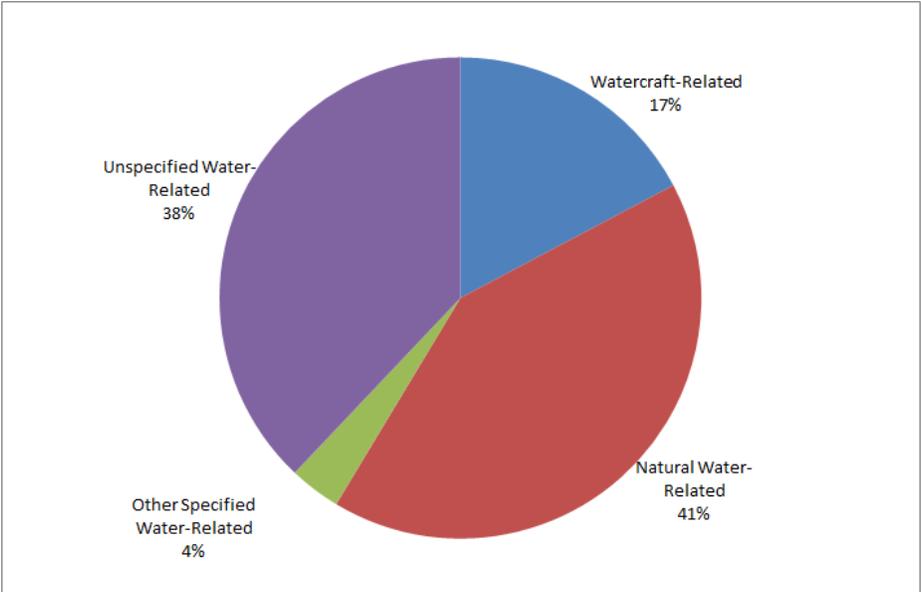
Mechanism or Location of Drowning-Related Deaths

Natural water, including lakes, open sea, rivers and streams, was the major cause of death by drowning, at 41%.

Watercraft, including powered and unpowered watercraft, comprised 17% of deaths by drowning.

Other deaths, including drowning in quenching tanks and reservoirs, comprised less than 5 percent of drowning-related deaths.

Mechanism or Location of Drowning-Related Deaths, NWT (2000-09), n=29

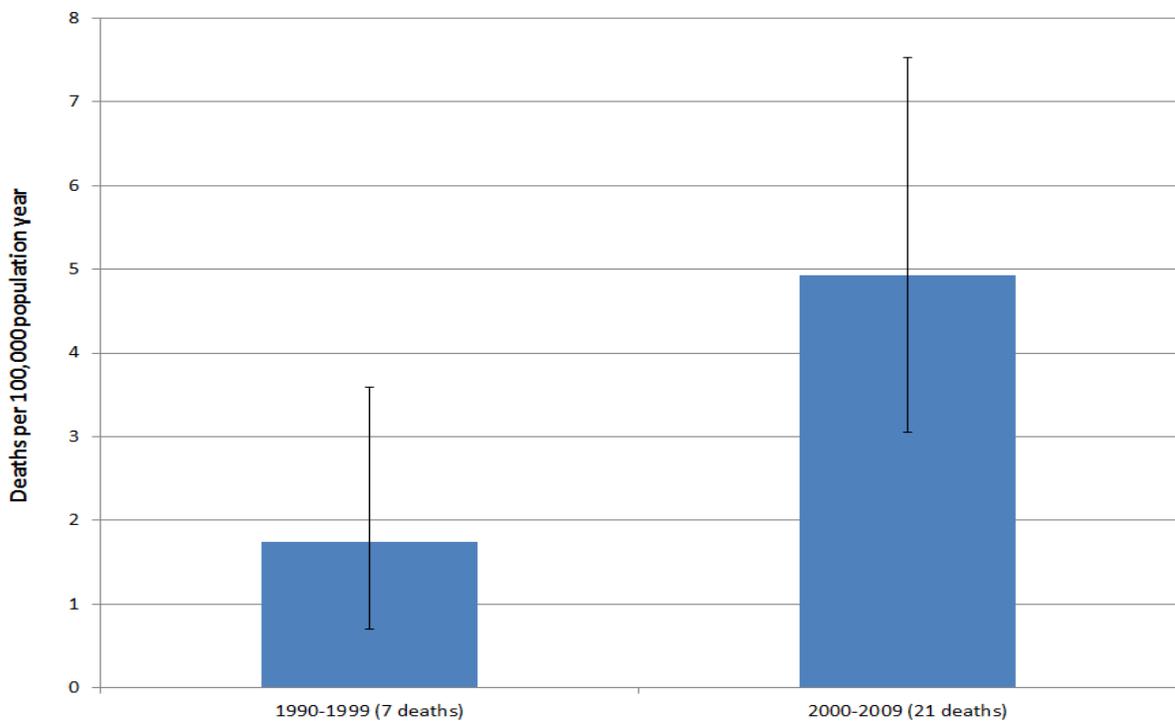


falls | deaths



Falls were the fifth leading cause of death, accounting for seven percent of all injury deaths. Between 2000 and 2009, there were 21 deaths as a result of falls (an average of 2 fall-related deaths per year). The crude death rate was 4.9 deaths per 100,000 population year.

Time Trend for Fall-Related Deaths, NWT (1990-99 vs. 2000-09)



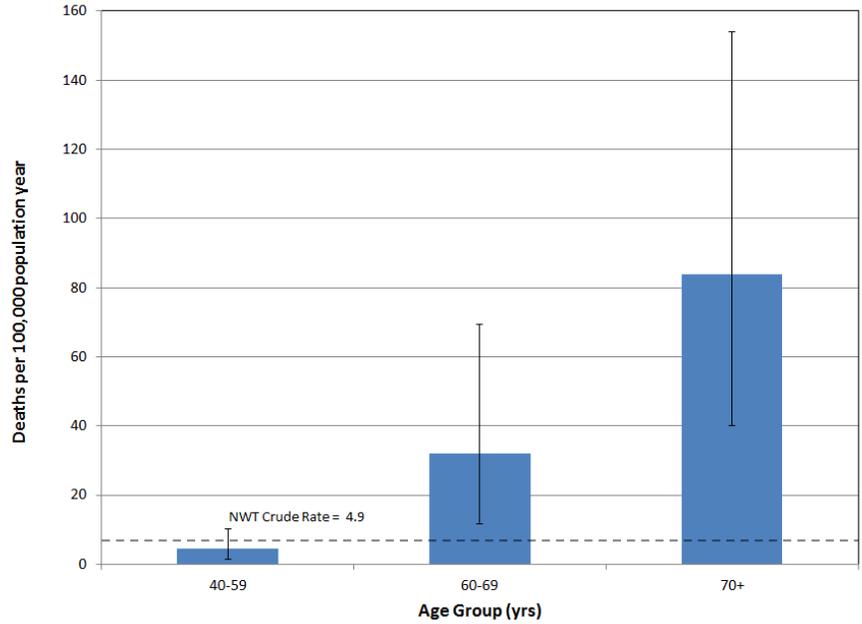
Time Trend for Fall-related Deaths, NWT (1990-99 vs. 2000-09)

The crude rate for deaths due to falls during the 2000-2009 period was almost three times higher than the rate during the 1990-1999 period. Rates could not be age-adjusted due to the low number of deaths in both periods. Between 1990 and 1999, there were seven fall-related deaths.

Fall-Related Deaths by Age Group, NWT (2000-09)

Fall-related deaths primarily occurred among the elderly. There were no deaths among those less than forty years of age. The rate among those 60-69 years and 70+ years of age was 6.5 and 17 times higher than the territorial crude rate.

Fall-Related Deaths by Age Group, NWT (2000-09)

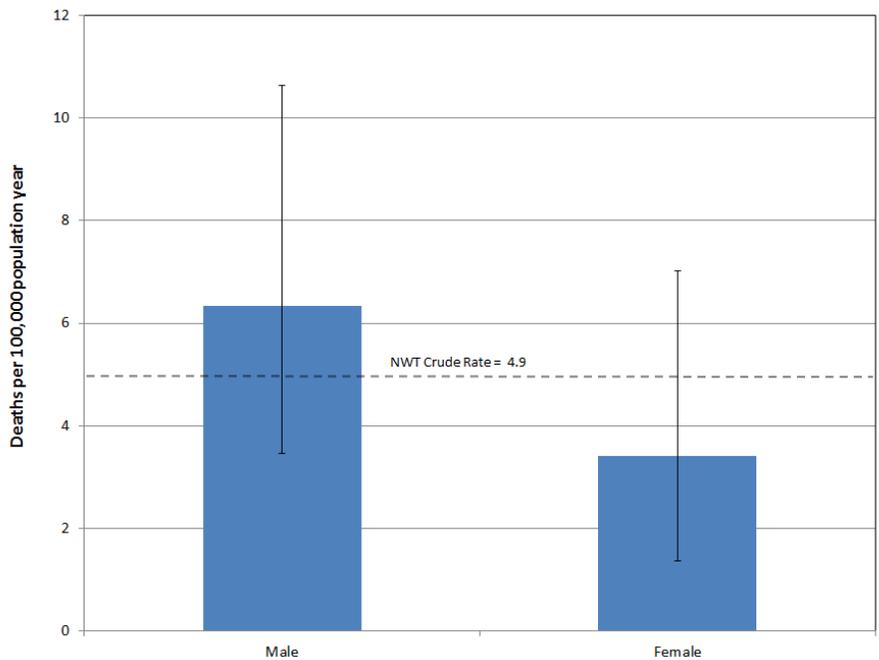


Fall-Related Deaths by Sex, NWT (2000-09)

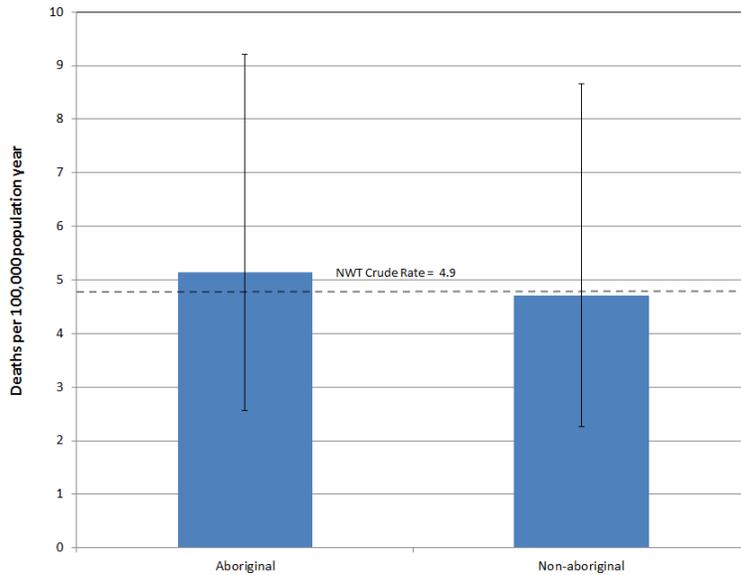
Males accounted for 67 percent of all fall-related deaths, although the crude rates between males and females were not significantly different.

The small number of deaths in this category caused large uncertainty in the measurements, as illustrated by the wide confidence intervals. Therefore, differences must be interpreted with caution.

Fall-Related Deaths by Sex, NWT (2000-09), crude rates



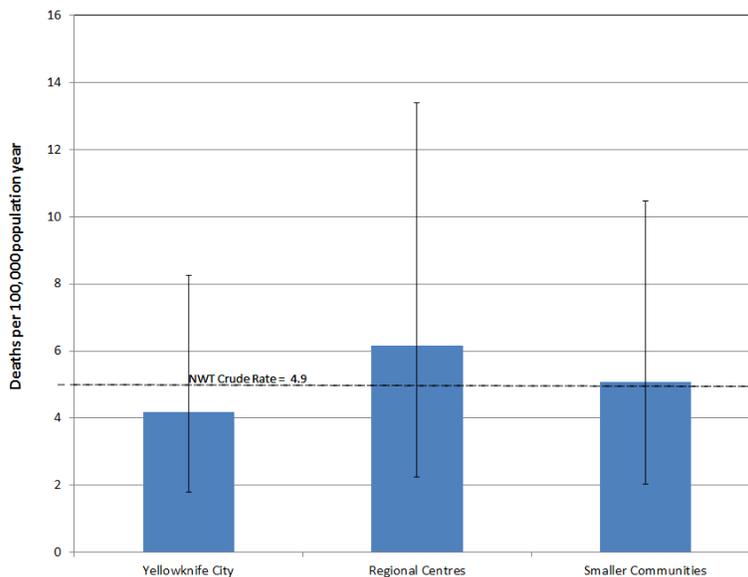
Fall-related Deaths by Ethnicity, NWT (2000-09)



Fall-Related Deaths by Ethnicity, NWT (2000-09)

There was no significant difference in the crude death rate due to falls by Aboriginal status. Due to the small numbers, the ethnic groups were categorized into aboriginal and non-aboriginal groups.

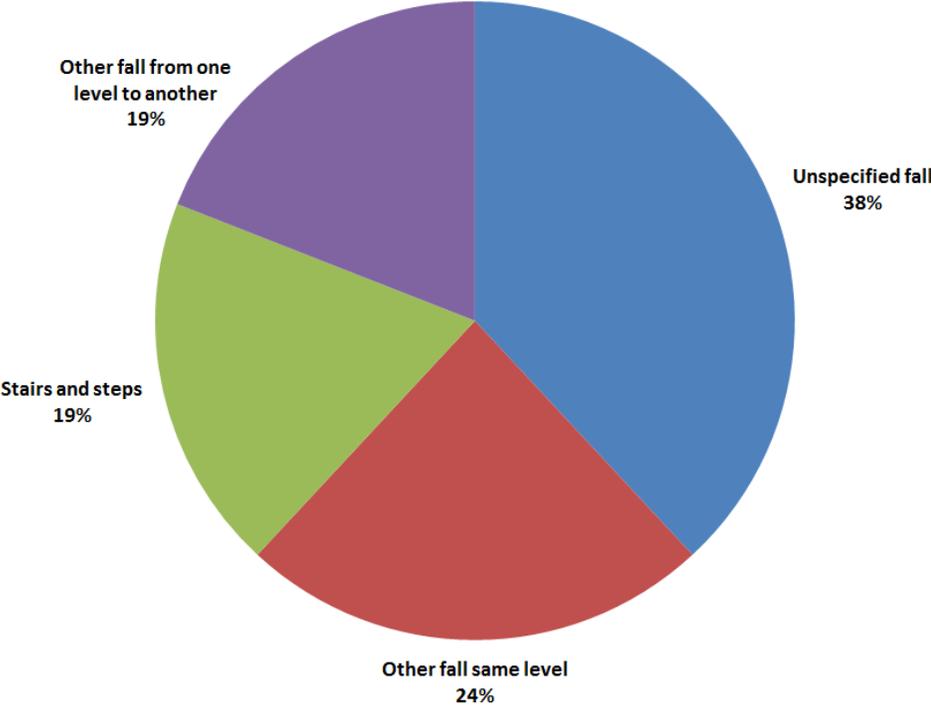
Fall-Related Deaths by Community Type, NWT (2000-09), crude rates



Fall-Related Deaths by Community Type, NWT (2000-09), crude rates

The crude death rate due to falls in each community type was similar to the territorial rate.

Type of Fall Responsible for Deaths, NWT (2000-09), n=21



Type of Fall Responsible for Deaths, NWT (2000-09)

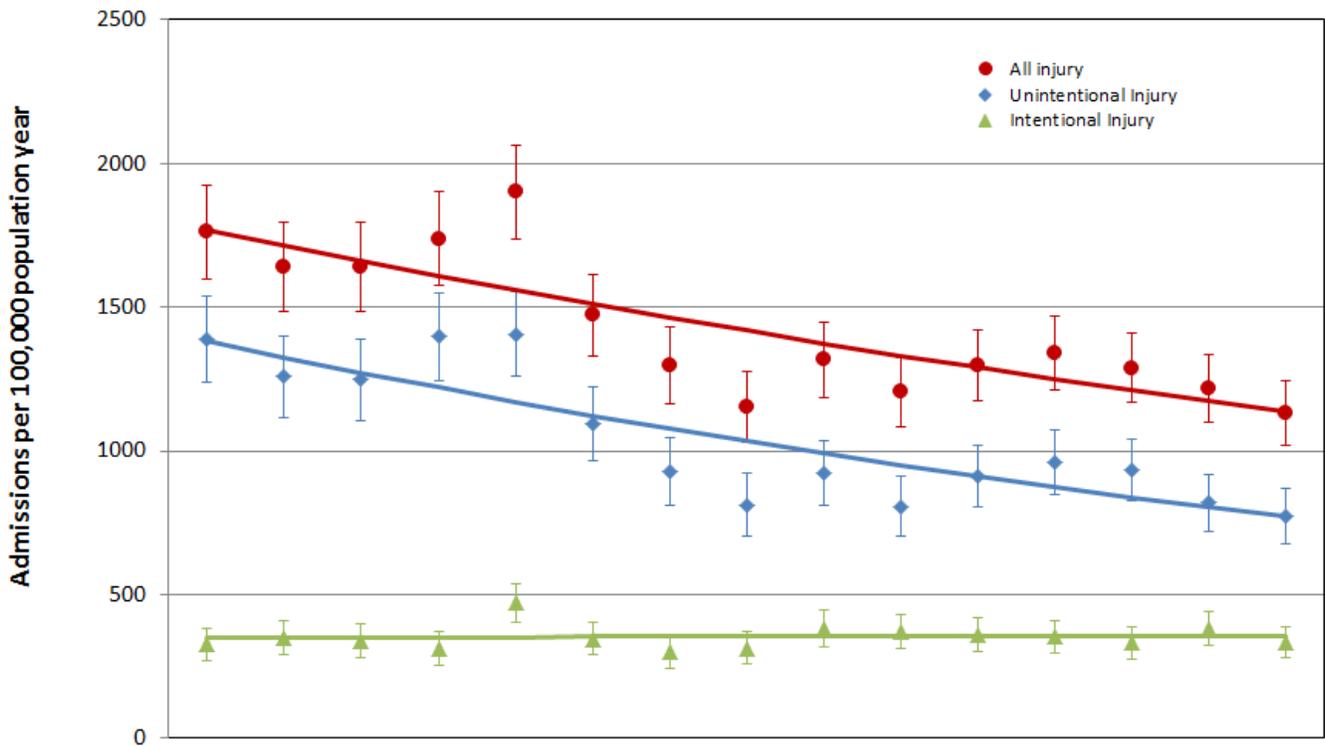
Falls within the same level (not from a height) accounted for a quarter of all fall-related deaths. However, unspecified falls where no location was documented accounted for the most deaths at 38 percent.

hospital admissions

4822 hospital admissions

With 4,822 injury-related hospital admissions between 2000 and 2009, there was slightly more than one injury admission per day. The overall crude rate for injury admissions was 1131 admissions per 100,000 population year.

NWT Injury-related Admissions Trend (1995 to 2009) (n=7834)



Rate per 100,000 population	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
All Injuries	1761.8	1642.2	1638.8	1737.8	1900.0	1471.6	1295.1	1154.5	1316.5	1204.4	1298.2	1341.5	1288.6	1216.6	1132.1
Unintentional	1386.0	1258.1	1247.7	1397.2	1406.7	1094.0	928.3	812.5	924.0	806.4	912.6	959.3	934.6	818.1	773.1
Intentional	325.3	348.9	336.5	311.9	470.1	344.9	299.5	312.8	381.3	372.2	357.9	351.9	331.5	381.3	332.5

Injury admission rates have changed over time from 1995 to 2009.⁵ There was a slight decrease in overall injury admission from 1995 to 2009 due to a decrease in unintentional injury admissions, while intentional injury admissions remained fairly constant during this time period.

5 Note for hospital admissions, the year noted reflects the fiscal year. Thus 1995 represents the period from April 1995 to March 1996.

This does not include injuries that are treated in hospital emergencies rooms, physician’s offices, occupational health emergency sites, or in health centers.

Number of Injury-Related Admissions by Age Group and Sex, NWT (2000-09)

From 1995 to 2009, there was an average annual decrease of 3.1% in the rate of injury related admissions. This decrease was slightly higher for unintentional injuries at 4.1%. There was no significant trend for intentional injuries. The rates in 1999 were the highest for all three injury categories. The lowest admission rates were 2009 for unintentional injuries and 2001 for intentional injuries.

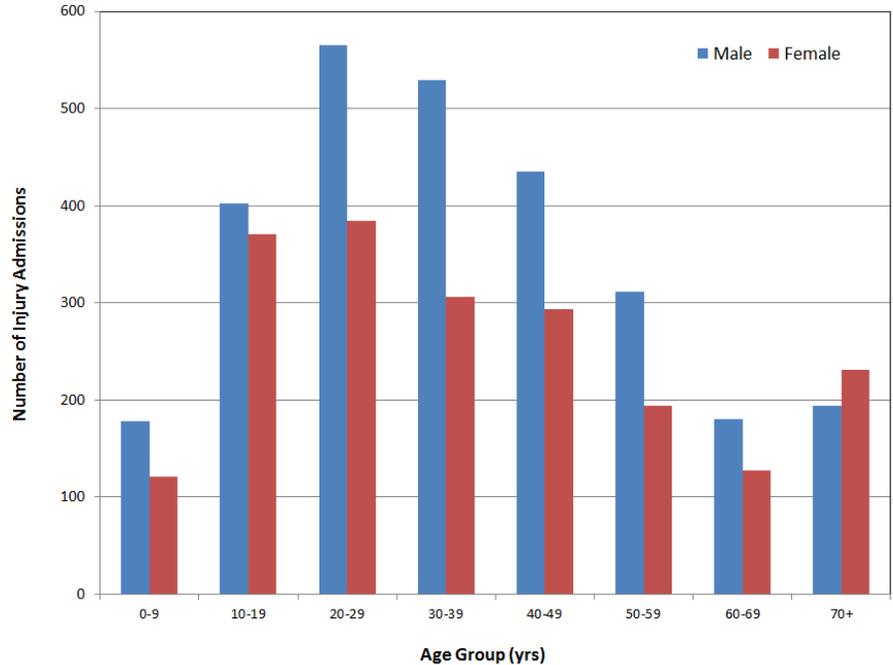
Rate of Injury-Related Admissions by Age Group and Sex, NWT (2000-09)

The number and the rate for Injury-related admissions increased with age until age group 20- 29. After age 30, there was a decrease in the rate between the ages of 30 to 59 and then another increase at 60 years and older. Males accounted for 58% of the injury admissions with 2,794 admissions between 2000 and 2009.

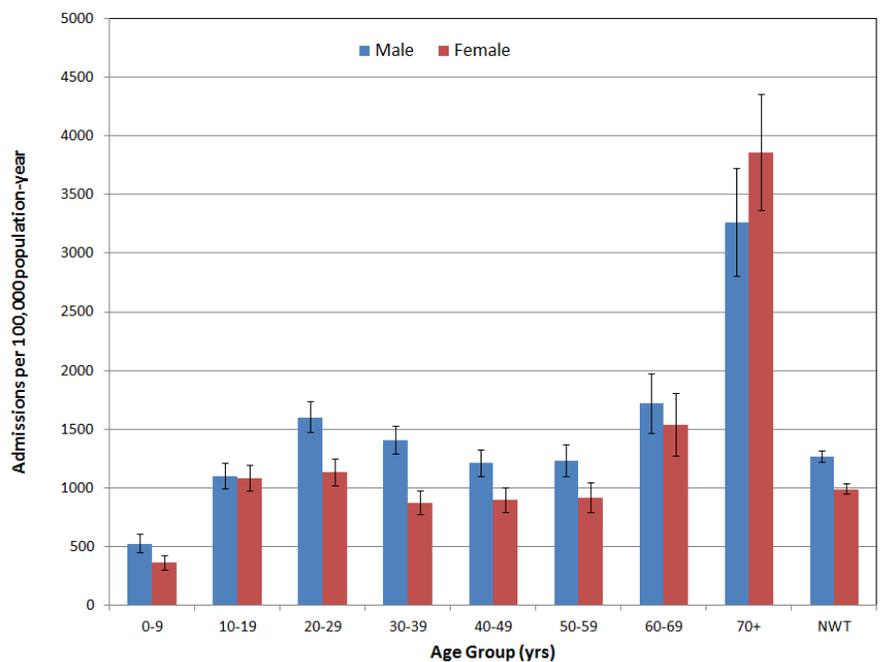
The largest ratio in injury admission rates between sexes occurred in the 30 to 39 year age group, in which males were admitted for injury 1.6 times more than females. When age-adjusted, males have more than 20% greater risk than females for an admission due to injury.

Who is Hospitalized Due to Injuries?

Number of Injury Admissions by Age Group and Sex, NWT (2000-09)

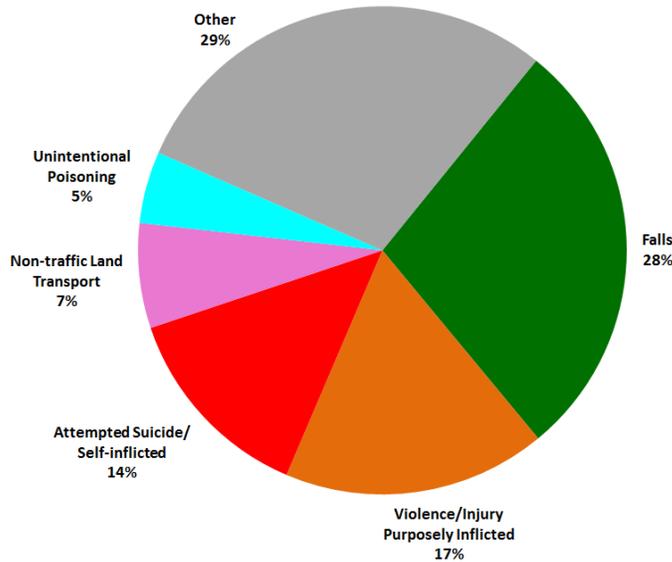


Rate of Injury Admissions by Age Group and Sex, NWT (2000-09)



Leading Causes of Injury-Related Hospital Admissions

Leading Causes of Injury-Related Hospital Admissions, NWT (2000-09), n= 4822



Leading Causes of Injury-Related Admissions, NWT

Between 2000 and 2009, the top five leading causes of injury-related hospital admissions were:

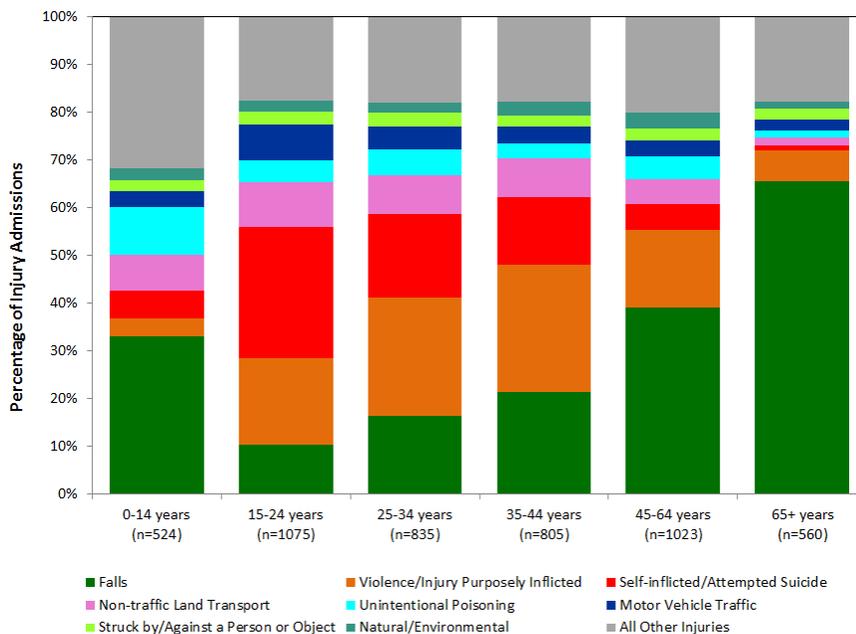
1. Unintentional falls
2. Violence/purposely inflicted injury
3. Attempted suicide and self-inflicted injury
4. Non-traffic land transport
5. Unintentional poisoning

Unintentional falls were the leading cause of injury-related hospital admissions at 1.6 times the rate of the next category of injury. Falls represented 28% of all injury admissions.

Injury-Related Admissions by Age Group and Causes of Injury, NWT (2000-09)

Falls were the most common cause for injury admission among those 0-14 years and those 45 years and older. Attempted suicide and self-inflicted injuries were the most common cause for injury admission among those 15 to 24 years of age. The leading type of injury admission for those within the age groups of 25 to 34 and 35 to 44 years was due to violence or purposely inflicted injuries.

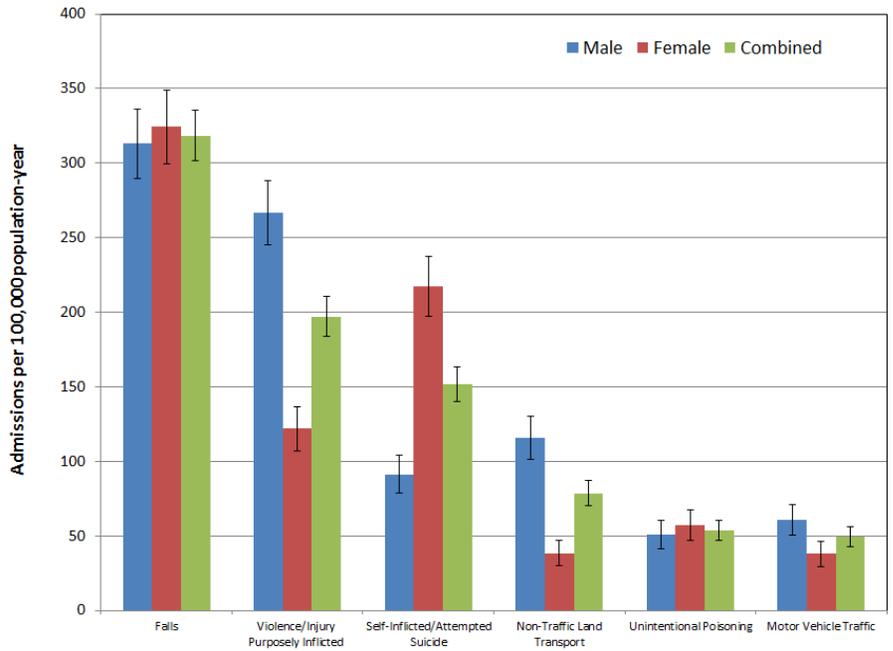
Injury-related Hospital Admissions by Age Group and Causes of Injury, NWT (2000-09)



Leading Causes of Injury-Related Admissions by Sex, NWT (2000-09)

Females had a greater admission rate than males for attempted suicides and self-inflicted injuries by 2.4 times. However the male admission rate outnumbered the female admission rate for violence/purposely inflicted injuries (2.2 times), non-traffic land transport (3 times) and motor vehicle traffic injuries (1.6 times).⁶

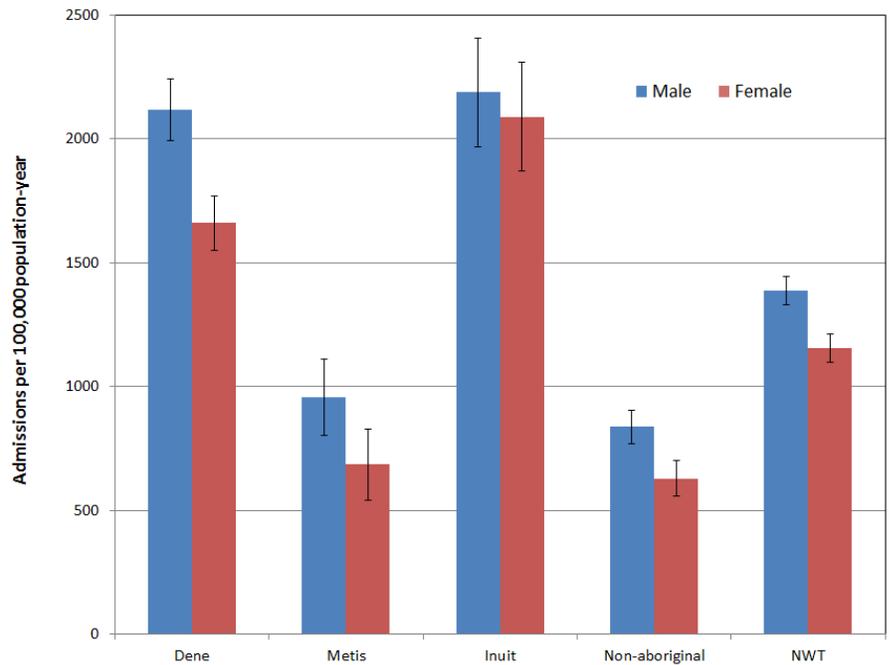
Leading Causes of Injury-Related Admissions by Sex, NWT (2000-09)



Injury-Related Admission Rate by Ethnicity, NWT (2000-09)

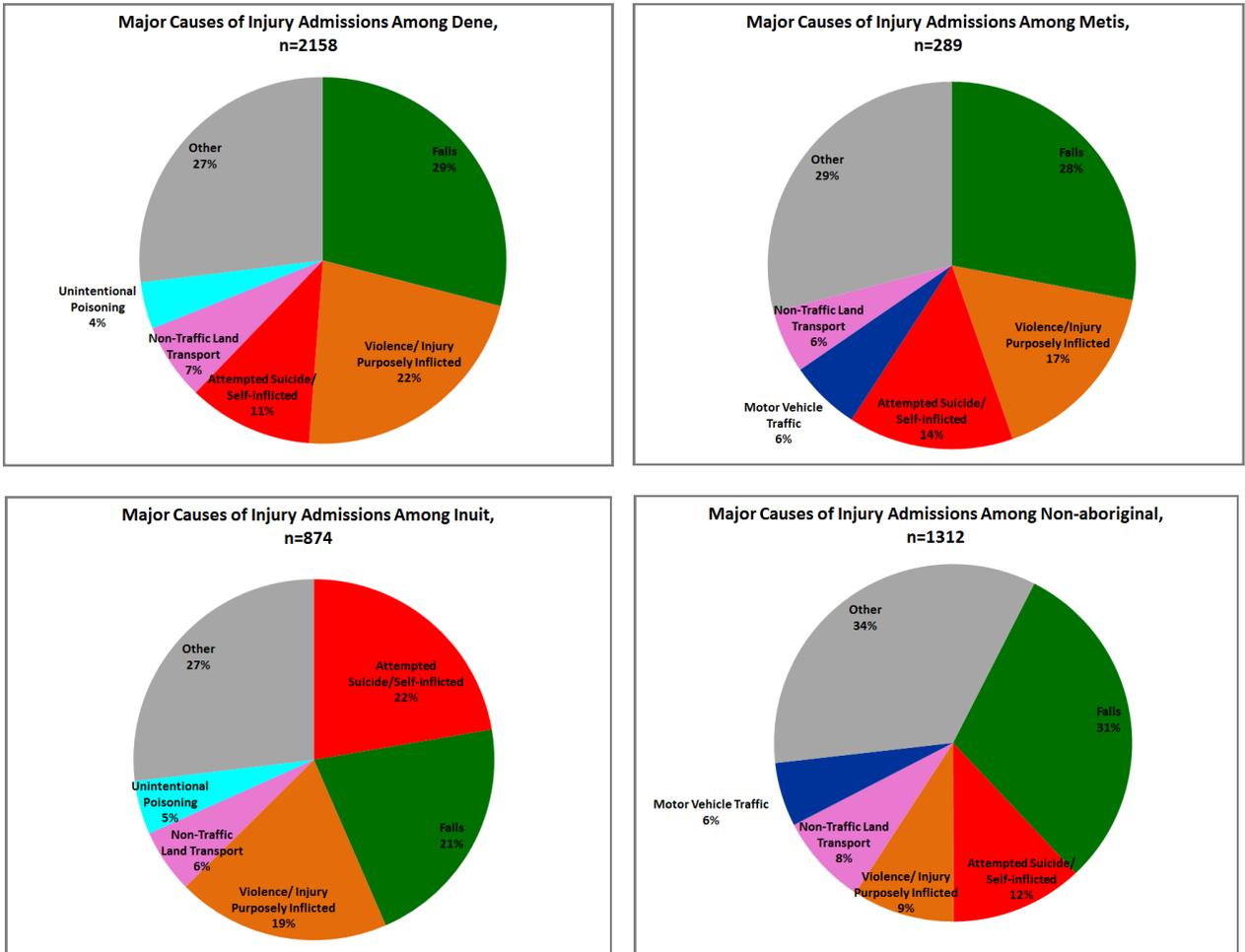
Once age-standardized, the injury admission rates ranged from 27 to 40 percent higher in males compared to females in the Dene, non-Aboriginal and Métis populations. Male and female rates for Dene and Inuit were higher than their gender-specific territorial rate, whereas the male and female rates for Métis and non-Aboriginal people were lower than their territorial counterparts.

Injury-Related Admission Rate by Ethnicity, NWT (2000-09)



⁶ These are ratios of crude rates.

Major Causes of Injury-related Hospital Admissions by Ethnicity, NWT (2000-09)



Falls were the leading cause of injury-related hospital admissions among all ethnic groups except for the Inuit. Among the Inuit, attempted suicide/self-inflicted injury was the top hospitalization.

Injury-Related Admission Rate by Community Type, NWT (2000-09)

When examined by community type, the age-adjusted injury admission rate for Yellowknife City was almost 20% lower than the territorial rate whereas Regional Centres had rates that were 36% higher than the territorial rate. In contrast to injury deaths, whereby those living in smaller communities had higher injury death rates than the territory, the injury admission rate for small communities was similar to the territorial rate.

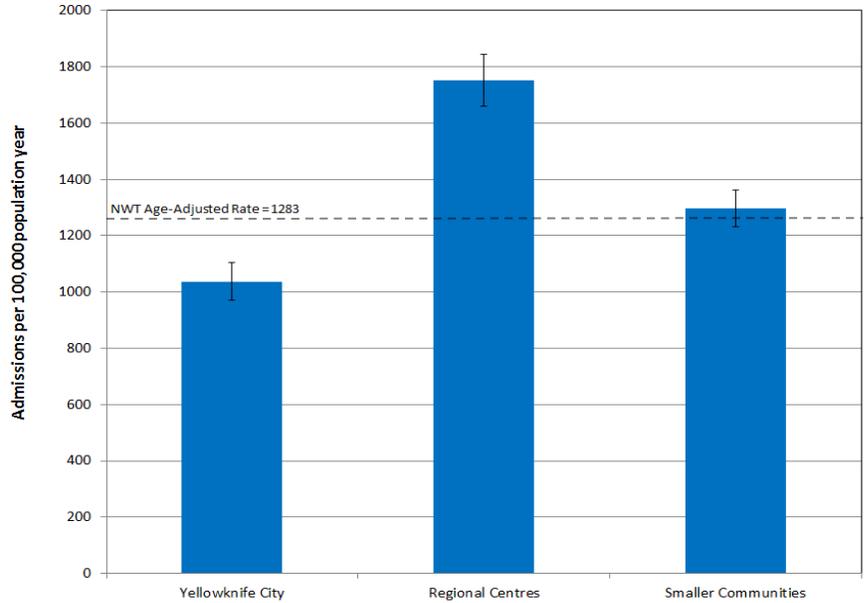
Age-Standardized Injury-Related Admission Rates by Region, NWT (2000-09)

The Tlicho, South Slave and Beaufort-Delta region had injury admission rates that ranged from 13% to 28% percent higher than the territorial rate. The rates for Yellowknife and the Sahtu region were almost 20% lower than the territorial rate.

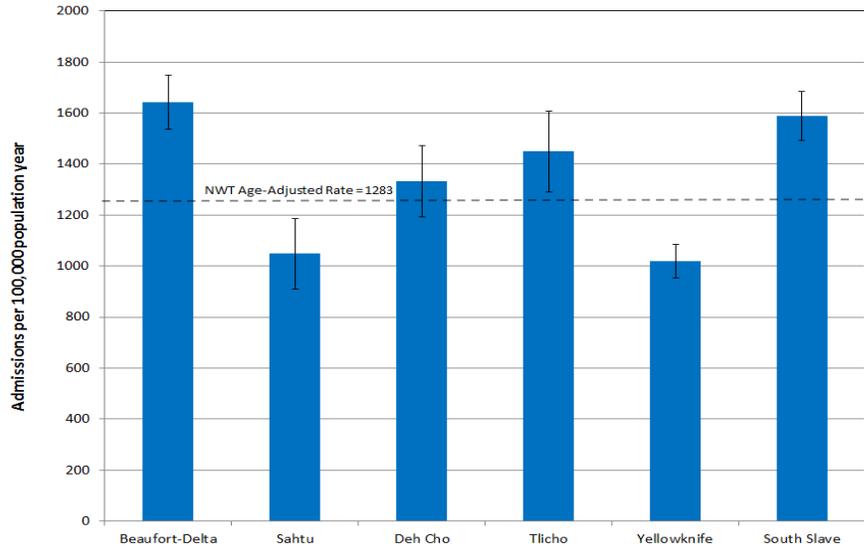
The Deh Cho region had an injury admission rate similar to the territorial rate.

Injury-Related Admissions by Residence

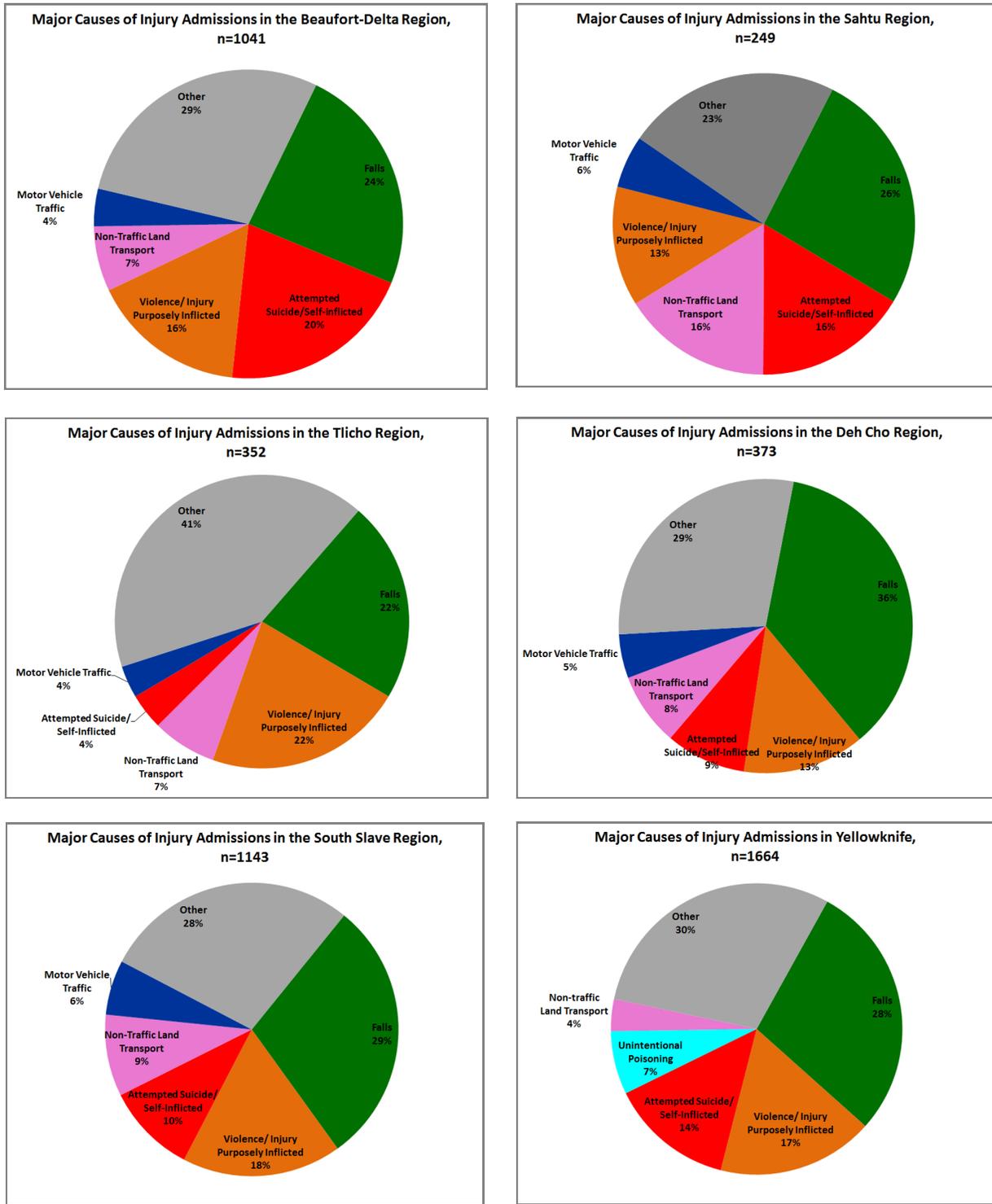
Injury-Related Admission Rate by Community Type, NWT (2000-09)



Age-Standardized Injury-Related Admissions Rated by Region, NWT (2000-09)



Major Causes of Injury-Related Hospital Admissions by Region, NWT (2000-09)



Falls accounted for the majority of admissions in all regions. The second leading cause in the Beaufort-Delta and Sahtu region was due to attempted suicide/self-inflicted injuries. Violence and purposely inflicted injuries were the second most common reason in the Tlcho, Deh Cho, South Slave and Yellowknife regions.

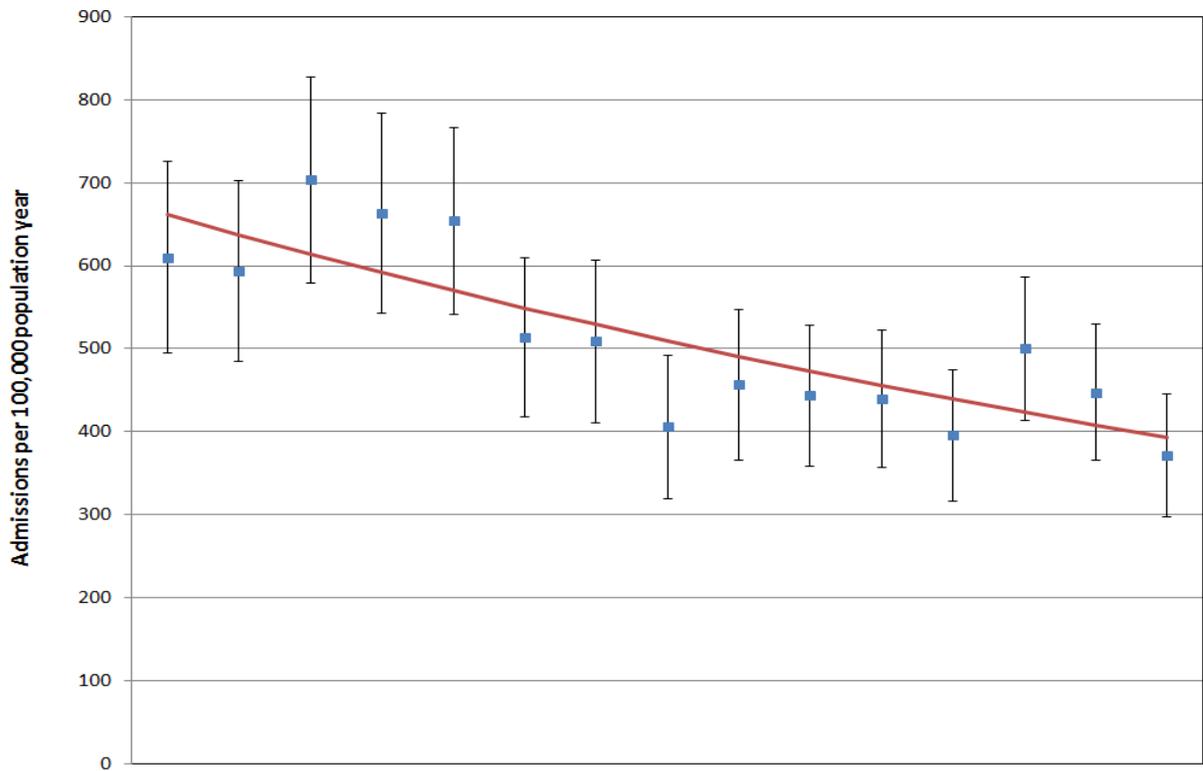
Injuries in the NWT: Major Mechanisms of Injury-Related Hospital Admissions

falls | hospital admissions



Between 2000 and 2009, there were 1358 fall-related hospital admissions. This was the leading cause and accounted for 28 percent of injury-related hospitalizations. Overall the crude rate for admissions due to falls was 319 admissions per 100,000 population year.

Time Trend for Fall-Related Admissions, NWT (1995-2009)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Rate per 100,000 population	609.9	593.5	703.2	662.7	654.1	513.6	508.6	406.1	456.4	443.7	440.0	395.9	500.2	447.6	371.6

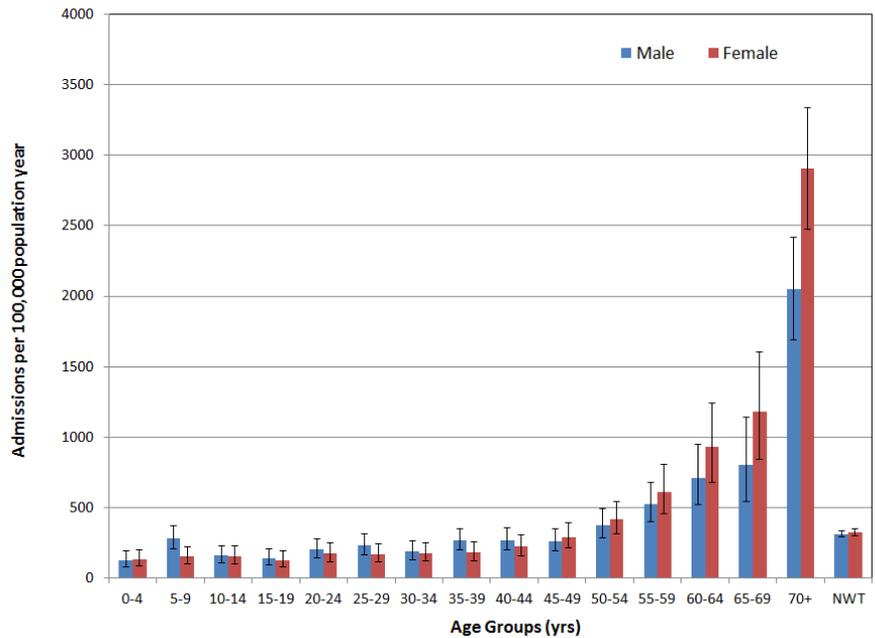
Time Trend for Fall-Related Admissions, NWT (1995-2009)

From 1995 to 2009, there was a decreasing trend in fall-related hospital admissions. Throughout this period, the average rate decreased by 3.7% every year. Overall, the age-adjusted rate in the 2000-2009 period was 31% lower than that in the 1995-1999 period.

Fall-Related Admissions by Age Group and Sex, NWT (2000-09)

Fall-related hospital admissions occurred in all age groups, contrasting with fall-related deaths which occurred only among those aged 40 and older. Hospitalization rates related to falls also increased with age. Male and female fall-related admission rates did not differ within age groups, except for the 5-9 years and 70 years and older age groups. Although crude rates between males and females were not significantly different, the age-adjusted rate was 16 percent higher among females. Fall-related admissions were split evenly between males and females.

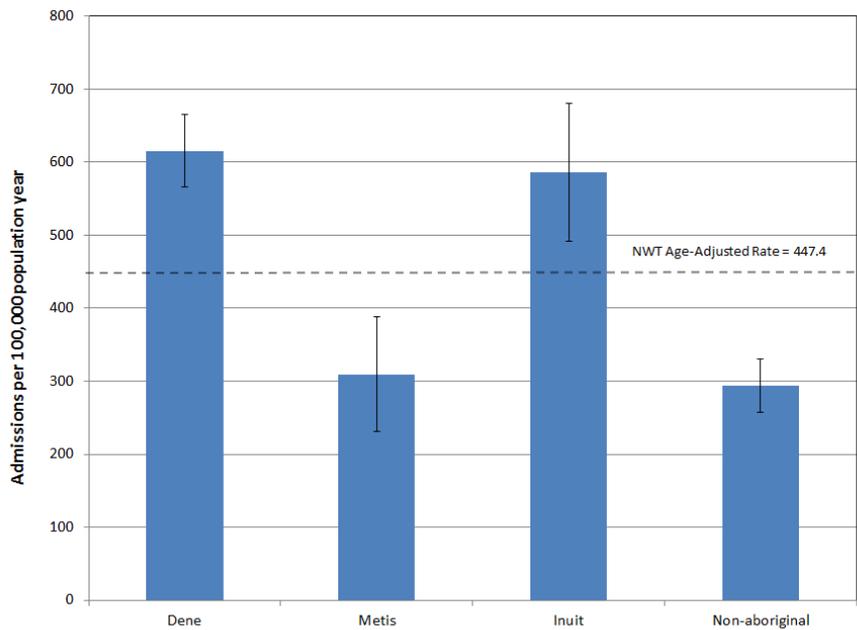
Fall-related Admissions by Age Group and Sex, NWT (2000-09)



Fall-Related Admissions by Ethnicity, NWT (2000-09)

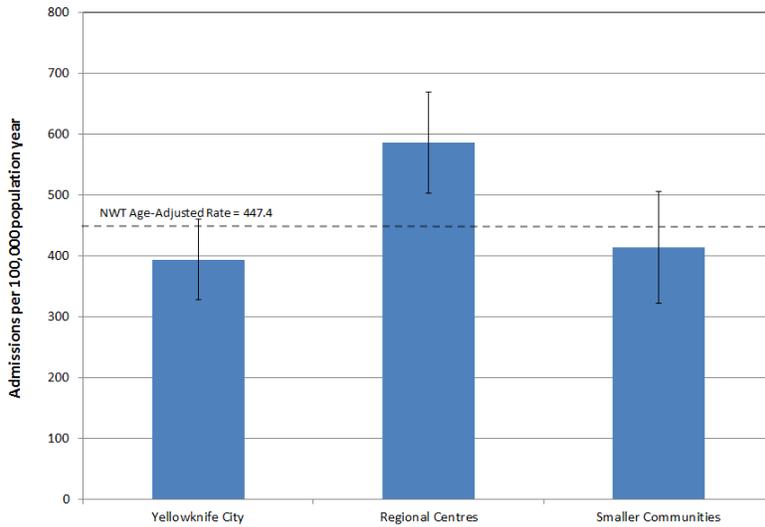
Between 2000 and 2009, the fall-related admission rates among Dene and Inuit were 38% and 31% higher than the territorial rate, respectively. Dene represented the majority of fall-related admissions at 46%. Rates among the Métis and non-aboriginal people were 31% and 34% lower than the territorial rate, respectively.

Fall-related Admissions by Ethnicity, NWT (2000-09)



falls | hospital admissions

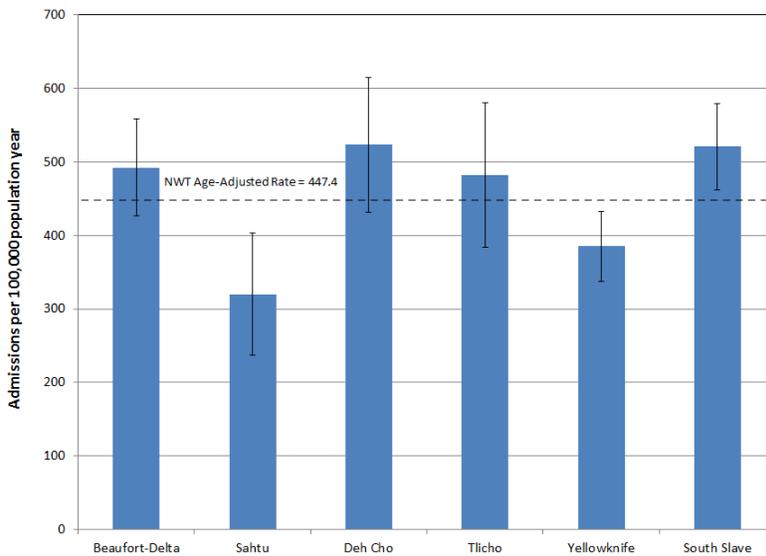
Fall-Related Admissions by Community Type, NWT (2000-09)



Fall-Related Admissions by Community Type, NWT (2000-09)

The total number of fall-related hospital admissions was almost equally shared between each of the community types: 35% of admissions were among Yellowknife City residents; 31% among residents of Regional Centres; and 34% among Smaller Communities. However, the age-adjusted injury admission rate in Regional Centres was 31% higher than the territorial rate.

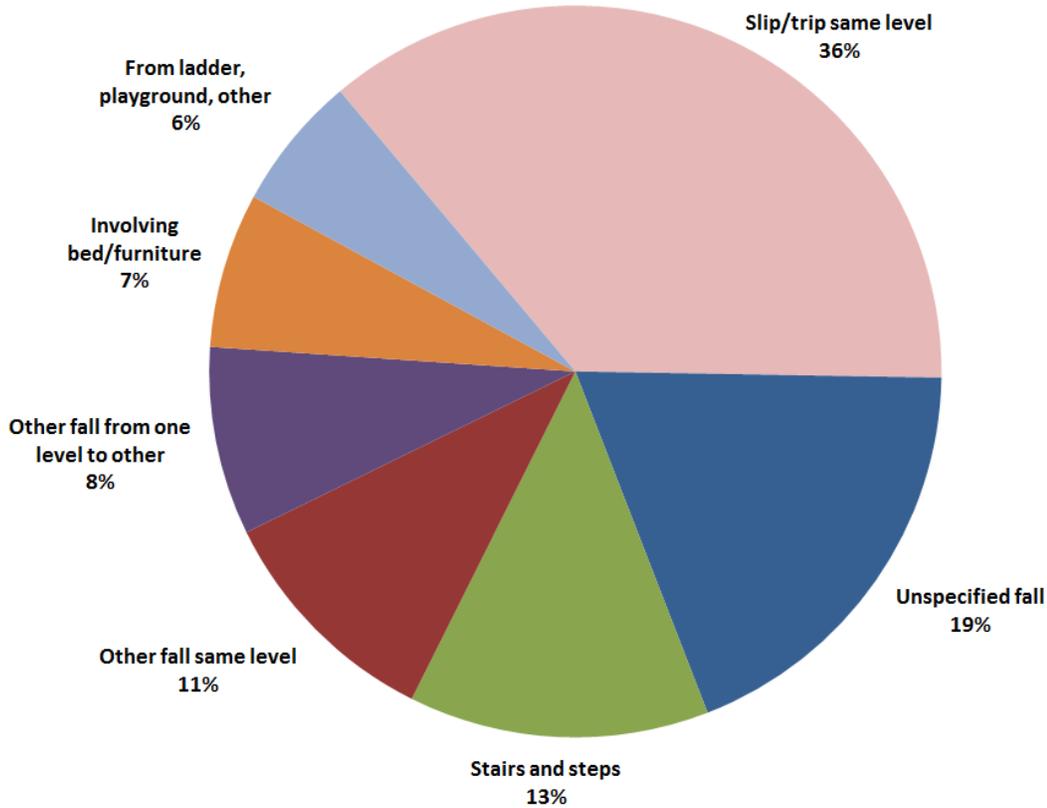
Fall-Related Admissions by Region, NWT (2000-09)



Fall-Related Admissions by Region, NWT (2000-09)

The Sahtu and Yellowknife regions had lower fall-related admission rates, corresponding to 72% and 86% of the territories' average rate, respectively. The admission rate for fall-related injuries in the South Slave region was 16 percent higher than the territorial rate. Despite the admission rate among Yellowknife region residents being one of the lowest in the territory, Yellowknife region contributed 35% of all fall-related admissions in the NWT.

Type of Fall Responsible for Admissions, NWT (2000-09), n=1358

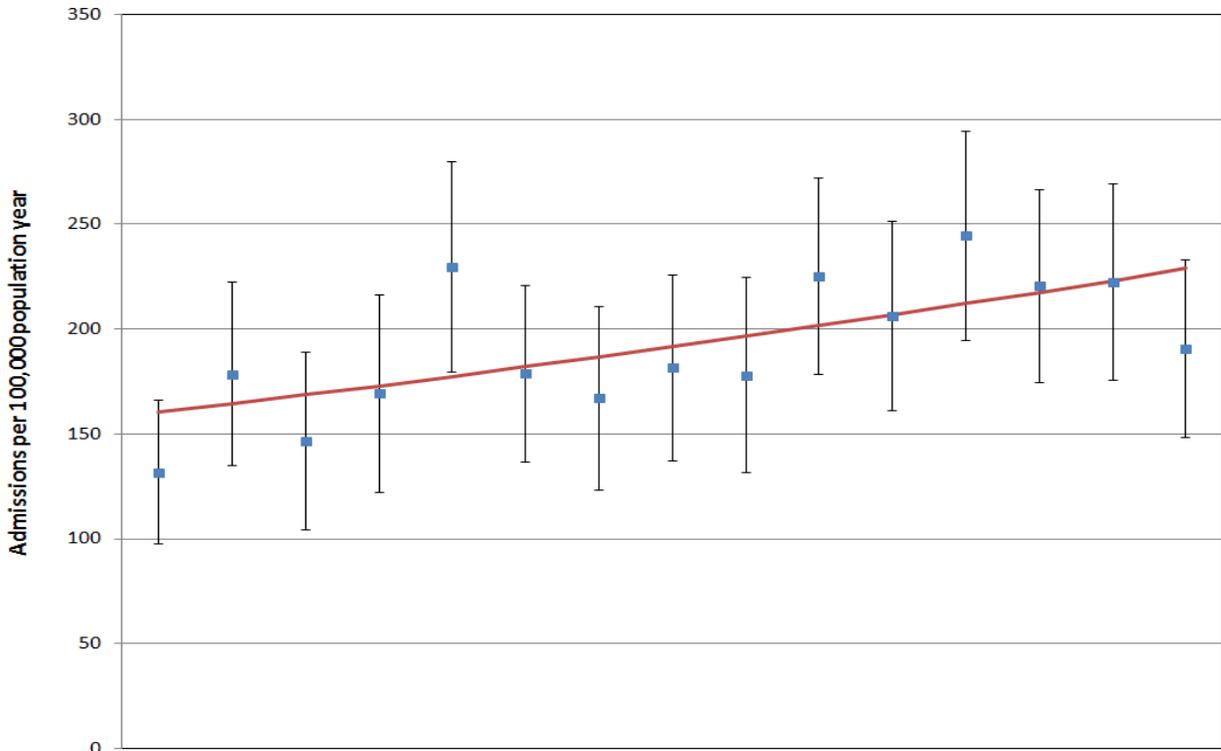


Type of Fall Responsible for Admissions, NWT (2000-09)

The majority of admissions for fall-related injuries were due to slipping or tripping on the same level (36%).



Time Trend in Violence/Injury Purposely Inflicted Hospital Admissions, NWT (1995-2009)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Rate per 100,000 population	131.7	178.5	146.5	169.1	229.5	178.8	166.9	181.4	177.9	225.2	206.3	244.6	220.5	222.3	190.4

Time Trend in Violence/Injury Purposely Inflicted Hospital Admissions, NWT (1995-2009)

From 1995 to 2009, there was an overall average increase in violence/injury purposely inflicted hospital admissions of 2.6% each year.

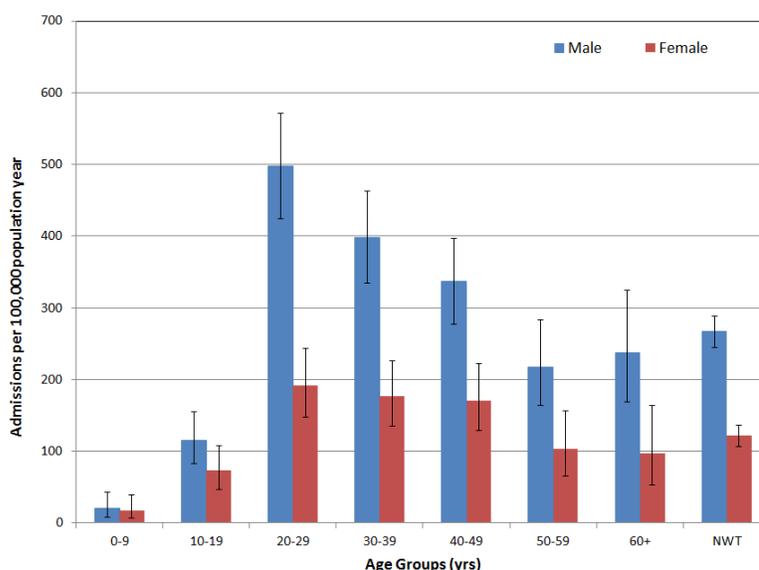
Violence/Injury Purposely Inflicted Admissions by Age Group and Sex, NWT (2000-09)

Males accounted for 70% of the violence/injury purposely inflicted admissions and had admission rates consistently higher than females.

For all age groups except those less than 20 years of age, the admission rate for males was more than twice that for females in the same age group.

Males between 20 to 29 years of age had an admission rate twice that of the overall male territorial rate.

Violence/Injury Purposely Inflicted Admissions by Age Group and Sex, NWT (2000-09)

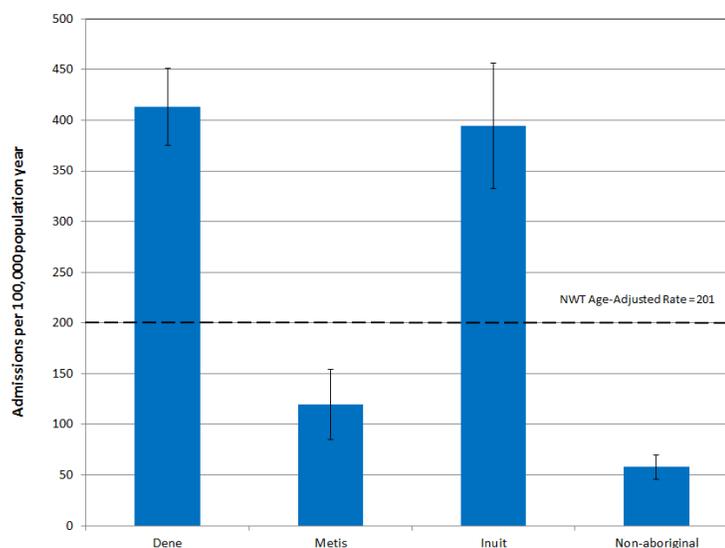


Violence/Injury Purposely Inflicted Admissions by Ethnicity, NWT (2000-09)

Dene had the highest violence/injury purposely inflicted hospital admission rate, which was more than twice that of the territorial rate and accounted for 57% of the admissions.

Inuit had the second highest rate and accounted for 20% of the admissions.

Violence/Injury Purposely Inflicted Admissions by Ethnicity , NWT (2000-09)



violence/injury purposely inflicted hospital admissions

Violence/Injury Purposely Inflicted Admissions by Community Type, NWT (2000-09)

The total number of violence/injury purposely inflicted hospital admissions was almost equally shared between each of the community types.

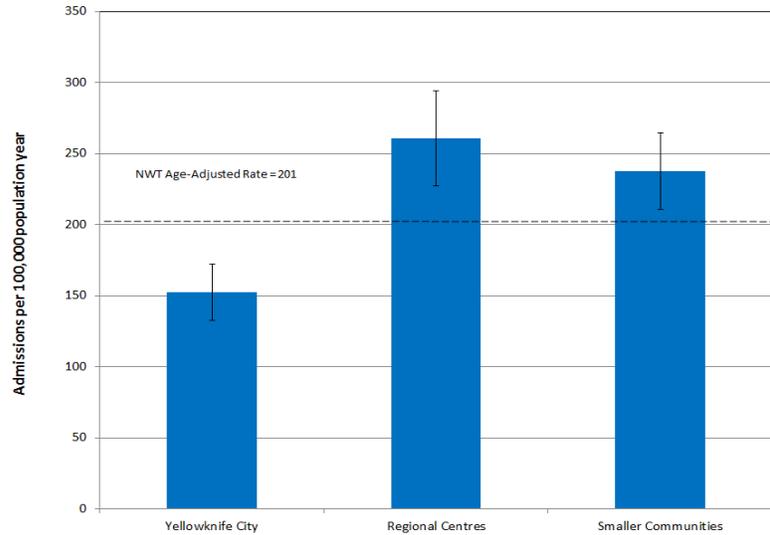
However, the adjusted injury admission rate in Regional Centres was 29% higher than the territorial rate.

Violence/Injury Purposely Inflicted Admissions by Region, NWT (2000-09)

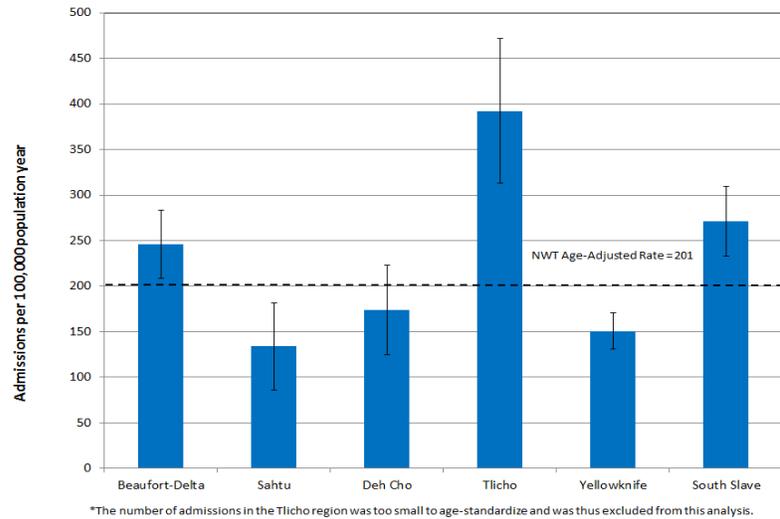
The Sahtu and Yellowknife regions had lower admission rates for violence/injury purposely inflicted, corresponding to 67% and 86% of the territories' average rate, respectively. The admission rate for violence/purposely inflicted injuries in the Tlicho region was almost twice that of the territorial rate.

Violence/purposely inflicted injury admissions accounted for 17% of all injury-related hospital admissions in the NWT.

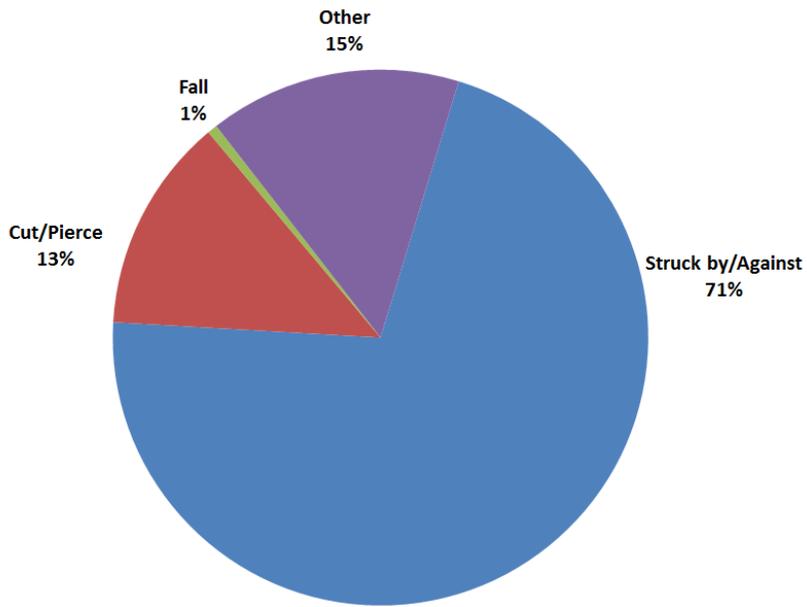
Violence/Injury Purposely Inflicted Admissions by Community Type, NWT (2000-09)



Violence/Injury Purposely Inflicted Admissions by Region, NWT (2000-09)



Violence/Injury Purposely Inflicted Admissions by Method, NWT (2000-09)

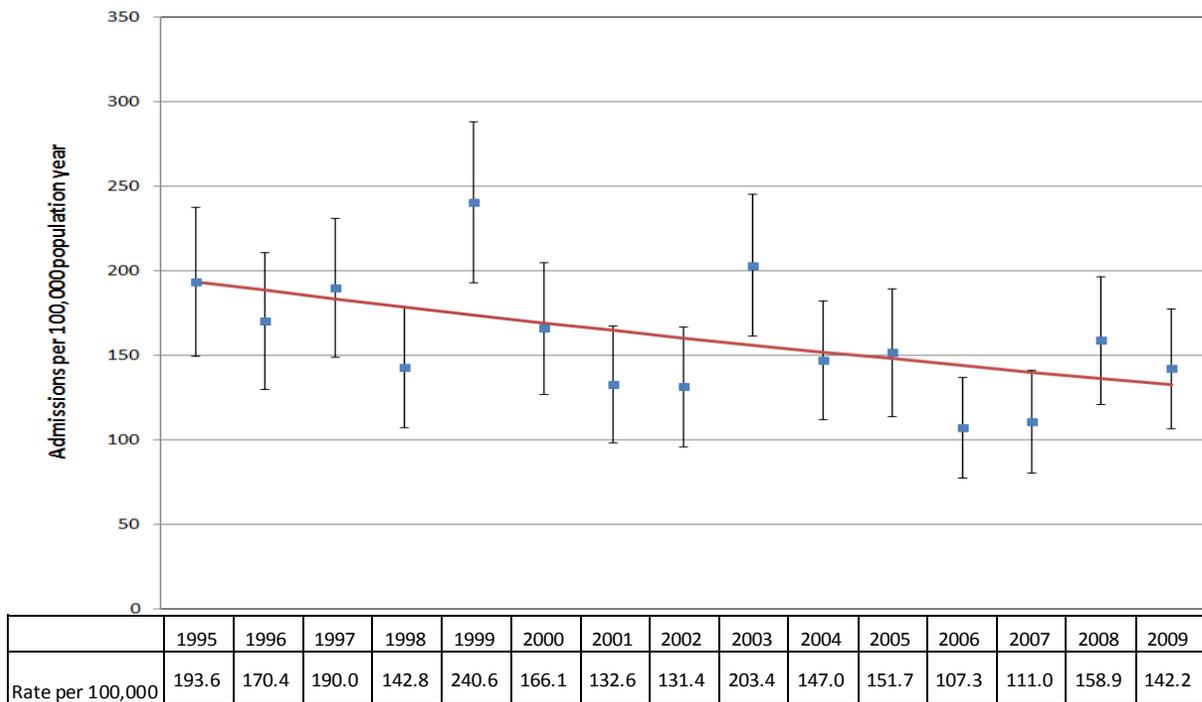


Violence/Injury Purposely Inflicted Admissions by Method, NWT (2000-09)

The most common method used in violence/injury purposely inflicted admission was being struck by/against a person or object with 71% of the admissions.



Between 2000 and 2009, there were 648 attempted suicide/self-inflicted injury-related hospital admissions. This accounted for 14 percent of injury admissions and was the third leading cause of injury-related hospitalizations. Overall the crude rate for admissions due to attempted suicide or self-inflicted injury was 152 admissions per 100,000 population year.



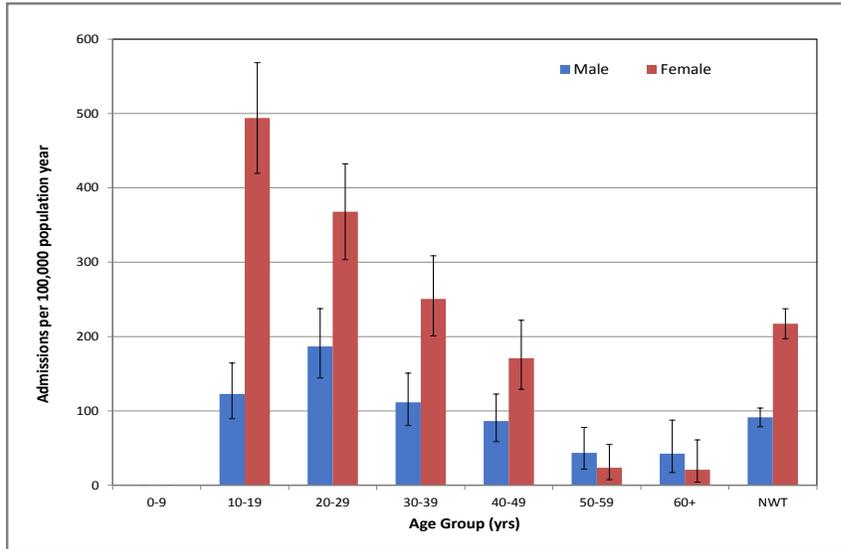
Time Trend in Attempted Suicide/Self-Inflicted Injury Admissions, NWT (2000-09)

From 1995 to 2009, there was an overall decrease in attempted suicide hospital admission rates. During this period, there were two spikes in the rates, one in 1999 and the other in 2003. There was an overall downward trend in which the average annual decrease was 2.7%. When comparing age-adjusted rates, admissions in the 2000-2009 period were 21% lower than in 1995-1999.

Attempted Suicide/Self-inflicted Injury Admissions by Age Group and Sex, NWT (2000-09)

In contrast to suicide deaths, whereby the crude rates were 4.2 times higher among males than females, the female age-adjusted rate for attempted suicide or self-inflicted injury hospital admissions was 2.2 times higher than the male rate. For each of the ten-year age categories ranging from 10 to 49, the rate among females was significantly higher than the rates in males. 69% of all attempted suicide/self-inflicted injury related admissions occurred among females.

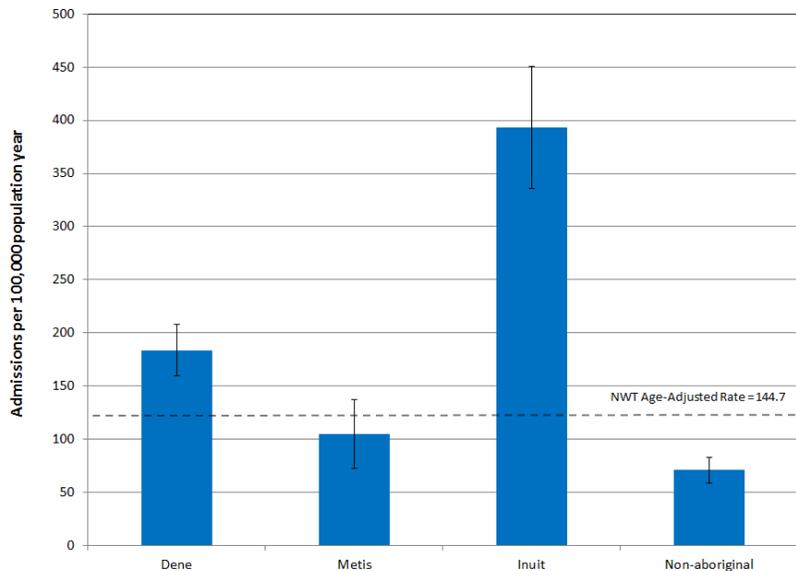
Attempted Suicide/Self-Inflicted Injury Admissions by Age Group and Sex, NWT (2000-09)



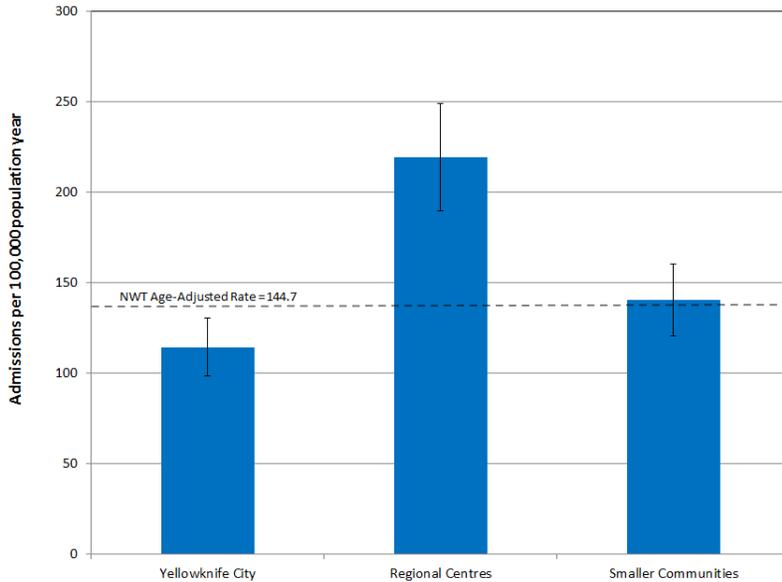
Attempted Suicide/Self-Inflicted Injury Admissions by Ethnicity, NWT (2000-09)

Between 2000 and 2009, Dene and Inuit had attempted suicide/self-inflicted injury-related admission rates 1.3 and 2.7 times higher than the territorial rate. Together, Dene and Inuit represent 66.7% of attempted suicides/self-inflicted injuries. The rate among non-aboriginal people was almost half the territorial rate. Métis had rates 28% lower than the territory, although this was not statistically significant.

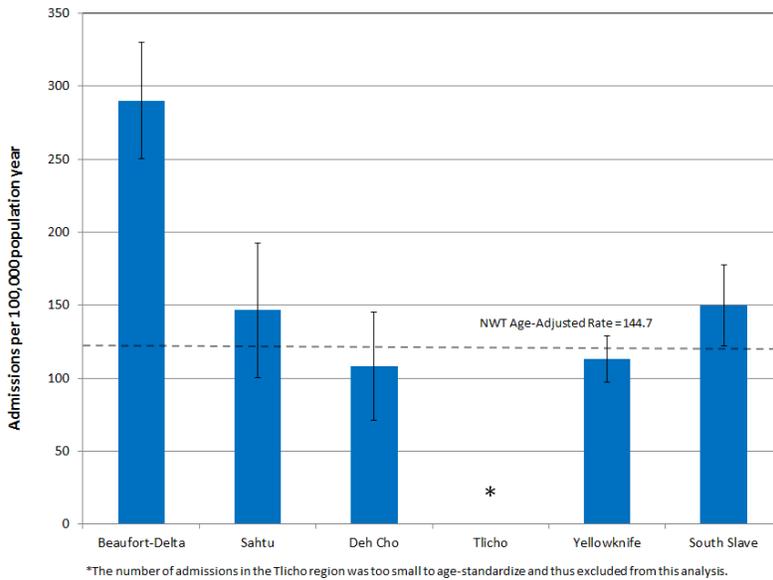
Attempted Suicide/Self-Inflicted Injury Admissions by Ethnicity, NWT (2000-09)



Attempted Suicide/Self-Inflicted Injury Admissions by Community Type, NWT (2000-09)



Attempted Suicide/Self-Inflicted Injury Admissions by Region, NWT (2000-09)



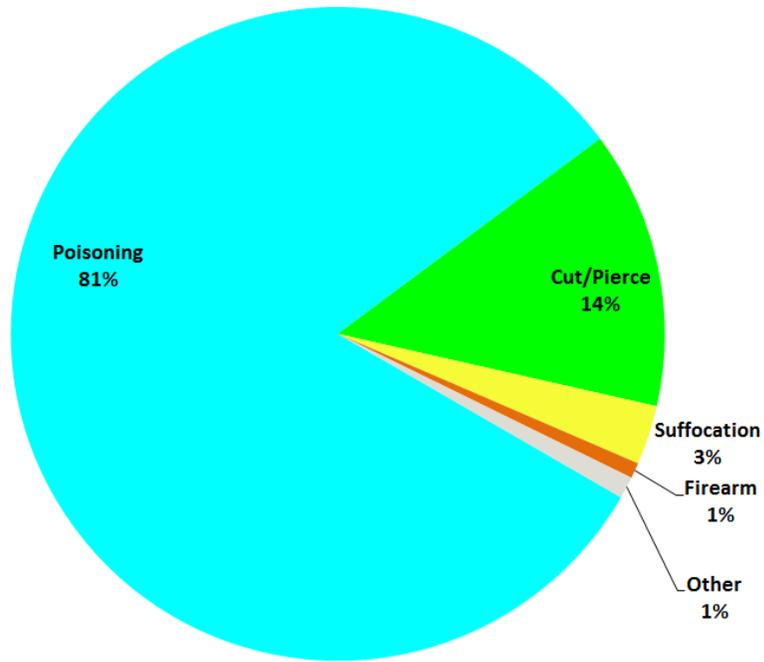
Attempted Suicide/Self-Inflicted Injury Admissions by Community Type, NWT (2000-09)

When examined by community type, Yellowknife City had an age - adjusted injury admission rate that was 20% lower than the territorial rate, whereas Regional Centres had rates that were 52% higher than the territorial rate. The number of admissions were almost equally shared between each of the community types. Yellowknife City represented 35%, Regional Centres were 33%, and Smaller Communities were 31% of admissions.

Attempted Suicide/Self-Inflicted Injury Admissions by Region, NWT (2000-09)

The Beaufort-Delta region had an admission rate for attempted suicide or self-inflicted injuries that was more than twice the territorial rate. This is consistent with the higher rates found among Inuit. Although Yellowknife had a rate that was almost 22% lower than the territorial rate, the majority of attempted suicide or self-inflicted injury hospital admissions occurred among residents from Yellowknife (35.3%) and the Beaufort-Delta regions (32.9%). The number of attempted suicides or self-inflicted injuries among residents from the Tlicho region was too small to age-adjust (18 admissions). However, using crude rates only for comparison purposes, the rate in the Tlicho region was 58% lower than the territorial rate.

Method Responsible for Attempted Suicide/ Self-inflicted Admissions, NWT (2000-09),



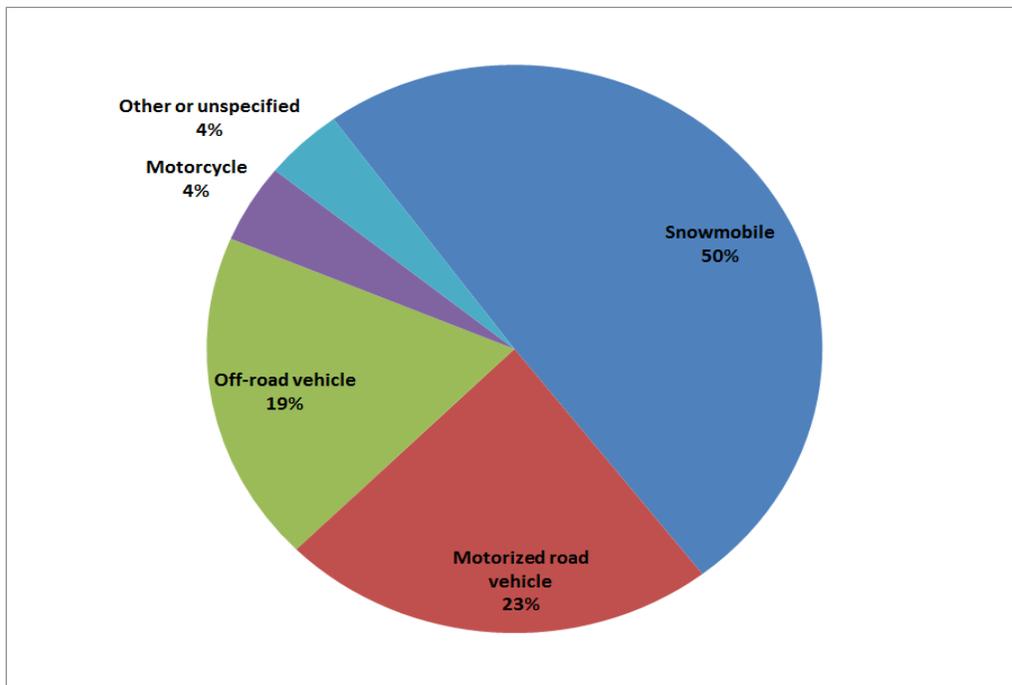
More than 81% of admissions for attempted suicide or self-inflicted injury were due to poisoning.



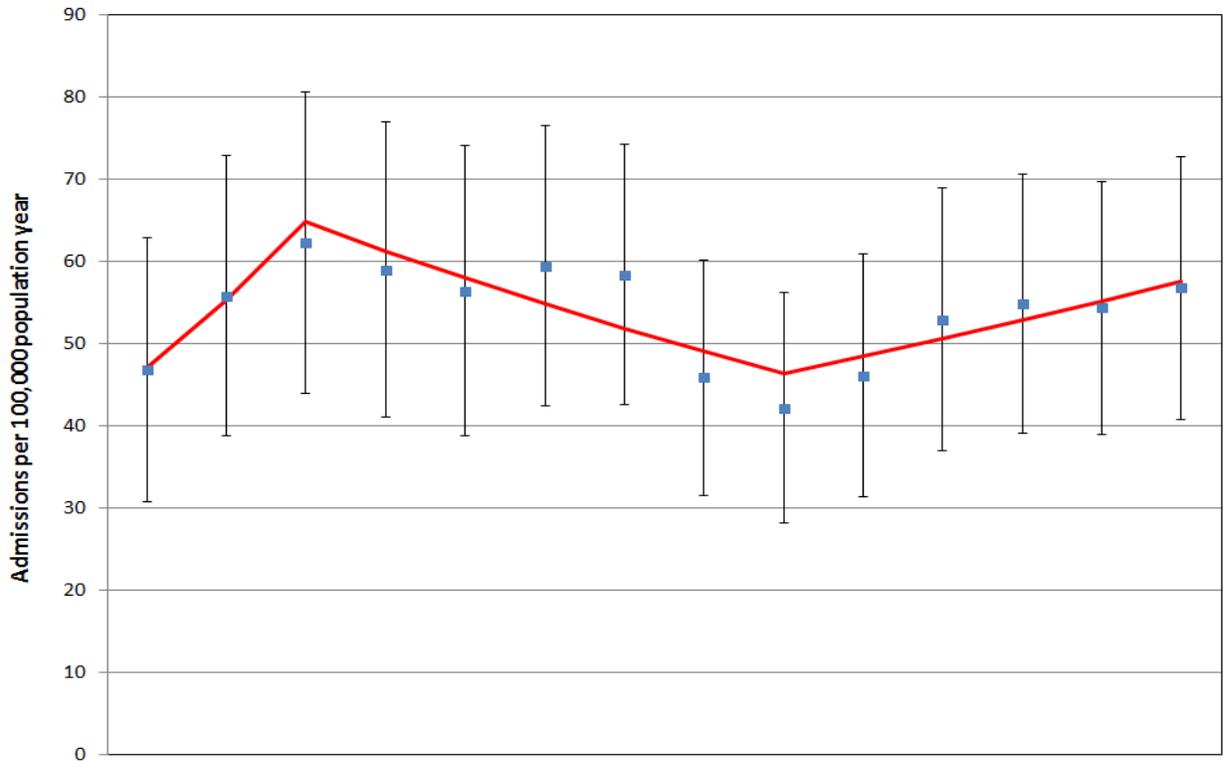
A non-traffic land transport event is defined as any vehicle accident that occurs entirely in any place other than a public highway. The transport vehicle can include a motorized road vehicle (pick-up truck, SUV, motorcycle, car), off-road vehicle, railway train, animal-drawn vehicle, bicycle or animal.

Between 2000 and 2009, there were 335 non-traffic land transport events that resulted in a hospital admission. This accounted for 7 percent of injury admissions and was the fourth leading cause of injury-related hospitalizations. Overall the crude rate for admissions due to non-traffic land transportation events was 78.6 admissions per 100,000 population year. 68% of these admissions occurred among those using snowmobiles or ATVs. Therefore, for the purposes of this report, only snowmobile and ATV hospital admissions will be presented.

Non-Traffic Land Transport-Related Admissions by Injured Person's Mode of Transportation, NWT (2000-09)



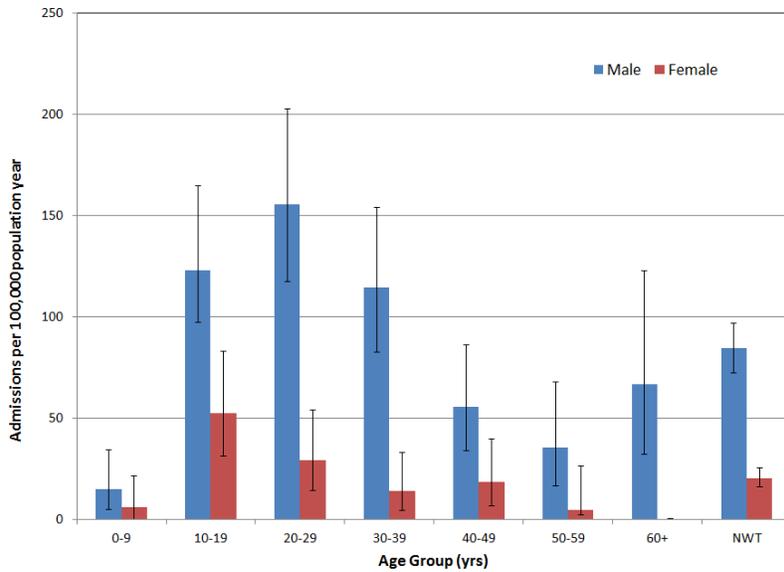
**Time Trend for Non-Traffic Land Transport-Related Admissions, NWT, 1995-2009,
(two-year rolling average) (ATV and snowmobile)**



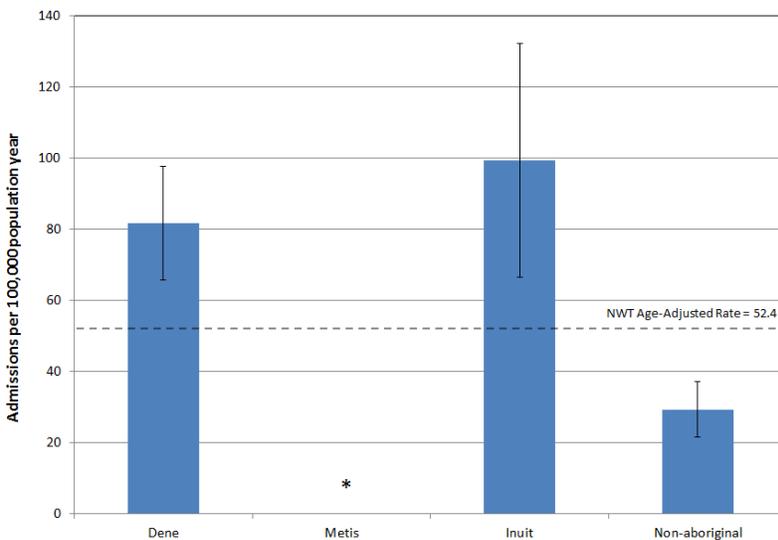
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Rate per 100,000 population	49.7	52.9	69.3	65.7	65.2	60.4	69.6	99.6	88.2	48.0	104.3	79.2	65.5	78.2

With the best fit of data, there was an annual average decrease of 0.47% in non-traffic land transport admissions. However, there were three distinct trends between 1995 and 2009. The first trend from 1995/96 to 1997/98, there was an annual average increase of 17.2%. The second trend from 1998/99 to 2003/04 there was an annual average decrease of 5.4%. The third trend from 2004/05 to 2008/09 there was an annual average increase of 4.4%.

Non-traffic Land Transport-Related Admissions by Age Group and Sex, NWT (2000-09) , (ATV and snowmobile)



Non-Traffic Land Transport-Related Admissions by Ethnicity, NWT (2000-09) , (ATV and snowmobile)



*The number of admissions in the Metis population was too small to age-standardize and thus excluded from this analysis.

Non-traffic Land Transport-Related Admissions by Age Group and Sex, NWT (2000-09) , (ATV and snowmobile)

Admission rates due to ATV/ snowmobile-related injuries were consistently higher in males than in females in all age categories.

Males between 20 and 29 years of age had the highest rates of all males, and females between 10 and 19 years had the highest rate for all females.

The age group which had the largest difference in admission rates between males and females were those 30 to 39 years of age. Males had an admission rate 8 times higher than that of females in the same age group.

Non-Traffic Land Transport-Related Admissions by Ethnicity, NWT (2000-09) (ATV and snowmobile)

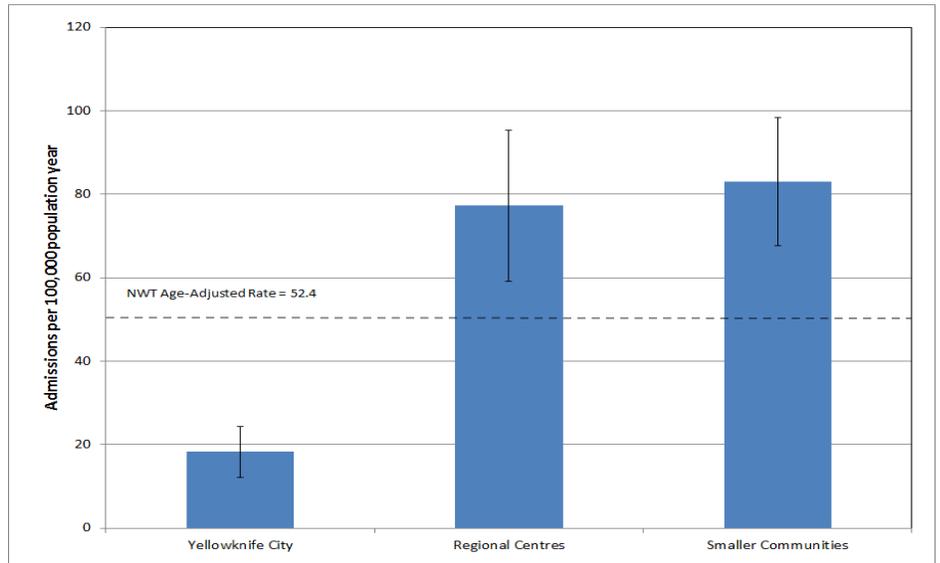
Between 2000 and 2009, admission rates due to ATV and snowmobile injuries among Dene and Inuit were 56% and 90% higher than the territorial rate, respectively whereas the rate among non-aboriginal people was 44% lower. Dene and non-aboriginal people accounted for 46% and 28% of off-road admissions.

The number of admissions among Métis was too low to age adjust. Métis accounted for 4% of ATV and snowmobile injury admissions. Base on crude rates, the admission rate among Métis was 57% lower than the territorial crude rate for ATV and snowmobile vehicle-related injuries.

Non-Traffic Land Transport-Related Admissions by Community Type, NWT (2000-09), (ATV and snowmobile)

Regional Centres and Smaller Communities had higher age adjusted admission rates for ATV and snowmobile injuries than the territorial rate. The rate among Yellowknife City residents was lower than the territorial rate. The majority of admissions were residents from Regional Centres and Smaller Communities.

Non-Traffic Land Transport-Related Admissions by Community Type, NWT (2000-09) (ATV and snowmobile)

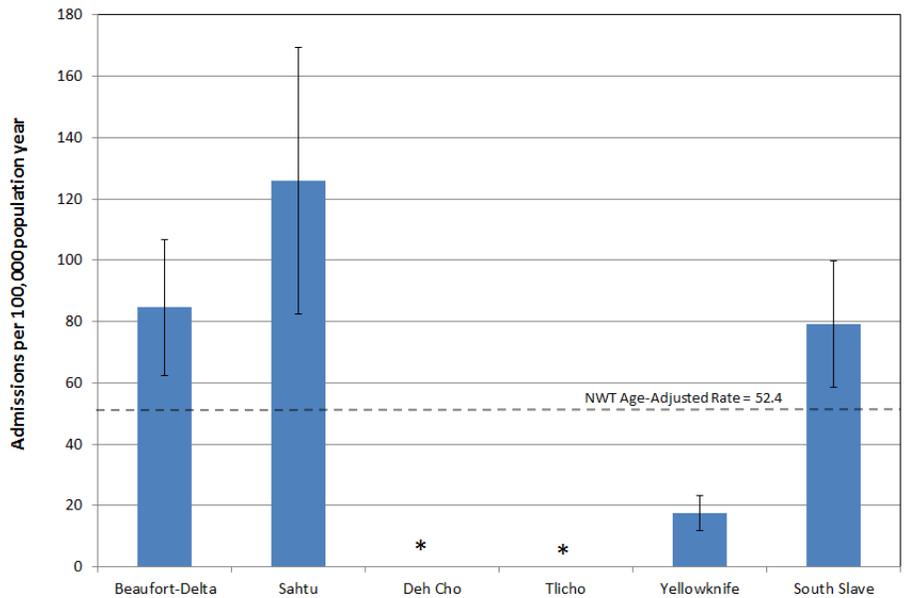


Non-Traffic Land Transport-Related Admissions by Region, NWT (2000-09) (ATV and snowmobile)

Beaufort-Delta, Sahtu and South Slave had admission rates higher the territories' average rate, corresponding 38%, 58% and 34%, respectively.

Yellowknife region had a rate well below the territorial rate.

Non-Traffic Land Transport-related Admissions by Region NWT (2000-09) (ATV and snowmobile)

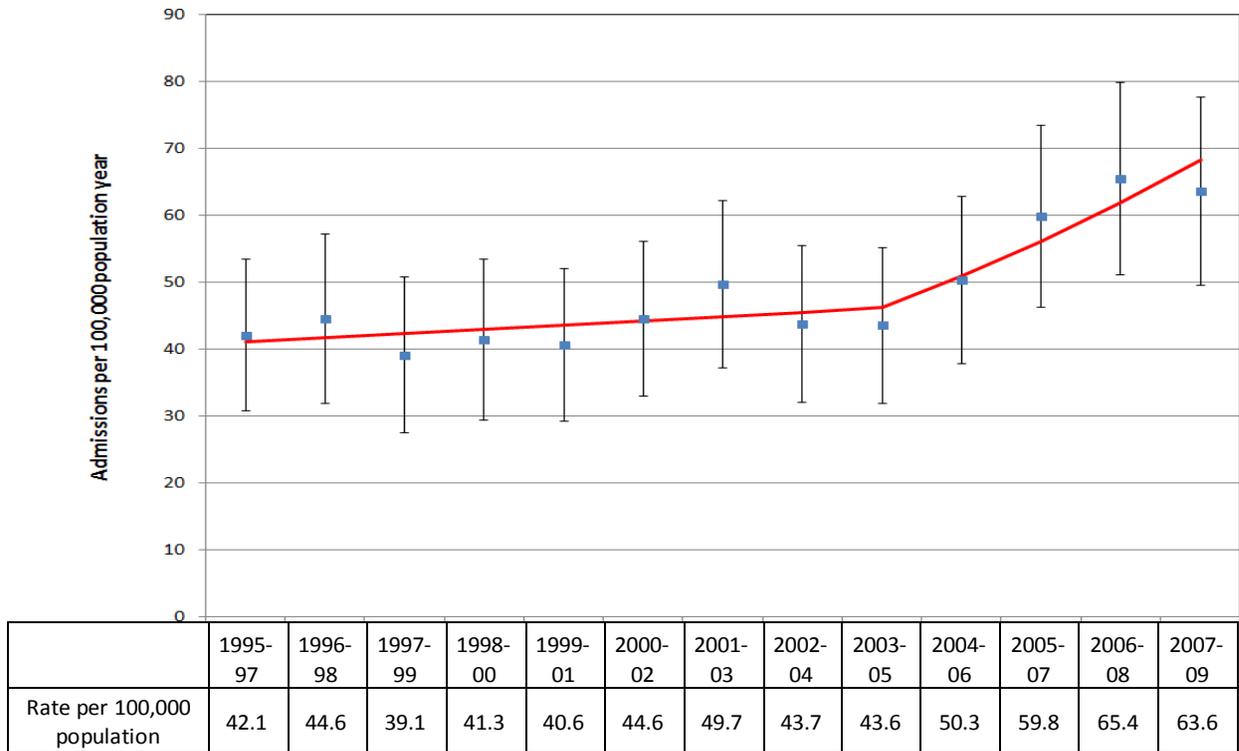


* The number of admissions in the Deh Cho and Tlicho region was too small to age-standardize and was thus excluded from further analysis.



Between 2000 and 2009, there were 229 unintentional poisoning-related hospital admissions. This accounted for 5 percent of injury admissions and was the fifth leading cause of injury-related hospitalizations. Overall, the crude rate for admissions due to unintentional poisonings was 53.7 admissions per 100,000 population year.

Time Trend for Unintentional Poisoning-Related Admissions, NWT (1995-97 to 2007-09) (three year rolling average)

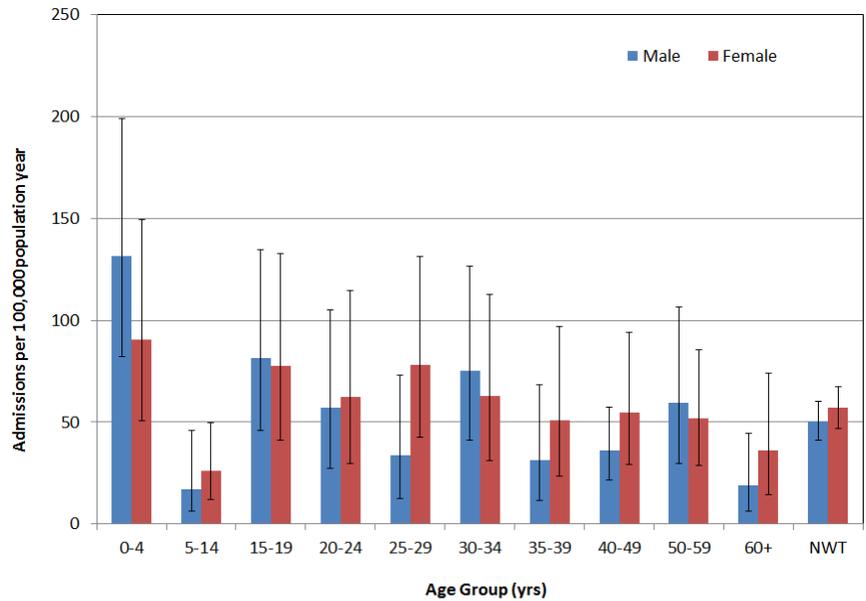


From 1995 to 2009, there was an overall increasing trend in unintentional poisoning-related hospital admissions. Although the age adjusted rate in 2000-2009 was not significantly different from that in 1995-1999, there was an average increase of 10.3% per 3 year rolling period during the period from 2003-2009.

Unintentional Poisoning-Related Admissions by Age Group and Sex, NWT (2000-09)

Unintentional poisoning-related hospital admissions occurred in all age groups, but were two times higher than the territorial rate among children less than five years of age and 60% lower than the territorial rate among children 5-14 years of age. The rates between males and females did not differ within the various age groups nor the territory as a whole. About equal numbers of unintentional poisoning-related admissions occurred among males and females.

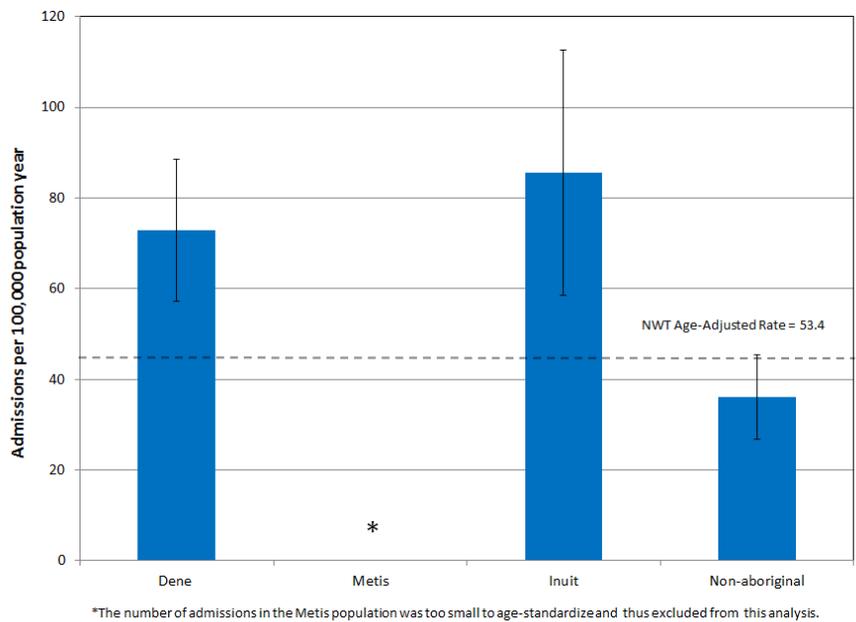
Unintentional Poisoning-Related Admissions by Age Group and Sex, NWT (2000-09)



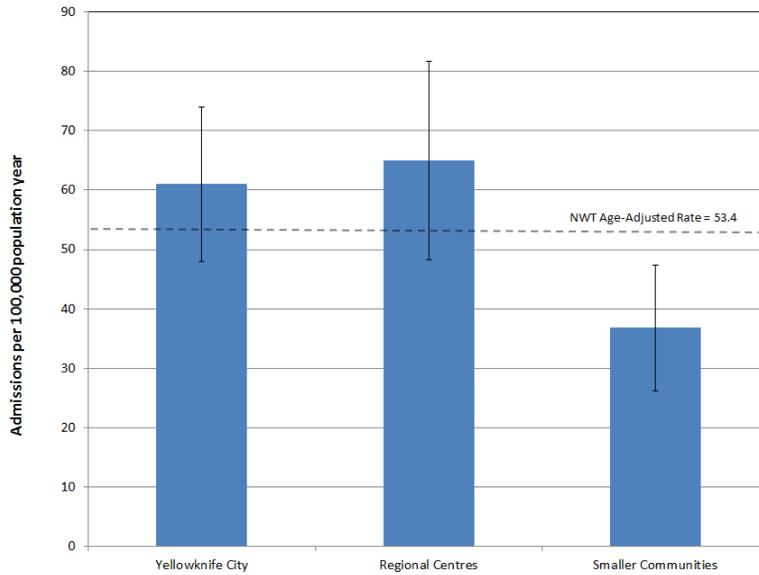
Unintentional Poisoning-Related Admissions by Ethnicity, NWT (2000-09)

Between 2000 and 2009, Dene and Inuit had unintentional poisoning-related admission rates 36% and 60% higher than the territorial rate, respectively. The rate among non-Aboriginal people was 32% lower than the territorial rate. Dene and Inuit accounted for 39% and 32% of admissions. Métis accounted for 6% of admissions (14 deaths), a figure too small to age-adjust for comparison purposes. However, when comparing crude rates only, the rate among Métis was similar to the territorial crude rate.

Unintentional Poisoning-Related Admissions by Ethnicity, NWT (2000-09)



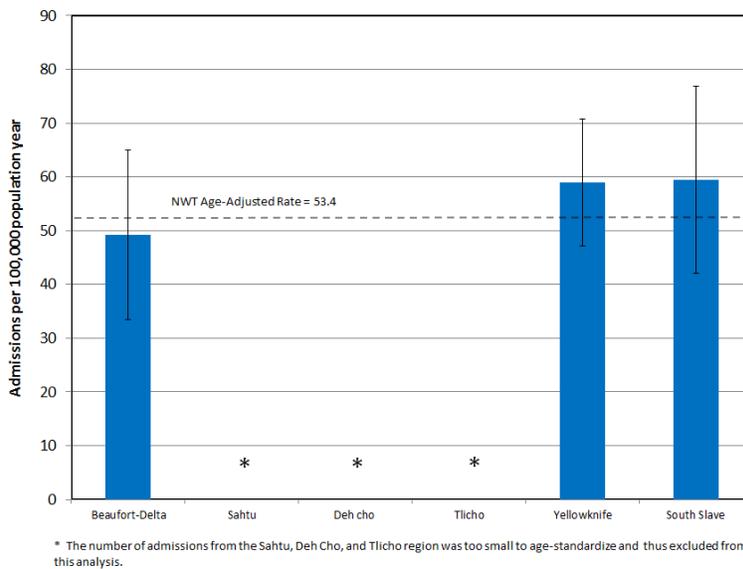
Unintentional Poisoning-Related Admissions by Community Type, NWT (2000-09)



Unintentional Poisoning-Related Admissions by Community Type, NWT (2000-09)

When examined by community type, the Smaller Communities had an adjusted injury admission rate that was 31% lower than the territorial rate. The majority of admissions were comprised of residents of Yellowknife City (51%).

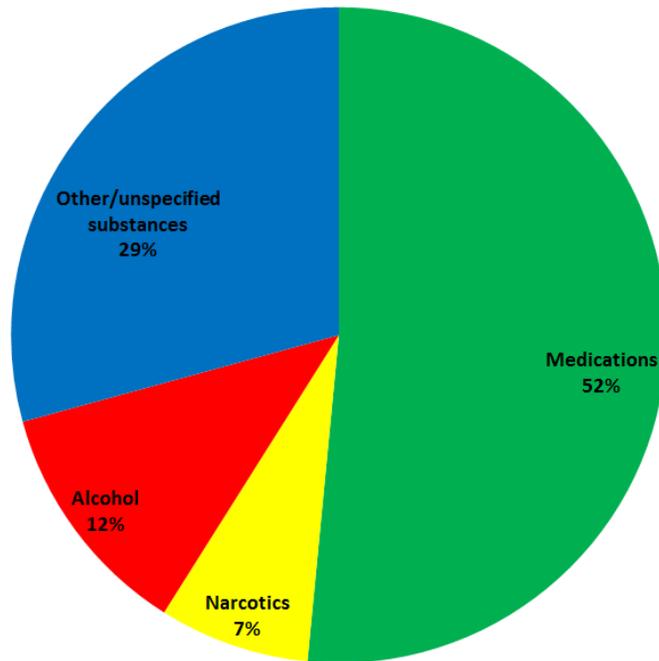
Unintentional Poisoning-Related Admissions by Region, NWT (2000-09)



Unintentional Poisoning-Related Admissions by Region, NWT (2000-09)

Due to the low number of admissions in the Sahtu, Deh Cho, and Tlicho region, the rates for these regions were not age-adjusted. Referring to crude rates, the Deh Cho region had a rate that was 64% lower than the territorial rate. The remaining regions Beaufort-Delta, Yellowknife and South Slave were age-adjusted and found to be similar to the territorial rate.

Causes of Unintentional Poisoning-Related Admissions, NWT (2000-09), n=229



Causes of Unintentional Poisoning-Related Admissions, NWT (2000-09)

Whereas alcohol was the predominant substance used resulting in unintentional poisoning-related deaths (63%), medications (52%) were most commonly associated with admissions.

Appendix A

Detailed Methodology

Data sources

- The NWT Vital Statistics database provided by Statistics Canada was used to identify injury mortality data on all residents from the Northwest Territories during the period of 1990 to 2009. During this period, cause of death was coded using the International Classification of Diseases, 9th Revision, (ICD-9) and the International Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). ICD-10 codes were implemented effective January 1, 2000 for deaths.
- The Discharge Abstract Database provided by the Canadian Institute for Health Information was used to identify injury-related hospital admissions in the NWT and hospital admissions among NWT residents outside the territory during the fiscal years 1995/96 to 2009/10. During the period, diagnoses were coded using the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) and the International Classification of Diseases and Related Health Problems, 10th Revision, Canadian (ICD-10-CA). ICD-10-CA codes were implemented effective April 1, 2002 for hospital discharges.
- Events associated with injuries are classified using the codes for external cause of injury (E-codes): ICD-9 or ICD-9CM (E800.0 to E999.9), ICD-10 or ICD-10CA (V01-Y98). A description of the ICD-9 and ICD-10 codes used for each injury category is provided at the end of Appendix A
- Population estimates used to calculate the rate of injury death and hospitalization were obtained from the NWT Bureau of Statistics.
- Canadian injury mortality data were based on CANSIM tables detailing cause of death by age and sex based on Statistics Canada's Vital Statistics database.¹

Residence Type

- Residence data in this report are grouped by community type and region.
- Community type refers to the place of permanent residence at the time of hospitalization or death. For comparison purposes, the community types are: Yellowknife, Regional Centres (Hay River, Fort Smith and Inuvik), and Smaller Communities (all remaining communities in the NWT).
- For regional comparison purposes, the groupings are: Beaufort Delta (Aklavik, Tsiigehtchic, Inuvik, Ulukhaktok, Paulatuk, Tuktoyaktuk, Sachs Harbour, Fort McPherson), Sahtu (Norman Wells, Deline, Tulita, Fort Good Hope, Colville Lake), Deh Cho (Fort Simpson, Fort Liard, Nahanni Butte, Wrigley, Jean Marie River, Kakisa, Fort Providence, Trout Lake), Tlicho (Behchoko, Gameti, Wha'Ti, Wekweeti, Edzo), Yellowknife (Yellowknife, Dettah, N'dilo), and South Slave (Hay River, Hay River Reserve, Fort Smith, Enterprise, Fort Resolution, Lutsel K'e).

¹ Statistics Canada. Table 102-0540 - Deaths, by cause, Chapter XX: External causes of morbidity and mortality (V01 to Y89), age group and sex, Canada, annual (number), CANSIM (database). (Accessed 2013-05-15)

- The analysis of injury mortality and morbidity included all NWT residents who died from or were admitted for injury in the NWT along with NWT residents who died or were hospitalized for injury in other jurisdictions. Injury deaths and hospitalizations of residents from other jurisdictions were excluded. The most accurate estimate of the incidence and risk of injury death in the NWT would include only residents who were injured in the NWT. However, given the nature of medical service provision in the territory, injured NWT residents suffering major trauma were sometimes transferred to a hospital in Alberta for treatment. Moreover, residents of one community in the southwest corner of the territory often received hospital services in northern British Columbia. If the injured person died after being transferred to an out of territory hospital, the jurisdiction where the death occurred is listed in the mortality file. This event would be captured in the numerator count. As a result, all injury deaths of NWT residents which occurred in Alberta, British Columbia and the Yukon – the only highway link between northern NWT and the rest of Canada passes through the Yukon – were included in the count of injury related deaths. While including residents who died outside of the NWT may slightly overestimate the risk of injury inside of the territory, excluding them would result in a much larger underestimation of risk.²
- The count of injury-related hospitalizations included all NWT residents hospitalized in NWT acute care hospitals along with NWT residents hospitalized in acute care hospitals in Alberta after being transferred out from the territory and NWT residents hospitalized in Fort Nelson, British Columbia.
- Population-based injury morbidity analysis is more complex where the population is served by several acute care hospitals and patients are sometimes transferred between hospitals, depending on the level of acute care required. This problem was evident in the NWT where injured patients hospitalized in one of the smaller local hospitals were sometimes transferred to the larger regional facility in Yellowknife and/or to an acute care hospital in Edmonton for treatment of the same injury.
- A unique patient identifier reduces “double counting” of admissions for treatment of the same injury. However in a large number of cases, a unique identifier was not provided.
- To reduce double counting due to transfers between hospitals for the same injury, the following methods were used:
 - If the date of admission into one acute care hospital was within one day from the date of discharge at another acute facility for a unique patient identifier, then the transferred case(s) was removed from the count of injury hospitalizations.
 - If a unique patient identifier was not present, then cases with the same age, gender and community of residence were assumed to be unique patients.
 - If the date of admission into one acute care hospital was within one day from the date of discharge at another acute facility for these unique patients, then the transferred case(s) was removed from the dataset.
- As a result of this process, 408 admissions were removed from the injury hospitalization file.

² Between 1990 and 1999, 40 of the 331 injury related deaths among NWT residents took place outside of the territory, 70% of these occurred in Edmonton Alberta. This is an indication that in the vast majority of cases, the event likely occurred inside the NWT and the individual was transferred to a hospital in that city for care.

- There is another consideration when using hospitalization data to determine injury rates. Sometimes the same person can be admitted and discharged several times for more than one injury in a single year. Therefore, the number of injury hospitalizations represents each injury incident that resulted in a hospitalization and not the number of individuals hospitalized. Moreover, incidents are counted at the time of discharge and not upon admission. If a person was admitted in March 2010 and discharged in April 2010, the case would not be included in the hospitalization dataset since it only includes data from April 1995 to March 2010.

Defining Injury Categories

- There are many specific ICD-9 and ICD-10 external cause of injury codes. In order to make the analysis more interpretable, codes were rolled up into broader, more encompassing categories. The grouping of external cause of injury codes into various injury categories is based on the framework for presenting injury data developed by the United States Centers for Disease Prevention and Control in collaboration with the American Public Health Association.^{3,4} This framework was modified to present additional categories to better describe the nature of injuries in the Northwest Territories. A complete list of E-codes used to define each injury category is provided at the end of Appendix A. The matrix table shows E-codes grouped according to the two E-code classification axes: mechanism of injury or cause of death (e.g., falls, fires/burns, firearms, poisoning, and suffocation) by intent of injury or manner of death (i.e., unintentional, intentionally self-inflicted, intentionally inflicted by another, intent undetermined, and legal intervention).
- The following events assigned injury codes in the ICD-9/ICD-10 classification are excluded from the data presented in this report. They are very different from most injuries, both in their nature and in the types of preventive measures that might be considered appropriate.

ICD-9	Description
E870 – E876	Misadventure to patients during medical and surgical care.
E878 – E879	Surgical and medical procedures as the cause of abnormal reaction of patient or later complication, without mention of misadventure at the time of the procedure.
E930 – E949	Drugs, medicinal and biological substances causing adverse effects in therapeutic use.
ICD-10	
Y40-Y84	Complications of medical and surgical care
Y88	Sequelae with surgical and medical care as external cause

³ NCHS. ICD-10: External cause of injury mortality matrix [online]. Available from: /nchs/injury/injury_matrices.htm

⁴ CDC. Recommended framework for presenting injury mortality data. MMWR 46 (RR-14) Centers for Diseases Control and Prevention. Available from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00049162.htm>. 1997.

ICD-9 modified to be consistent with ICD-10 External Cause of Injury

- The sources for the tables at the end of Appendix A are: Miniño AM, Anderson RN, Fingerhut LA, Boudreault MA, Warner M. Deaths: Injuries, 2002 and National vital statistics reports; vol 54 no 10. Hyattsville, MD: National Center for Health Statistics. 2006.
- The tables are based on the following table with minor modifications: http://www.cdc.gov/nchs/data/injury/icd9_icd10_comparability_ratios.pdf (Accessed July 2, 2013)
- ICD is International Classification of Diseases. When a set of additional digits are required for ICD codes, the additional digits are in parentheses () and apply to the preceding code or preceding range of codes in brackets [].

Ethnicity

- The vital data from Statistics Canada does not include ethnicity. This information was obtained by performing a record linkage between the vital statistics files obtained from Statistics Canada and the NWT Health Care Registration Database. Ethnicity is recorded for all hospitalizations that occur within the NWT. For cases where the hospitalization occurred outside of the territory and ethnicity was not recorded in the Patient Identifier field, the ethnicity was left unknown. In total, of the 4822 hospital admissions, 189 admissions had an unknown ethnicity field.

Calculating Rates

- A key aspect of injury surveillance is the calculation of injury rates. Rates permit comparisons between groups and the analysis of factors such as demographic characteristics of the groups. Differences in injury rates between populations or within the same population at different points in time occur as a result of a combination of differences or changes in the underlying factors that influence the occurrence of injury and by random variation in the number of injury events. It is usually the former component that is of interest in injury surveillance. The injury rates presented in this report are based on the injury experiences of the entire population. In effect, sampling and sampling errors is not an issue. However, population parameters such as the injury mortality rate due to fires may vary from time to time due to random variation. The effect of such variation on population parameters can be large when the population size and the actual number of observed events are both small. Therefore, efforts are made to minimize the effects of random variation and to measure the variance.
- As the number of observed events increase, the observed rate becomes more stable and a better estimate of the “true” rate. Increasing the number of events can be accomplished by expanding the time period under study. In this report, the analysis of injury mortality and hospitalization is based on ten years of data 2000 to 2009. Combining multiple years of data does two things. First it increases the number of events and second it increases the effective population size, since the denominator is actually “person-time.” That is the annual population estimates must be summed for each year under study. In effect, the more stable rate represents an average of the years under study. However, combining multiple years of data will conceal any trends that may have occurred within that period.

Age-Adjusted Rates

- While population-based rates ensure that differences in population size are taken into consideration, overall crude rates may still be misleading if there are substantial differences between populations being compared or if there are differences within a population at different points in time. For example, the age structure of two populations may differ or the age structure of a single population may differ at various points in time. Since age influences the risk of most diseases and death, any differences in the overall crude rates between populations, or within a population over time, may be explained by differences in age structure rather than differences in the risk of disease or death.
- To remove this effect and still provide one summary measure for the total population, it is necessary to adjust for differences in age structure through a process of age adjustment or standardization. In this study, the crude rates were adjusted using the direct method of standardization with the 1991 Canadian census as the standard. In this method, the age-specific rates of the population were applied to the Canadian 1991 age structure to yield an “expected” rate that would have occurred in a 1991 Canadian population. It is important to point out that standardized rates are not “real” rates but are fictional rates based on an arbitrarily chosen standard population. However, the adjusted rate can be trusted in a head-to-head comparison with other age-adjusted rates. Throughout this report, a minimum of 25 observed events was required to age adjust. If a population did not meet this criterion, it was not age adjusted. In such cases, only crude rates were used for comparison purposes.

Confidence Intervals

- Confidence intervals are provided to show that the observed rate is an estimate of an underlying true rate that cannot be directly observed. The width of the confidence interval indicates the degree of variability associated with the rate. The true rate will fall between the upper and lower confidence limits 19 times out of 20 (95 percent confidence).
- Depending on the number of observed events, the variance formula used was either based on a binomial distribution or a Poisson distribution (e.g. less than 100 observations).

Testing Statistical Significance

- Confidence intervals can also be used to determine statistical significance. A statistical significant difference between two rates is noted when the confidence intervals of the two rates do not overlap. However, it is important to point out that the use of confidence intervals in this way is not equivalent to a statistical test. Rather it is a good approximation that produces a conservative result. That is, in some cases an appropriate statistical test would indicate a statistically significant difference even though the confidence intervals do slightly overlap. As a result, chi-square tests of independence and/or rate ratios were used to test statistically significant differences between sexes, age groups, ethnicity and community types when mortality and hospitalizations were examined for each type of injury. For the comparison of age-adjusted rates for low incidence events, the method described by Carriere and Roos was used.⁵

⁵ Carriere and Roos. A Method of Comparison for Standardized Rates of Low-Incidence Events. *Medical Care* Volume 35(1), January 1997, pp 57-69

Historical Trends

- Due to the small number of annual injury-related deaths, central moving averages were calculated in certain cases and these estimates were used to calculate the age-adjusted mortality rates. Averaging estimates over longer periods of time is useful in reducing variability when there are a small number of observations for any particular time period.
- Using the Joinpoint Regression Program developed by the Statistical Research and Applications Branch of the National Cancer Institute of the U.S. National Institutes of Health, regression analysis was performed on the injury data to fit the most appropriate trend line model based on the time series data (i.e., age standardized injury rates). For more information please go to: <http://surveillance.cancer.gov/joinpoint/>
- Changes in the trend line are expressed by the average annual percent change.

Limitations

- The quality of the data is dependent on the coding performed and this in turn is dependent on documentation provided on the health record in the case of hospitalizations and on the registration of death form in the case of the mortality data. It should be acknowledged that there may be errors or inconsistencies in the coding that cannot be identified in this analysis. Moreover, errors may also occur when recording community of residence and/or ethnicity.
- This report is based on the most current data available when it was undertaken. This data is more than five years old and changes in risk factors and the nature of injury may have occurred during that time. Moreover, combining ten years of mortality data may result in masking any changes occurring during the time period covered by the rate.
- When injury rates for each mechanism of injury were calculated for this report, it was assumed that each person in the population was at equal risk of that injury. This assumption may not be true. For example, not everyone in the Northwest Territories owns and operates a snowmobile. Moreover, the number of kilometres driven each year varies among those who do operate these machines. The number of injuries per kilometre driven would be a more appropriate measure of the actual risk of snowmobile-related injuries. This is also true for all other types of motorized vehicles and other transportation-related injuries. However, estimates of kilometres driven for different sub-populations in the territory are not available. Similarly, the opportunity for drowning-related injury occurs when the person has some access to a medium in which drowning could occur. For many people, this may be an infrequent occurrence. As a result, the rates for some injury mechanisms presented in this report may underestimate the real risk of injury.
- External cause of injury codes (E-codes) captures the circumstances of an injury along two dimensions: intent (unintentional, self-inflicted, assault, undetermined, legal intervention), and mechanism (e.g., fall, drowning, fire, motor vehicle traffic crash). In the structure of the ICD, the intent of the injury death takes precedence over the mechanism. That is, a coder must first determine intent and then assign the proper mechanism. Sometimes, it is difficult for physicians, medical examiners or coroners to determine intent. It is likely the

number of suicides and self-inflicted injuries is somewhat underestimated for certain mechanisms of injury. For example, without evidence of intent, motor vehicle traffic crashes and drownings are most likely considered unintentional.

- The ICD-9/ICD-10 coding scheme was not designed for injury prevention purposes. Along with the uncertainty with defining intent, it is often difficult to determine what the person was doing at the time of the injury, exactly where the injury occurred, and if there were any contributing factors. For example, relying on ICD-9 coding alone means it is not possible to determine if a large number of motor vehicle traffic crashes are occurring on a particular section of highway, if a large number of drivers were intoxicated, and if the occupants were wearing seatbelts. Similarly it is difficult to determine if an intimate partner or another acquaintance perpetrated an assault. Moreover some of the E-codes are broad and lack the level of detail needed to provide important information for the development of targeted prevention programs. For example, “fall from stairs or steps” is one of the categories of falls presented in the report. However no information is provided on whether the fall was indoors or outdoors, the stair design and stair building materials, or if handrails were present.
- The analysis in this report is reliant on existing administrative data compiled for other purposes. The reliance does not permit analysis of populations defined by socio-economic status an important influence on the risk of injury. In this situation, ethnicity not only presents injury data for unique cultural groups but also presents a crude ecological control for socioeconomic status. In effect it is assumed ethnicity can be viewed as a surrogate measure of socio-economic status. Classification by ethnicity may obscure an underlying relationship between injury and poverty, a relationship that suggests that improving the socio-economic conditions of people living in poverty might improve their health. However, more research is needed to confirm that assumption.
- Comparisons of injury rates between community types, regions, and ethnicity should be made with some caution. Rates are good summary measures that help identify groups more at risk of being injured, and the risk of injury is normally associated with environmental or behavioural risk factors. However, observed variations may be a result of differences in injury treatment and registration practices, in addition to lifestyle or environmental factors.
- The data represents the number of hospital discharges and not the number of people hospitalized due to injury. For example, the same person may be admitted several times for follow-up treatment of the same injury and would be counted in each case. Individuals living in communities where a hospital is located may be more likely to be hospitalized for follow-up treatment of the same injury and/or observation/treatment of more minor injuries than residents who live in the smaller communities where follow-up and/or treatment of more minor injuries can be done at the community health centre.⁶

⁶ There are four hospitals in the NWT, one in Yellowknife and one in each of the three regional centres. Community health centres are located in most of the smaller communities.

- On the other hand, limited evidence suggests that for some types of injuries – for example, fracture of a limb without complications – hospitalization may be more likely for residents of smaller communities than residents of towns where a hospital is located who receive treatment on an outpatient basis. Moreover, persons severely injured in more remote areas of the territory may be more likely to die before they receive treatment, and thereby appear in the mortality data, than someone injured near an intensive trauma treatment centre.
- It is difficult to determine what impact these factors have on differences in injury hospitalization and mortality rates for residents of the three types of communities and the six regions examined. However, the system for transferring seriously injured patients from smaller communities to hospitals is well established in the NWT. Therefore, hospitalization data should provide a good record of the overall patterns of nonfatal injuries that are more severe in nature. A robust estimation of injury severity was beyond the scope of this report. Further research and analysis in this area is needed.

ICD-10 and ICD-9 Injury Matrix according to Mechanism of Injury and Intent

Mechanism of injury and intent	ICD-10 codes	ICD-9 codes
All injury	V01–Y36, Y85–Y87, Y89	E800–E869, E880–E929, E950–E999
Unintentional	V01–X59, Y85–Y86	E800–E869, E880–E929
Suicide/Self-inflicted injury	*U03, X60–X84, Y87.0	E950–E959
Violence/Injury Purposely Inflicted	X85–Y09, Y87.1	E960–E969
Undetermined	Y10–Y34, Y87.2, Y89.9	E980–E989
Legal intervention or war	Y35–Y36, Y89(.0–.1)	E970–E978, E990–E999
Cut or pierce	W25–W29, W45, W46, X78, X99, Y28, Y35.4	E920, E956, E966, E974, E986
Unintentional	W25–W29, W45, W46	E920
Suicide/Self-inflicted injury	X78	E956
Violence/Injury Purposely Inflicted	X99	E966
Undetermined	Y28	E986
Legal intervention/war	Y35.4	E974
Drowning	W65–W74, V90, V92, X71, X92, Y21	E830, E832, E910, E954, E964, E984
Unintentional	W65–W74, V90, V92	E830, E832, E910
Suicide/Self-inflicted injury	X71	E954
Violence/Injury Purposely Inflicted	X92	E964
Undetermined	Y21	E984
Fall	W00–W01, W03–W19, X80, Y01, Y30	E880–E885, E886.9, E888, E957, E968.1, E987
Unintentional	W00–W01, W03–W19	E880–E885, E886.9, E888
Suicide/Self-inflicted injury	X80	E957
Violence/Injury Purposely Inflicted	Y01	E968.1
Undetermined	Y30	E987
Fire or flame	X00–X09, X76, X97, Y26, Y36.3	E890–E899, E958.1, E968.0, E988.1, E990.0, E990.3
Unintentional	X00–X09	E890–E899
Suicide/Self-inflicted injury	X76	E958.1
Violence/Injury Purposely Inflicted	X97	E968.0
Undetermined	Y26	E988.1
Legal intervention or war	Y36.3	E990.0, E990.3
Hot object or substance	X10–X19, X77, X98, Y27	E924, E958(.2,.7), E961, E968.3, E988(.2,.7)
Unintentional	X10–X19	E924
Suicide/Self-inflicted injury	X77	E958(.2,.7)
Violence/Injury Purposely Inflicted	X98	E961, E968.3
Undetermined	Y27	E988(.2,.7)
Firearm	W32–W34, X72–X74, X93–X95, Y22–Y24, Y35.0	E922, E955(.0–.4), E965(.0–.4), E985(.0–.4), E970
Unintentional	W32–W34	E922
Suicide/Self-inflicted injury	X72–X74	E955(.0–.4)
Violence/Injury Purposely Inflicted	X93–X95	E965(.0–.4)
Undetermined	Y22–Y24	E985(.0–.4)
Legal intervention or war	Y35.0	E970
Machinery ¹	W24, W30–W31	E919

--- Category not applicable (no code in cell)

¹Intent is unintentional

ICD-10 and ICD-9 Injury Matrix according to Mechanism of Injury and Intent (continued)

Mechanism of injury and intent	ICD-10 codes	ICD-9 codes
All transport	V01–V99,X82,Y03,Y32,Y36.1	E800–E848,E958.5,E988.5,E994
Unintentional	V01–V99	E800–E848
Suicide/Self-inflicted injury	X82	E958.5
Violence/Injury Purposely Inflicted	Y03	---
Undetermined	Y32	E988.5
Legal intervention or war	Y36.1	E994
Motor vehicle traffic (MVT) ¹	[V02–V04](.1,.9),V09.2,[V12–V14](.3–.9),V19(.4–.6),[V20–V28](.3–.9),[V29–V79](.4–.9),V80(.3–.5),V81.1,V82.1,[V83–V86]	E810–E819
Occupant ¹	V30–V79(.4–.9),V83–V86(.0–.3)	[E810–E819](.0–.1)
Motorcyclist ¹	V20–V28(.3–.9),V29(.4–.9)	[E810–E819](.2–.3)
Pedal cyclist ¹	V12–V14(.3–.9),V19(.4–.6)	[E810–E819](.6)
Pedestrian ¹	V02–V04(.1,.9),V09.2	[E810–E819](.7)
Other specified ¹	V80(.3–.5),V81.1,V82.1	E810–E819(.4–.5,.8)
Unspecified ¹	V87(.0–.8),V89.2	[E810–E819](.9)
Pedal cyclist, other ¹	V10–V11,[V12–V14](.0–.2),V15–V18,V19(.0–.3)	[E800–E807](.3),[E820–E825](.6),E826(.1,.9)
Pedestrian, other ¹	V01,[V02–V04](.0),V05,V06,V09(.0–.1,.3,.9)	[E800–E807](.2),[E820–E825](.7),[E826–E829](.0)
Other land transport	[V20–V28](.0–.2),[V29–V79](.0–.3),V80(.0–.2,.6–.9),[V81–V82](.0,.2–.9),[V83–V86](.4–.9),V87.9,V88(.0–.9),V89(.0–.3,.9)	[E800–E807](.0–.1,.8–.9),[E820–E825](.0–.5,.8–.9),E826(.2–.8),[E827–E829](.2–.9),E846,E958.5,E988.5
Unintentional	[V20–V28](.0–.2),[V29–V79](.0–.3),V80(.0–.2,.6–.9),[V81–V82](.0,.2–.9),[V83–V86](.4–.9),V87.9,V88(.0–.9),V89(.0–.1,.3,.9)	[E800–E807](.0–.1,.8–.9),[E820–E825](.0–.5,.8–.9),E826(.2–.8),[E827–E829](.2–.9),E846
Suicide/Self-inflicted injury	X82	E958.5
Violence/Injury Purposely Inflicted	Y03	---
Undetermined	Y32	E988.5
Other transport	V91,V93–V99,Y36.1	E831,E833–E845, E847–
Unintentional	V91,V93–V99	E831,E833–E845, E847–E848
Suicide/Self-inflicted injury	---	E958.6
Undetermined	---	E988.6
Legal intervention or war	Y36.1	E994
Natural or environmental ¹	W42–W43,W53–W64,W92–W99,X20–	E900–E909,E928(.0–.2),E958.3,E988.3
Unintentional	W42–W43,W53–W64,W92–W99,X20–	'E900–E909,E928(.0–.2)
Suicide/Self-inflicted injury	---	E958.3
Undetermined	---	E988.3
Overexertion ¹	X50	E927

--- Category not applicable (no code in cell)

¹Intent is unintentional

ICD-10 and ICD-9 Injury Matrix according to Mechanism of Injury and Intent (continued)

Mechanism of injury and intent	ICD-10 codes	ICD-9 codes
Poisoning	X40–X49,X60–X69,X85–X90,Y10–Y19,Y35.2	E850–E869,E950–E952,E962,E972,E980–E982
Unintentional	X40–X49	E850–E869
Suicide/Self-inflicted injury	X60–X69	E950–E952
Violence/Injury Purposely Inflicted	X85–X90	E962
Undetermined	Y10–Y19	E980–E982
Legal intervention or war	Y35.2	E972
Struck by or against	W20,W22.08,W22.09,W50,W51.08,W51.09, W52,X79,Y00,Y04,Y29,Y35.3	E916,E917(.1-.9),E960.0,E968.2,E973,E975
Unintentional	W20,W22.08,W22.09,W50,W51.08,W51.09, Y35.3	E916,E917(.1-.9)
Suicide/Self-inflicted injury	X79	---
Violence/Injury Purposely Inflicted	Y00,Y04	E960.0,E968.2
Undetermined	Y29	---
Legal intervention or war	Y35.3	E973,E975
Suffocation	W75–W84,X70,X91,Y20	E911–E913,E953,E963,E983
Unintentional	W75–W84	E911–E913
Suicide/Self-inflicted injury	X70	E953
Violence/Injury Purposely Inflicted	X91	E963
Undetermined	Y20	E983
Sports-related ¹	W02,W21,W22(.00-.07),W51(.00-.07)	E886.0,E917.0
Other specified, classifiable	W23,W35–W41,W44,W49,W85–W91,X75,X81,X96,Y02,Y05–Y07,Y25,Y31,Y35(.1,.5),Y36(.0,.2,.4-.8),Y85	E914–E915,E918,E921,E923,E925–E926,E928.3,E929(.0-.5),E955(.5-.6-.9),E958(.0,.4),E960.1, E965(.5-.9),E967,E968(.4,.6-.7),E971,E978,E985(.5-.6), E988(.0,.4),E991–E993,E996,E997(.0-.2)
Unintentional	W23,W35–W41,W44,W49,W85–W91,Y85	E914–E915,E918,E921,E923,E925–E926,E928.3,E929(.0-.5)
Suicide/Self-inflicted injury	X75,X81	E955(.5-.6-.9),E958(.0,.4)
Violence/Injury Purposely Inflicted	X96,Y02,Y05–Y07	E960.1,E965(.5-.9),E967,E968(.4,.6-.7)
Undetermined	Y25,Y31	E985(.5-.6),E988(.0,.4)
Legal intervention or war	Y35(.1,.5),Y36(.0,.2,.4-.8)	E971,E978,E991–E993,E996,E997(.0-.2)
Other specified, not elsewhere classified	X58,X83,Y08,Y33,Y35.6,Y86–Y87,Y89(.0-.1)	E928.8,E929.8,E958.8,E959,E968.8,E969,E977,E988.8,E989,E995,E997.8,E998,E999
Unintentional	X58,Y86	E928.8,E929.8
Suicide/Self-inflicted injury	X83,Y87.0	E958.8,E959
Violence/Injury Purposely Inflicted	Y08,Y87.1	---
Undetermined	Y33,Y87.2	E988.8,E989
Legal intervention or war	Y35.6,Y89(.0-.1)	E977,E995,E997.8,E998,E999
Unspecified	X59,X84,Y09,Y34,Y35.7,Y36.9,Y89.9	E887,E928.9,E929.9,E958.9,E968.9,E976,E988.9,
Unintentional	X59	E887,E928.9,E929.9
Suicide/Self-inflicted injury	X84	E958.9
Violence/Injury Purposely Inflicted	Y09	E968.9
Undetermined	Y34,Y89.9	E988.9
Legal intervention or war	Y35.7,Y36.9	E976,E997.9

--- Category not applicable (no code in cell)

¹Intent is unintentional