



INJURIES

AMONG MEMBERS OF THE MÉTIS
NATION OF ALBERTA, 2013

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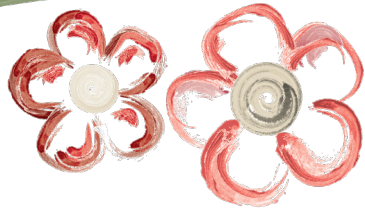
PRESIDENT'S MESSAGE

As the governing body for Métis in Alberta, we take the welfare of our citizens seriously. We have worked in partnership with the University of Alberta to produce the milestone report "Injuries Among Members of the Métis Nation of Alberta, 2013". This report adds to the existing body of literature regarding the health status of Métis Albertans and helps to foster a holistic understanding of contemporary and modern health challenges. At first glance, injuries appear to be acute health problems; however, they often have negative long-term ramifications for citizens including monetary costs, chronic pain, reduced mobility, and overall reduced quality of life. Unfortunately, Métis people are significantly more likely to be victims of injury than non-Aboriginal people in Alberta. I am optimistic that this research will help to fuel new healthcare initiatives for our Métis citizens.

Audrey Poitras

Audrey Poitras
President, Métis Nation of Alberta





MINISTERS' MESSAGES

As a Minister of Health, Children, and Youth, I am pleased to release the report "Injuries Among Members of the Métis Nation of Alberta, 2013". Information on the injury prevalence and incidents is an essential step to developing effective injury prevention messaging and programming specific to those at greatest risk. Through partnership with the Injury Prevention Centre at the University of Alberta, this report identifies the types of injuries that Métis people in Alberta experience most often and their presentations to the healthcare system.

A handwritten signature in black ink that reads "Sylvia Johnson".

Sylvia Johnson,
Minister; Health, Children, and Youth



EXECUTIVE SUMMARY: INJURIES AMONG MEMBERS OF THE MÉTIS NATION OF ALBERTA, 2013

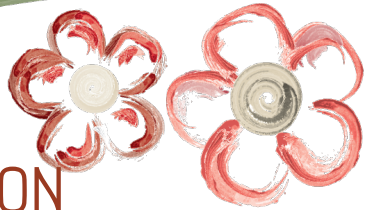
Background: Injury is the leading cause of death for people aged 1-44 in Alberta with a loss of 1,700 lives and \$2.9 billion spent per year. Injury is an encompassing term including but not limited to unintentional falls, sports related injuries, violence, overexertion, unintentional poisoning, motor vehicle accidents, and self-inflicted injuries.

Methods: Injury data was taken from Alberta Health databases. Métis people were identified using the Métis Nation of Alberta (MNA) registry by Alberta Health. After the linkage, personal information was removed and all data was reported in aggregate ensuring confidentiality.

Main Findings: Métis people in Alberta have a 26% greater risk of experiencing all types of injuries when compared to the non-Aboriginal population. As well, Métis people in Alberta that are injured present to the Emergency Department (ED) 35% more often and in rural settings this increases to 51%. The top five causes of injury for Métis Albertans are unintentional falls, struck by or against an object, sport related injuries, overexertion/strenuous movements, and cutting/piercing events. It was also found that Métis men experience injury more often than Métis women.

Conclusion: It is clear from this report that Métis people in Alberta experience a significantly greater burden of injuries than the non-Aboriginal population. Based on this information, there is a need for the development of culturally appropriate injury prevention strategies for Métis people. One specific area identified by the study in which injury prevention needs to be focused is on unintentional falls in the elderly.





INTRODUCTION

Métis Nation of Alberta (MNA)

The Métis are an Indigenous people with a long, complex, and important history in Canada. In *Alberta v. Cunningham*, the Supreme Court of Canada (SCC) provided a succinct and useful overview of the origin of the Métis people:

*The Métis were originally the descendants of eighteenth-century unions between European men—explorers, fur traders and pioneers—and Indian women, mainly on the Canadian plains, which now form part of Manitoba, Saskatchewan and Alberta. Within a few generations the descendants of these unions developed a culture distinct from their European and Indian forebears. In early times, the Métis were mostly nomadic. Later, they established permanent settlements centered on hunting, trading, and agriculture. The descendants of Francophone families developed their own Métis language derived from French. The descendants of Anglophone families spoke English. In modern times the two groups are known collectively as Métis.*¹

The Métis established themselves as a distinct people, Indigenous to the prairies and western territories that include present day Alberta.² It is an essential part of the Métis' identity as a unique Indigenous people that "they are "not Indian" and "not Inuit"."³ Accordingly, the Métis became known as *otipemisiwak*: the people who own themselves.

In 1982, recognition of the Métis as a distinct Indigenous people was constitutionalized. Section 35 of the Constitution Act, 1982, declares that the "existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed." It then goes on to define the Aboriginal peoples of Canada as including the Indian, Inuit and Métis peoples.⁴

These changes "signal that the time has finally come for recognition of the Métis as a unique and distinct people."⁵

In a contemporary context, identification of Métis has become complex. Over the years, the term Métis has come into general use to describe every person of mixed Indian and European ancestry. This, however, is neither accurate nor sufficient. In *R. v. Powley*, the SCC provided clarity and gave life to the promise that s. 35 extended to the Métis as a distinct Indigenous people. This decision forever changed the relationship between the Métis Nation of Alberta (MNA), Government of Canada (GoC), and the Government of Alberta (GoA). In *R v Powley*, the SCC established that "the term, 'Métis' in Section 35 refers to distinctive Métis peoples who, in addition to their mixed ancestry, developed their own customs, way of life, and group identity—separate from their Indian, Inuit and European forbearers."⁶

The SCC provided the broad strokes of a test for the identification of rights-bearing Métis individuals:

- *First, they must self-identify as a member of a Métis community;*
- *Second, they must present evidence of an ancestral connection to a historic Métis community;*
- *Third, they must demonstrate that they are accepted by the modern community whose continuity with the historic community provides the legal foundation for their rights.*⁷

In *Powley*, the SCC affirmed "that that the creation of appropriate membership tests [for the identification of Métis] before disputes arise is an urgent priority."⁸

In the wake of this decision, the work of identifying Métis rights-bearers and rights-bearing communities was left to the Métis's representative organizations and institutions of self-government.

“Métis means a person who self-identifies as a Métis, is distinct from other aboriginal peoples, is of historic Métis Nation ancestry, and is accepted by the Métis Nation.”⁹

As such, the Métis National Council definition of Métis was adopted by citizens of the MNA’s Annual General Assembly 2006 as a means of operationalization of the Powley test. The MNA identifies a Métis as follows: “Métis means a person who self-identifies as a Métis, is distinct from other aboriginal peoples, is of historic Métis Nation ancestry, and is accepted by the Métis Nation.”⁹

A person who suits this definition can apply to obtain Métis membership. Data from the National Household Survey (NHS) show that 451,795 of Canadians who reported Aboriginal ancestry identified themselves as Métis in 2011. They represented 32.3% of the total Aboriginal population and 1.4% of total Canadian population. The largest population of Métis reside in Alberta (21.4%), where approximately 51% live in the cities of Edmonton and Calgary (2).

Purpose and Context of the Report

Injury is a major public health issue in terms of direct and indirect costs and diminished quality of life both nationally and provincially. In Canada, approximately 14,500 deaths (6.4% of all deaths) were caused by injury in 2005 (3), and 4.27 million people aged 12 or older (15% of the population in this age range) suffered an injury severe enough

to limit their activities of daily living in 2009-2010 (4). Alberta has one of the highest injury rates in Canada which is the leading cause of death for Albertans aged 1 to 44 years (5), and represents a loss of over 1,700 lives and 2.9 billion dollars each year (6).

Evidence has indicated that Aboriginal people have similar injury-patterns as the general population, but with higher rates (7). Previous studies have found that First Nations people have 3 to 6 times higher rates of injury death compared to the Canadian average (7). In the same line, compared to non-Aboriginal people injury-related mortality risk-ratios were 2.65 and 1.89 in Métis males and females, respectively (8).

Possible factors contributing to a high incidence of injuries in Aboriginal people include their isolated residence, their physical environment, crowded and dilapidated housing conditions, lifestyle and poor social and economic conditions (7).

Comparison between Aboriginal and non-Aboriginal populations are often used in Canada to identify disparities on a broad range of topics, including health. Although numerous studies on Aboriginal health exist, only few of them differentiate findings between the three groups recognized by the Canadian Government as Aboriginal peoples: Métis, Inuit, and First Nation populations (9;10). Moreover, Métis have typically been underrepresented in health research studies compared to the rest of Canadian Aboriginal population (10;11). Therefore, further studies describing the health status in Métis people are required to prioritize health problems adjusted to the needs of this population, to develop relevant policy options, and to design and implement effective culturally-specific interventions.

¹Alberta (Aboriginal Affairs and Northern Development) v. Cunningham, [2011] 2 SCR 670 at para. 5.

²Manitoba Metis Federation Inc. v. Canada (Attorney General), 2013 SCC 14 at para. 2.

³Alberta (Aboriginal Affairs and Northern Development) v. Cunningham, [2011] 2 SCR 670 at para. 54.

⁴Constitution Act of 1982, Section 35 (1) and Section 35 (2).

⁵Alberta (Aboriginal Affairs and Northern Development) v. Cunningham, [2011] 2 SCR 670 at para. 70.

⁶Teillet Jean, R v Powley: A Summary of the Supreme Court of Canada’s Reason for Judgement”

⁷R. v. Powley, [2003] 2 SCR 207 at paras. 31-33.

⁸R. v. Powley, [2003] 2 SCR 207 at para. 30

⁹Bylaws of the Métis Nation of Alberta Association (Updated November 14, 2013) at art. 3.1



Comprehensive registries of Métis people do not exist making difficult to identify them within existing administrative health data holdings. Currently, the MNA membership registry offers a valuable research opportunity to better understand the health status and health service use of this population through record linkage.

Previous studies have shown that injuries represents a major cause of morbidity and death in Aboriginal populations. However, in Alberta those studies have been mainly carried out in First Nations people (12) and there is scarce information available about the burden associated to injury among members of the MNA.

Therefore, the aim of this report is to examine injury-related health services use (hospital admissions and emergency department visits) and mortality among MNA members, and to all Alberta's population in 2013.

METHODS

This population-based descriptive epidemiological-research studied injuries among members of the MNA between January 1 and December 31, 2013. Injury-related health services usage (hospitalizations and visits to the emergency room) and mortality among MNA members were calculated and compared to the population of Alberta. Diagnosis of injuries were based on data from administrative health databases in Alberta using the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10)(13). Provincial administrative health databases, maintained by Alberta Health (AH), were linked using the personal health number which is a unique lifetime identifier (ULI), the Alberta Health Care Insurance Plan Central Stakeholder Registry. Hospital morbidity database were used to estimate the incidence rate of injury-related inpatient hospitalizations and ambulatory care classification system were used to estimate the visits to the emergency

department in Alberta, and injury-related mortality was calculated using the Alberta Vital Statistics registry. To identify injury and mortality cases in the Métis Nation of Alberta members, administrative health databases were linked, by Alberta Health, with the Métis Nation of Alberta Identification Registry, supplied by the Métis Nation of Alberta. Incidence rates were compared between Métis people and Alberta's population using z-tests. Statistical significance was accepted at p -values < 0.05.

Only non-identifying health information was provided for the present analysis. Ethical approval for this multi-year, retrospective review of Alberta data was obtained from the Health Research Ethics Board (HREB) at the University of Alberta.

RESULTS

Injury Related visits to the Emergency Department among Métis members in 2013.

Injury-Related visits to the Emergency Department among Métis Nation of Alberta members in 2013.

In 2013, there were 4,025 visits to an ED that were associated with an injury. The top ten causes of injuries were: unintentional falls; struck by or against object/person; sport related injuries; overexersion/strenuous movement; cutting/piercing; motor vehicle traffic accident; natural environmental factors; suffocation/foreign body/chocking; violence and injury purposely inflicted; and other road vehicle accident (Figure 1).

Injury-Related visits to the Emergency Department among registered Métis Nation of Alberta members compared to the Alberta's population in 2013.



In 2013, the crude incidence rate (IR) per 100,000 population for an injury-related visit to an ED was 17,965 and 12,941 among MNA members and the overall Alberta's population, respectively. Age-standardized incidence rate (ASIR) of all causes combined for injury-related visits to the ED among Métis was 35% higher than that of the Alberta's population during the same period of time ($p < 0.01$). Statistically significant higher injury ASIRs are shown in Figure 2 and Table 1.

Main causes of Injury-Related visits to the Emergency Department among registered Métis Nation of Alberta members in 2013.

Unintentional falls were the main cause of injury-related visits to the ED among Métis people through most age groups, with a higher ASIR observed in adults aged 70 years or older. The second most common cause of injuries was associated with being struck by or against objects/persons, with a slightly high incidence in younger MNA members (age < 25 years).

Figure 1. Causes of Injury-Related visits to the Emergency Department among Métis members, 2013.

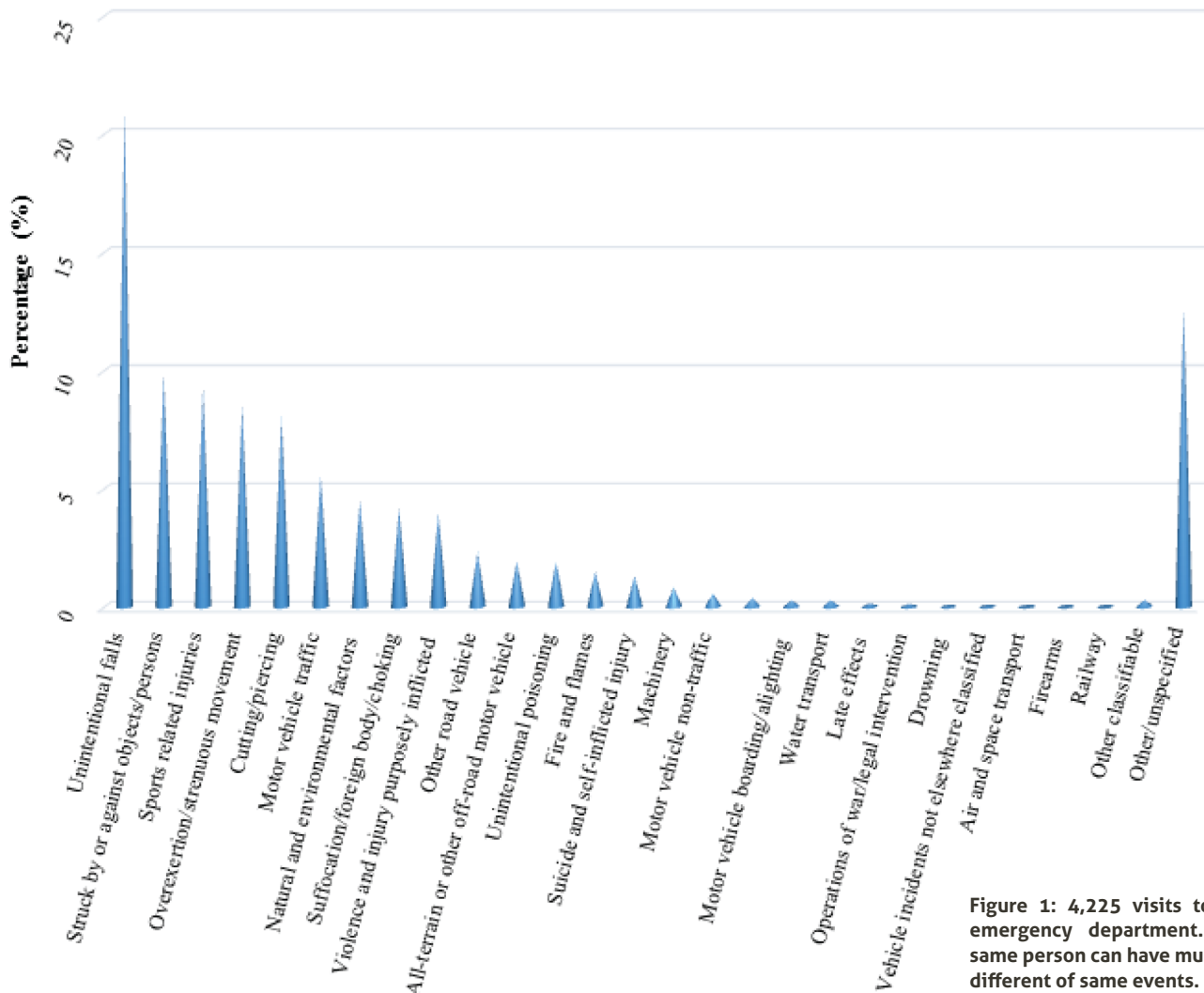


Figure 1: 4,225 visits to the emergency department. The same person can have multiple different of same events.

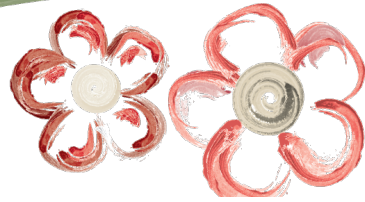
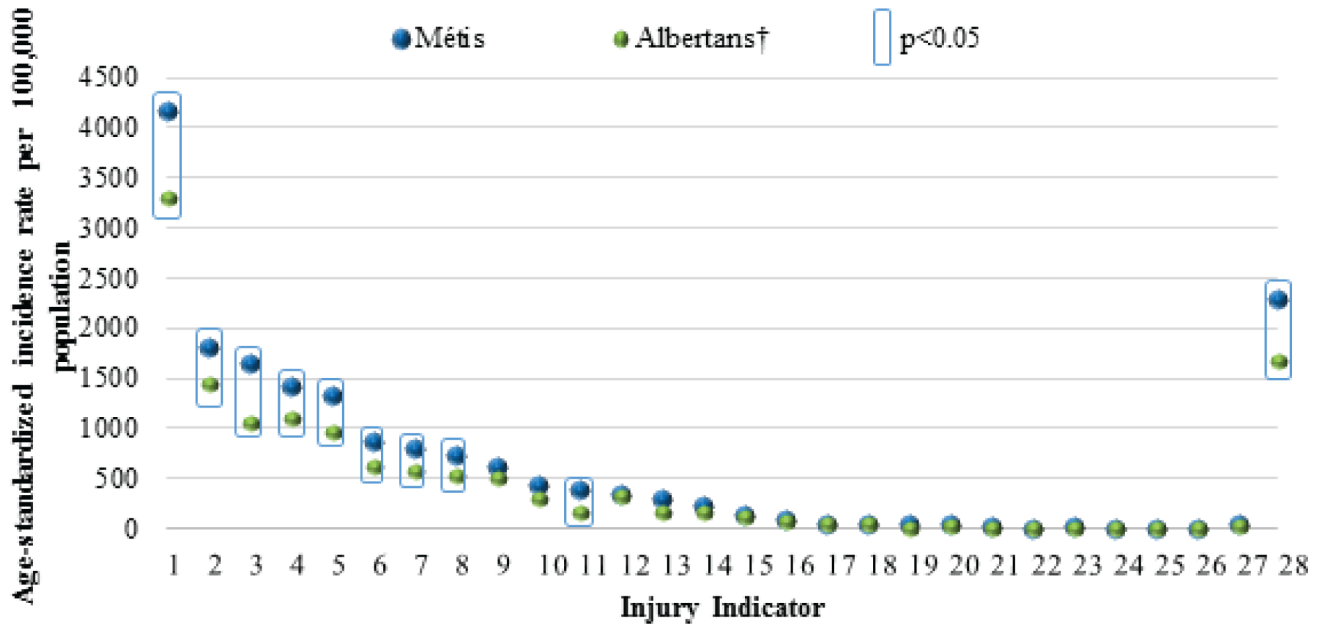


Figure 2. Injury-Related Emergency Department visits among Métis members, 2013.



† All Alberta's population including Métis

CAUSE OF INJURY			
1	Unintentional falls	15	Machinery
2	Struck by or against objects/persons	16	Motor-vehicle non-traffic
3	Sports related injuries	17	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)
4	Overexertion/strenuous movement	18	Motor vehicle boarding/alighting
5	Cutting/piercing	19	Water transport
6	Motor vehicle traffic	20	Late effects
7	Natural and environmental factors	21	Operations of war/legal intervention
8	Suffocation/foreign body/choking	22	Drowning
9	Violence and injury purposely inflicted	23	Vehicle incidents not elsewhere classified
10	Other road vehicle	24	Air and space transport
11	All-terrain or other off-road motor vehicle	25	Firearms
12	Unintentional poisoning	26	Railway
13	Fire and flames	27	Other classifiable
14	Suicide and self-inflicted injury	28	Other/unspecified

*The same person can have multiple different or same events

Figure 3. Five main causes of Injury-Related visits to the Emergency Department among Métis members by age group, 2013.

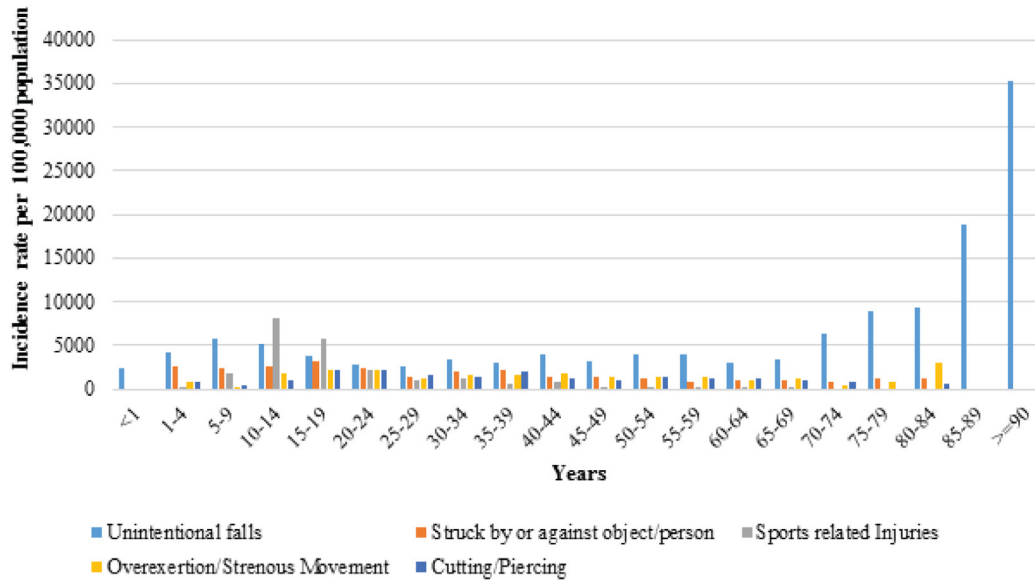
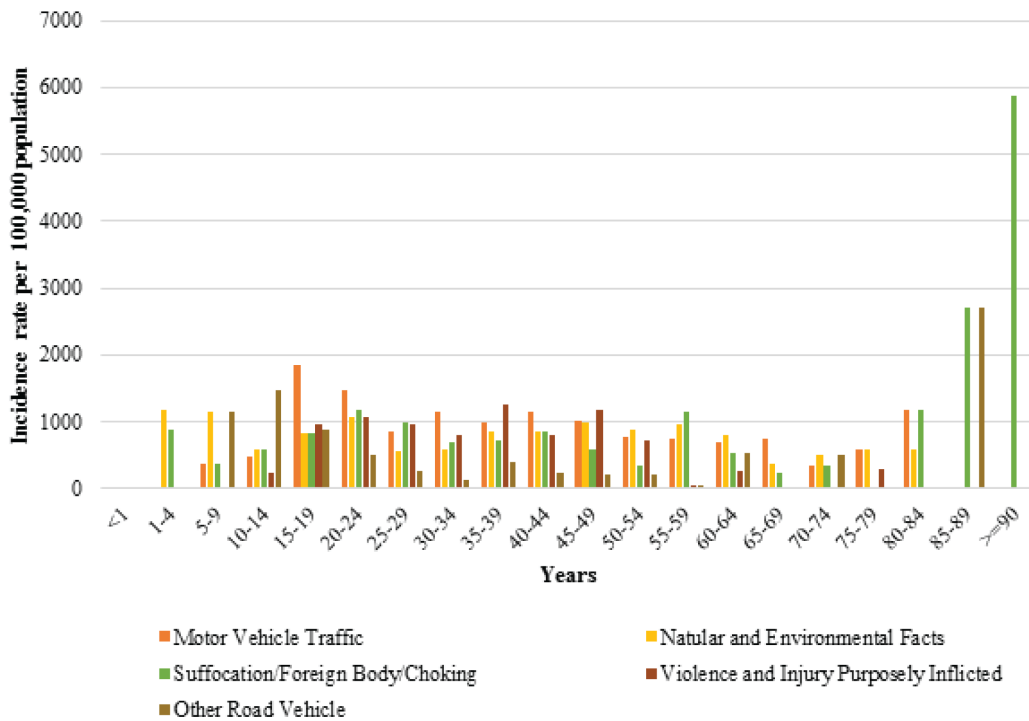


Figure 4. 6th to 10th most common causes of Injury-Related visits to the Emergency Department among Métis members by age group, 2013.





Sport related injuries, third cause of injury-related visits to the emergency department, occurred commonly among Métis 10 to 19 years old.

The fourth common cause of injury-related visits to the ED was associated with overexertion/strenuous movement, with higher ASIRs among Métis aged 15 to 24 and 80 to 84 years. Cutting/piercing events, the fifth most common cause, were mainly observed among people 15 to 24 and 35 to 39 years old (Figure 3) (Table 4).

The sixth to tenth most common causes of visits to the ED of Métis population in 2013 were: motor vehicle accidents, commonly found in young Métis aged 15 to 24 years; environmental and natural factors, found in almost all age-groups but slightly higher in younger Métis between 1 and 9 years old; suffocation/ foreign body/choking, which occurred mostly in adults 85 years old or over; violence and injury purposely inflicted with a slightly higher ASIR reported in adults aged 35 to 39 and 45 to 49; and other road vehicle accidents, most common in adults between the ages of 85 and 89 (Figure 4) (Table 2).

Injury-Related visits to the Emergency Department among registered Métis Nation of Alberta members in 2013 by rural/urban location.

The IR of visits to the ED in Métis people of Alberta in 2013 was 51% higher in rural areas than in urban ones ($p < 0.001$). Except for IRs of unintentional poisoning, and suicide and self-inflicted injury which were significantly higher in the urban area, IRs of all other causes of injury-related visits to the ED were higher in rural settings (Figure 5) (Table 3).

Injury-Related visits to the Emergency Department among registered Métis Nation of Alberta members in 2013 by gender.

Métis males had 40% higher IR of Injury-related visits to the ED than females in 2013 ($p < 0.001$).

Métis females had higher IRs for unintentional falls and suicide/self-inflicted injury. Métis males showed higher IRs for being struck by or against object/person, sport related injuries, cutting/piercing, suffocation/foreign body/choking, violence and injury purposely inflicted, other road vehicle, all-terrain and other off-road motor vehicle and injury related to the use of machinery (Figure 6). Other causes of injury should be interpreted cautiously due to a small number of events (Table 3).

Injury-Related Hospital admissions among Métis members in 2013.

Injury-Related Hospital admissions among registered Métis Nation of Alberta members in 2013.

Two hundred and nine injury-related hospital admissions were registered among Métis people living in Alberta in 2013. Unintentional falls were the main cause of injury-related hospital admissions in MNA, followed by motor vehicle traffic accidents and suicide and self-inflicted injuries (Figure 7).

Incidence rate of Injury-Related Hospital admissions in registered Métis Nation of Alberta people compared to the Alberta's population in 2013.

In 2013, the age-standardized incidence rate (ASIR) of all causes of injury combined was 26% higher in Métis people than in the overall Alberta's population, though not statistically significant. ASIRs of almost all causes of injury-related hospital admission tended to be higher in Métis people compared to the Alberta's population (Figure 8) (Table 4), however, there were no statistically significant differences.



Figure 5. Injury-Related Emergency Department among Métis members by location, 2013.

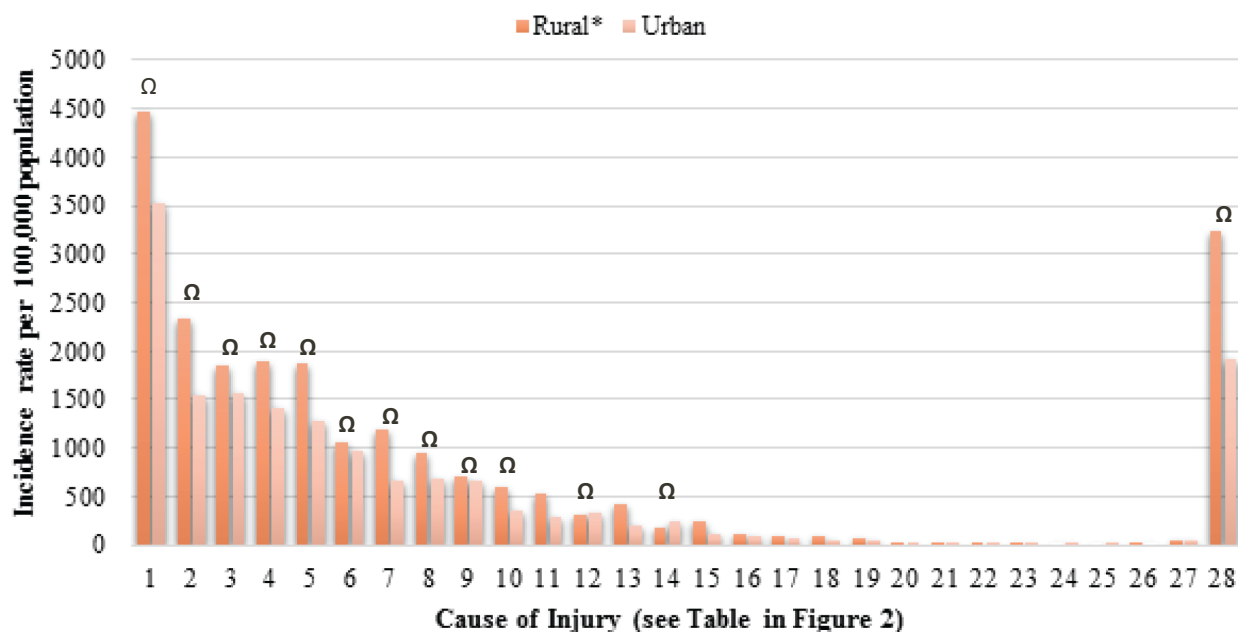


Figure 5: *40 events were deleted because of unclear postal codes. Ω Significant difference p<0.05. Results should be interpreted with caution due to a small number of cases within some causes of injury.

Figure 6. Injury-Related Emergency Department among Métis members by gender, 2013.

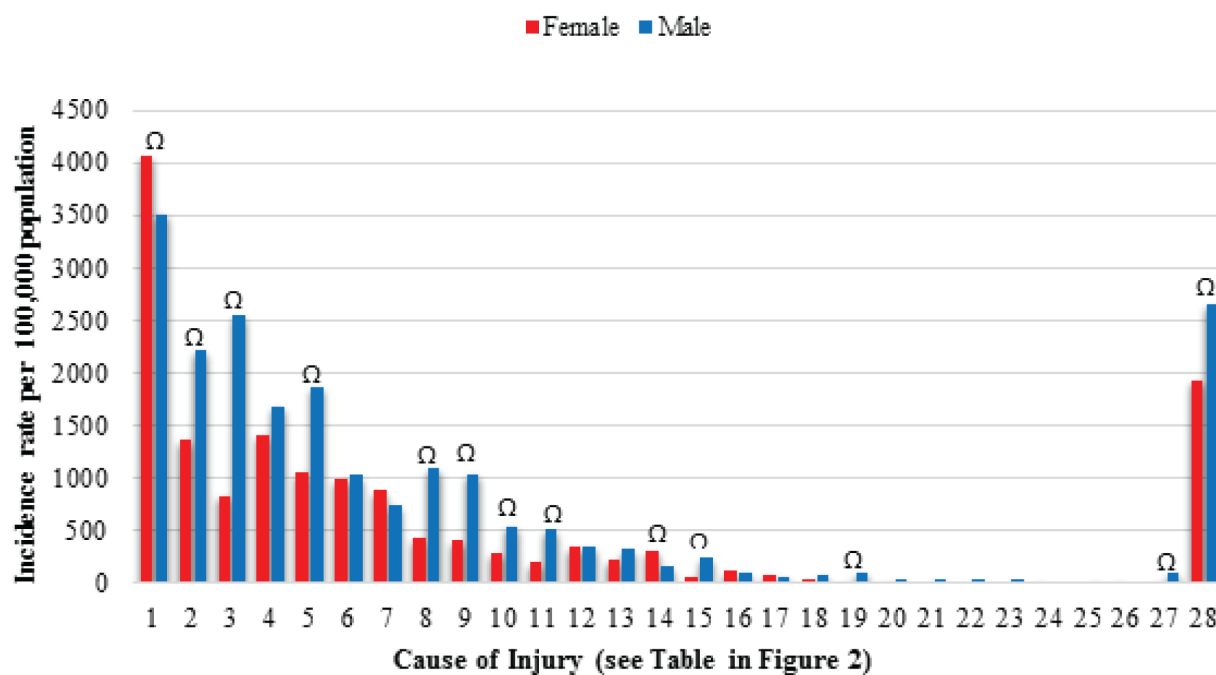


Figure 6: Ω Significant difference p<0.05. Results should be interpreted with caution due to a small number of cases within some causes of injury.

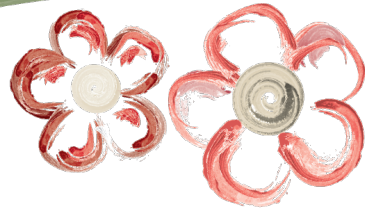
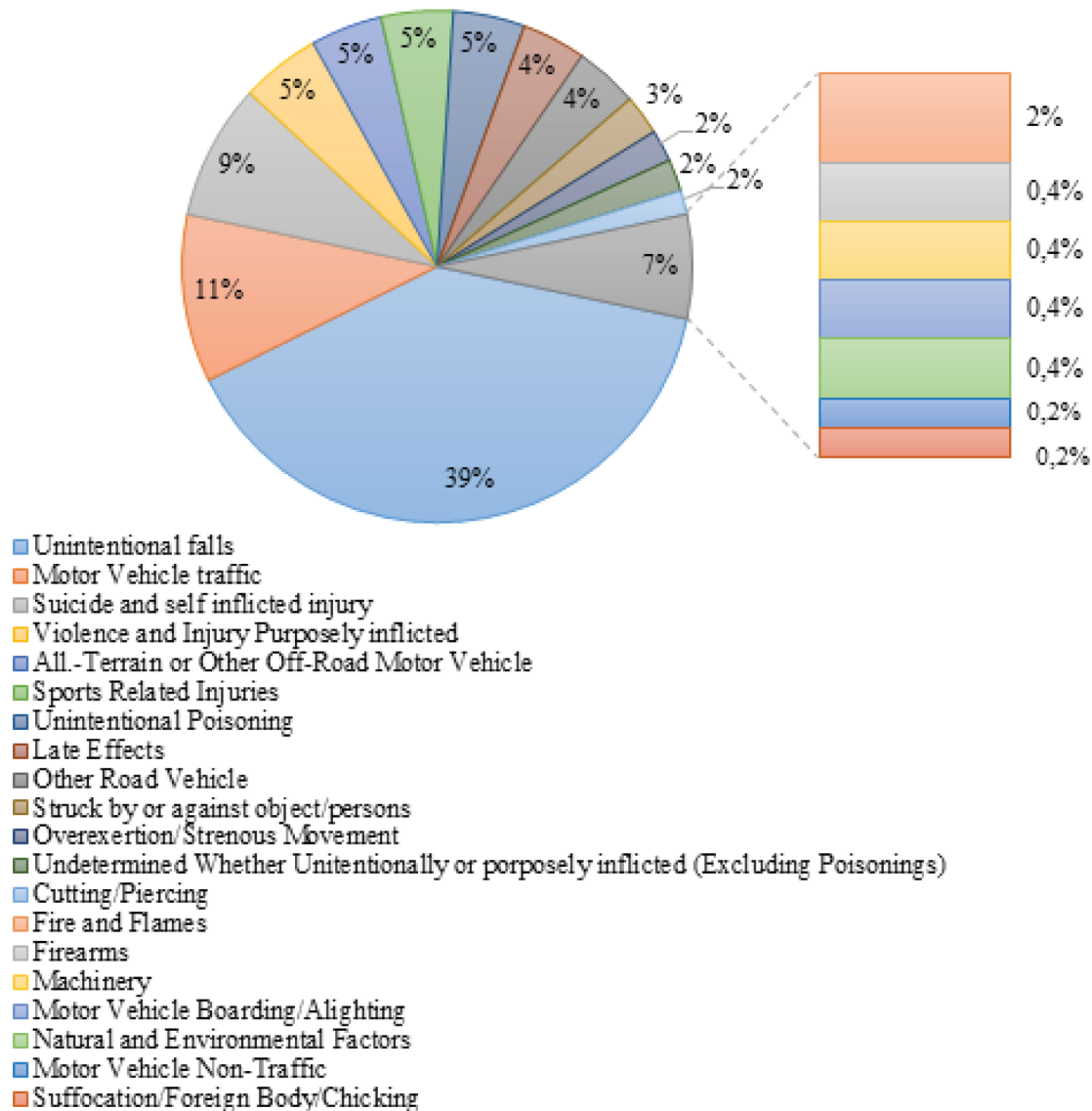


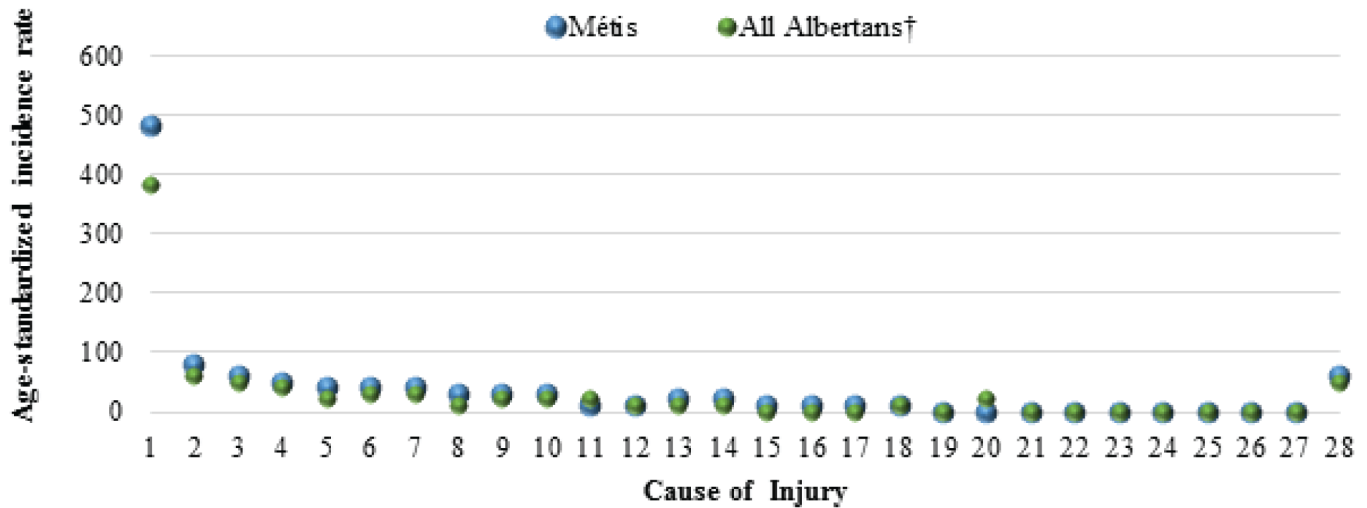
Figure 7. Causes of Injury-Related Hospital Admissions among registered Métis Nation of Alberta members, 2013.

The 209 injuries registered were caused by:



* The same person can have multiple different or same events. Adverse events were not included.

Figure 8. Injury-Related Hospital admissions among Métis in 2013



† All Alberta's population including Métis. *The same person can have multiple different or same events. Age-Standardized Incidence Rate per 100,000 population.

CAUSE OF INJURY			
1	Unintentional fall	15	Firearms
2	Motor Vehicle traffic	16	Machinery
3	Suicide and self-inflicted injury	17	Motor Vehicle Boarding/Alighting
4	Violence and Injury Purposely inflicted	18	Natural and Environmental Factors
5	All-Terrain or Other Off-Road Motor Vehicle	19	Motor Vehicle Non-Traffic
6	Sports Related Injuries	20	Suffocation/Foreign Body/Chocking
7	Unintentional Poisoning	21	Air and Space Transport
8	Late Effects	22	Drowning
9	Other Road Vehicle	23	Operations of War/Legal Intervention
10	Struck by or against object/persons	24	Railway
11	Overexertion/Strenuous Movement	25	Vehicle Incidents not elsewhere classified
12	Undetermined Whether Unintentionally or purposely inflicted (Excluding Poisonings)	26	Water Transport
13	Cutting/Piercing	27	Other classifiable
14	Fire and Flames	28	Other/unspecified

*The same person can have multiple different or same events



Figure 9. Main cause of Injury-Related Hospital Admission among Métis members by age group, 2013.

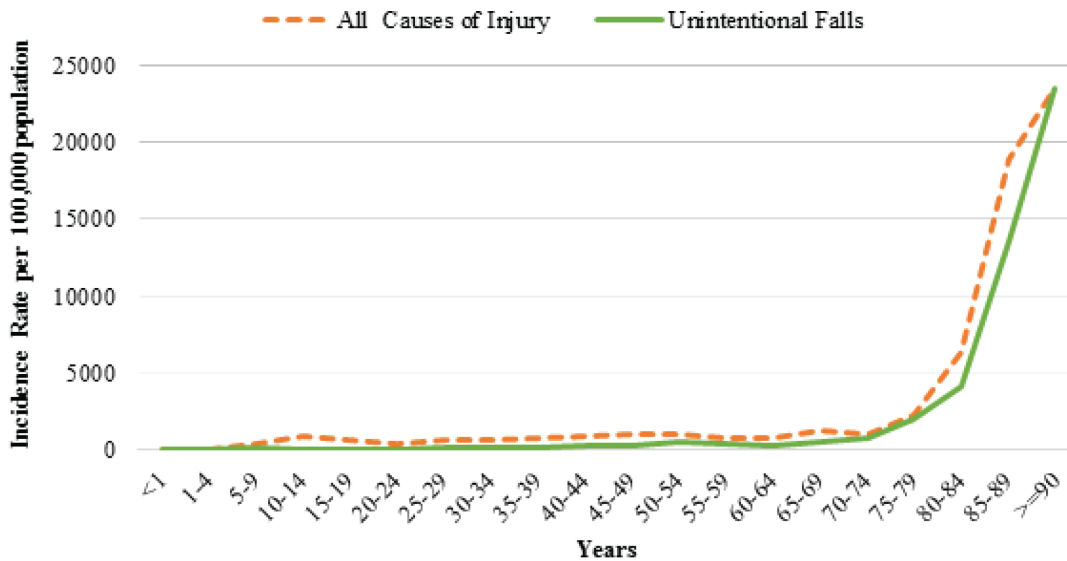


Figure 10. 2th to 4th most common causes of Injury-Related Hospital Admission among Métis members by age group, 2013.

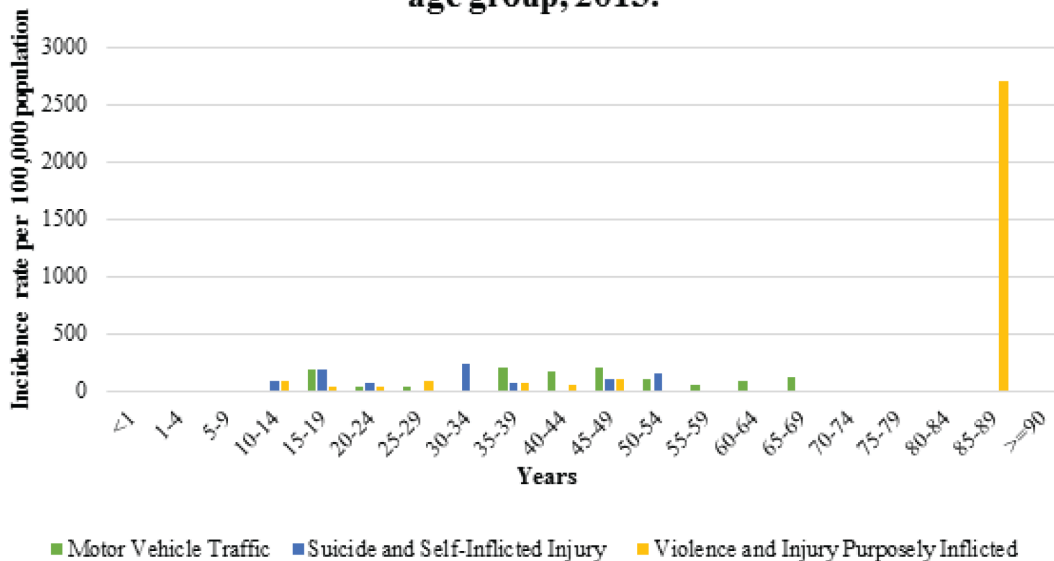




Figure 11. Injury-Related Hospital Admissions among Métis members by location, 2013.

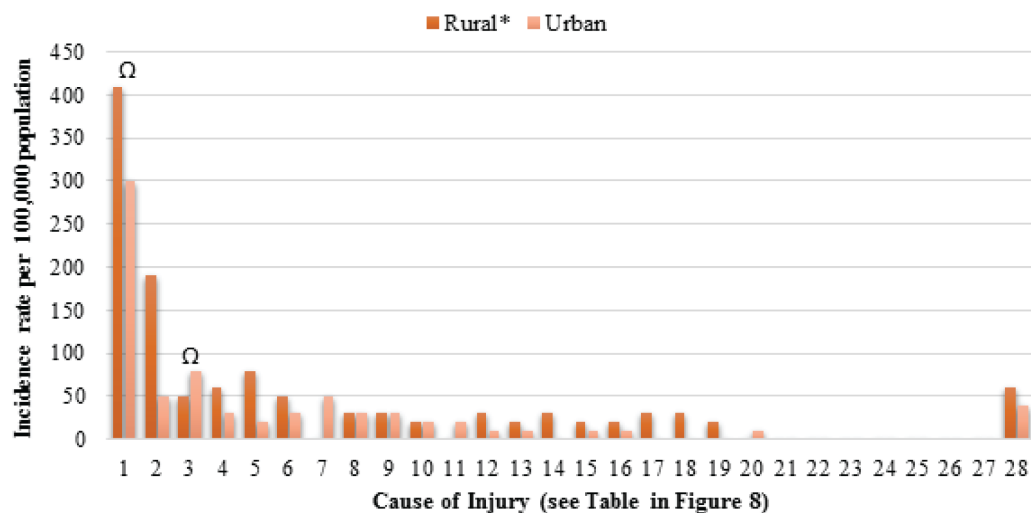
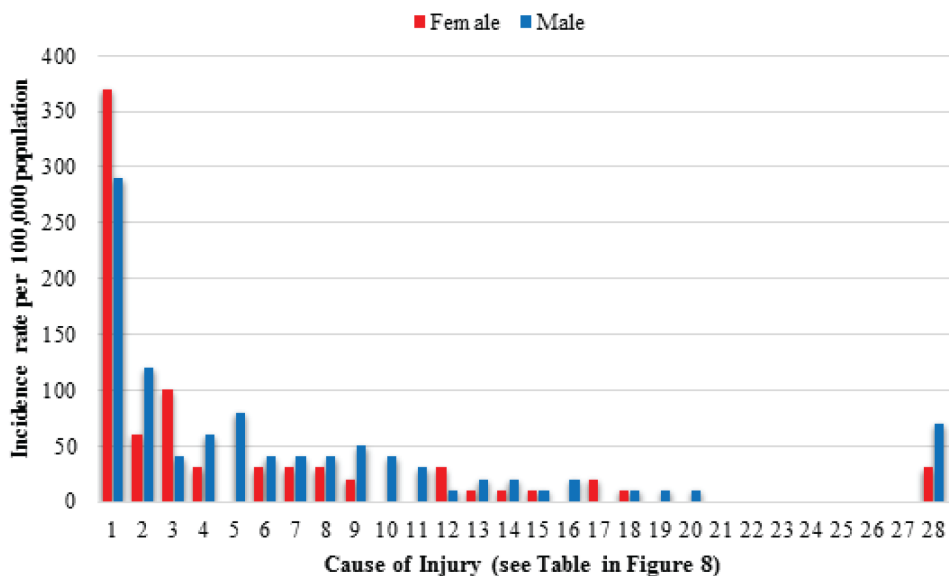


Figure 11:
 * 2 Rural events were deleted because of unclear postal codes.
 Ω Significant difference $p < 0.05$. Results should be interpreted with caution due to a small number of cases within some causes of injury.

Figure 12. Injury-Related Hospital Admissions among Métis members by gender, 2013.





Main causes of Injury-Related Hospital admission in registered Métis Nation of Alberta people in 2013.

Injury-related hospital admission in MNA people were mainly associated with unintentional falls, which were especially significant in adults aged 85 or older and turned into the exclusive cause of injury among aged 90 and over (Figure 9) (Table 5).

Motor vehicle traffic accidents were the second cause of injury-related hospital admissions in Métis people in 2013, especially between the age groups of 15 to 19 and 35 to 49. Suicide and self-inflicted injuries, the third cause of injury, were most commonly present among people aged 15 to 19 and 30 to 34. In addition, violence and injury purposely inflicted was the fourth most commonly reported cause of injury among adults aged 85 to 89 (Figure 10) (Table 5).

Injury-Related Hospital admission among registered Métis Nation of Alberta members in 2013 by rural/ urban location.

The IR of injury-related hospital admission among MNA members was 51% higher in rural areas compared to urban areas ($p < 0.001$). Incidence rate of unintentional falls was significantly higher in rural areas, while incidence rate of suicide and self-inflicted injuries was higher in urban settings. Differences in other causes of injuries should be interpreted cautiously due to the low number of events occurred by location (Figure 11) (Table 6).

Injury-Related Hospital admission among registered Métis Nation of Alberta members in 2013 by gender.

Métis males had 34% higher IR of all causes of injury-related hospital admission compared to Métis females. However, there were no significant differences in injury-related hospital admission between Métis females and males. In 2013, Métis females tended to have a higher IRs

of unintentional falls and suicide/self-inflicted injury-related hospital admission; while males had higher IRs of motor vehicle accidents, all terrain or other off-road motor vehicle accidents and violence/injury purposely inflicted events (Figure 12) (Table 6).

Injury-Related Mortality in registered Métis Nation of Alberta members in 2013.

There were no statistically significant differences in injury-related mortality between Métis people and the total Alberta's population (Table 7) in the period studied. In MNA, IR of injury-related mortality was higher in males compared to females (Figure 13) (Table 8).

DISCUSSION

Interpretation of Results

In 2013, MNA members had an overall higher incidence of injury-related health services use (emergency department visits and hospital admissions) compared with the total population of Alberta. Moreover, results from the present study also indicate that incidence of injury-related health services use of Métis people was higher in rural areas, and that Métis males were more likely to be injured than females. However, no statistically significant differences were found in incidence rate of injury-related mortality in MNA members compared to all Albertan's population during the period studied.

Strengths and Limitations

This is the first report on the burden of injury among MNA members living in Alberta. These analyses were conducted using high quality provincial administrative health data. Furthermore, collaboration with the Métis Nation of Alberta Association for the identification of the MNA members in provincial registries is another strength of the present study. This allowed for direct measurement at the individual level.

Figure 13. Incidence Rate of Injury-Related Mortality among Métis members by location and gender, 2013.

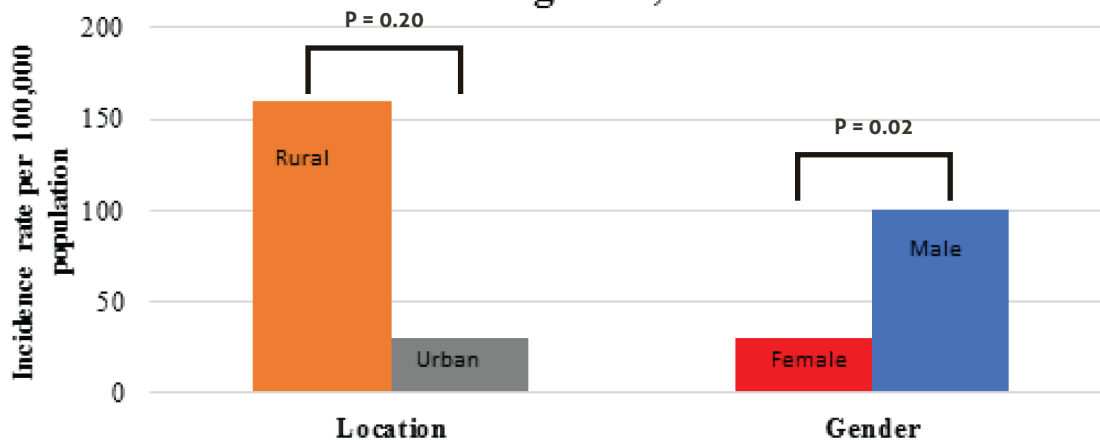


Figure 13:
Results should be interpreted with caution due to a small number of cases

The MNA population was identified using the MNA identification registry. This list is comprised only of Métis people who qualify for and have registered with the MNA. Consequently, it does not capture all people with Métis ancestry living in Alberta and may not represent the overall Métis population within the province. Moreover, because the registered MNA population is small, there were a relatively small number of events associated to some causes of injury studied. Small numbers of events might represent a methodological limitation which prevents us from drawing strong conclusions due to a lack of statistical power. Therefore, although some of the differences between the groups compared were statistically significant, the results should be interpreted cautiously.

Recommendations

Primary prevention offers the most cost-effective strategy for controlling the burden associated to injuries and the consequences accompanying them. It involves either preventing the events from occurring or preventing it from leading to injuries (14). However, it is important to consider that evidence-based interventions designed

and/or adapted according to the needs and cultural context of the target group may yield better results (15).

Unintentional falls in older people have been identified as a major public health problem in Alberta, and efforts have been directed to tackle this cause of injury (16). Results from the present study have shown that falls represent even a greater problem in Métis people compared to Alberta's population. Therefore, we recommend the implementation of fall prevention strategies adjusted to the needs of older MNA people, especially females in rural areas. In order to design appropriate interventions, further study of the determinants of falls in this population is advised.

Additional primary prevention interventions might include measures such as educational campaigns encouraging safety practices such as wearing protective gear while working or participating in sports. Overall, in order to motivate an active engagement and participation from MNA people, we suggest involving representatives from MNA people in the designing of culturally-oriented interventions directed to their community.



Finally, lack of accurate information related to the cause of injuries can be an obstacle to counteract this public health problem. Therefore, we advocated for an implementation of a reliable surveillance system which will produce data useful not only to facilitate the design and implementation of appropriate interventions, but also to monitor the results and to assess the impact of the interventions.

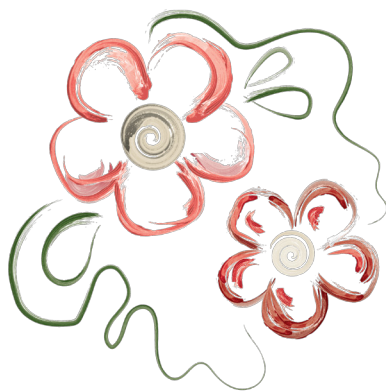
Conclusions

MNA members had an overall higher incidence of injury-related health services use (emergency department visits and hospital admissions), but did not have higher injury-related mortality, when compared to the total population of Alberta in 2013. Injuries are considered a serious public health problem in Alberta and Canada due to the potential consequences associated to them, in terms of costs and diminished quality of life. Results from the present report suggest that injuries are important aspects to be addressed in Métis people, probably with culturally-oriented prevention and intervention strategies.

The present report attempts to cover the gap of information available on injury in MNA people. We hope that the information contained in this report can be used by health planners for the design and implementation of strategies directed to reduce the burden of injury and the complications associated to it in MNA people.

Table 1. Number of events and incidence rate of Injury-Related visits to Emergency department in Métis and Albertans, 2013.

INJURY INDICATOR	CAUSE OF INJURY
	Any Injury*
1	Unintentional falls
2	Struck by or against objects/persons
3	Sports related injuries
4	Overexertion/strenuous movement
5	Cutting/piercing
6	Motor vehicle traffic
7	Natural and environmental factors
8	Suffocation/foreign body/choking
9	Violence and injury purposely inflicted
10	Other road vehicle
11	All-terrain or other off-road motor vehicle
12	Unintentional poisoning
13	Fire and flames
14	Suicide and self-inflicted injury
15	Machinery
16	Motor vehicle non-traffic
17	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)
18	Motor vehicle boarding/alighting
19	Water transport
20	Late effects
21	Operations of war/legal intervention
22	Drowning
23	Vehicle incidents not elsewhere classified
24	Air and space transport
25	Firearms
26	Railway
27	Other classifiable
28	Other/unspecified





Métis (23,518)		Alberta† (4,007,203)		Métis (23,518)		Alberta† (4,007,203)	
Count	Incidence Rate	Count	Incidence Rate	Age standardized Incidence Rate	Age standardized Incidence Rate	Age standardized Incidence Rate	Age standardized Incidence Rate
4,225	17,965	518,592	12,941	17,880		13,230	
891	3,789	133,542	3,333	4,170		3,310	
418	1,777	55,549	1,386	1,810		1,440	
394	1,675	38,264	955	1,650		1,060	
362	1,539	42,750	1,067	1,410		1,100	
341	1,450	38,300	956	1,320		970	
236	1,003	24,100	601	880		610	
191	812	22,757	568	790		570	
177	753	20,981	524	740		530	
168	714	19,152	478	620		500	
98	417	11,161	279	440		290	
82	349	6,543	163	380		170	
81	344	12,602	314	350		320	
63	268	6,356	159	290		160	
55	234	6,107	152	220		160	
35	149	4,690	117	130		120	
24	102	2,366	59	100		60	
16	68	2,004	50	50		50	
12	51	1,858	46	50		50	
12	51	486	12	50		10	
6	26	781	19	50		20	
5	21	489	12	20		10	
3	13	171	4	10		0	
3	13	261	7	20		10	
1	4	95	2	0		0	
1	4	253	6	0		10	
1	4	52	1	0		0	
12	51	1,196	30	40		30	
537	2,283	65,726	1,640	2,290		1,680	



Table 2. Incidence rate of Injury-Related visits to Emergency department of Métis, stratified by age group, 2013.

Injury Indicator	Cause of Injury	Age standardized Incidence Rate							
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34
	Any Injury*	4,890	15,850	17,580	27,040	28,140	21,850	15,220	16,910
1	Unintentional falls	2,440	4,110	5,860	5,280	3,750	2,770	2,550	3,350
2	Struck by or against objects/persons	.	2,640	2,420	2,640	3,130	2,340	1,340	2,080
3	Sports related injuries	.	290	1,910	8,080	5,690	2,160	1,080	1,330
4	Overexertion/strenuous movement	.	880	250	1,810	2,160	2,160	1,300	1,560
5	Cutting/piercing	.	880	510	1,070	2,160	2,160	1,640	1,390
6	Motor vehicle traffic	.	.	380	490	1,850	1,470	860	1,150
7	Natural and environmental factors	.	1,170	1,150	580	840	1,080	560	580
8	Suffocation/foreign body/choking	.	880	380	580	840	1,190	990	690
9	Violence and injury purposely inflicted	.	.	.	250	970	1,080	950	810
10	Other road vehicle	.	.	1,150	1,480	880	500	260	120
11	All-terrain or other off-road motor vehicle	.	1,170	380	490	530	580	610	350
12	Unintentional poisoning	.	1,170	130	160	620	400	220	170
13	Fire and flames	.	590	250	.	350	250	260	460
14	Suicide and self-inflicted injury	.	.	.	330	440	110	130	350
15	Machinery	.	.	.	.	180	320	90	170
16	Motor vehicle non-traffic	.	.	130	330	180	.	130	120
17	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)	.	.	.	80	220	110	90	.

*The same person can have multiple different or same events. Incidence Rate per 100,000 population.

†Including Métis



18	Motor vehicle boarding/alighting	.	.	.	.	90	70	40	.
19	Water transport	.	.	130	80	90	140	90	120
20	Late effects	.	.	.	.	.	40	.	.
21	Operations of war/legal intervention	.	.	.	.	.	40	.	.
22	Drowning	.	.	.	.	90	40	.	.
23	Vehicle incidents not elsewhere classified	.	.	.	160	.	.	.	.
24	Air and space transport	.	.	.	.	.	.	.	.
25	Firearms	.	.	.	.	.	40	.	.
26	Railway	.	.	.	.	.	.	.	.
27	Other classifiable	.	.	.	80	90	110	40	.
28	Other/unspecified	2,440	2,050	2,550	3,050	3,000	2,730	1,990	2,140

Table 3. Number of events and incidence rate of Injury-Related visits to Emergency Department in Métis, stratified by location and gender, 2013.

Injury Indicator	Cause of Injury
	Any Injury*
1	Unintentional falls
2	Struck by or against objects/persons
3	Sports related injuries
4	Overexertion/strenuous movement
5	Cutting/piercing
6	Motor vehicle traffic
7	Natural and environmental factors
8	Suffocation/foreign body/choking
9	Violence and injury purposely inflicted
10	Other road vehicle
11	All-terrain or other off-road motor vehicle
12	Unintentional poisoning
13	Fire and flames
14	Suicide and self-inflicted injury
15	Machinery



130	110	50	50	.	.	.	.	290	.	.	.
.
130	.	.	.	.	90	.	.	.	580	.	5,880
200	.	.	50	.	.	.	.	.	.	.	.
.
.	60	.	.	.	.	.	.	.	.	.	.
.	60	.	.	.	.	.	.	.	.	.	.
.
.	60	.	.	.	.	.	.	.	.	.	.
.	170	50	50	.	.	.	.	.	.	.	.
3,050	1,770	2,060	1,710	2,230	1,930	1,350	1,690	2,600	1,750	2,700	.

	Location				Gender			
	Rural*		Urban		Female		Male	
	Count	Incidence Rate	Count	Incidence Rate	Count	Incidence Rate	Count	Incidence Rate
	1,407	24,350	2,781	16,150	1,793	1,500	2,432	2,103
	282	4,480	606	3,520	485	4060	406	3510
	147	2,340	267	1,550	162	1360	256	2210
	117	1,860	271	1,570	99	830	295	2550
	119	1,890	243	1,410	168	1410	194	1680
	118	1,870	221	1,280	125	1050	216	1870
	67	1,060	165	960	118	990	118	1020
	75	1,190	115	670	105	880	86	740
	60	950	117	680	51	430	126	1090
	44	700	115	670	48	400	120	1040
	38	600	60	350	35	290	63	540
	33	520	49	280	23	190	59	510
	20	320	58	340	41	340	40	350
	26	410	37	210	26	220	37	320
	11	170	43	250	37	310	18	160
	15	240	20	120	7	60	28	240



16	Motor vehicle non-traffic
17	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)
18	Motor vehicle boarding/alighting
19	Water transport
20	Late effects
21	Operations of war/legal intervention
22	Drowning
23	Vehicle incidents not elsewhere classified
24	Air and space transport
25	Firearms
26	Railway
27	Other classifiable
28	Other/unspecified

*40 events were deleted because of unclear postal codes. Incidence Rate per 100,000 population.

Table 4. Count and incidence rate of Injury-Related Hospital Admissions in Métis and Albertan, 2013.

Injury Indicator	Cause of Injury
	All Injury*
1	Unintentional falls
2	Motor vehicle traffic
3	Suicide and self-inflicted injury
4	Violence and injury purposely inflicted
5	All-terrain or other off-road motor vehicle
6	Sports related injuries
7	Unintentional poisoning
8	Late effects
9	Other road vehicle
10	Struck by or against objects/persons
11	Overexertion/strenuous movement
12	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)
13	Cutting/piercing
14	Fire and flames
15	Firearms
16	Machinery
17	Motor vehicle boarding/alighting



	7	110	16	90	13	110	11	100
	6	100	10	60	9	80	7	60
	5	80	7	40	4	30	8	70
	4	60	8	50	1	10	11	100
	2	30	4	20	1	10	5	40
	1	20	3	20	0	0	5	40
	1	20	2	10	0	0	3	30
	1	20	2	10	0	0	3	30
	0	0	1	10	1	10	0	0
	0	0	1	10	0	0	1	10
	1	20	0	0	1	10	0	0
	3	50	9	50	2	20	10	90
	204	3,240	331	1,920	231	1930	306	2650

	Métis (23,518)		Alberta†(4,007,203)		Métis (23,518)	Alberta†(4,007,203)
	Count	Incidence Rate	Count	Incidence Rate	Age standardized Incidence Rate	Age standardized Incidence Rate
	209	889	34,513	857	1,040	820
	78	332	16,929	421	480	380
	21	89	2,269	56	80	60
	17	72	2,014	50	60	50
	10	43	1,463	36	50	40
	9	38	851	21	40	20
	9	38	1,197	30	40	30
	9	38	1,399	35	40	30
	8	34	632	16	30	10
	8	34	769	19	30	20
	5	21	773	19	30	20
	4	17	1,016	25	10	20
	4	17	344	9	10	10
	3	13	478	12	20	10
	3	13	256	6	20	10
	2	9	44	1	10	0
	2	9	205	5	10	0
	2	9	162	4	10	0



15	Firearms	.	.	.	80	.	.	.	.
16	Machinery	.	.	.	.	.	.	40	.
17	Motor vehicle boarding/ alighting	.	.	.	.	.	40	.	.
18	Natural and environmental factors	.	.	.	.	.	.	40	.
19	Motor vehicle non-traffic	.	.	.	.	.	.	.	.
20	Suffocation/foreign body/ choking	.	.	.	.	.	.	40	.
21	Air and space transport	.	.	.	.	.	.	.	.
22	Drowning	.	.	.	.	.	.	.	.
23	Operations of war/legal intervention	.	.	.	.	.	.	.	.
24	Railway	.	.	.	.	.	.	.	.
25	Vehicle incidents not elsewhere classified	.	.	.	.	.	.	.	.
26	Water transport	.	.	.	.	.	.	.	.
27	Other classifiable	.	.	.	.	.	.	.	.
28	Other/unspecified	.	.	250	.	40	.	.	.

Missing means no event. Incidence Rate per 100,000 population.

Table 6. Count and incidence rate of Injury-Related Hospital Admissions in Métis, stratified by location and gender, 2013.

Injury Indicator	Cause of Injury
	All Injury*
1	Unintentional falls
2	Motor vehicle traffic
3	Suicide and self-inflicted injury
4	Violence and injury purposely inflicted
5	All-terrain or other off-road motor vehicle
6	Sports related injuries
7	Unintentional poisoning
8	Late effects
9	Other road vehicle



.	60
.	90
70
.	.	.	.	60
.	.	50
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70	60	.	50	60	.	250	170	.	580	.	.

	Location				Gender			
	Rural*		Urban		Female		Male	
	Count	Incidence rate	Count	Incidence rate	Count	Incidence rate	Count	Incidence rate
	74	1,180	134	780	91	760	118	1,020
	26	410	52	300	44	370	34	290
	12	190	9	50	7	60	14	120
	3	50	14	80	12	100	5	40
	4	60	6	30	3	30	7	60
	5	80	4	20	0	0	9	80
	3	50	6	30	4	30	5	40
	0	0	9	50	4	30	5	40
	2	30	6	30	3	30	5	40
	2	30	6	30	2	20	6	50



10	Struck by or against objects/persons
11	Overexertion/strenuous movement
12	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)
13	Cutting/piercing
14	Fire and flames
15	Firearms
16	Machinery
17	Motor vehicle boarding/alighting
18	Natural and environmental factors
19	Motor vehicle non-traffic
20	Suffocation/foreign body/choking
21	Air and space transport
22	Drowning
23	Operations of war/legal intervention
24	Railway
25	Vehicle incidents not elsewhere classified
26	Water transport
27	Other classifiable
28	Other/unspecified

*2 events were deleted because of unclear postal codes. Incidence Rate per 100,000 population.

Table 7. Count and incidence rate of Injury-Related Mortality in Métis and all Alberta, 2013.

Injury indicator	Injury
0	Any Injury*
1	Suicide and self-inflicted injury
2	Motor vehicle traffic
3	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)
4	Drowning
5	Violence and injury purposely inflicted

†Including Métis. Incidence Rate per 100,000 population.



	1	20	4	20	0	.	5	40
	0	0	4	20	0	.	4	30
	2	30	2	10	3	30	1	10
	1	20	2	10	1	10	2	20
	2	30	.	0	1	10	2	20
	1	20	1	10	1	10	1	10
	1	20	1	10	0	.	2	20
	2	30	0	.	2	20	0	.
	2	30	0	.	1	10	1	10
	1	20	0	.	0	.	1	10
	0	.	1	10	0	.	1	10
	0	.	0	.	0	.	0	.
	0	.	0	.	0	.	0	.
	0	.	0	.	0	.	0	.
	0	.	0	.	0	.	0	.
	0	.	0	.	0	.	0	.
	0	.	0	.	0	.	0	.
	0	0	0	.	0	.	0	.
	4	60	7	40	3	30	8	70

	Métis (23,607)		Alberta†(4,025,078)		Métis (23,607)	Alberta†(4,025,078)
	Count	Incidence Rate	Count	Incidence Rate	Age standardized Incidence Rate	Age standardized Incidence Rate
	15	60	1931	50	60	50
	5	20	519	10	20	10
	4	20	305	10	20	10
	4	20	416	10	20	10
	1	0	43	0	0	0
	1	0	72	0	0	0



Table 8. The event numbers and incidence rates of Injury-Related Mortality in Métis, stratified by location and gender, 2013.

Injury indicator	Injury
0	Any Injury*
1	Suicide and self-inflicted injury
2	Motor vehicle traffic
3	Undetermined whether unintentionally or purposely inflicted- (excluding poisonings)
4	Drowning
5	Violence and injury purposely inflicted

Missing means no event. *40 events were deleted because of unclear postal codes. Incidence Rate per 100,000 population.



	Rural/Urban				Gender			
	Rural*		Urban		Female		Male	
	Count	Incidence Rate	Count	Incidence Rate	Count	Incidence Rate	Count	Incidence Rate
	10	16	5	30	3	30	12	10
	3	50	2	10	1	10	4	30
	3	50	1	10	1	10	3	30
	3	50	1	10	1	10	3	30
	1	20	0	0	0	0	1	10
	0	0	1	10	0	0	1	10



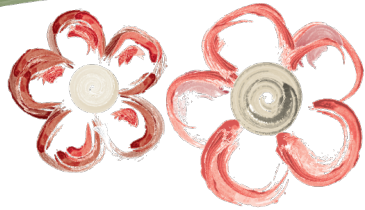
APPENDIXES:

Appendix 1. Cause of Injury Category Description

Mechanism/Cause of Injury	Inclusion/Exclusion	ICD-10 /ICD-10-CA (Codes identified in italics are specific to ICD-10-CA)
Total Injuries (including adverse events)	Includes: all injury deaths, hospital admissions, and emergency department visits.	All below
Adverse Events	Includes: drugs, medicaments and biological substances causing an abnormal reaction in therapeutic use, complications of medical and surgical care, misadventures to patients during surgical and medical care, medical devices associated with adverse incidents in diagnostic and therapeutic use, surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of procedure.	Y40.0-Y84.2, <i>Y84.30, Y84.38, Y84.4-Y84.9</i>
Unintentional Falls	Includes: fall on or from stairs/steps, ladders/scaffolding, from or out of building/structure, into hole or other opening in surface, fall from one level to another, fall on same level from slipping/tripping/ or stumbling (includes roller skates, skateboard, skis, snowboard), fall on same level from collision/pushing/ shoving by or with person (not sports related tackle) .	W00, W01, W03, W04, <i>W05.00-W05.09</i> , W06-W19
Motor Vehicle	Includes: driver, passenger, motor cyclist, bicyclist, pedestrian, other or unspecified.	V3*.5 (0-8), V39.4, V4*.5 (0.-8), V49.4, V5*.5 (0-8), V59.4, V6*.5 (0-8), V69.4, V7*.5 (0-8), V79.4, V8*.0 (3-5), <i>V86.00, V86.08</i> , V3*.6 (0-8), V39.5, V4*.6 (0-8), V49.6, V5*.6(0-8), V59.5, V6*.6 (0-8), V69.5, V7*.6 (0-8), V79.5, V8*.1 (3-5), <i>V86.10, V86.18</i> , V86.2, V2*.4 (0-9), V2*.5 (0-9), V02.1, V02.9, V03.1, V03.9, V04.1, V04.9, V09.2, V12.4, V12.5, V12.9, V13.4, V13.5, V13.9, V14.4, V14.5, V14.9, V19.4, V19.5, V19.6, V2*.9 (0-9), V29.6, V29.8, V29.9, V3*.7 (0-8), V3*.9 (0-8), V39.6, V39.8, V39.9, V4*.7 (0-8), V4*.9 (0-8), V49.6, V49.8, V49.9, V5*.7 (0-8), V5*.9 (0-8), V59.6, V59.8, V59.9, V6*.7 (0-8), V6*.9 (0-8), V69.6, V69.8, V69.9, V7*.7 (0-8), V7*.9 (0-8), V79.6, V79.8, V79.9, V82.1, V83.2, V83.3, V84.2, V84.3, V85.2, V85.3, <i>V86.30, V86.38</i> , V87.0-V87.8, V89.2
Suicide and Self-Inflicted Injury	Includes: purposely self-inflicted poisoning or injury, suicide (attempted). Includes: (attempted) suicides/ self-inflicted poisonings by solids/liquids, hanging, firearms, cutting/piercing instruments, carbon monoxide, other.	X60-X73, X74.00-X74.09, X75- X84
Violence and Injury Purposely Inflicted	Includes: homicide, injuries inflicted by another person with intent to injure or kill by any means. Includes: fight/ brawl, sexual assault, assault by firearms and explosives, assault by cutting/piercing instrument, child and adult battering, and other maltreatment.	X85-X94, <i>X95.00-X95.09</i> , X96-X99, Y00-Y09



Other terrain or other Off-road Motor Vehicle	Includes: Occupant of special all-terrain or other motor vehicle designed primarily for off-road use, injured in transport accident, which doesn't include non-traffic accident	V86.08, V86.58, V86.18, V86.68, V86.2, V86.38, V86.4, V86.7, V86.98, V86.00, V86.50, V86.51, V86.10, V86.60, V86.61, V86.30, V86.90, V86.91
Sport Related Injuries	Includes: fall on level collision, pushing or shoving by or with other person in sports (tackle), and striking against or struck accidentally by object or person in sports.	W02.00-W02.08, W21.00-W21.09, W22.00-W22.08, W51.00-W51.08
Unintentional Poisoning	Includes: accidental overdose of drug, wrong drug given or taken in error, and drug taken inadvertently. Excludes: administration with suicidal or homicidal intent or intent to harm, correct drug properly administered in therapeutic or prophylactic dosage as the cause of an adverse event.	X40-X49, Y10-Y19
Late Effects of Injury	Definition: a residual condition (sequelae) of a disease that is no longer present. Includes: late effects of motor vehicle accident, other transportation accident, intentional self-harm, assault, surgical and medical care, leg interventions, war operations, and unspecified external causes.	Y85.0-Y89.9
Other Road Vehicle	Includes: pedestrian, pedal cyclists, animals, streetcar, other not involved with a motor vehicle.	V01.0-V01.9, V06.0-V06.9, V09.1-V09.9, V10.0-V10.9, V11.0-V11.9, V12.3, V13.3, V14.4, V16.0-V16.9, V17.0-V17.9, V18.0-V18.9, V19.3, V19.8, V19.9, V80.0-V80.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3
Struck by or Against Objects/Persons	Includes: struck by falling object, person/object (excluding sports), caught in or between objects. Excludes: sports related.	W20, W22.09, W23, W50, W51.09, W52
Overexertion/Strenuous Movement	Includes: overexertion and strenuous movements or repetitive movements.	X50
Undetermined Intention (excluding poisoning)	Includes: events where available information is insufficient to determine where the injuries were accidental (unintentional), suicide (attempted), or assault of substances including: gas, hanging, strangulation, or suffocation, submersion/drowning, injury by firearm, cutting/piercing, fire/burn/scald, electrocution.	Y20-Y23, Y24.00-Y24.09, Y25-Y34
Cutting/Piercing	Includes: powered lawn mower, power tools, household appliances, knives, swords, hand tools and implements, hypodermic needle, broken glass, dart/arrow, edge of stiff paper, nail, splinter, tin can lid.	W25-W29, W45, W60



Fire and Flames	Includes: fire, flames, hot objects/substances. Explosion caused by fire, smoke and fumes from fire in private dwelling, building or structure, ignition of clothing, ignition of highly inflammable material. Burns caused by: hot substance or object, caustic or corrosive material and steam.	X00-X06, X08-X16, X18, X19
Firearms	Includes: handgun, pistol, revolver, shotgun (automatic), hunting rifle, military firearm/machine gun, air gun, flare pistol, BB gun, air gun.	W32, W33, W34.00-W34.09
Machine/Machinery	Includes: agriculture machinery, mining/earth-drilling machines, chain hoists, crane, derrick, elevator, forklift, winch, metal working machine, woodworking/forming machines, gas turbine/steam/internal combustion engine, transmission machinery, bulldozer, roadscraper, manufacturing machines.	W24, W30, W31, X17
Motor Vehicle Boarding/ Alighting	Includes: Non-collision motor vehicle traffic accident while boarding or alighting; Other motor vehicle non-traffic accident while boarding and alighting.	V2*.3 (0-8), V3*.4 (0-8), V4*.4 (0-8), V5*.4 (0-8), V6*.4 (0-8), V7*.4 (0-8), V83.4, V84.4, V85.4, V86.4
Natural and Environmental Factors	Includes: excessive cold/heat, thirst, exposure, neglect, bites/stings, dog bites, forces of nature, air pressure change, travel and motion, other and unspecified environmental and accidental causes.	W53-W59, W64, W92-W94, W99, X20, X31, X33-X36, X37.00-X37.09, X38, X39, X51-X54, X57
Motor Vehicle Non-traffic	Includes: Non-traffic accidents involving motor-driven snow vehicle, other off-road motor vehicle, collision with moving object, collision with stationary object; It also include the non-traffic accident while boarding and alighting or accident of other and unspecified nature.	V3*.0 (0-9), V4*.0 (0-9), V5*.0 (0-9), V6*.0 (0-9), V7*.0 (0-9), V83.5, V84.5, V85.5, V86.50, V86.51, V86.58, V3*.1 (0-9), V4*.1 (0-9), V5*.1 (0-9), V6*.1 (0-9), V7*.1 (0-9), V83.6, V84.6, V85.6, V86.60, V86.61, V86.68, V2*.0 (0-8), V2*.1 (0-9), V02.0, V03.0, V04.0, V09.0, V12.0-V12-2, V13.0-V13.2, V14.0-V14.2, V19.0-V19.2, V2*.2 (0-9), V29.3, V3*.2 (0-9), V3*.3 (0-9), V4*.2 (0-9), V4*.3 (0-9), V5*.2 (0-9), V5*.3 (0-9), V6*.2 (0-9), V6*.3 (0-9), V7*.2 (0-9), V7*.3 (0-9), V80.3, V80.4, V80.5, V82.0, V83.7, V83.9, V84.7, V84.9, V85.7, V85.9, V86.90, V86.91, V86.98, V88.0- V88.8, V89.0

Suffocation/Foreign Body/Choking	Includes: inhalation and ingestion of food/object causing obstruction of respiratory tract/suffocation, accidental mechanical suffocation, and foreign body in a natural opening.	W44, W75-W84
Air and Space Transport	Includes: accident to powered aircraft, non-powered aircraft (balloon, hang-glider, glider), other specified (parachutist).	V95.0-V95.9 V96.0-V96.9 V97.0-V97.8
Drowning	Includes: water transport accidents, drowning/submersion while: water-skiing, diving, fishing (except with boat), ice-skating, playing in water, surfboarding, swimming, wading in water.	W65-W70, W73, W74, V90.0-V90.9, 92.0-V92.9
Operation of War/Legal Intervention	Includes: injuries from operations of war and legal intervention by firearms, gas, blunt object, cutting/piercing and legal execution.	Y35.0-Y35.7, Y36.0-Y36.9
Railway	Includes: railway train or railway vehicle. Includes: driver, passenger, motor cyclist, bicyclist, pedestrian, other or unspecified.	V05.0-V05.9, V15.0-V15.9, V80.6, V81.0-V81.9
Vehicle Incidents not elsewhere classified	Includes: accidents involving powered vehicles used solely within the buildings and premises of industrial or commercial establishment, cable cars not running on rails, and other vehicles which were not elsewhere classifiable.	V89.9 V98 V99
Water Transport	Includes: accident to watercraft causing other injury except drowning and submersion.	V91.0-V91.9 V93.0-V93.9 V94.0-V94.9
Other Specified Classifiable Injuries	Includes: fracture unspecified, cause unspecified, explosion of pressure vessel, accident caused by explosive material, accident caused by electric current, exposure to radiation including exposure to sunlight.	W35-40, W85-W91, X32
Other/Unspecified Injuries	Includes: unspecified accident (accident, not otherwise specified).	W41-W43, W49, X58, X59



REFERENCES

1. Métis Nation Council. Who are the Métis? National Definition of Métis. 2010.
2. Aboriginal People in Canada: First Nations People, Métis and Inuit. National Household Survey 2011. Ottawa: Statistics Canada; 2013.
3. Statistics Canada. Mortality, Summary List of Causes. 2005.
4. Billette JM, Janz T. Injury in Canada: Insights from the Canadian Community Health Survey. 2011.
5. Alberta Centre for Injury Control & Research. Alberta Injury Data: Comparison of Injuries in Alberta's Health Regions, 2006. 2009.
6. Injury Alberta. The Injury Alberta Report. 2011.
7. Health Canada. Unintentional and Intentional Injury Profile for Aboriginal People in Canada 1990-1999. 2001.
8. Tjepkema M, Wilkins R, Senecal S, Guimond E, Penney C. Mortality of Metis and registered Indian adults in Canada: an 11-year follow-up study. Health Rep 2009 Dec;20(4):31-51.
9. Wilson K, Young T. An overview of Aboriginal health research in the social sciences: current trends and future directions. Int J Circumpolar Health 2008;67(2-3):179-89.
10. Young T. Review of research on aboriginal populations in Canada: relevance to their health needs. BMJ 2003;327:419-22.
11. Furgal C, Garvin T, Jardine C. Trends in the study of Aboriginal health risks in Canada. International Journal of Circumpolar Health 2010;69(4):322-32.
12. Alberta Injury Control & Research. Injury-Related Health Services Use by First Nations in Alberta 2000. 2005.



13. International Statistical Classifications of Diseases and Related Health Problems, 10th Revision (ICD-10). 3[Second]. 2005.
14. Holder J, Peden M, Krug E, Kobusingye O. Injury surveillance guidelines. 2001. Geneva, World Health Organization.
15. Gonzalez-Castro F, Barrera Jr. M, Holleran-Steiker L. Issues and Challenges in the design of cultural adapted Evidence-Based Interventions. 2010.
16. Coordinated by The Alberta Centre For Injury Control & Research. Finding Balance program. 2014.



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