INJURY PREVENTION CENTRE

Injury Data Overview:
Two Hills County

September 2024

injurypreventioncentre.ca

UNIVERSITY OF ALBERTA

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Two Hills County

Introduction:
The development of this report is based on the fundamental principle that injury prevention requires knowledge of the frequency and nature of injury incidents. By disseminating injury data, the Injury Prevention Centre's objective is to support local communities, organizations and groups in the development of coordinated, evidence-based programs and strategies to reduce and prevent injuries to residents of Alberta communities.

This report examines the **leading mechanisms of injuries** of residents in local geographic area of Two Hills County (LGA Z3.6.A.02) with comparison to the Central Zone and the province (Alberta).

This report examines the five leading causes of injury that have identified evidence-based strategies that can be implemented to prevent or reduce the risk of those injuries. Some mechanisms of injury which may be significant in number, do not provide enough information or include such a wide variety of scenarios that it would be difficult to identify preventative actions. For example, the mechanism of "struck by / against an object / person" would include injuries such as the result of walking into a door, being struck by an object falling off a shelf, or colliding with a person on a crowded street. Other injury mechanisms that describe a wide variety of scenarios include:

- Other / Unspecified
- Cutting / Piercing
- Overexertion / Strenuous movements
- Natural / Environmental factors
- Other Classifiable Injuries

To assist in the overall understanding of the injury issue in Two Hills County, the remaining causes of injury are reported but are not discussed in detail.

For the top five leading causes of injury examined, this report provides detail on:

- The overall number and percent of emergency department visits and hospital admissions by age group.
- Mechanism of injury rate comparison of local area, health zone and provincial age-standardized emergency department and hospital admissions rates.
- Changes in the trend line are expressed by the average annual per cent change (APC). The sum of the average percentage change between time periods will give the overall change.
- Mechanism of injury deaths for Central Zone.

Injury data reporting is one service provided by the Injury Prevention Centre. After reviewing this report, you may have questions or want to explore what actions could be taken to reduce the rates of injury in Alberta. The Injury Prevention Centre can help you to identify strategies, activities and programs that address the injury issues of concern in your community. The IPC can provide:

- Evidence-based resources on a variety of injury topics.
- Injury prevention networking and information sharing.
- Programs that address seniors' falls, poisoning, child and youth concussions and head injuries.
- Education opportunities on injury prevention and associated topics.
- Expertise in community engagement, resource development, program planning, implementation and evaluation.

If there is something we can do to assist your injury prevention efforts please contact us - ipc@ualberta.ca or 780-492-6019.

Top 5 Mechanisms of Injury Emergency Department Visits, Two Hills County, 2013-2022

Mechanism of Injury/Age Group (years)	All Injuries	% of All Injuries	< 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
All injuries excluding adverse events	9,855		48	577	637	837	1,147	876	585	522	535	450	454	499	593	514	340	400	321	222	172	146
Top 5 Mechanisms of Injury with Evidence-based Prevention Strategies																						
Falls	2,565	26	19	207	224	196	132	123	74	101	103	84	76	118	174	154	137	176	133	129	101	104
Motor Vehicle	505	5	< 5	14	20	22	105	55	25	31	31	23	25	18	31	29	12	24	23	7	< 5	8
Sports-related	351	4	< 5	<5	44	118	99	37	21	<5	5	<5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Machinery	261	3	<5	<5	<5	14	33	35	33	20	21	14	19	19	15	<5	6	13	6	<5	<5	<5
Poisoning (unintentional / undetermined)	180	2	< 5	27	10	5	15	18	14	9	9	13	10	9	<5	13	7	5	<5	5	<5	< 5

Falls were the leading mechanism of injury, accounted for 26% of emergency department visits for residents of Two Hills County.

- Motor vehicle injuries accounted for 5% of injury emergency department visits.
- Sports-related accounted for 4% of injury emergency department visits.
- Machinery-related accounted for 3% of injury emergency department visits.
- Poisonings (unintentional / undetermined) accounted for 2% of injury emergency department visits.

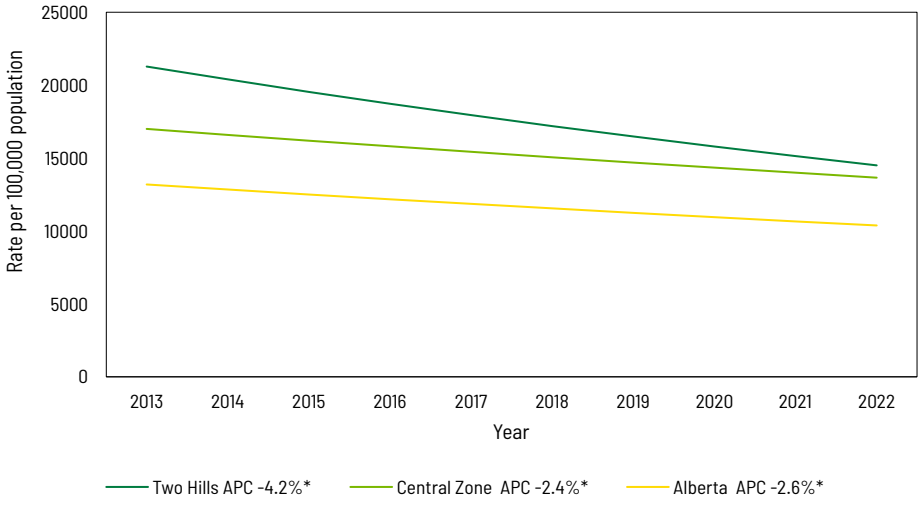
Other Mechanisms of Injury, Two Hills County, 2013-2022

Mechanism of Injury	# ED Visits All Ages	% of All Injuries
Other / Unspecified	1,184	12
Struck by / Against an Object / Person	1,098	11
Cutting / Piercing	926	9
Natural / Environmental Factors	742	8
Suffocation / Choking / Foreign Body	726	7
Overexertion / Strenuous Movements	693	7
All-Terrain / Off-Road Vehicles	165	2
Fire / Flames	117	1
Violence / Purposely Inflicted	81	1
Other Classifiable Injuries	48	0
Suicide / Self-harm	22	0
Late Effects	17	0
Vehicle (not elsewhere classified)	15	0
Water Transport	12	0
Firearms	8	0
Drowning	5	0
Railway	0	0
Air / Space Transport	0	0
Operations of War/Legal	0	0

Comparison of Overall Injury Emergency Department Visit Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

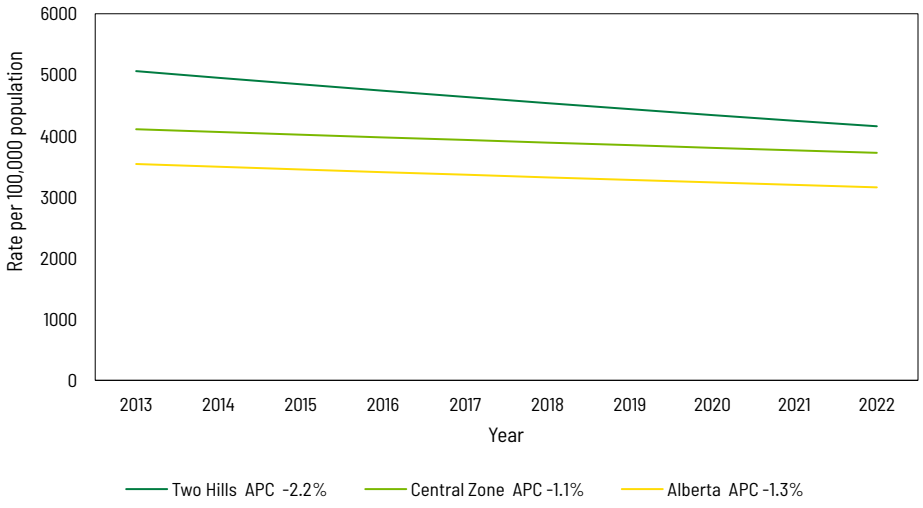
Over the 10-year period from 2013 to 2022, each year there was an average of 986 emergency department visits of Two Hills County area residents due to an injury. This equates to 3 injury visits each day.

When we compare the overall injury age-standarized rates of Two Hills County with the Central Zone and Alberta, the Two Hills County rate was higher than both the Central Zone and Alberta rates.



Over the 10-year period, Two Hills County experienced a statistically significant decrease in the overall injury rate of 4.2% each year. The Central Zone experienced a statistically significant 2.4% decrease each year, and Alberta experienced a statistically significant 2.6% decrease each year.

Comparison of Fall-related Injury Emergency Department Visit Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

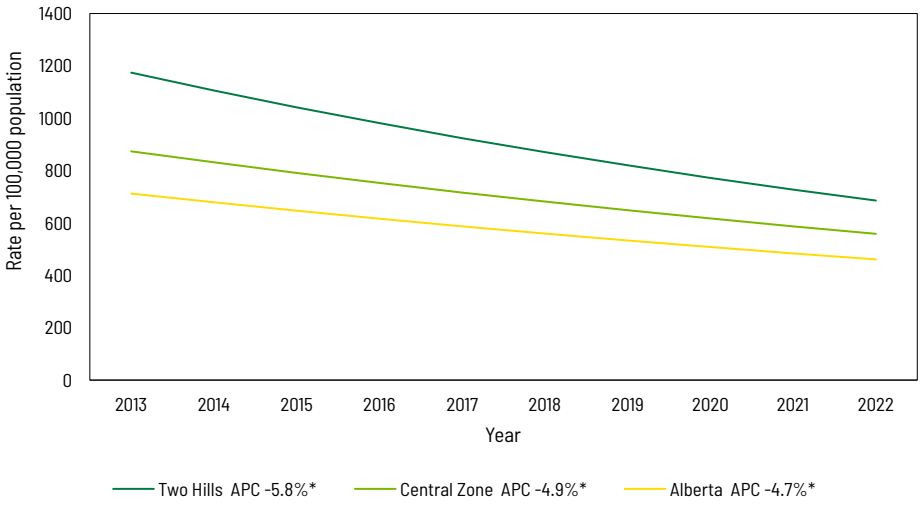


Over the 10-year period from 2013 to 2022, each year there was an average of 257 visits of Two Hills County area residents seen in an emergency department due to a fall. This equates to almost 1 fall-related injury visit each day.

When we compare the fall age-standarized rates of Two Hills County with the Central Zone and Alberta, the Two Hills County rate was higher than both the Central Zone and Alberta rates.

Over the 10-year period, Two Hills County experienced a decrease in the fall rate of 2.2% each year. The Central Zone experienced a 1.1% decrease each year, and Alberta experienced a 1.3% decrease each year.

Comparison of Motor Vehicle-related Injury Emergency Department Visit Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022



Over the 10-year period from 2013 to 2022, each year there was an average of 51 emergency department visits of Two Hills County area residents due to motor vehicle injury.

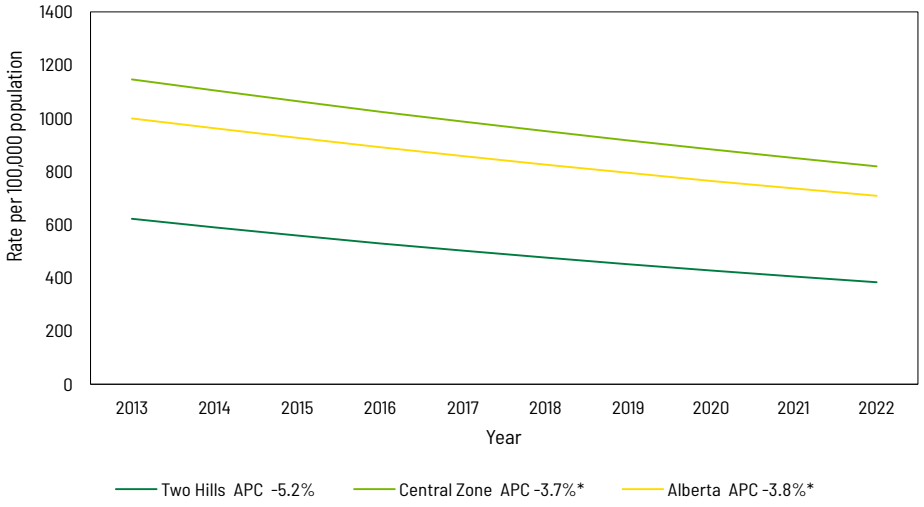
When we compare the motor vehicle injury age-standarized rates of Two Hills County with the Central Zone and Alberta, the Two Hills County rate was higher than both the Central Zone and Alberta rates.

Over the 10-year period, Two Hills County experienced a statistically significant decrease in the motor vehicle injury rate of 5.8% each year. The Central Zone experienced a statistically significant decrease of 4.9% each year, and Alberta also experienced a statistically significant decrease of 4.7% each year.

Comparison of Sports-related Injury Emergency Department Visit Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

Over the 10-year period from 2013 to 2022, there was an average of 35 emergency department visits of Two Hills County area residents due to a sports injury each year.

When we compare the sports injury age-standarized rates of Two Hills County with the Central Zone and Alberta, the Two Hills County rate was lower than both the Central Zone, and Alberta rates.

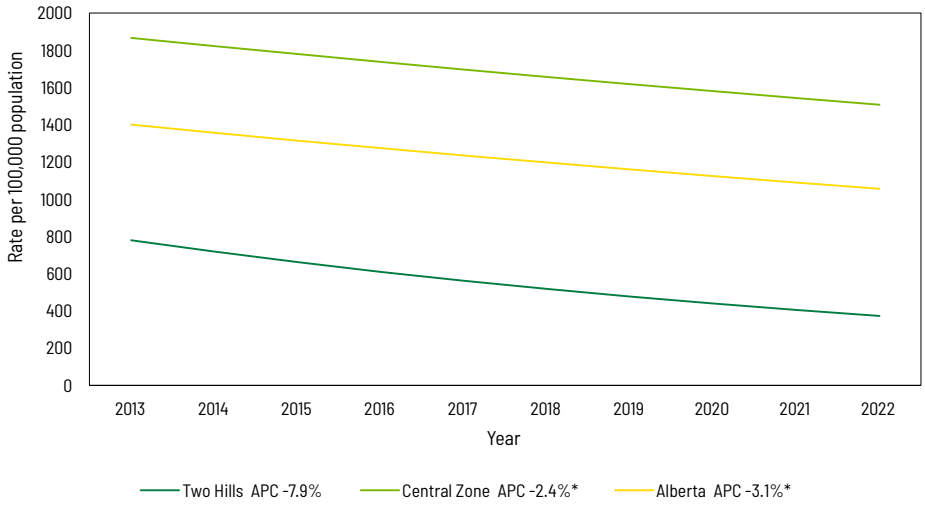


Over the 10-year period, Two Hills County experienced a decrease in the sports injury rate of 5.2% each year. The Central Zone experienced a statistically significant decrease each year of 3.7%, and Alberta experienced a statistically significant decrease each year of 3.8%.

Comparison of Machinery-related Injury Emergency Department Visit Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

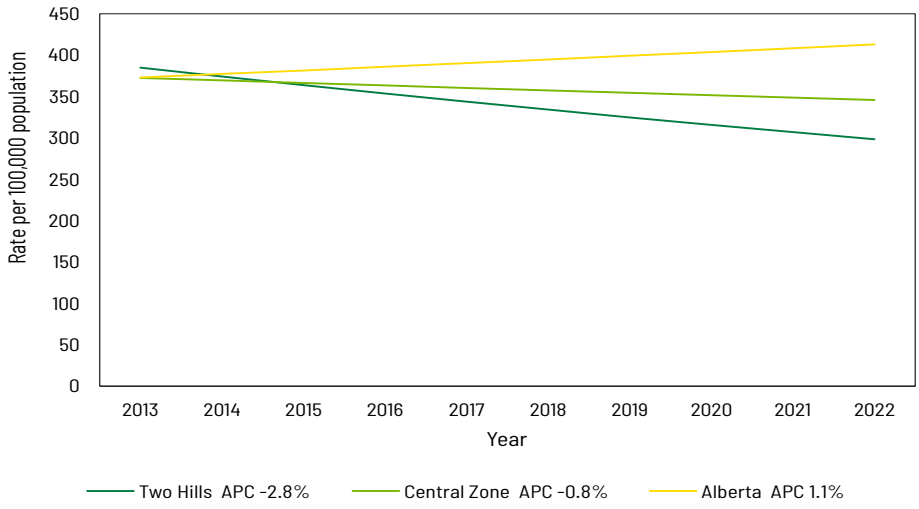
Over the 10-year period from 2013 to 2022, there was an average of 26 emergency department visits of Two Hills County area residents due to machinery-related injury each year.

When we compare the machinery-related injury age-standarized rates of Two Hills County with the Central Zone, and Alberta, the Two Hills County rate was lower than both the Central Zone and Alberta rates.



Over the 10-year period, Two Hills County experienced a decrease in the machinery-related injury rate of 7.9% each year. The Central Zone experienced a statistically significant decrease each year of 2.4%, and Alberta experienced a statistically significant 3.1% decrease each year.

Comparison of Poisoning (unintentional / undetermined) Emergency Department Visit Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022



Over the 10-year period from 2013 to 2022, there was an average of 18 emergency department visits of Two Hills County area residents due to a poisoning (unintentional / undetermined) each year.

When we compare the poisoning injury age-standarized rates of Two Hills County with the Central Zone and Alberta, the Two Hills County rate was lower than both the Central Zone and Alberta rates.

Over the 10-year period, Two Hills County experienced a decrease of 2.8% each year for poisonings. The Central Zone experienced a 0.8% decrease each year, and Alberta experienced a 1.1% increase each year.

Top 5 Mechanisms of Injury Hospital Admissions, Two Hills County, 2013-2022

Mechanism of Injury/Age Group (years)	All Injuries	% of All Injuries	< 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	50-84	85-89	90+
All injuries excluding adverse events	621		5	17	16	12	41	21	10	13	20	21	24	31	45	30	28	71	53	61	40	62
Top 5 Mechanisms of Injury with Evidence-based Prevention Strategies																						
Falls	283	46	<5	6	6	5	< 5	<5	<5	6	6	<5	<5	8	18	12	20	39	30	41	30	43
Motor vehicle	72	12	< 5	< 5	< 5	< 5	18	5	<5	<5	<5	<5	5	<5	5	5	< 5	7	5	<5	<5	< 5
Poisoning (unintentional / undetermined)	26	4	< 5	< 5	< 5	< 5	< 5	< 5	< 5	5	< 5	<5	<5	<5	<5	<5	<5	< 5	<5	< 5	< 5	< 5
All-Terrain/off - road vehicles	18	3	< 5	< 5	< 5	< 5	<5	<5	<5	< 5	< 5	<5	<5	< 5	<5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Machinery	13	2	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5

Falls were the leading cause of injury hospital admissions for residents of Two Hills County accounting for 46%.

The next leading mechanisms were:

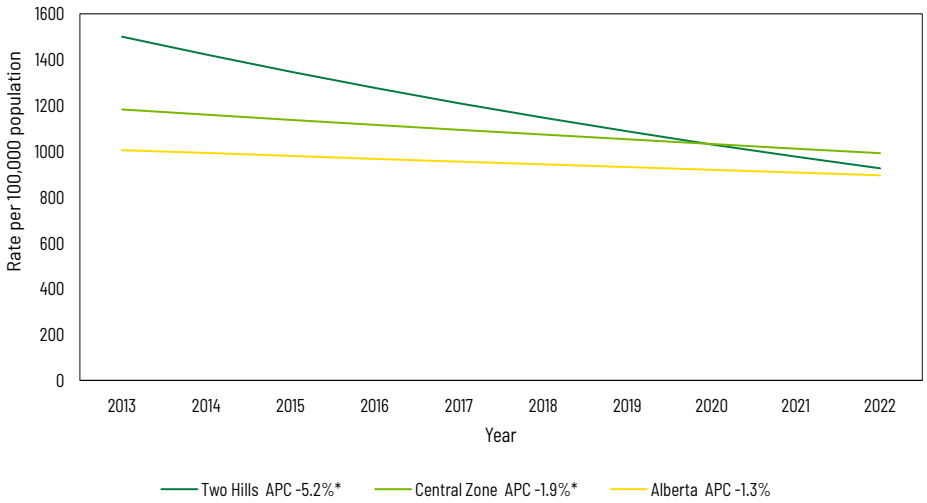
- Motor vehicle injuries accounted for 12% of injury hospital admissions.
- Poisoning (unintentional / undetermined) injuries accounted for 4% of injury admissions.
- All-terrain / off-road vehicle-related injury admissions accounted for 3% of all injury hospital admissions.
- Machinery-related injuries accounted for 2% of injury hospital admissions.

Other Mechanisms of Injury, Two Hills County, 2013-2022

Mechanism of Injury	# Admission All Ages	% of All Injuries
Suffocation / Choking / Foreign Body	58	9
Other / Unspecified	46	7
Struck by / against an Object / Person	23	4
Natural / Environmental Factors	19	3
Suicide / Self-harm	12	2
Overexertion / Strenuous Movements	10	2
Violence / Injury Purposely Inflicted	8	1
Cutting / Piercing	6	1
Fire / Flames	5	1
Sports-related	<5	1
Late Effects	<5	1
Water Transport	<5	0
Other Classifiable	<5	0
Railway	<5	0
Air / Space Transport	<5	0
Vehicle (not elsewhere classified)	<5	0
Drowning	<5	0
Operations of War / Legal	<5	0
Firearms	<5	0

Comparison of Overall Injury Hospital Admission Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

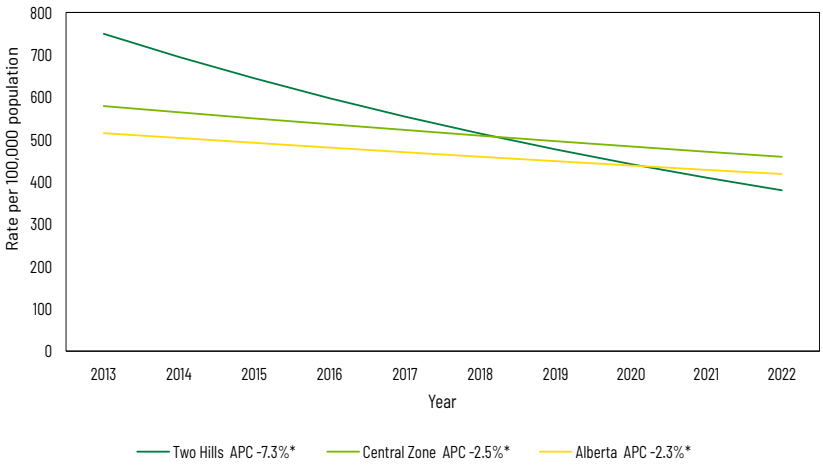
Over the 10-year period from 2013 to 2022, there was an average of 62 hospital admissions of Two Hills County area residents due an injury each year.



When we compare the overall injury age-standarized hospital admission rates of Two Hills County with the Central Zone and Alberta, the Two Hills County rate was initially higher than both the Central Zone and Alberta rates. However, over the same 10-year period, the Two Hills County rate decreased to be lower than the Central Zone rate but higher than the Alberta rate.

Two Hills County experienced a statistically significant decrease in the injury rate of 5.2% each year. The Central Zone experienced a statistically significant decrease of 1.9% each year, and Alberta experienced a 1.3% decrease each year.

Comparison of Fall-related Hospital Admission Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022



Over the 10-year period from 2013 to 2022, there was an average of 28 admissions of Two Hills County area residents due to a fall each year.

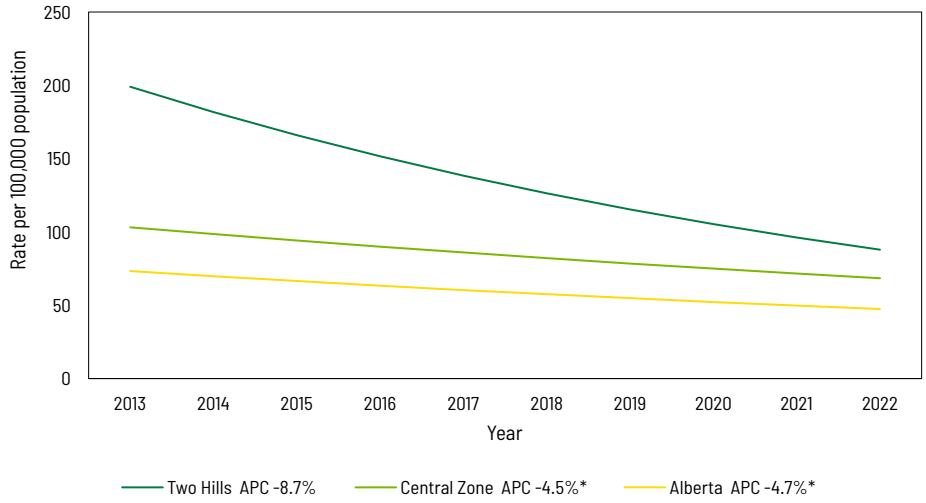
When we compare the fall injury age-standarized hospital admission rates of Two Hills County with the Central Zone, and Alberta, in 2013 the Two Hills County rate was higher than both the Central Zone and Alberta rates. Over the 10-year period, the Two Hills County rate decreased resulting in the 2022 fall-related hospital admission rate being lower than both the Central Zone and Alberta admission rates.

Over the 10-year period, Two Hills County experienced a statistically significant decrease of 7.3% each year. The Central Zone experienced a statistically significant decrease of 2.5% each year, and Alberta experienced a statistically significant decrease of 2.3%.

Comparison of Motor Vehicle-related Injury Hospital Admission Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

Over the 10-year period from 2013 to 2022, there was an average of 7 hospital admissions of Two Hills County area residents due to a motor vehicle injury each year.

When we compare the motor vehicle-related injury age-standarized rates of Two Hills County, Central Zone, and Alberta, the Two Hills County rate was higher than both the Central Zone and Alberta rates.

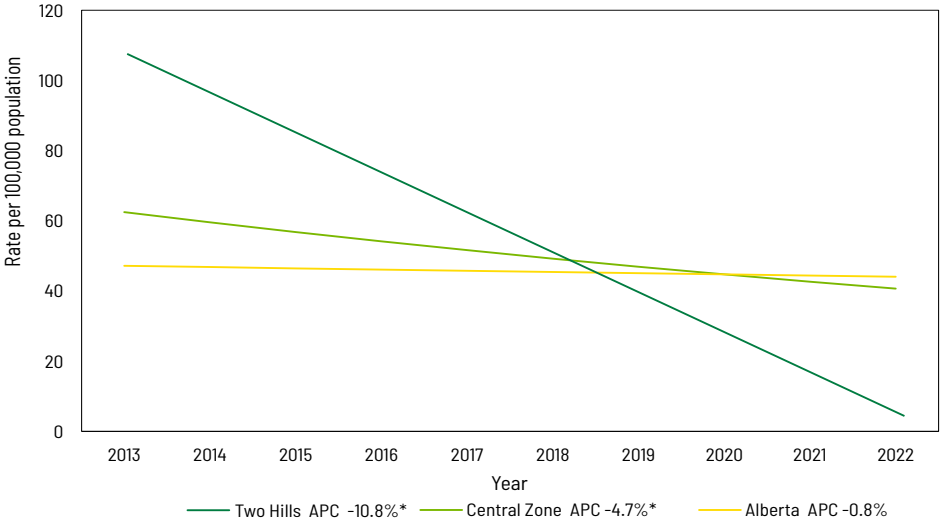


Two Hills County experienced a decrease in the motor vehicle injury rate of 8.7% each year. The Central Zone experienced a statistically significant decrease of 4.5% each year, and Alberta also experienced a statistically significant decrease of 4.7% each year.

Comparison of Poisoning (unintentional / undetermined) Hospital Admission Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

Over the 10-year period from 2013 to 2022, there was an average of 3 hospital admissions of Two Hills County area residents due to poisoning (unintentional / undetermined) each year.

When we compare the poisoning admission age-standarized rates of Two Hills County, Central Zone, and Alberta, the Two Hills County rate was initially higher than both the Central Zone and Alberta rates in 2013. Over the 10-year period, the number decreased, and in 2021 and 2022 there were zero poisoning admissions of Two Hills County residents.

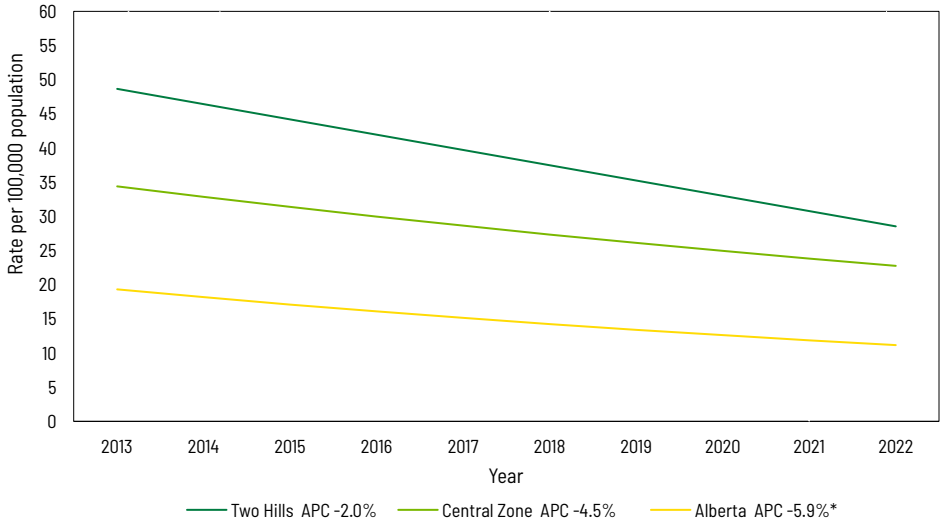


Two Hills County experienced a statistically significant decrease in the poisoning admission rate of 10.8% each year. The Central Zone experienced a statistically significant decrease of 4.7% each year, and Alberta experienced a slight decrease of 0.8% each year.

Comparison of All-Terrain / Off-Road Vehicle-related Injury Hospital Admission Rates (age-standardized) for Two Hills County, Central Zone, Alberta, 2013-2022

Over the 10-year period from 2013 to 2022, an average of 2 admissions of Two Hills County area residents were due to all-terrain / off-road vehicle-related injuries each year.

When we compare the all-terrain / off-road vehicle-related injury age-standarized rates of Two Hills County, Central Zone, and Alberta, the Two Hills County rate was higher than both the Central Zone and Alberta rates.



Two Hills County experienced a decrease in all-terrain / off-road vehicle-related injury admission rate of 2.0% each year. The Central Zone experienced a decrease of 4.5% each year, and Alberta experienced a statistically significant decrease 5.9% each year.

Comparison of Machinery-related Hospital Admission Rates (age-standardized) for Two Hills County, Central Zone and Alberta, 2013-2022

Over the 10-year period from 2013 to 2022, there was an average of 1 admission of Two Hills County area residents due to machinery-related injuries each year.

When we compare the machinery-related injury age-standarized rates of Two Hills County, Central Zone, and Alberta, the Two Hills County rate was higher than both the Central Zone and Alberta rates.

Two Hills County experienced a machinery-related hospital admission rate increase of 2.9% each year. The Central Zone experienced a decrease of 3.4% each year, and Alberta experienced a statistically significant decrease of 5.9% each year.

Top 5 Mechanisms of Deaths, Central Zone*, 2013-2022

*Due to the small number of injury deaths of Two Hills residents, only **Central Zone** death numbers will be presented.

Mechanism of Injury/Age Group (years)	All Injuries	% of All Injuries	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
All injuries excluding adverse events	3,346		305	312	344	346	305	361	325	284	376	388
Top 5 Mechanisms of Injury with Evidence-based Prevention Strategies												
Poisoning (unintentional / undetermined)	917	27	49	58	77	89	82	103	112	73	143	131
Suicide / Self-Harm	826	25	83	80	72	98	87	92	66	66	89	93
Motor vehicle	573	17	64	67	89	61	46	51	58	43	33	61
Falls	329	10	29	30	31	33	23	28	34	32	50	39
Violence / Injury Purposely Inflicted	98	3	6	13	13	12	6	9	5	11	17	6

The leading cause of injury death for residents of the Central Zone was poisonings (unintentional / undetermined) accounting for 27%.

The next top mechanisms of injury were:

- Suicide / self-harm deaths accounting for 25% of injury deaths.
- Motor vehicle-related injuries accounting for 17% of injury deaths.
- Falls accounting for 10% of injury deaths.
- Violence / injury purposely-inflicted accounting for 3% of injury deaths.

Other Mechanisms of Injury, Central Zone, 2013-2022

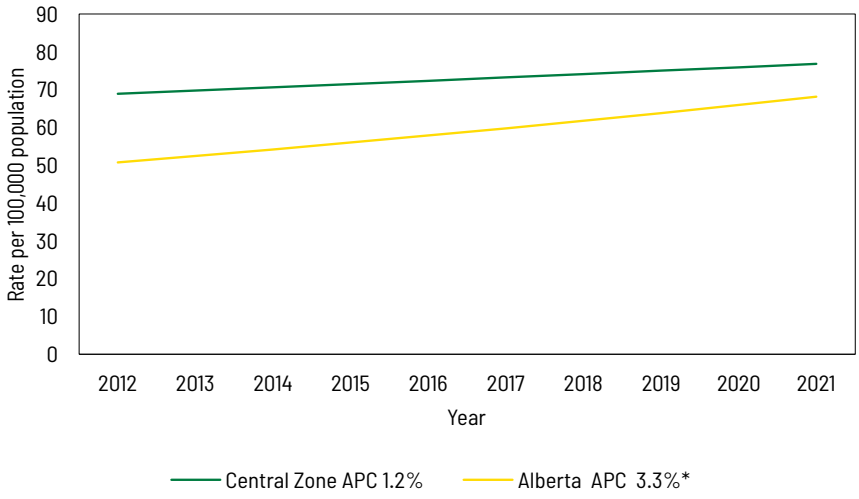
Mechanism of Injury	# Deaths All Ages	% of All Injuries
Other / Unspecified	194	6
Suffocation / Choking / Foreign Body	91	3
Drowning	49	1
Natural / Environmental Factors	48	1
All-Terrain / Off-Road Vehicles	39	1
Fire / Flames	38	1
Late Effects	36	1
Struck by / Against an Object / Person	29	1
Machinery	22	1
Air / Space Transport	7	0
Railway	6	0
Vehicle (not elsewhere classified)	<5	0
Sports-Related	<5	0
Operations of War / Legal	<5	0
Cutting / Piercing	<5	0
Other Classifiable	<5	0
Firearms	<5	0
Water Transport	<5	0
Overexertion / Strenuous Movements	<5	0

Comparison of Overall Injury Death Rates (age-standardized) for Central Zone and Alberta, 2012-2021

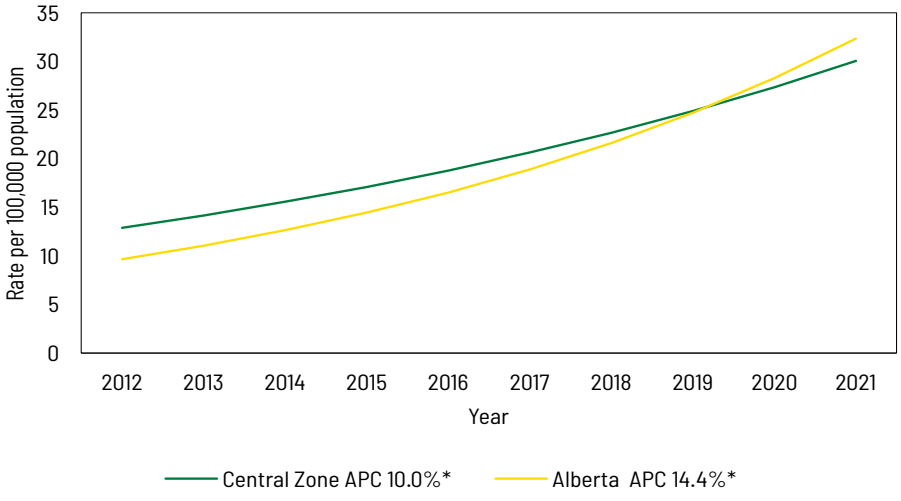
Over the 10-year period from 2012 to 2021, an average of 345 Central Zone area residents died due to an injury each year.

When we compare the overall injury age-standarized death rates of Central Zone and Alberta, the Central Zone had an overall injury death rate higher than the Alberta rate.

Central Zone experienced an increase in the overall injury death rate of 1.2% each year. Alberta experienced a statistically significant increase in the overall injury death rate of 3.3% each year.



Comparison of Poisoning (unintentional and undetermined) Death Rates (age-standardized) for Central Zone and Alberta, 2012-2021

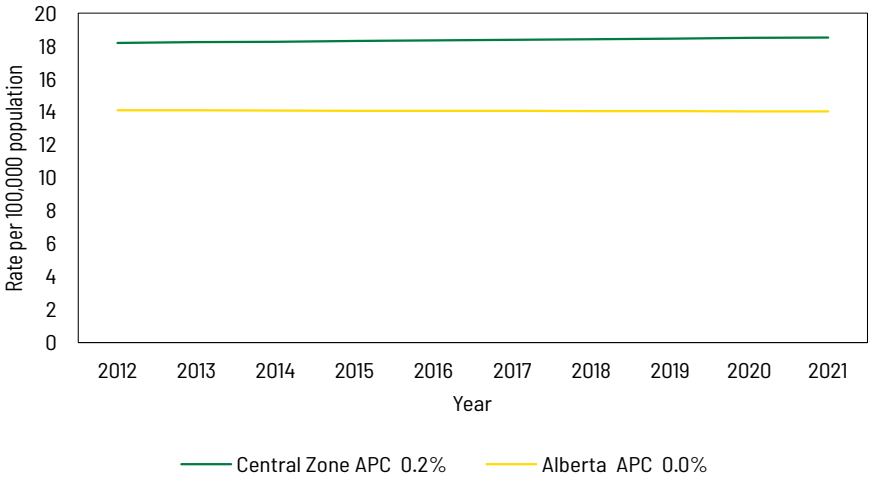


Over the 10-year period from 2012 to 2021, an average of 92 Central Zone area residents died due to unintentional / undetermined poisonings each year. This accounted for 27% of injury deaths.

When we compare the poisoning injury age-standarized death rates of Central Zone and Alberta, initially the Central Zone had a higher poisoning rate however, as of 2020, the Central Zone rate was lower than the Alberta rate.

The Central Zone experienced a statistically significant increase in the poisoning death rate of 10% each year, and Alberta also experienced a statistically significant increase of 14.4% each year.

Comparison of Suicide / Self-Harm Death Rates (age-standardized) for Central Zone and Alberta, 2012-2021



Over the 10-year period from 2012 to 2021, there was an average of 83 Central Zone residents who died due suicide / self-harm injuries each year.

When we compare the suicide / self-harm age-standarized death rates of Central Zone and Alberta, the Central Zone suicide / self-harm injury death rate was higher than the Alberta rate.

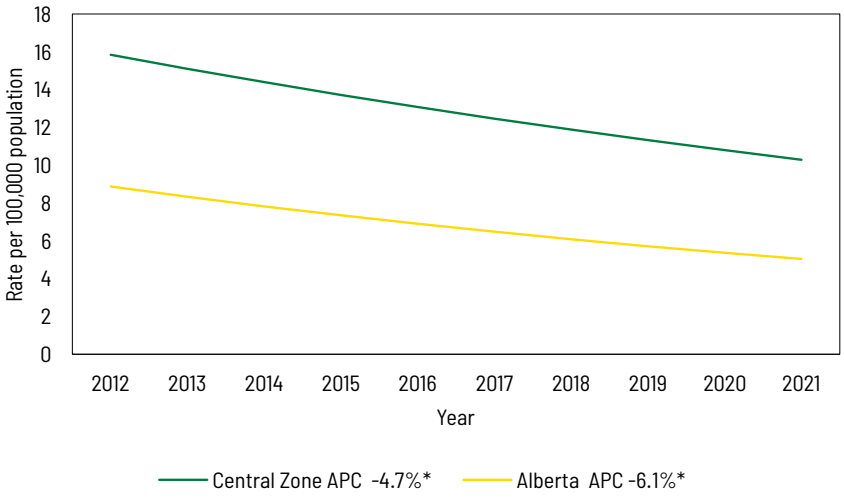
Over the 10 years, both the Central Zone and Alberta experienced little change in the suicide death rates. The Central Zone experienced a slight increase of 0.2% each year. There was no change in the Alberta suicide death rate.

Comparison of Motor Vehicle Death Rates (age-standardized) for Central Zone and Alberta, 2012-2021

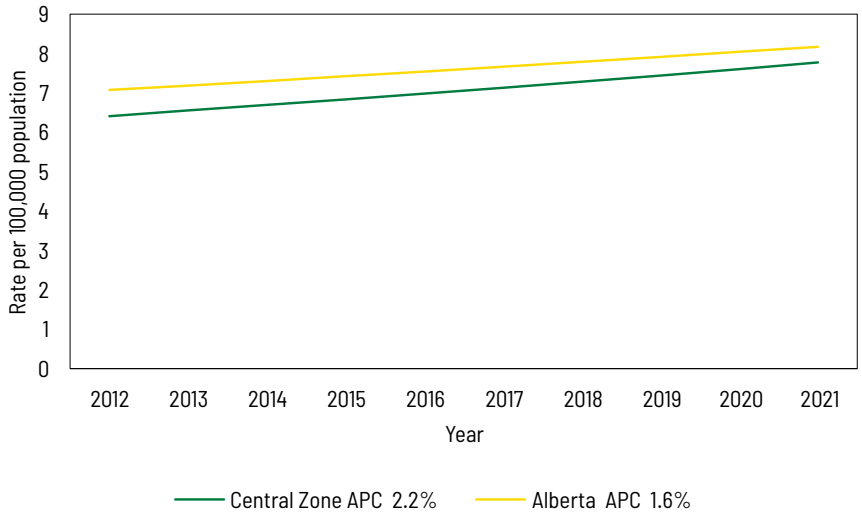
Over the 10-year period from 2012 to 2021, an average of 57 Central Zone residents died as a result of a motor vehicle incident each year. This accounts for 17% of all injury deaths.

When we compare the motor vehicle injury age-standarized death rates of Central Zone and Alberta, the Central Zone rate was higher than the Alberta rate.

The Central Zone experienced a statistically significant decrease in the motor vehicle death rate of 4.7% each year. Alberta experienced a statistically significant death rate decrease of 6.1% each year.



Comparison of Fall Death Rates (age-standardized) for Central Zone and Alberta, 2012-2021



Over the 10-year period from 2012 to 2021, an average of 33 Central Zone residents died as a result of a fall each year.

When we compare the fall age-standarized death rates of Central Zone and Alberta, the Central Zone fall death rate was higher than the Alberta rates.

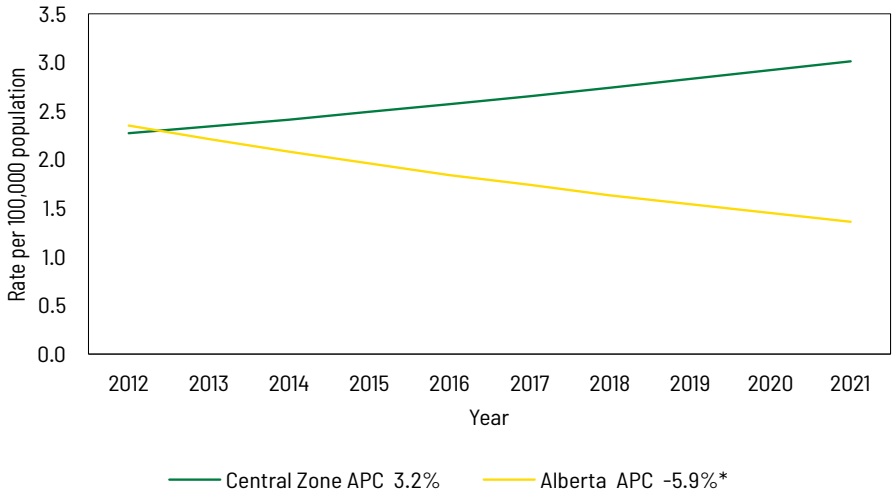
Both the Central Zone and Alberta experienced a rate increase over the 10 year period. The Central Zone had a 2.2% rate increase each year and Alberta had a 1.6% rate increase each year.

Comparison of Violence / Injury Purposely Inflicted Death Rates (age-standardized) for Central Zone and Alberta, 2012-2021

Over the 10-year period from 2012 to 2021 an average of 9 Central Zone residents died due to violence / purposely-inflicted injuries each year.

When we compare the violence / injury purposely inflicted age-standarized death rates of Central Zone and Alberta, the Central Zone violence / injury purposely inflicted death rate was higher than the Alberta rates.

The Central Zone experienced a 3.2% average annual increase in the violence / injury purposely inflicted death rate, whereas Alberta experienced a statistically significant rate decrease of 5.9% each year.



Data Sources and Methods

Data for this report was obtained from Alberta Health. Emergency Department Visits are from the National Ambulatory Care Reporting System (NACRS) with a visit date between January 1, 2013 to December 31, 2022. Hospital admissions are from the Discharge Abstract Database (DAD) with a discharge date from January 1, 2013 to December 31, 2022. The deaths are from Vital Statistics, Alberta with a death date from January 1, 2012 to December 31, 2021.

The mechanism of injury was determined by the first external cause of injury (V01-Y09) classified according to International Classification of Disease (ICD-10 CA) excluding adverse events and medical / surgical complications.

The data are based on emergency department visits rather than individual patients, therefore multiple visits of the same patient for the same injury would be counted as separate cases.

Non-residents of Alberta, those identified as not having an Alberta postal code at the time of the visit were removed.

Direct age-standardization method was used as it accounts for differences in the age structures of the populations being compared (study populations), by weighting their respective age-specific rates to the age distribution of a standard population. The Canadian population of 2022 was used as the standard population. Regression analysis of injury data was performed using the Joinpoint Regression Program which was developed by the Statistical Research and Applications Branch of the National Cancer Institute of the U.S. National Institutes of Health. Joinpoint uses statistical analysis to fit the most appropriate trend line model based on the time series data (i.e. age-stnadardized injury rates), For more information please go to the link at:
http://surveillance.cancer.gov/joinpoint

Changes in the trend line are expressed by the average annual per cent change (APC). The sum of the average percentage change between time period will give the overall change.

Percentages and rates were not adjusted for the number of registered participants, frequency of play, duration of play, seasonal weather conditions or influences of COVID-19.

Supplemental Data

Numerator: Geographic Assignment: The Alberta Hospital Morbidity file was linked with the Alberta Health Care Insurance Plan (AHCIP) Population Registration Data file to identify visits belonging to Alberta residents (at the time of visit or following fiscal year end). Only those of Alberta residents are included. The local geographic area was assigned based on postal code of the patient at the time of the health care encounter. For this report, those residents with the local geographic area of Z3.6.A.03 were included.

Denominator:
Inclusion: The population data is sourced from the mid-year adjusted AHCIP Population Registry Files (See the methodological notes for the adjusted population estimates in the Alberta Health, Interactive Health Database Application for more detail). These population counts serve as estimates of person-years for a given calendar year.

Geographic Assignment:
The postal code on the adjusted mid-year population registry file is used to determine the geographic location of the individual as of June 30 each year. The geography of residence is obtained by linking with the postal code using the postal code translation file.

Age and Sex Assignment: The date of birth and sex on the mid-year population registry file is used to calculate the age and sex of the individual as of June 30 each year.

The population exclude; members of the Armed Forces, RCMP, inmates in Federal Penitentiaries, or those who have opted out of the Alberta Health Care Insurance Plan. Observations with a missing value for sex or age are excluded; transfers between facilities are included as multiple visits. Adjusted population estimates (See the methodological notes for the adjusted population estimates in the IHDA for more detail) are used for the denominators of the rates. The newly recalculated incidence rates will differ slightly from all previously reported figures released on the IHDA prior to July, 2014. Emergency department visits by Alberta residents in the Lloydminster hospital (Saskatchewan side of border) are not included.

Age-Standardized Rates:
Overall Description The Age-Standardized Rates of Hospital Separations due to Injury is a measure of the frequency (rate) at which injury related hospital separations occur if that population (Alberta) had the same age distribution as the standard population (Canada 2011). This measure captures multiple separations per person.

Regression analysis of injury data was performed using the Joinpoint Regression Program which was developed by the Statistical Research and Applications Branch of the National Cancer Institute of the U.S. National Institutes of Health. Joinpoint uses statistical analysis 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 per cent change (APC). The sum of the average percentage change between time period will give the overall change.

Confidence Intervals:
Confidence intervals are provided for most rates to aid interpretation. Using confident intervals acknowledges that the observed rate is an estimate of an underlying true rate that cannot be directly observed. The width of the confidence interval illustrates the degree of variability associated with the rate. The true rate will fall between the upper and lower confidence intervals 19 out of 20 times (95 per cent confidence).

Not Corrected:
Rates were not corrected / adjusted for participation, weather conditions, or COVID-19 effects.

Supplemental Data

Mechanism / Cause of Injury	**Inclusion / Exclusion**
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.
Drowning / Submersion	Includes: water transport accidents, drowning / submersion while: waterskiing, diving, fishing (except with boat), ice-skating, playing in water, surfboarding, swimming, wading in water.
Fall	Excludes: falls related to sports 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 / stumbling, fall on same level from collision / pushing / shoving by or with person (not sports).
Fire / Scald / Burn	Includes: fire, flames, hot objects / substances. Explosion caused by fire, smoke, smoke, and fumes from fire in private dwelling, building or structure, ignition of clothing, ignition of highly flammable materials. Burns caused by: hot substance or object, caustic or corrosive material and steam.
Firearm	Includes: handgun, pistol, revolver, shotgun (automatic), hunting rifle, military firearm / machine gun, air gun, flare pistol.
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.
Motor Vehicle - Traffic	Definition: includes any motor vehicle occurring on a public highway. A motor vehicle 'accident' is assumed to have occurred on the highway unless another place is specified, except in the case of off-road motor vehicles which are classified as nontraffic 'accidents' unless the contrary is stated. Includes: driver, passenger, motor cyclist, bicyclist, pedestrian, or other unspecified.
Bicyclist - Non-Traffic	Excludes: bicyclist unspecified person. Includes bicycle 'accidents' with railway, snowmobile, other off-road vehicle, animal, pedestrian, stationary object while boarding and alighting.
Pedestrian - Non-Traffic	Includes: pedestrian 'accidents' with railway, snowmobile, other off-road vehicle, animal pedestrian, stationary object

Supplemental Data

Mechanism / Cause of Injury	**Inclusion / Exclusion**
Natural / Environmental	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.
Overexertion	Includes: overexertion from lifting, pulling, pushing, strenuous movements in recreational activities and other activities.
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 the therapeutic or prophylactic dosage as the cause of an adverse effect.
Struck by Object / Persons	Includes: struck by falling object, person / object (excluding sports), caught in or between objects. Excludes: sports-related.
Suffocation / Foreign Body in Natural Opening	Includes: inhalation and ingestion of food / object causing obstruction of respiratory tract / suffocation, accidental mechanical suffocation, and foreign body in natural opening.
Other Specified Classifiable	Includes: fracture unspecified, cause unspecified, explosion of pressure vessel, 'accident' caused by explosive material, 'accident' caused by electric current, exposure to radiation.
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', 'accidental' poisoning, 'accidental' fall, 'accident' caused by fire, 'accident' due to natural and environmental factors, other 'accident' unspecified 'accident'.
Sports Related	Includes: fall on same level from collision, pushing or shoving by or with other person in sports (tackle), and striking against or struck accidentally by object or person in sports.
Other Injuries, Undetermined Intent	Includes: injuries undetermined whether accidental (unintentional), suicide (attempted), or assault of substances including: poisoning by solid or liquid, gas, hanging, strangulation, or suffocation, submersion / drowning, injury by firearm, cutting / piercing, fire / burn / scald, electrocution.
Attempted Suicide / Self-Inflicted	Includes: attempted suicide / self-inflicted poisonings by solids or liquids, hanging, firearms, cutting / piercing instruments, carbon monoxide, other.

Number of Injury Emergency Visits by Age Group, Two Hills County, 2013 - 2022

Mechanism of Injury	All Ages	% of All Injuries	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
All Injuries excluding adverse events	9,855		48	557	637	837	1,147	876	585	522	535	450	454	499	593	514	340	400	321	222	172	146
Top 5 Mechanism of Injury with Actionable Injury Prevention Strategies																						
All Injuries excluding adverse events	9,855		48	557	637	837	1,147	876	585	522	535	450	454	499	593	514	340	400	321	222	172	146
Falls	2,565	26	19	207	224	196	132	123	74	101	103	84	76	118	174	154	137	176	133	129	101	104
Motor vehicle	505	5	<5	14	20	22	105	55	25	31	31	23	25	18	31	29	12	24	23	7	<5	8
Sports-related	351	4	<5	<5	44	118	99	37	21	<5	5	<5	5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Machinery	261	3	<5	<5	<5	14	33	35	33	20	21	14	19	19	15	<5	6	13	6	<5	<5	<5
Unintentional/undetermined poisonings	180	2	<5	27	10	5	15	18	14	9	9	13	10	9	<5	13	7	5	<5	5	<5	<5
Mechanism of Injury with Little or No Evidence-based Prevention Strategies																						
Other/unspecified	1184	12	7	69	76	103	133	107	72	58	50	47	61	67	75	66	36	53	38	25	24	17
Struck by/against an object/person	1098	11	5	83	85	116	166	85	67	66	56	61	41	49	65	43	33	29	13	10	19	6
Cutting/piercing	926	9	0	19	52	75	129	105	71	56	70	66	44	46	53	45	24	31	26	9	<5	<5
Natural/environmental factors	742	8	5	42	34	52	58	46	48	40	37	35	44	52	62	67	38	25	30	13	10	<5
Suffocation/choking/foreign body	726	7	9	60	25	17	71	100	55	55	55	39	53	44	33	34	18	17	28	8	<5	<5
Overexertion/strenuous movements	693	7	<5	7	17	61	98	77	62	48	45	38	44	50	47	35	18	17	15	10	<5	<5
All-Terrain/off road vehicles	165	2	<5	<5	5	19	35	23	17	10	10	5	5	10	7	6	<5	6	<5	<5	<5	<5
Fire/Flames	117	1	<5	16	<5	<5	19	14	8	<5	9	<5	7	<5	10	9	<5	<5	<5	<5	<5	<5
Violence/Purposely Inflicted	81	1	<5	<5	<5	<5	14	12	5	5	12	6	7	6	<5	<5	<5	<5	<5	<5	<5	<5
Other classifiable	48	0	<5	<5	<5	<5	7	7	<5	6	5	5	7	<5	<5	<5	<5	<5	<5	<5	<5	<5
Suicide/self-harm	22	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Late effects	17	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vehicle-not elsewhere classified	15	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Water transport	12	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Firearms	8	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Drowning	5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Railway	0	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Air/space transport	0	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Operations of war/legal	0	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Cells with values less than 5 were reported <5. Actual cell value included in the totals.

Number of Injury Hospital Admissions by Age Group, Two Hills County, 2013 - 2022

Mechanism of Injury	All Ages	% of All Injuries	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
All Injuries excluding adverse	621		5	17	16	12	41	21	10	13	20	21	24	31	45	30	28	71	53	61	40	62
Top 5 Mechanisms of Injury with Actionable Injury Prevention Strategies																						
Falls	283	46	<5	6	6	5	<5	<5	<5	6	6	<5	<5	8	18	12	20	39	30	41	30	43
Motor vehicle	72	12	<5	<5	<5	<5	18	5	<5	<5	<5	<5	5	<5	5	5	<5	7	5	<5	<5	<5
Unintentional/undetermined	26	4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
All-Terrain/off road vehicles	18	3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Machinery	13	2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Mechanism of Injury with Little or No Evidence-based Prevention Strategies																						
Suffocation/choking/foreign	58	9	<5	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	8	7	5	<5	6
Other/unspecified	46	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7	5	6	<5	<5
Struck by/against an	23	4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Natural/environmental factors	19	3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5	<5	<5	<5
Suicide/self-harm	12	2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Overexertion/strenuous	10	2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Violence/purposely inflicted	8	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cutting/piercing	6	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Fire/Flames	5	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sports-related	<5	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Late effects	<5	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Water transport	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Other classifiable	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Railway	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Air/space transport	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vehicle-not elsewhere	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Drowning	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Operations of war/legal	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Firearms	<5	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Cells with values less than 5 were reported <5. Actual cell value included in the totals.

Number of Injury Deaths by Year, Central Zone, 2013 - 2022

	All Ages	% of All Injuries	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
All Injuries excluding adverse events	3,346		305	312	344	346	305	361	325	284	376	388
Mechanism of Injury	**Top 5 Mechanism of Injury with Actionable Injury Prevention Strategies**											
Unintentional/undetermined poisonings	917	27	49	58	77	89	82	103	112	73	143	131
Suicide/self-harm	826	25	83	80	72	98	87	92	66	66	89	93
Motor vehicle	573	17	64	67	89	61	46	51	58	43	33	61
Falls	329	10	29	30	31	33	23	28	34	32	50	39
Violence/purposely inflicted	98	3	6	13	13	12	6	9	5	11	17	6
Mechanism of Injury with Little or No Evidence-based Prevention Strategies												
Mechanism of Injury	**# Deaths All Ages**	**%**										
Other/unspecified	194	6	22	16	26	10	21	28	15	21	21	14
Suffocation/choking/foreign body	91	3	14	14	7	8	10	10	9	8	5	6
Drowning	49	1	5	6	<5	9	<5	8	<5	6	<5	<5
Natural/environmental factors	48	1	5	<5	<5	<5	<5	<5	7	7	<5	13
All-Terrain/off road vehicles	39	1	7	5	<5	7	<5	<5	<5	<5	<5	6
Fire/Flames	38	1	7	<5	<5	<5	5	<5	<5	<5	<5	<5
Late effects	36	1	5	<5	<5	<5	5	8	<5	<5	<5	<5
Struck by/against an object/person	29	1	<5	6	<5	<5	<5	<5	6	<5	<5	<5
Adverse events	23	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Machinery	22	1	<5	<5	6	5	<5	<5	<5	<5	<5	<5
Air/space transport	7	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Railway	6	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vehicle-not elsewhere classified	4	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Sports-related	3	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Operations of war/legal	3	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cutting/piercing	3	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Other classifiable	3	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Firearms	2	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Water transport	0	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Overexertion/strenuous movements	0	0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Cells with values less than 5 were reported <5. Actual cell value included in the totals.

If you would like additional information about injuries, please visit **http://injurypreventioncentre.ca** or contact us via phone at **780.492.6019** or email **ipc@ualberta.ca**

INJURY PREVENTION CENTRE

INJURY PREVENTION CENTRE
4-248 ECHA, University of Alberta
11405 87 Ave NW
Edmonton AB T6G 1C0

Phone 780.492.6019
ipc@ualberta.ca

injurypreventioncentre.ca

Funding and Support
The Injury Prevention Centre receives core business funding from Alberta Health and is part of the School of Public Health at the University of Alberta. Provision of funding by Alberta Health does not signify that this project represents the policies or views of Alberta Health.

REV: 09-2024