Child and Youth Injury in Saskatchewan 2004-2013

Report prepared by the
Saskatchewan Prevention Institute

June 2017

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The Saskatchewan Prevention Institute is a non-profit organization, founded in 1980. Its focus is to reduce the occurrence of disabling conditions in children using primary prevention methods. The Prevention Institute raises awareness by providing training, information, and resources based on current best evidence. The Prevention Institute has long-term support from the Kinsmen Telemiracle Foundation, Saskatchewan Abilities Council, University of Saskatchewan, Government of Saskatchewan, and the Community-at-Large.

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Child and Youth Injury in Saskatchewan 2004-2013 is also available for download from the Saskatchewan Prevention Institute's website at www.skprevention.ca.

Suggested citation
Saskatchewan Prevention Institute. (2017). *Child and youth injury in Saskatchewan 2004-2013*. Saskatoon, SK: Author.

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Acknowledgements

Financial support for this report, *Child and Youth Injury in Saskatchewan 2004-2013*, was provided by the Acquired Brain Injury Partnership Program (Saskatchewan Health and SGI).

The Saskatchewan Prevention Institute would like to acknowledge the invaluable contribution and assistance of researchers at the Injury Prevention Centre, University of Alberta and information analysts from eHealth, Government of Saskatchewan.

This report is a result of the team efforts of staff members of the Saskatchewan Prevention Institute.

This report is based on data provided by the Canadian Institute for Health Information, Statistics Canada, and eHealth Saskatchewan. The interpretation and conclusions contained in this report do not necessarily represent those of the Government of Saskatchewan or the Saskatchewan Ministry of Health.

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Executive Summary

The current report serves as an update to the *Child and Youth Injury in Saskatchewan 1995-1999* report completed by the Saskatchewan Prevention Institute in 2002. The current report examines injury-related deaths and hospitalizations of Saskatchewan children and youth less than 20 years of age during the 10 year period of 2004 to 2013. Injury-related deaths and hospitalizations are examined overall, followed by a more detailed analysis of the ten most common causes of injury-related hospitalizations, including both intentional and unintentional injuries. The ten most common causes discussed in this report are falls, sports, intentional self-harm, assault, poisoning, motor vehicle occupant, cycling, all-terrain vehicle, fire and burns, and pedestrian.

Injuries remain a leading cause of death, disability, and years of life lost in Canada. This is particularly true for Saskatchewan, which had the highest provincial rate of hospitalizations due to injury for children and youth under 20 years of age between 2004 and 2013. Saskatchewan's overall injury-related hospitalization rate of 742.4 hospitalizations per 100,000 population was significantly higher than the Canadian rate of 409.6 hospitalizations per 100,000 population. There are extensive human and economic costs due to these injuries. In 2010, child and adult injuries cost the residents of Saskatchewan $1.1 billion (Parachute, 2015). These costs include direct costs to the healthcare system and indirect costs (e.g., reduced productivity, disability, premature death).

Between 2004 and 2013, there were on average 69 injury-related deaths of Saskatchewan children and youth under the age of 20 each year. Although the total numbers of injury-related deaths have decreased, the percentage of child and youth deaths due to injury has not decreased when compared to all causes of deaths to children and youth in the same time period. In fact, when the data are collapsed over the age groups, the percentage of youth and child deaths due to injury has increased, particularly for females. (See Table 1.3 in this report.) Youth aged 15 to 19 years had the highest rate of unintentional and intentional injury-related deaths. The most common mechanism of injury-related death for this age group was transport accidents (45.2%), followed by intentional self-harm (31.9%).

For every Saskatchewan child who died due to injury, approximately 24 children were hospitalized. Between 2004 and 2013, there were on average 1,657 injury-related hospitalizations of Saskatchewan children and youth under the age of 20 each year. Falls were the overall leading cause of injury-related hospitalizations for children and youth under 20 years of age (20.1% of child and youth injury-related hospitalizations), followed by sports-related injuries (10.0%), intentional self-harm (8.2%), assault (7.1%), and unintentional poisoning (6.7%). The age breakdown indicates that while falls were the leading cause of injury-related hospitalizations for the younger age groups, sports-related injuries were the leading cause for youth between the ages of 10 and 14 and intentional self-harm was the leading cause for youth aged 15 to 19.

Age Group	Leading Cause of Injury-Related Hospitalization	% of All Injury-Related Hospitalizations
Under 1	Falls	39.1%
1 to 4 years	Falls	32.3%
5 to 9 years	Falls	29.3%
10 to 14 years	Sports-related	20.4%
15 to 19 years	Intentional self-harm	17.1%

Although injury-related hospitalization rates decreased overall over the 10 year period (average decrease of 4.1% annually), there were increases for certain causes of injury and increases for certain age groups. For example, injury-related hospitalization rates increased overall between 2004 and 2013 for intentional self-harm injuries and all-terrain vehicle-related injuries. Injury-related hospitalization rates also increased in the 1 to 4 year old age group for both playground falls and cycling, and in the 10 to 14 year old age group for pedestrian-related injuries. These increases highlight areas that may be particularly important to focus on in terms of prevention.

Fortunately, the number of injury-related deaths and injury-related hospitalizations is decreasing in Saskatchewan. This suggests that prevention efforts are having an effect, including efforts focused on education, environment and engineering changes, enforcement, and economic incentives and disincentives. Despite these successes, more work needs to be done. The fact remains that the vast majority of injuries are predictable and preventable. Therefore, continued prevention efforts are needed to further decrease the rates of injury-related deaths and hospitalizations in Saskatchewan. It is important to start by increasing understanding about how injuries occur, under what conditions they occur, who is at risk, and how injuries can be effectively prevented. The current report, *Child and Youth Injuries in Saskatchewan 2004-2013*, shares important data and prevention tips in an effort to inform injury prevention programming in the province.

Introduction

It is time to revisit the state of child and youth injuries in Saskatchewan. The last provincial report, *Child and Youth Injury in Saskatchewan 1995-1999* (Saskatchewan Prevention Institute, 2002), highlighted the fact that injury was a leading cause of death and hospitalization for Saskatchewan children and youth. At that time, Saskatchewan had the highest provincial rate of hospitalization due to injury for children and youth under 20 years of age in Canada. There are extensive human and economic costs due to these injuries. In 2010, child and adult injuries cost the residents of Saskatchewan $1.1 billion (Parachute, 2015). These costs include direct costs to the healthcare system and indirect costs (e.g., reduced productivity, disability, premature death). The resulting cost per resident of Saskatchewan was $1,059 in direct and indirect costs.

It is important to remember that the vast majority of injuries are predictable and preventable. Focusing on the prevention of injuries is an important way to reduce child hospitalizations, deaths, and related costs in Saskatchewan. This report, *Child and Youth Injury in Saskatchewan 2004-2013*, examines injury-related deaths and hospitalizations of Saskatchewan children and youth under 20 years of age during the 10 year period of 2004 to 2013. The report outlines the causes and types of injuries to Saskatchewan children during this time period. The information is presented in categories, including age, sex, and health region. The report also shares prevention tips for each of the main causes of child and youth injury-related hospitalizations. The goal of this report is to provide insight into causes of injury to Saskatchewan children and youth and to promote injury prevention in this province. Reducing the number of injuries will decrease the human and economic costs associated with injuries.

Using This Report

The intended audiences for this report are those working to reduce injuries among Saskatchewan children and youth. The findings from this report can be used to determine areas of greatest injury prevention need in order to plan and deliver effective prevention programs and to create policies in agencies, communities, or provincially that will reduce injury risk. Individuals may use this report as a means to focus injury prevention efforts in their region. Information specific to age groups and health regions is included to enable communities to examine their particular injury situation, determine needs unique to the area, and plan appropriate injury control strategies.

Report Content

In order to provide a more complete picture of how children and youth in Saskatchewan have been injured, both unintentional and intentional injuries are included in this report. Unintentional injuries are those that occur when there is no intent to inflict harm. Intentional injuries include interpersonal violence (e.g., homicide, assault) and self-harm.

The report is presented in three sections. The first section of the report provides an overview of the injury-related deaths. The second section provides an overview of injury-related hospitalizations. The last section of the report examines the leading causes of child and youth injury-related hospitalizations. These leading causes are falls, sports, intentional self-harm, assault, poisoning, motor vehicle occupant, cycling, all-terrain vehicle, and fire and burns.

Methodology

The data presented in this report include injury-related hospitalizations and deaths of children and youth under the age of 20 between 2004 and 2013 in Saskatchewan. The data exclude adverse events, medical/surgical complications, transfers to another facility, in-hospital deaths, and hospitalization readmissions. The source of data on deaths is e-Health Saskatchewan. Due to the small of number of injury-related deaths of children and youth in Saskatchewan, and to maintain the confidentiality of those who have died, the reporting of deaths is limited in the current report. The hospitalization data used in this report was provided by the Canadian Institute of Health Information (CIHI). The hospitalization data presented in the report include all hospital discharge/separations where an injury code appears in the record. It must be noted that the unit of analysis is the hospitalization and not the individual.

To allow for a comparison across years and health regions, age-standardized rates were calculated using the direct method. This method controls for potential sources of bias resulting from variations in age distribution of populations across time and zones. See Appendix A for calculation details. When reporting the overall rate presented in the 10 year trend graphs, the number of hospitalizations includes all persons injured in Saskatchewan (residents and non-residents). The overall rate presented for the individual health regions includes only residents of Saskatchewan based on their postal code at the time of registration at the hospital.

Supplementary Material

Additional information and resources related to the *Child and Youth Injury in Saskatchewan 2004-2013* report will be released in the months following the report. The goal of these supplementary materials is to provide greater detail about the specific causes of injury and how to prevent these injuries. Please check the Saskatchewan Prevention Institute website for more details (www.skprevention.ca).

Overview of Injury-Related Deaths

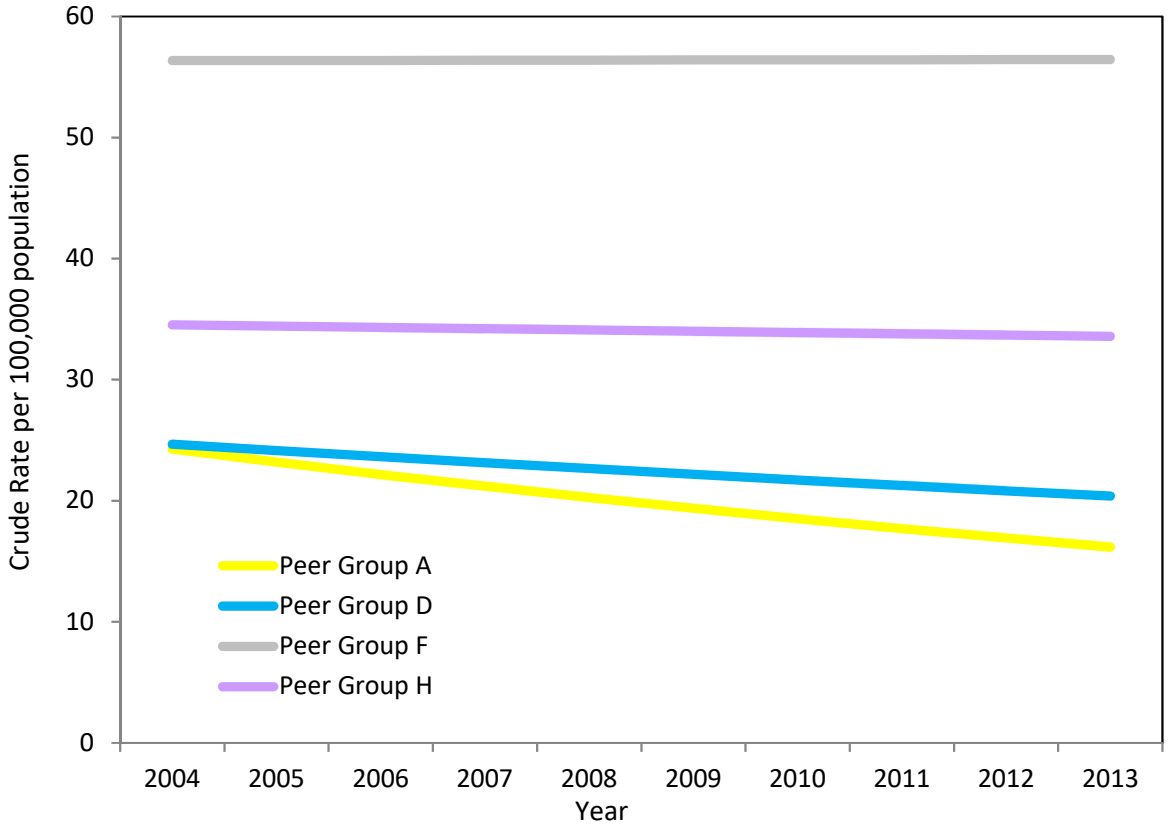
Due to the small number of injury-related deaths of children and youth in Saskatchewan, and to maintain the confidentiality of those who have died, the reporting of data related to deaths is limited.

Injury-Related Deaths by Peer Group

The following figure presents trends in injury-related deaths of children and youth under 20 years of age between 2004 and 2013 for each of Saskatchewan's four peer groups[1]. Over this 10 year period, the overall injury-related death rate for Saskatchewan children and youth decreased an average of 2.3% each year.

Residents in peer group A (Regina Qu'Appelle and Saskatoon health regions) experienced the largest decrease with an average of 4.4% annually. This was followed by residents in peer group D (Cypress, Five Hills, Heartland, Kelsey Trail, Sun Country, and Sunrise health regions), with an average decrease of 2.1% annually. The child and youth injury-related death rate for peer group F (Athabasca, Keewatin, and Mamawetan Churchill health regions) remained constant, with an average increase of 0.02% annually. Peer group H (Prairie North and Prince Albert Parkland health regions) experienced an average decrease of 0.3% annually.

Figure 1.1 Injury-Related Deaths by Peer Group, Saskatchewan, Under 20 Years of Age, 2004-2013



[1] Peer groups are a construct of Statistics Canada, created using a grouping algorithm (cluster analysis) to allow for comparison of health regions with similar socio-economic characteristics. For more information, please refer to the Methodology section in Appendix A.

Injury-Related Deaths by Age Group

The table below provides the number of unintentional and intentional injury-related deaths by age group. Between 2004 and 2013, there were on average 45.5 unintentional injury-related deaths of Saskatchewan children and youth annually. Youth aged 15 to 19 had the highest rate of unintentional injury-related deaths with 36.4 deaths per 100,000 population (an average of 27.6 deaths each year). This was followed by children 1 to 4 years of age, with a rate of 13.0 deaths per 100,000 population (an average of 6.7 deaths each year).

Based on the available data, there were at least 22 intentional injury-related deaths of Saskatchewan children and youth on average annually between 2004 and 2013. Youth aged 15 to 19 had the highest rate of intentional injury-related deaths with 24.0 deaths per 100,000 population (an average of 18.2 deaths each year).

Table 1.1 Injury-Related Deaths by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013

Type of Injury	Under 1 Year	1-4 Years	5-9 Years	10-14 Years	15-19 Years
Unintentional Injuries	15	67	40	57	276
Intentional Injuries	*	11	*	27	182

Note: Unintentional injury counts are based on ICD-10CA codes V01-X59. The intentional injury counts are based on ICD-10CA codes X60-Y09. Based on eHealth Saskatchewan security policy, all counts less than 6 cannot be reported and were replaced by *.

Between 2004 and 2013, the most common mechanism of injury-related death for youth aged 15-19 years was transport accidents (including motor vehicle traffic, pedal cyclist, and pedestrian). Transport accidents were the mechanism of death in 45.2% of the injury-related deaths in this age group, followed by intentional self-harm which was the mechanism of death in 31.9% of the cases.

Table 1.2 Injury-Related Deaths by Mechanism of Injury, Saskatchewan, Under 20 Years of Age, 2004-2013

Mechanism of Injury	Number of Deaths	Percentage
Transport accidents (V01-V99)	207	45.2
Intentional self-harm (X60-X84)	146	31.9
Assault (X85-Y09)	36	7.9
Falls (W00-W19)	6	1.3
Other injuries	63	13.7
Total	458	100

The percentage of deaths due to injury in children and youth increases with age, as highlighted in the table below. For children under the age of 1, injury was the cause of death in 3.5% of deaths between 2004 and 2013. In the 15 to 19 age group, injury was the cause of death in at least 80% of the deaths.

Table 1.3 Number of Injury-Related and Total Deaths by Sex and Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013

Age	Sex	Injury Deaths	Total Deaths	% of Deaths Due to Injury	% of Deaths Due to Injury (1995-1999)[2]
Under 1	Male	10	345	2.9%	3.1%
	Female	12	285	4.2%	4.9%
	Total	22	630	3.5%	3.9%
1-4	Male	46	109	42.2%	48.8%
	Female	35	91	38.5%	35.2%
	Total	81	200	40.5%	43.3%
5-9	Male	27	52	51.9%	50.9%
	Female	15	44	34.1%	50.0%
	Total	42	96	43.8%	50.5%
10-14	Male	44	73	60.3%	65.7%
	Female	43	68	63.2%	43.6%
	Total	87	141	61.7%	57.5%
15-19	Male	305	372	82.3%	83.3%
	Female	154*	203	75.9%*	72.2%
	Total	459*	575	79.8*	80.0%
0-19	Male	432	951	45.4%	40.6%
	Female	259*	691	37.5%*	28.4%
	Total	691*	1642	42.1%*	35.8%
1-19	Male	422	606	69.6%	68.6%
	Female	247*	406	60.8%*	53.3%
	Total	669*	1012	66.1%*	63.2%

Notes: Data retrieved from eHealth Saskatchewan, using the ICD-10CA codes V01.0 –Y36.9.

* denotes that some records have been withheld for privacy concerns, based on eHealth Saskatchewan security policy. Therefore, the true total number of injury-related deaths and percentage of deaths due to injury for females aged 15 to 19 is higher than what is reported here.

Since the last Saskatchewan Child and Youth Injury Report was published in 2002, the percentages of child and youth deaths due to injury have not decreased. In other words, although injury-related death rates have decreased, the percentage of child and youth deaths due to injury has not decreased when compared to all causes of deaths to children and youth in the same time period. In fact, when the data are collapsed over age group, the percentage of deaths due to injury has increased, particularly for females. The reason behind this increase is unknown because injury-related death data separated by cause was inaccessible due to low numbers and privacy concerns.

[2] For more information, please refer to *Child and Youth Injury in Saskatchewan 1995-1999* (2002), available from the Saskatchewan Prevention Institute's website at www.skprevention.ca.

Table 2.1 Number of Hospitalizations by Injury Cause, Sex, and Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013

Injury Cause	<1			1-4 Years			5-9 Years			10-14 Years			15-19 Years			Total		
	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total
Assault	24	36	60	28	43	71	18	18	36	48	56	104	168	743	911	286	896	1182
ATV non-traffic	0	0	0	5	16	21	17	43	60	52	178	230	47	129	176	121	366	487
Cycling non-traffic	0	0	0	12	16	28	61	83	144	42	178	220	7	65	72	122	342	464
Cycling traffic	0	0	0	*	*	7	7	18	25	6	22	28	0	15	15	15	60	75
Drowning and submersion	*	*	*	*	*	17	0	*	*	*	*	*	*	*	5	10	22	32
Falls (excluding sport)	88	155	243	438	525	963	340	499	839	237	494	731	209	350	559	1312	2023	3335
Fire and burns	12	14	26	58	63	121	18	26	44	6	34	40	16	57	73	110	194	304
Intentional self-harm	0	0	0	*	0	*	*	*	*	239	38	277	789	294	1083	1030	334	1364
Motor vehicle occupant	6	6	12	36	35	71	38	45	83	69	45	114	315	396	711	464	527	991
Overexertion, travel, privation	*	*	*	9	8	17	10	10	20	28	43	71	36	68	104	84	132	216
Pedestrian traffic and non-traffic	0	0	0	21	45	66	21	53	74	25	28	53	35	65	100	102	191	293
Playground falls	*	*	*	75	100	175	341	359	700	67	108	175	9	8	17	493	578	1071
Unintentional poisoning	19	27	46	270	302	572	37	43	80	70	51	121	161	133	294	557	556	1113
Snowmobile	0	0	0	0	0	0	5	7	12	16	35	51	16	90	106	37	132	169
Sport-related	*	*	*	16	25	41	58	119	177	155	618	773	78	581	659	308	1344	1652
Suffocation	19	25	44	15	32	47	*	*	8	*	*	12	*	*	7	44	74	118
Undetermined intent	*	*	8	*	*	5	5	10	15	48	23	71	128	91	219	185	133	318
All other injury	66	104	170	292	464	756	209	333	542	236	480	716	346	858	1204	1149	2239	3388
Total	240	382	622	1284	1695	2979	1190	1675	2865	1350	2441	3791	2365	3950	6315	6429	10143	16572

Notes: Based on Canadian Institute for Health Research security policy, all counts less than 5 were replaced by *.

Refer to Appendix B for the complete list of internal and external injury codes and labels.

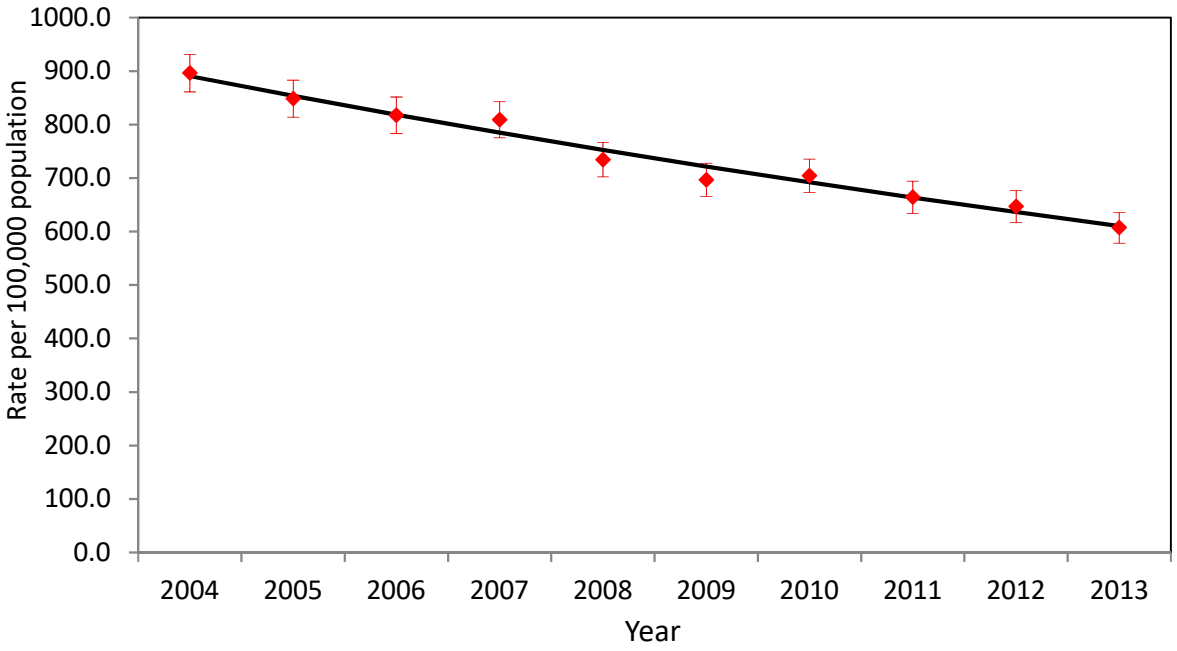
Overview of Injury-Related Hospitalizations

This section discusses causes of injury-related hospitalizations, diagnosis, days of stay, and rates of injury-related hospitalizations for Saskatchewan children and youth under 20 years of age. Rates are presented for the province as a whole and for each of the Saskatchewan health regions. The hospitalization data presented from this point forward excludes adverse events, medical/surgical complications, transfers to another facility, in-hospital deaths, and hospitalization readmissions.

In Saskatchewan, from 2004 to 2013, there were a total of 16,572 injury-related hospitalizations of children and youth under 20 years of age. Table 2.1 presents the number of hospitalizations by injury cause, sex, and age group for Saskatchewan children and youth.

In 2004, there were 2,037 injury-related hospitalizations of children and youth, under 20 years of age, including intentional and unintentional injuries. Ten years later, in 2013, there were 1,383 injury-related hospitalizations. This is a 32% decline in the number of injury-related hospitalizations between 2004 and 2013. There was a statistically significant average decrease in injury-related hospitalizations of 4.1% annually.

Figure 2.1 Injury-Related Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



When comparing the overall injury-related hospitalization rate of Saskatchewan from 2004 to 2013 with the overall rate of Canadian provinces and territories in the same time period, the Saskatchewan rate was significantly higher with a rate of 742.4 hospitalizations per 100,000 population (95% CI 732.2 to 752.6)[3]. The Canadian rate was 409.6 hospitalizations per 100,000 population (95% CI 408.0 to 411.2).

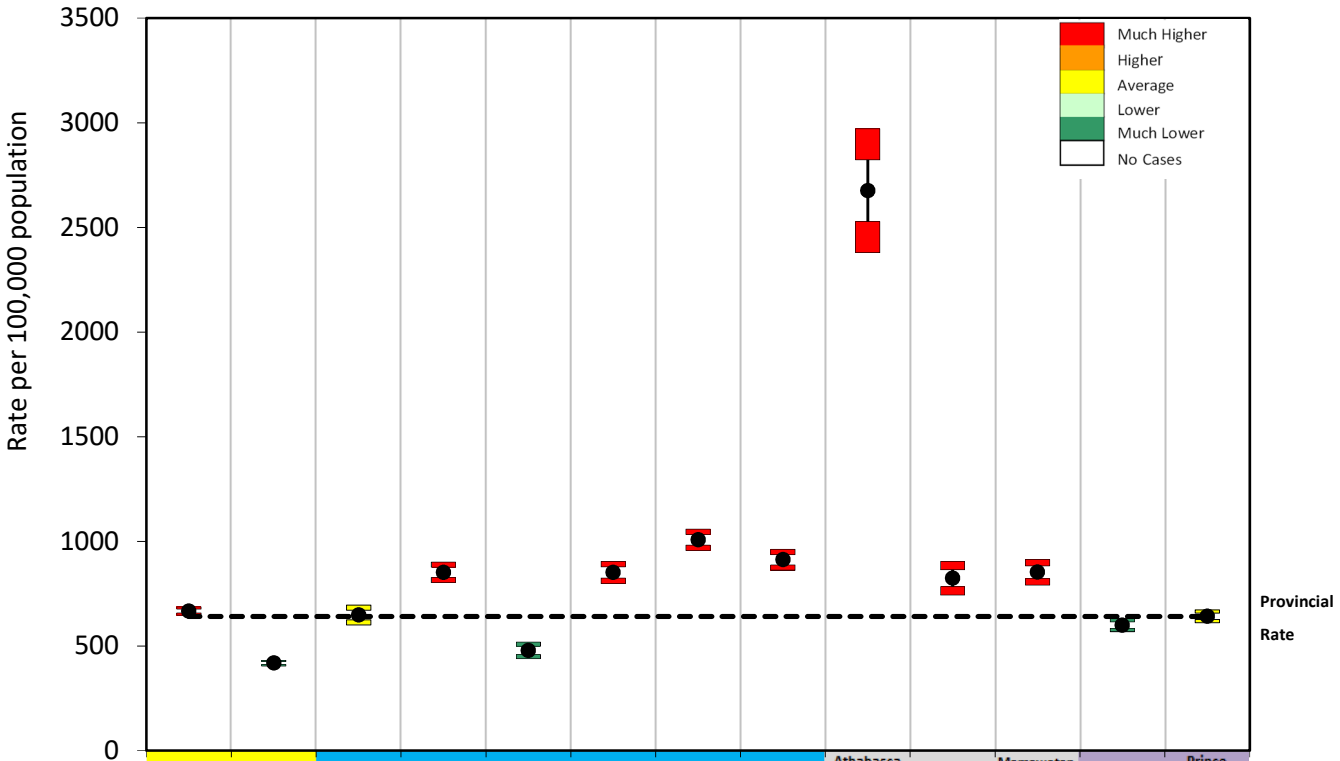
[3] This rate includes all injury-related hospital admissions in Saskatchewan, not only those based on patient postal code at the time of registration to the hospital.

More detailed information related to provincial comparisons for overall hospitalization rates and hospitalization rates for major causes of injury can be found in Appendix C.

Hospitalizations by Health Region

More than half of Saskatchewan health regions had an injury-related hospitalization rate much higher than the provincial rate of 640.8 hospitalizations per 100,000 population. Peer group D (aside from Cypress and Heartland health regions) and peer group F each had an injury-related hospital rate much higher than the provincial rate. Cypress and Prince Albert Parkland health regions had rates similar to the provincial rate. Regina Qu'Appelle Health Region had a child and youth injury-related hospitalization rate higher than the provincial rate, while Prairie North Health Region had a rate lower than the provincial rate. Finally, Saskatoon and Heartland health regions each had a rate much lower than the provincial rate.

Figure 2.2 Injury-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	667.00	418.19	648.06	851.45	478.86	851.45	1,007.18	911.77	2,674.80	823.53	852.10	599.20	641.83
Average # of Admissions	389.0	289.9	62.3	98.7	48.7	83.7	123.3	108.8	24.8	33.4	62.0	121.0	151.0

Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Hospitalizations by Cause

The three leading causes of injury-related hospitalizations of Saskatchewan children and youth under 20 years of age between 2004 and 2013 were falls (20.1% of all injury-related hospitalizations), sport-related injuries (10.0%), and intentional self-harm injuries (8.2%). Each of the major causes of injury-related hospitalizations listed in the table below will be examined in greater detail later in the report.

Table 2.2 Major Causes of Injury-Related Hospitalizations by Sex, Saskatchewan, Under 20 Years of Age, 2004-2013

Main Cause	Female	Male	Total	Percentage
Falls (excluding sport)	1312	2023	3335	20.1
Sport-related	308	1344	1652	10.0
Intentional self-harm	1030	334	1364	8.2
Assault	286	896	1182	7.1
Unintentional poisoning	557	556	1113	6.7
Playground falls	493	578	1071	6.5
Motor vehicle occupant	464	527	991	6.0
Cycling traffic and non-traffic	137	402	539	3.3
ATV non-traffic	121	366	487	3.0
Fire and burns	110	194	304	1.8
Pedestrian traffic and non-traffic	102	191	293	1.7
All other injury	1509	2732	4241	25.6
Total	**6429**	**10143**	**16572**	**100**

Note: "All other injury" refers to causes of injury-related hospitalizations that are not covered in detail in the remainder of this report (e.g., drowning and submersion; overexertion, travel, privation; snowmobile; suffocation; undetermined intent; other/unspecified). This category also refers to types of injury-related hospitalizations that are not covered in this report (firearms, injuries from riding animals, being struck by an object thrown or falling (non-sport-related), being hit or kicked by another person, foreign body, bitten by an animal, exposure to other unspecified factors, or machinery). The data is gathered in such a way that it often captures whether a child was struck by and/or struck against something, rather than the activity the child was involved in at the time of injury.

As Table 2.3 indicates below, the top three total length of hospital stays for injury-related child and youth hospital admissions between 2004 and 2013 were falls (6,593 total days of stay), intentional self-harm (6,362 total days of stay), and motor vehicle occupant (5,517 total days of stay). When the average length of stay by injury cause was examined, suffocation resulted in the longest average length of stay (7.5 days). This was followed by fire and burns (average of 6.8 days of stay) and motor vehicle occupant (average of 5.6 days of stay).

Although falls resulted in more total days of stay, due to the higher number of admissions for falls (3,335 admissions for falls versus 118 admissions for suffocation), suffocation resulted in more days of stay per child or youth injured in this way (2.0 days of stay on average for falls versus 7.5 days of stay on average for suffocation). This suggests that although injuries like suffocation occur less often, their prevention is important because of the seriousness of the outcome when such an injury does occur.

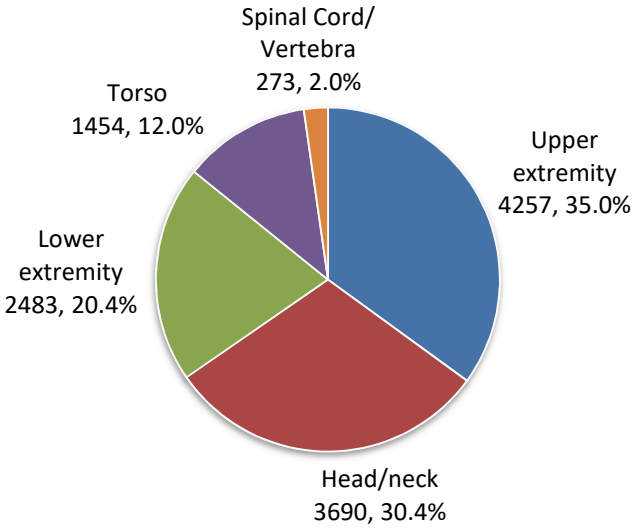
Table 2.3 Days of Stay by Injury Cause, Saskatchewan, Under 20 Years of Age, 2004-2013

Cause of Injury	Number of Admissions	Total Length of Stay	Average Length of Stay
Suffocation	118	881	7.5
Fire/burns	304	2061	6.8
Motor vehicle occupant	991	5517	5.6
Pedestrian traffic/non-traffic	293	1430	4.9
Intentional/self-harm	1364	6362	4.7
Drowning/submersion	32	125	3.9
Snowmobile	169	605	3.6
Assault	1182	4162	3.5
ATV non-traffic	487	1467	3.0
Overexertion/travel/privation	216	514	2.4
Sport-related	1652	3399	2.1
Falls (excluding sport)	3335	6593	2.0
Cycling traffic/non-traffic	539	1096	2.0
Unintentional poisoning	1113	2149	1.9
Playground falls	1071	1547	1.4
All other injury	3706	10231	2.8
Total	**16572**	**48139**	**2.9**

Hospitalizations by Body Part

The body part most frequently injured and for which hospitalization was required was upper extremity (shoulders, arms, and hands), accounting for 35.0% of injury-related hospitalizations between 2004 and 2013. The second most commonly injured body part and for which hospitalization was required was the head/neck, accounting for 30.4% of the hospitalizations. Injuries to the lower extremities (leg and foot) accounted for 20.4% of the hospitalizations. Fractures were the most common cause of hospitalization for upper extremity injuries (87.8% of upper extremity injuries), followed by open wounds (2.4% of upper extremity injuries). Injuries to the head which resulted in hospitalization were most commonly concussions (40.1% of head injuries), followed by internal injuries (19.0% of head injuries).

Figure 2.3 Injury-Related Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013

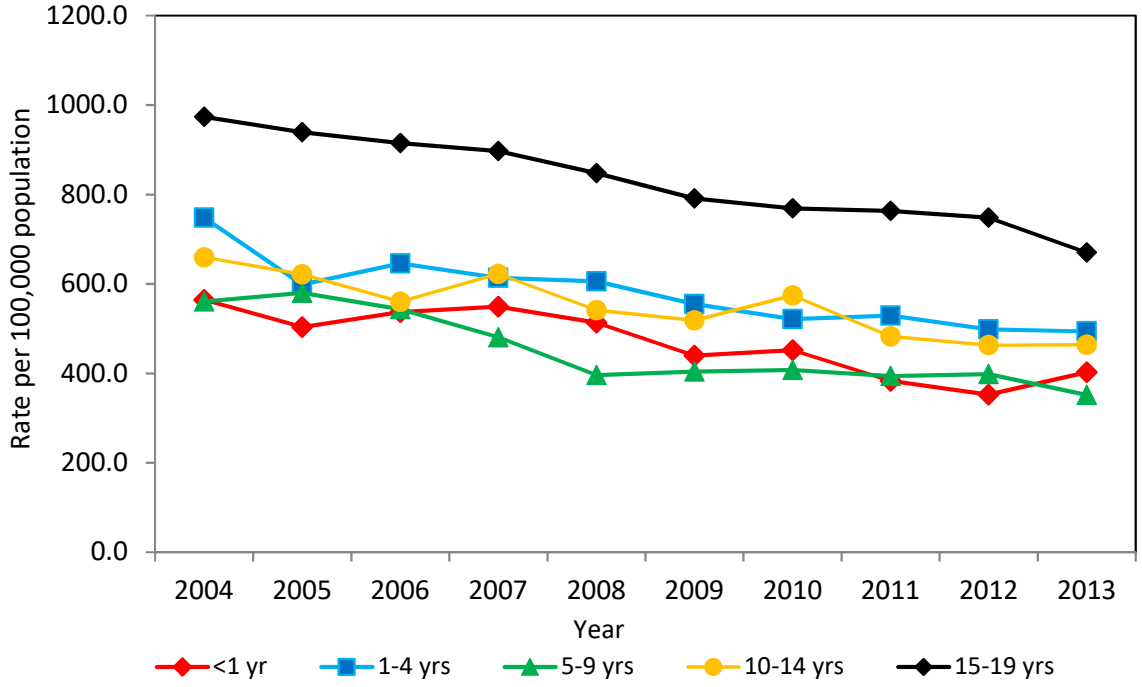


Note: For the body part injury analysis, there were 4,415 hospitalizations in which the most responsible diagnosis was not an injury code or the injury code was unclassified or multiple sites. These hospitalizations are not presented in this figure. Refer to Appendix D for a complete list of injury diagnosis codes by body part of injury.

Hospitalizations by Age Group

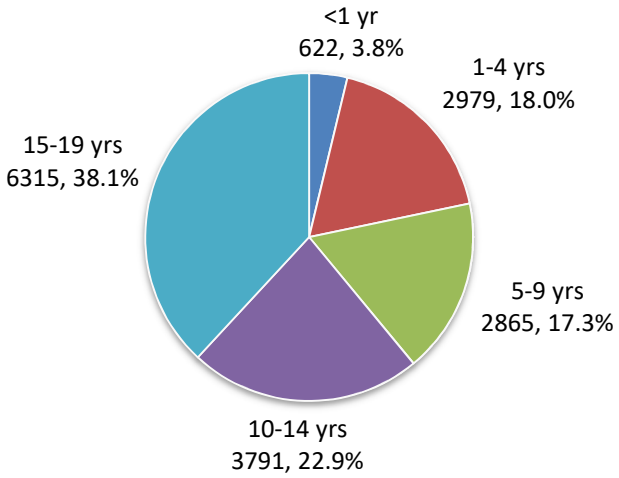
Between 2004 and 2013, each age group experienced a statistically significant decrease in the injury-related hospitalization rates. Children between 5 and 9 years of age experienced the largest hospitalization rate decrease with an average of 5.4% annually. This was followed by infants less than 1 year of age with an average decrease of 4.6% annually. Children between 1 and 4 years of age had an average decrease of 4.0% annually. Youth between 15 and 19 years had an average decrease of 3.8% annually, and children between 10 and 14 years of age had an average decrease of 3.7% annually.

Figure 2.4 Injury-Related Hospitalizations by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Youth between 15 and 19 years of age had the largest proportion of injury-related hospitalizations with 38.1%. This was followed by youth 10 to 14 years of age with 22.9%, children between 5 and 9 years of age with 17.3%, children between 1 and 4 years with 18.0%, and infants less than 1 year of age with 3.8%.

Figure 2.5 Proportion of Injury-Related Hospitalizations by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



When comparing the proportion of injuries experienced by a particular age group with their proportion of the total population of children and youth in Saskatchewan, it becomes clear that youth between 15 and 19 years of age are overrepresented in injury-related hospitalizations. While youth aged 15 to 19 years make up 27.7% of the population under the age of 20, they had a significantly higher proportion of injury-related hospitalizations (38.1% of hospitalizations for children and youth under 20 years of age).

Figure 2.6 Proportion of Injury-Related Hospitalizations and Saskatchewan Population by Age Group, Under 20 Years of Age, 2004-2013

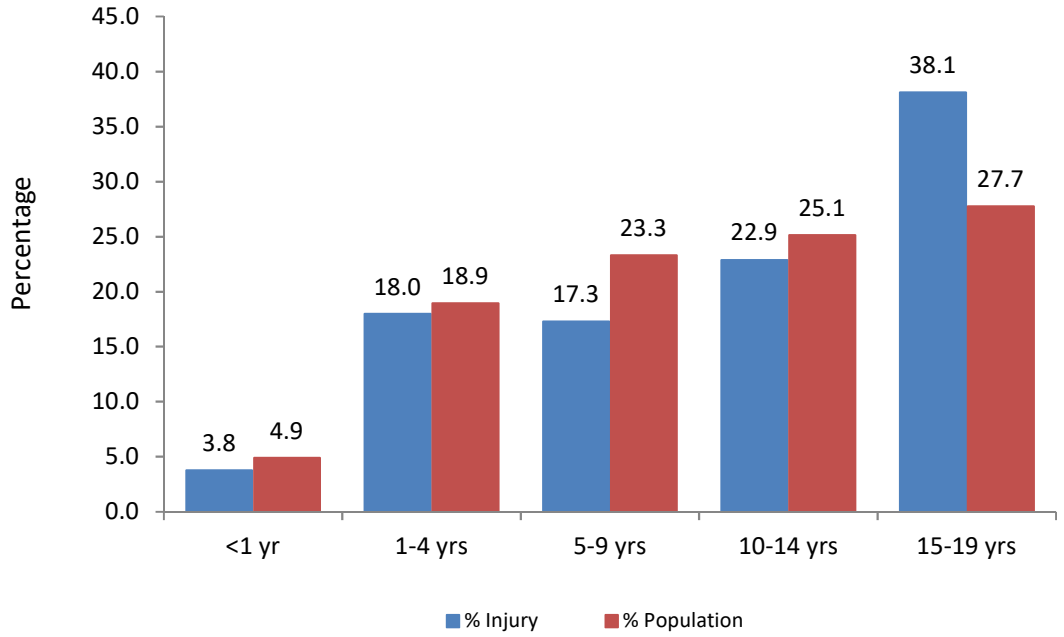
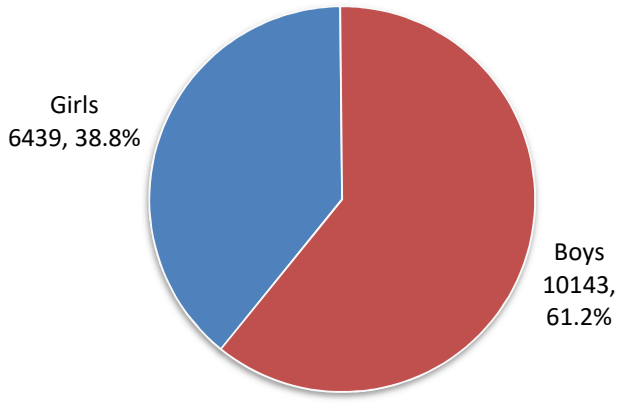


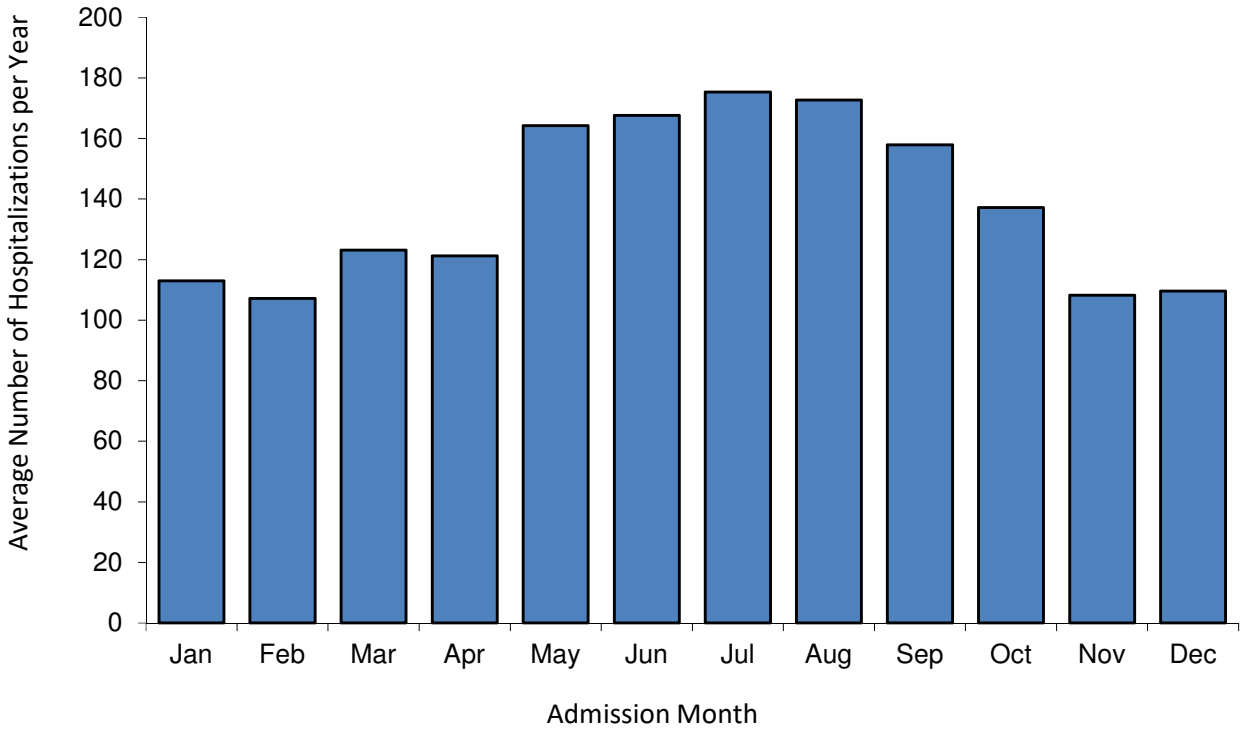
Figure 2.7 Proportion of Injury-Related Hospitalizations by Sex, Saskatchewan, Under 20 Years of Age, 2004-2013



Approximately 60% of the children and youth hospitalized due to injuries in Saskatchewan between 2004 and 2013 were boys.

Children and youth were injured more frequently during the warmer weather in Saskatchewan. The average number of injury-related hospitalizations per year began to climb in May (average of 164.2 hospitalizations between 2004 and 2013) and peaked in July (average of 175.3 hospitalizations per year). This increase in injury-related hospitalizations is likely due to increased outdoor activities and play.

Figure 2.8 Average Number of Injury-Related Hospitalizations by Admission Month, Saskatchewan, Under 20 Years of Age, 2004-2013



Leading Causes of Injury-Related Hospitalizations for Saskatchewan Children and Youth Under 20 Years of Age

This section discusses the leading cause of injury-related hospitalizations for children and youth under 20 years of age in Saskatchewan from 2004 to 2013. Each of the top eleven causes of injury-related hospitalizations is discussed by body part injured, types of injuries, rates over time, age group, and health region.

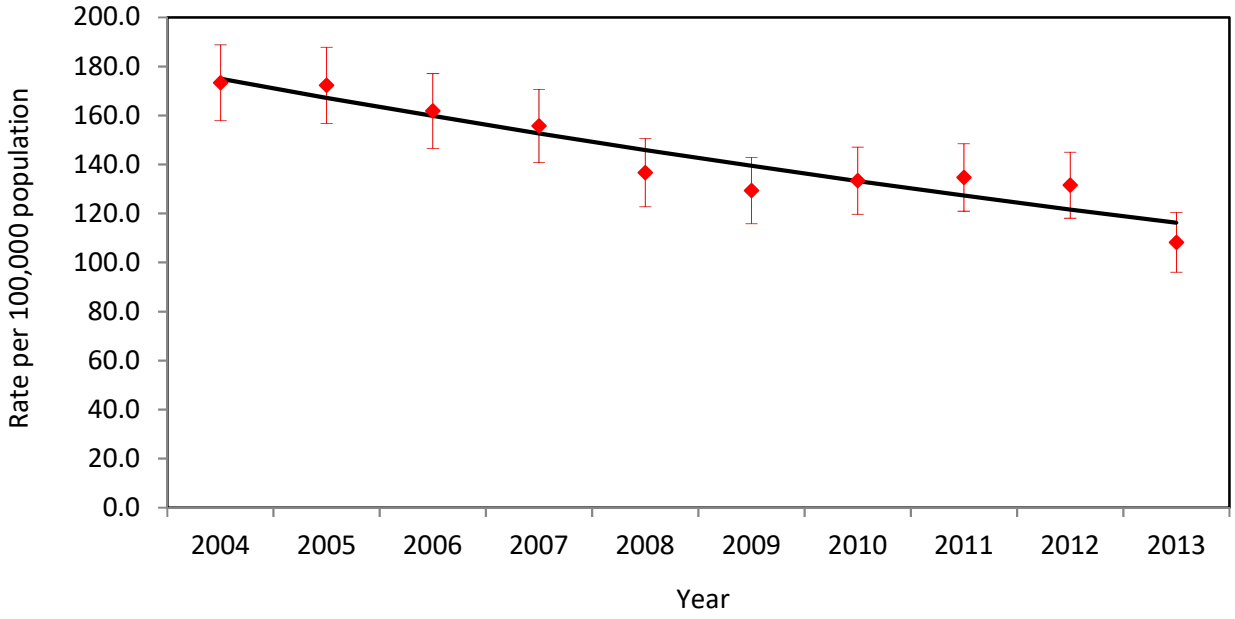
Prevention tips for each of the top causes of injury-related hospitalizations are also shared.

Falls

This section discusses falls as a cause of injury-related hospitalizations, body parts injured due to falls, and fall-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013. The falls discussed in this section do not include sport-related falls or playground falls. These will be covered in later sections in the report.

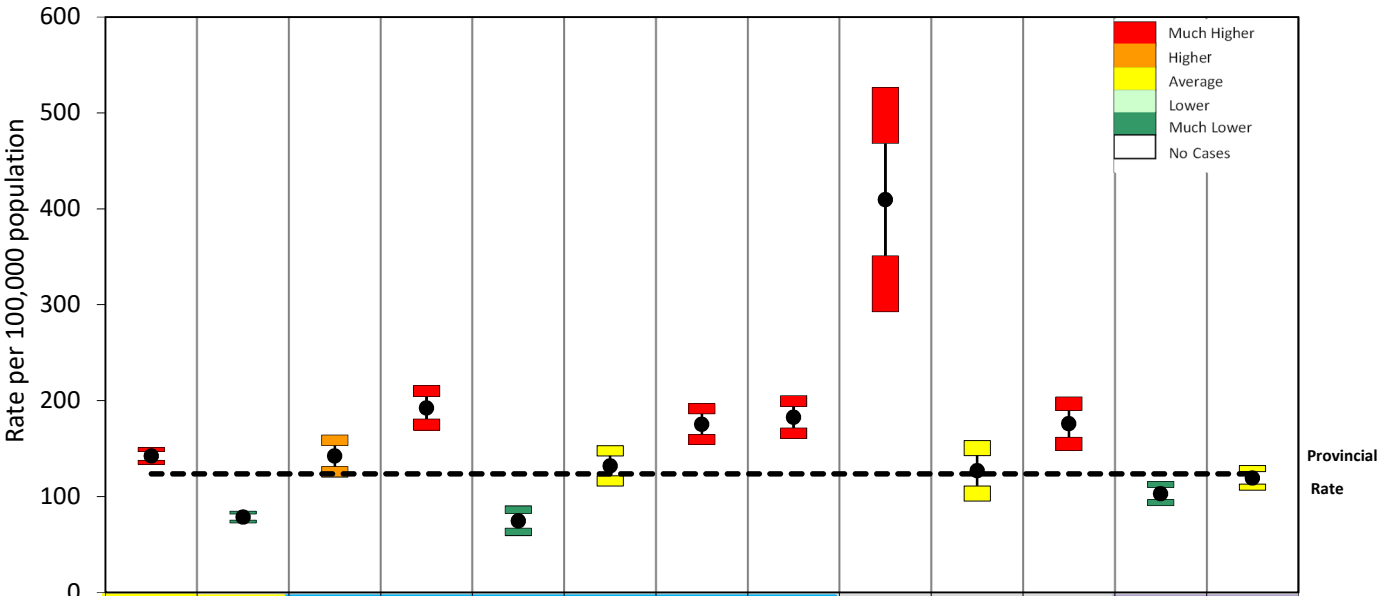
In Saskatchewan, falls were the leading cause of injury resulting in hospitalization. They were responsible for 20.1% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 333.5 hospitalizations per year). Over the 10 year period, there was a statistically significant average decrease of 4.4% annually in the rate of hospitalizations due to fall-related injuries.

Figure 3.1 Fall-Related Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Almost half of the health regions in Saskatchewan had a fall-related injury hospitalization rate much higher than the provincial rate of 123.6 hospitalizations per 100,000 population. Regina Qu'Appelle, Five Hills, Sun Country, Sunrise, Athabasca, and Mamawetan Churchill River health regions each had a fall-related injury hospitalization rate much higher than the provincial rate. Cypress Health Region had a rate higher than the provincial rate. Kelsey Trail, Keewatin Yatthé, and Prince Albert Parkland health regions each had a rate similar to the provincial rate. Saskatoon, Heartland, and Prairie North health regions each had a rate much lower than the provincial rate.

Figure 3.2 Fall-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	142.29	78.49	142.17	192.38	74.65	131.89	175.38	182.68	409.60	126.79	175.84	103.00	119.36
Average # of Admissions	85.5	57.5	13.8	22.6	7.6	13.3	22.4	22.4	4.4	5.6	14.4	22.9	29.7

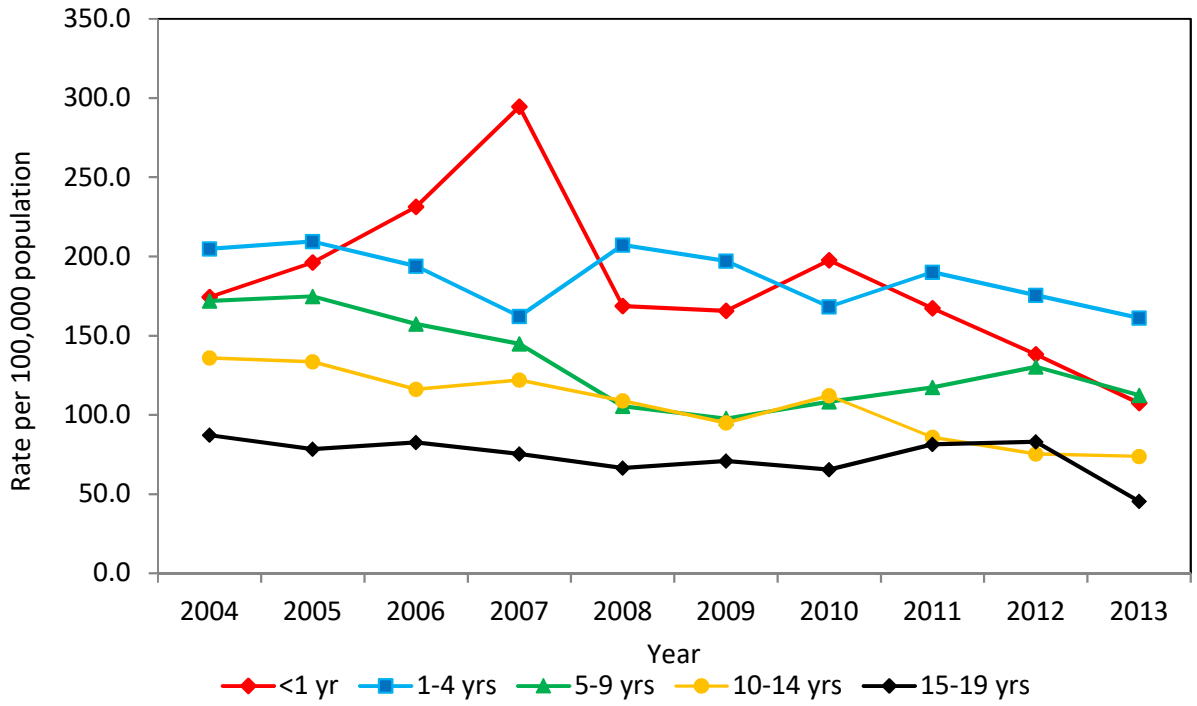
Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Fall-Related Hospitalizations by Age Group

For three of the five age groups covered in this report, falls were the leading cause of injury-related hospitalizations. More specifically, falls were the leading cause of injury-related hospitalizations for children under 1 year of age (39.1% of injury-related hospitalizations in this age group), children aged 1 to 4 (32.3% of injury-related hospitalizations), and children aged 5 to 9 (29.3% of injury-related hospitalizations). Falls were the second leading cause of injury-related hospitalizations for youth aged 10 to 14 (19.3%) and the fifth leading cause of injury-related hospitalizations for youth aged 15 to 19 (8.9%).

On average, fall-related hospitalization rates decreased over the 10 year period between 2004 and 2013 for each of the five age groups. The largest statistically significant decrease in fall-related hospitalizations was for youth between 10 and 14 years of age (average decrease of 6.4% annually). Infants less than 1 year of age experienced an overall fall-related injury hospitalization rate decrease of 5.7% annually. Children between 1 and 4 years of age had a statistically significant average decrease of 2.1% annually, and children between 5 and 9 years of age experienced a statistically significant average decrease of 5.1% annually. Youth between 15 and 19 years of age had an average decrease of 2.6% annually.

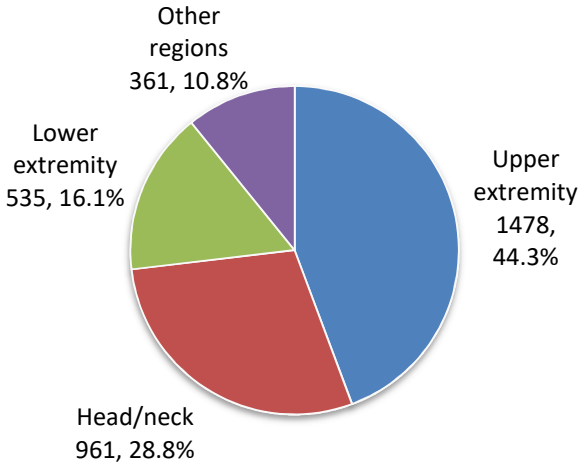
Figure 3.3 Fall-Related Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Fall-Related Hospitalizations by Body Part

The most commonly injured body part due to a fall that resulted in hospitalization was the upper extremity (shoulders, arms, and hands). Upper extremity injuries were responsible for 44.3% of fall-related hospitalizations. This was followed by head/neck injuries accounting for 28.8%, and lower extremity (leg and foot) accounting for 16.1% of fall-related hospitalizations. Other body parts, including those that were unspecified or unclassified, accounted for the remaining 10.8%.

Figure 3.4 Fall-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



Fractures accounted for the majority of upper extremity injuries (97.4%) and lower extremity injuries (90.0%) that resulted in hospitalization. The majority of head/neck injuries that resulted in hospitalization were classified as traumatic brain injuries (84.7%). Of these, 42.3% were concussions, 13.8% were internal head injuries, and 10.4% were fractures.

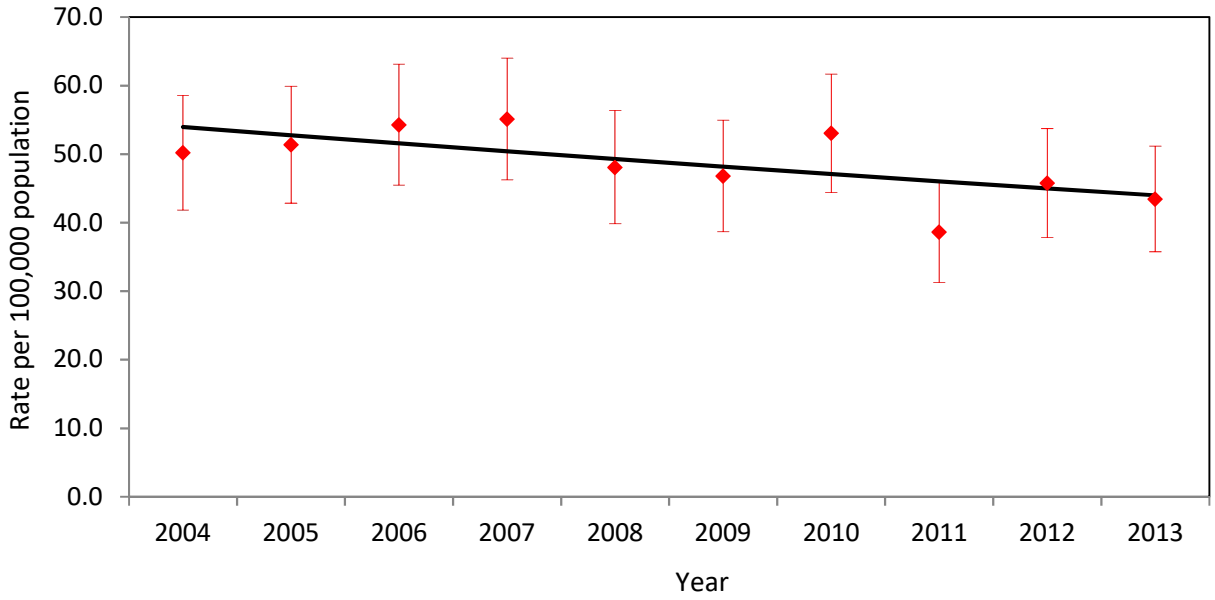
Fall-Related Hospitalizations by Location of Fall

Falls from one level to another accounted for 38.2% of falls resulting in hospitalization. This was followed by falls on the same level (15.9% of falls) and falls on stairs/steps (11.9% of falls).

Playground Injuries

In Saskatchewan between 2004 and 2013, playground falls accounted for 6.5% of injury-related hospitalizations. Over this same time period, the average number of playground-related hospitalizations was 107 each year. The rate of hospitalizations due to playground-related injuries decreased an average of 2.2% annually.

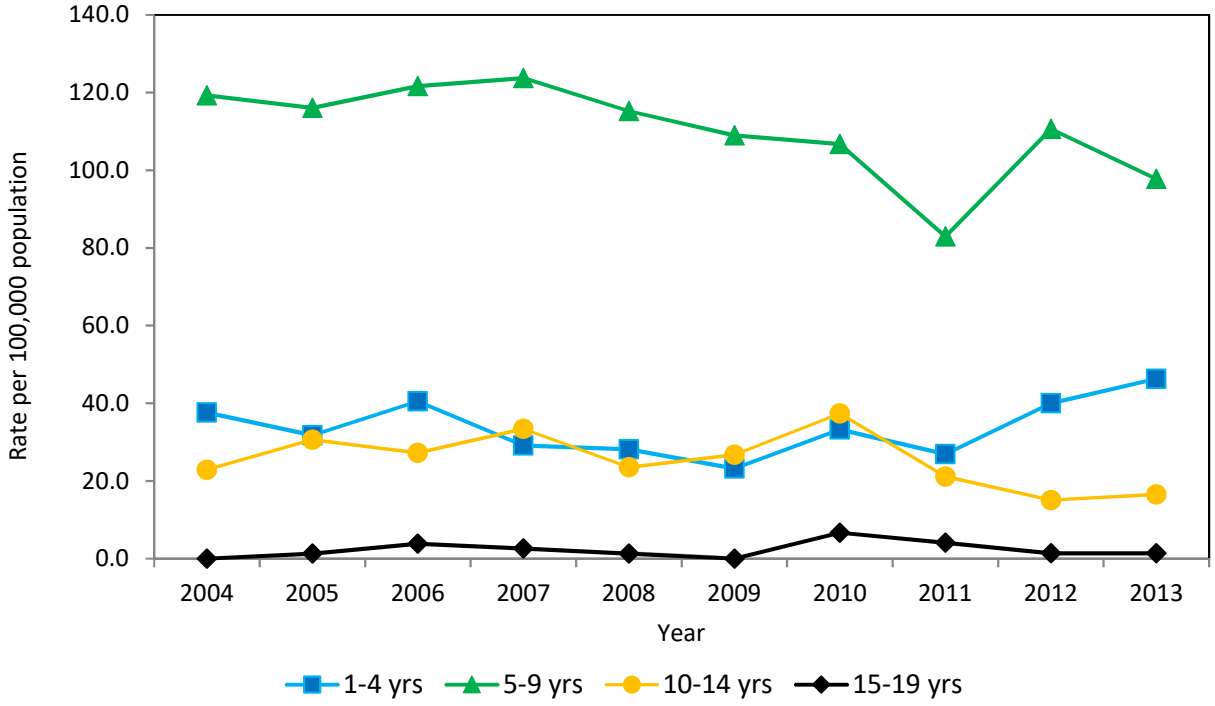
Figure 3.5 Playground-Related Injury Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013 Age-Standardized



Children aged 5 to 9 years experienced the highest percentage of playground falls resulting in hospitalization. This age group accounted for 65.4% of all playground-related hospitalization, followed by children aged 1 to 4 years (16.3% of playground-related hospitalizations) and youth aged 10 to 14 years (16.3% of playground-related hospitalizations).

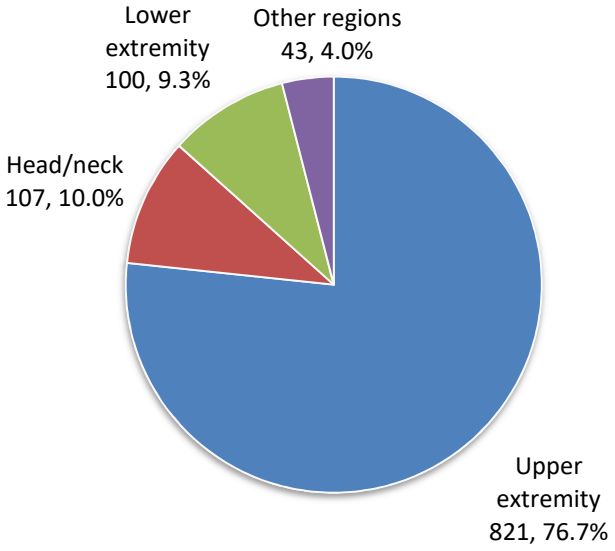
When examining age-related rates over time, children between 1 and 4 years of age experienced an average increase of 1.8% annually in playground-related hospitalizations. Although children between 5 and 9 years of age had the highest rate of playground-related hospitalizations overall, this age group experienced an average annual decrease of 2.5%. Youth between 10 and 14 years of age experienced a decrease of 3.6% annually, and youth between 15 and 19 years of age experienced an average increase of 3.1% annually.

Figure 3.6 Playground-Related Injury Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



For playground-related hospitalizations, the most common body part injured was the upper extremity, accounting for 76.7% of these hospitalizations. This was followed by head/neck injuries, which accounted for 10.0%, and lower extremity injuries, accounting for 9.3% of playground-related hospitalizations.

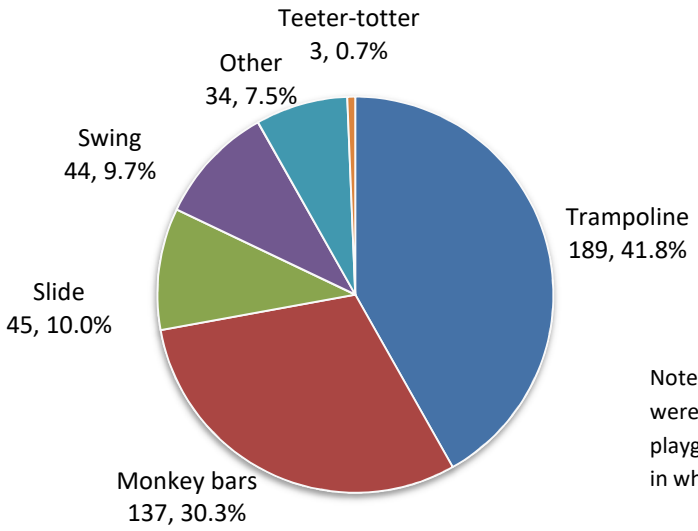
Figure 3.7 Playground-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



Of the upper extremity injuries, 97.6% were fractures. Fractures also accounted for 95.0% of lower extremity injuries. Of the head/neck injuries, 76.6% were classified as traumatic brain injuries. Of these, 53.7% were diagnosed as a concussion, followed by internal brain injuries (8.5%), and fractures (8.5%).

Details about the type of playground equipment being used at the time of injury were not available prior to 2009. From 2009 to 2013, in cases where the type of playground equipment was identified, 41.8% of the injuries were as a result of falling on or from a trampoline. Another 30.3% of playground-related hospitalizations were due to falls from monkey bars, 10.0% from falls from a slide, and 9.7% were due to falls from a swing.

Figure 3.8 Playground-Related Injury Hospitalizations by Equipment, Saskatchewan, Under 20 Years of Age, 2009-2013



Note: There were 619 hospitalizations (39.8%) that were either prior to 2009, in which details of the type of playground equipment was not available, or were cases in which the type of equipment was not identified.

Prevention Tips:

Falls are of special concern because they are the most common cause of injury-related hospitalization and because serious injuries to the head and neck resulting from falls can be life-altering. Falls often occur as a result of children growing and discovering their abilities and limitations. Preventing the types of falls that can result in life-altering disability and death is the main goal of the following fall-specific prevention tips.

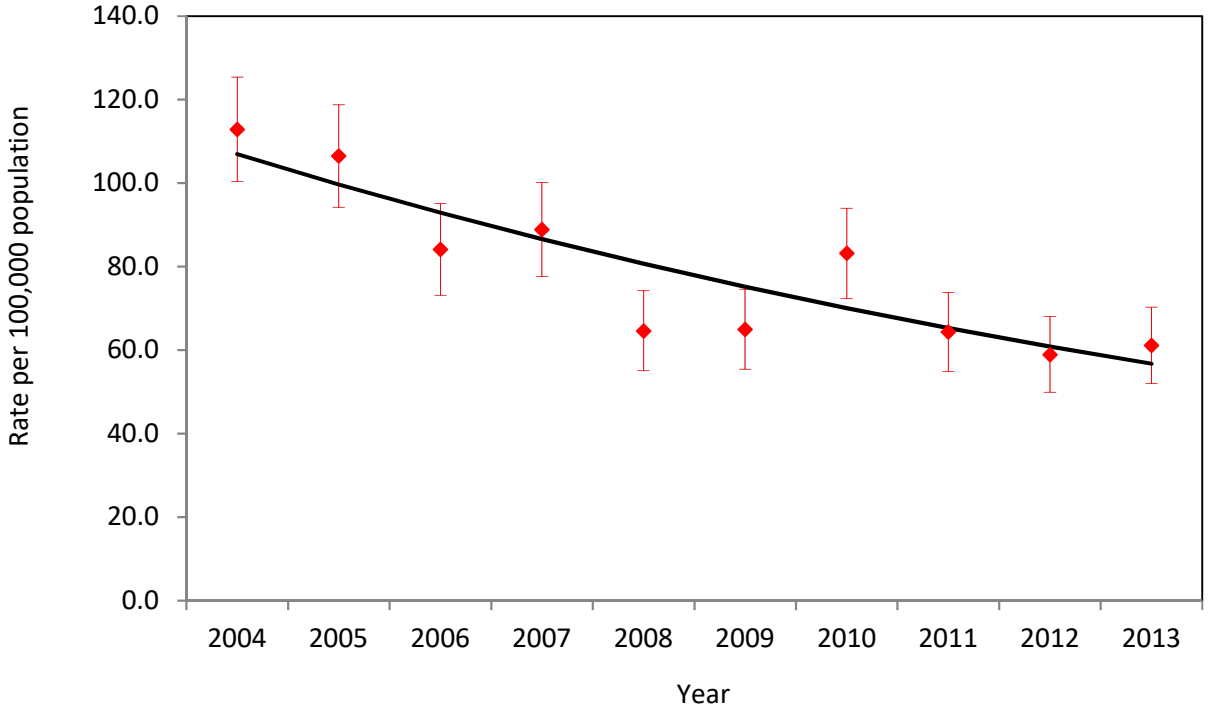
- Include fall prevention information in prenatal and parenting education particularly that focused on hazards in the home.
- Encourage and facilitate the use of safety equipment and safety features (e.g., safety straps on high chairs and strollers, baby gates for stairs, child-resistant latches on windows, wall anchors for furniture, helmets).
- Work with caregivers and communities to identify, replace, and/or modify unsafe products.
- Educate caregivers and communities about playground safety and the importance of adequate adult supervision.
- Follow and encourage the use of the Canadian Safety Association's (CSA) playground equipment standards.
- Allow children to play actively, with appropriate supervision, to help them develop competence and confidence in their physical abilities.

Sports-Related

This section discusses sports-related injuries as a cause of injury-related hospitalizations, body parts injured due to sports, and sports-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013.

In Saskatchewan, sports-related injuries were the second leading cause of injury resulting in hospitalization. They were responsible for 10.0% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 165.2 hospitalizations per year). Over the 10 year period, there was a statistically significant average decrease of 6.8% annually in the rate of hospitalizations due to sports-related injuries.

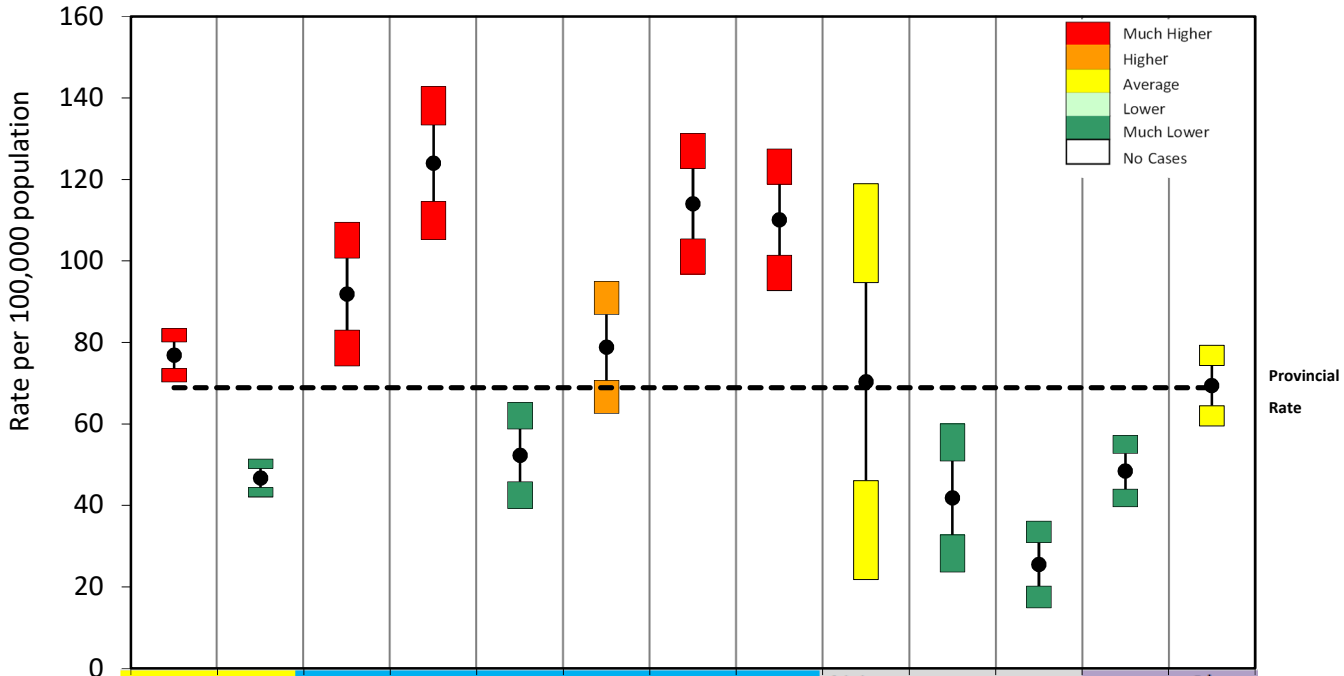
Figure 4.1 Sports-Related Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Note: Sports-related injury rates are not corrected for the number of participants, frequency, or duration of play.

Regina Qu'Appelle, Cypress, Five Hills, Sun Country, and Sunrise health regions each had a sports-related hospitalization rate much higher than the provincial rate of 68.9 hospitalizations per 100,000 population. Kelsey Trail Health Region had a rate higher than the provincial rate. Athabasca Health Authority and Prince Albert Parkland Health Region each had a rate similar to that of the provincial rate. Saskatoon, Heartland, Keewatin Yatthé, Mamawetan Churchill River, and Prairie North health regions each had a sports-related hospitalization rate much lower than the provincial rate.

Figure 4.2 Sports-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	76.86	46.74	91.86	124.01	52.27	78.80	114.03	110.12	70.38	41.83	25.52	48.41	69.42
Average # of Admissions	41.4	30.2	8.5	13.3	5.1	7.3	13.1	12.3	0.6	1.6	1.8	9.1	14.9

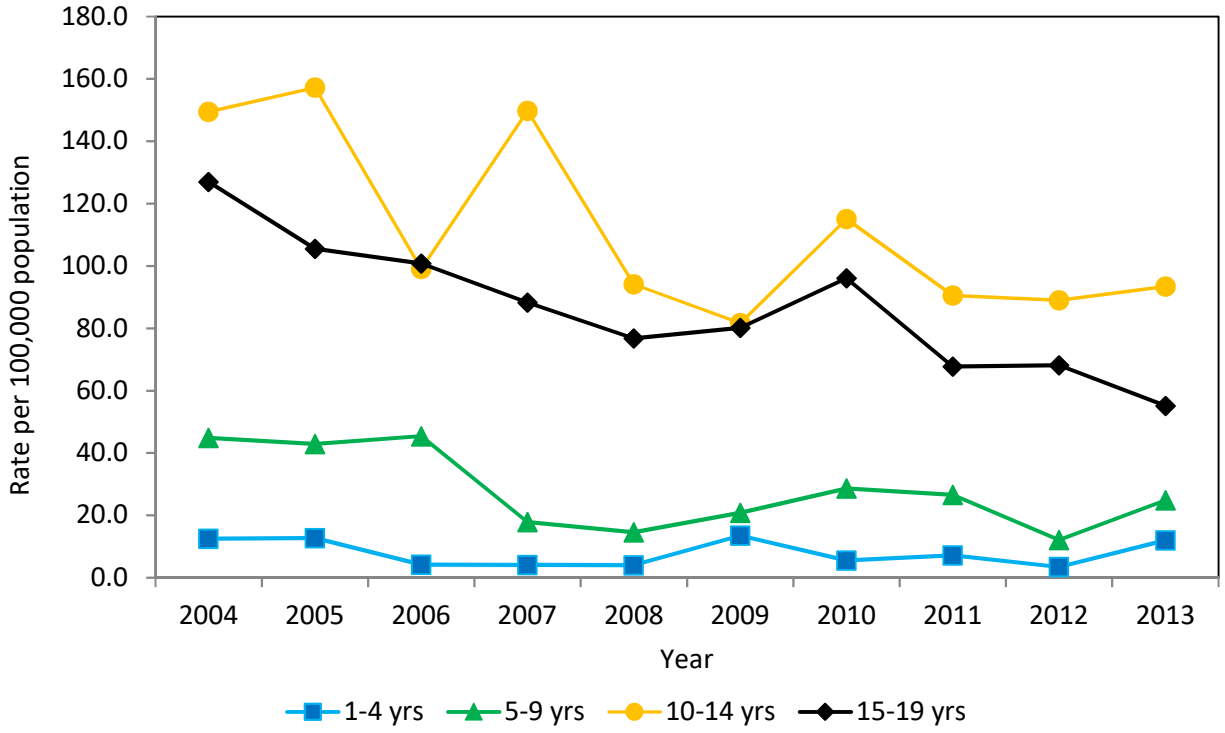
Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Sports-Related Hospitalizations by Age Group

Sports-related injuries were the leading cause of injury-related hospitalizations for children aged 10 to 14 years (20.4% of injury-related hospitalizations in this age group). Sports-related injuries were the third leading cause of injury-related hospitalizations for children aged 5 to 9 (6.2% of injury-related hospitalizations) and the fourth leading cause for youth aged 15 to 19 years (10.4% of injury-related hospitalizations). Not surprisingly, sports-related hospitalizations were much less common in children aged 1 to 4 years (1.4% of injury-related hospitalizations).

Sports-related hospitalization rates decreased over the 10 year period between 2004 and 2013 for each of the four age groups. The largest statistically significant decrease in sports-related hospitalizations was for children between 5 and 9 years of age (average decrease of 8.9% annually). Youth between 15 and 19 years had a statistically significantly average decrease of 7.1% annually, and youth between 10 and 14 years had a statistically significant average decrease of 6.3% annually. Children between 1 and 4 years of age had an average decrease of 2.4% annually.

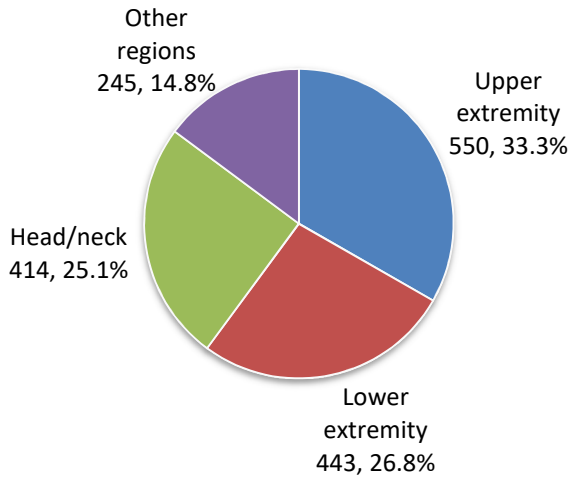
Figure 4.3 Sports-Related Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Sports-Related Hospitalizations by Body Part

The most commonly injured body part due to sports that resulted in hospitalization was the upper extremity (shoulders, arms, and hands). Upper extremity injuries were responsible for 33.3% of sports-related hospitalizations. This was followed by lower extremity (leg and foot) injuries accounting for 26.8%, and head/neck injuries accounting for 25.1% of sports-related hospitalizations. Other body parts, including those that were unspecified or unclassified, accounted for the remaining 14.8%.

Figure 4.4 Sports-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



Fractures accounted for the majority of upper extremity injuries (96.1%) and lower extremity injuries (90.1%) that resulted in hospitalization. The majority of head/neck injuries that resulted in hospitalization were classified as traumatic brain injuries (76.6%). Of these, 62.8% were concussions, 12.6% were internal head injuries, and 5.4% were fractures.

Note: Sports-related injury rates are not corrected for the number of participants, frequency, or duration of play.

Prevention Tips:

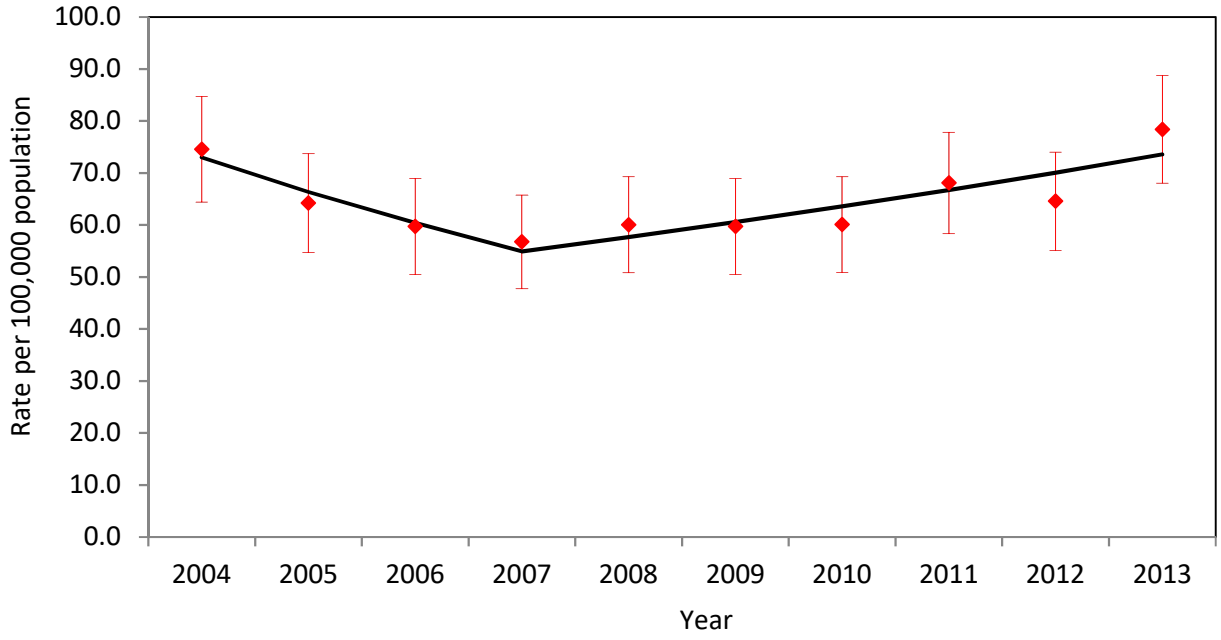
- Educate caregivers, coaches, and sports organizations about the importance of adequate adult supervision.
- Educate caregivers, coaches, and sports organizations about the proper use of protective gear (e.g., appropriate equipment for the activity, in good working order, fit to the child, worn properly every time).
- Educate caregivers, coaches, and children about proper techniques and safety rules to avoid injury.
- Encourage sport organizations to include concussion and first aid training in their education of referees and coaches.
- Ensure that sport surfaces are appropriate to the activity and maintained.

Intentional Self-Harm

This section discusses intentional self-harm as a cause of injury-related hospitalizations, type of self-harm, and intentional self-harm-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013.

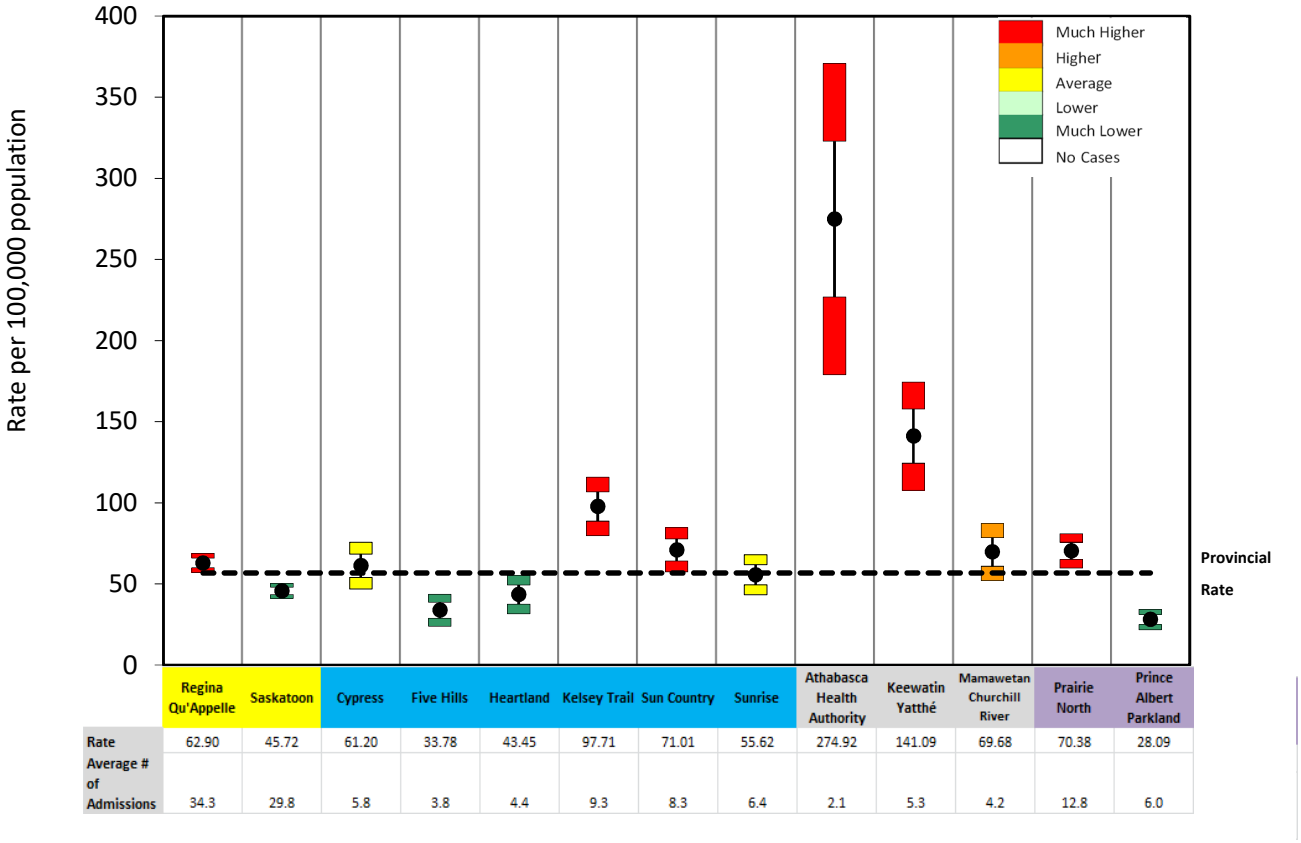
In Saskatchewan, intentional self-harm was the third leading cause of injury resulting in hospitalization. Intentional self-harm accounted for 8.2% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 136.4 hospitalizations per year). Over the 10 year period, there were two distinct trends in the intentional self-harm-related hospitalization rates. In the first trend, from 2004 to 2007, there was an average decrease of 9.1% annually for intentional self-harm-related hospitalizations. In the second trend, from 2008 to 2013, there was a statistically significant annual percentage increase of 5.0% each year. Over the entire 10 year period, there was a 0.8% average annual increase in the intentional self-harm-related hospitalization rates.

Figure 5.1 Intentional Self-Harm-Related Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Almost half of the health regions in Saskatchewan had an intentional self-harm-related hospitalization rate much higher than the provincial rate of 56.8 hospitalizations per 100,000 population. Regina/Qu'Appelle, Kelsey Trail, Sun Country, Athabasca, Keewatin Yatthé, and Prairie North health regions each had an intentional self-harm-related hospitalization rate much higher than the provincial rate. Mamawetan Churchill River Health Region had a rate higher than the provincial rate. The Cypress and Sunrise health regions each had a rate similar to the provincial rate. Saskatoon, Five Hills, Heartland, and Prince Albert Parkland health regions each had a rate much lower than the provincial rate.

Figure 5.2 Intentional Self-Harm-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	62.90	45.72	61.20	33.78	43.45	97.71	71.01	55.62	274.92	141.09	69.68	70.38	28.09
Average # of Admissions	34.3	29.8	5.8	3.8	4.4	9.3	8.3	6.4	2.1	5.3	4.2	12.8	6.0

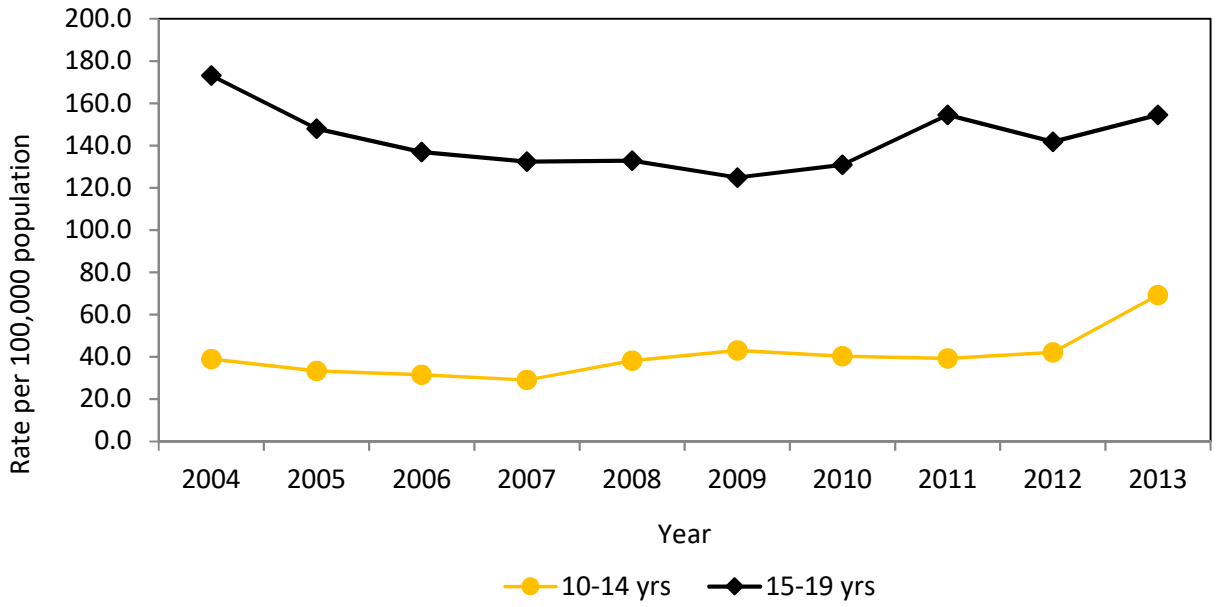
Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Intentional Self-Harm-Related Hospitalizations by Age Group

Intentional self-harm-related injuries were the leading cause of injury-related hospitalizations for youth aged 15 to 19 years (17.1% of injury-related hospitalizations for this age group), and the third leading cause of injury-related hospitalizations for youth aged 10 to 14 years (7.3% of injury-related hospitalizations). Youth aged 15 to 19 years had significantly higher hospitalization rates due to intentional self-harm than the other age groups, accounting for 79.4% of all child and youth self-harm-related injury hospitalizations between 2004 and 2013 (an average of 108.3 hospitalizations per year). Of those between 15 and 19 years who were hospitalized due to self-harm-related injuries, 72.9% were females, with an average of 78.9 hospitalizations per year. In the 10 to 14 age group, females were the majority (86.3%) of those hospitalized for self-harm-related injuries (average of 23.9 hospitalizations per year).

Due to the small numbers in the younger age groups, intentional self-harm-related hospitalization rates were only calculated for youth aged 10 to 14 years and those aged 15 to 19 years. Between 2004 and 2013, youth between 10 and 14 years of age experienced a statistically significant increase in the rate of self-harm-related hospitalizations with an average increase of 6.4% annually. Youth between 15 and 19 years of age had an average increase of 0.7% annually.

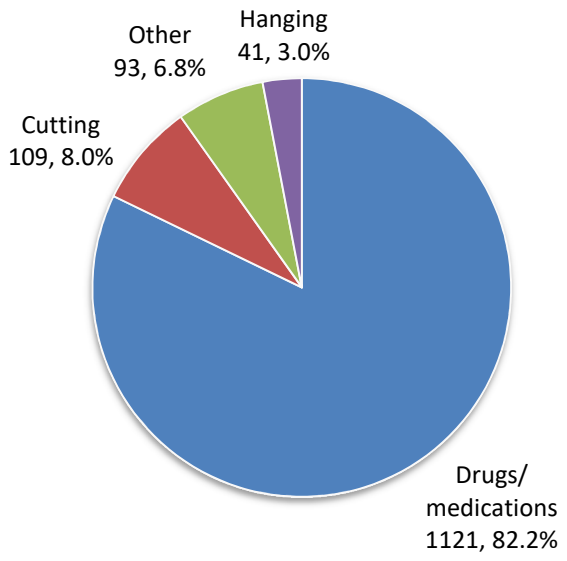
Figure 5.3 Intentional Self-Harm-Related Hospitalization Rates by Age Group, Saskatchewan, Age 10-19 years, 2004-2013



Intentional Self-Harm-Related Hospitalizations by Mechanism of Harm

In the majority of intentional self-harm-related hospitalizations, the body part affected was not specified. Instead, the mechanism by which self-harm was inflicted was recorded.

Figure 5.4 Intentional Self-Harm-Related Injury Hospitalizations by Mechanism of Harm, Saskatchewan, Under 20 Years of Age, 2004-2013



The majority of the self-harm-related hospitalizations were due to drugs/medication (82.2% of these hospitalizations), followed by cutting (8.0%), and hanging (3.0%). Other types of intentional self-injury (e.g., firearms, gases/vapour) accounted for the remaining 6.8% of self-harm-related hospitalizations.

Prevention Tips:

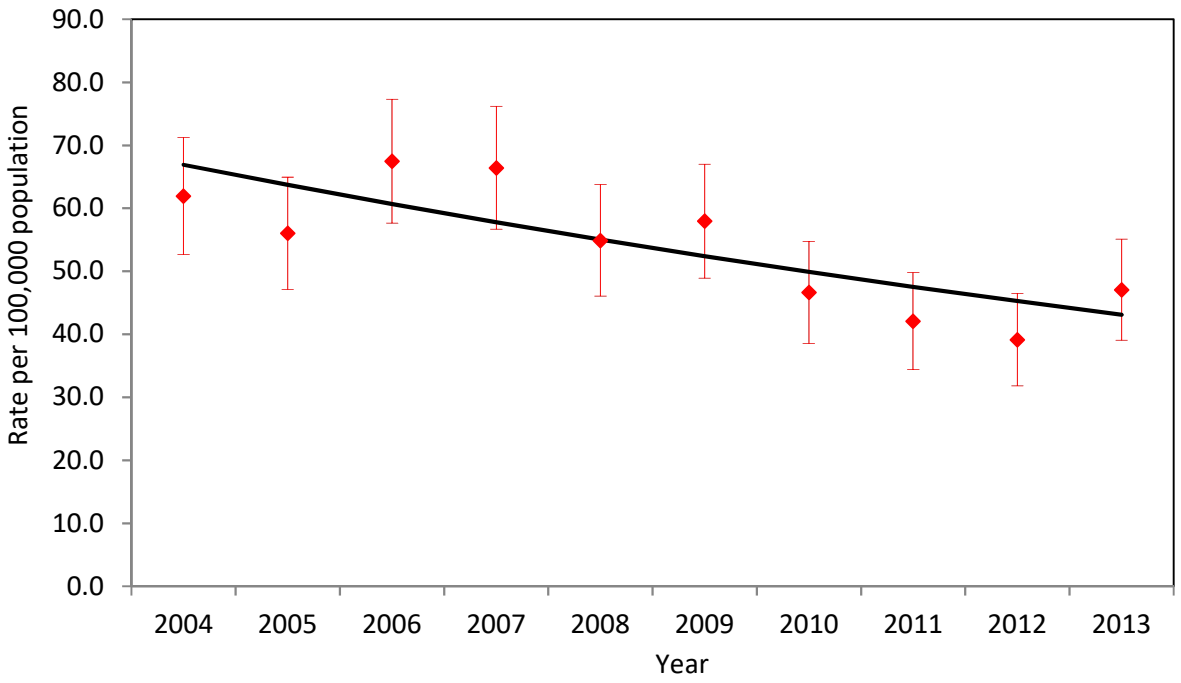
- Increase knowledge of how to recognize the warning signs of suicide and self-harm, and build skills to respond and seek support.
- Educate caregivers about the importance of limiting access to lethal medications and other mechanisms of self-harm.
- Educate children and youth about the availability of the Kids Help Line (1-800-668-6868) and other support services.
- Provide opportunities for children and youth to learn and build healthy coping skills and express their feelings in healthy ways.
- Consider partnering with organizations like the Canadian Mental Health Association (CMHA) to support efforts to prevent suicide at the community level.

Assault

This section discusses assault as a cause of injury-related hospitalizations, body parts injured due to assault, and assault-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013.

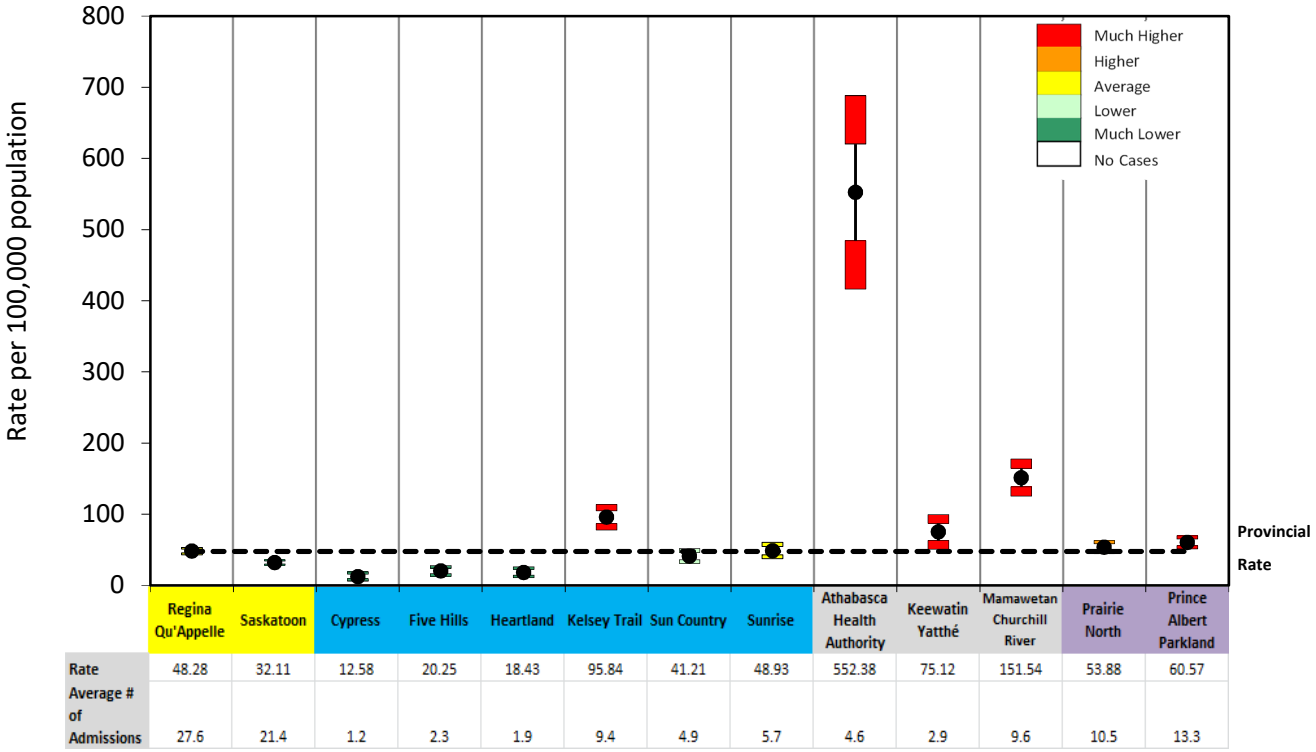
In Saskatchewan, assault was the fourth leading cause of injury resulting in hospitalization. Assaults were responsible for 7.1% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 118.2 hospitalizations per year). Over the 10 year period, there was a statistically significant average decrease of 4.8% annually in the rate of hospitalizations due to assault-related injuries.

Figure 6.1 Assault-Related Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Kelsey Trail, Athabasca, Keewatin Yatthé, Mamawetan Churchill River, and Prince Albert Parkland health regions each had an assault-related hospitalization rate much higher than the provincial rate of 47.7 hospitalizations per 100,000 population. Prairie North Health Region had a rate higher than the provincial rate. Regina Qu'Appelle and Sunrise health regions had rates similar to the provincial rate. Sun Country Health Region had a rate lower than the provincial rate, and Saskatoon, Cypress, Five Hills, and Heartland health regions each had a rate much lower than the provincial rate.

Figure 6.2 Assault-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	48.28	32.11	12.58	20.25	18.43	95.84	41.21	48.93	552.38	75.12	151.54	53.88	60.57
Average # of Admissions	27.6	21.4	1.2	2.3	1.9	9.4	4.9	5.7	4.6	2.9	9.6	10.5	13.3

Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

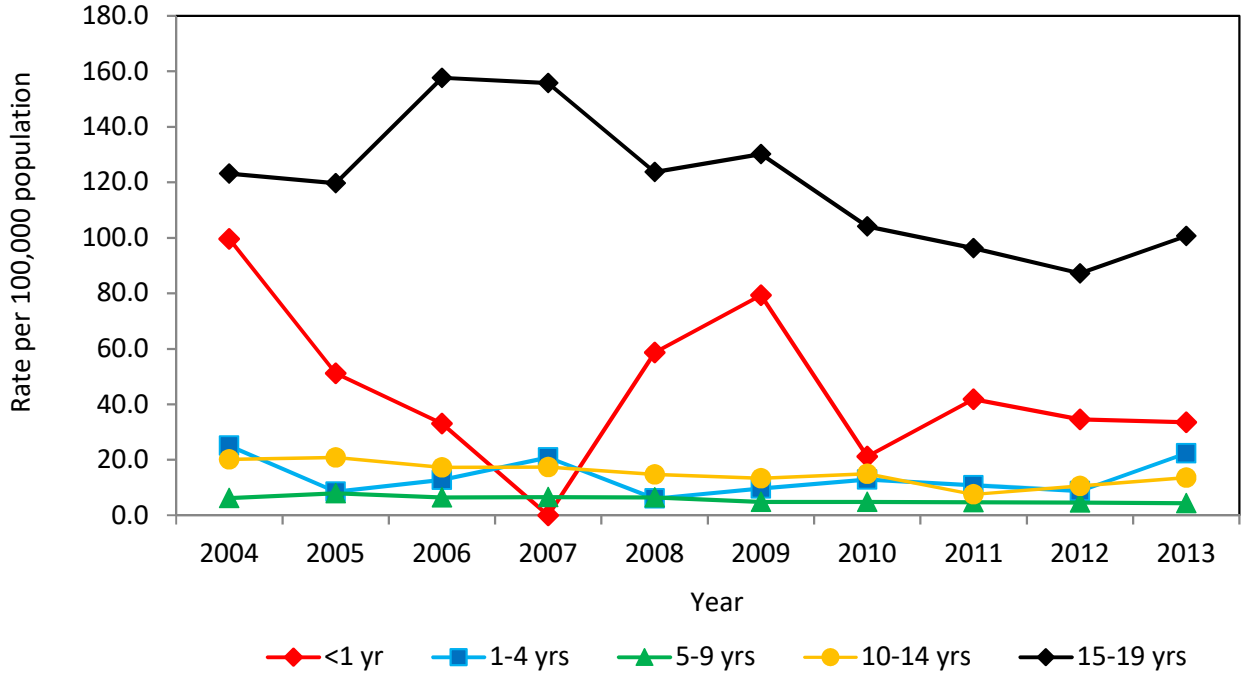
Assault-Related Hospitalizations by Age Group

For two of the five age groups covered in this report, assault was the second leading cause of injury-related hospitalizations. More specifically, assault was the second leading cause of injury-related hospitalization for youth aged 15 to 19 years (14.4% of injury-related hospitalizations in this age group), and children under the age of 1 (9.6% of injury-related hospitalizations). Assault was the fifth leading cause of injury-related hospitalizations for children aged 1 to 4 years (2.4%), the ninth leading cause for youth aged 10 to 14 years (2.7%), and the tenth leading cause of injury-related hospitalizations for children aged 5 to 9 years (1.3%).

Youth aged 15 to 19 years had significantly higher hospitalization rates due to assault than the other age groups, accounting for 77.1% of assault-related injury hospitalizations between 2004 and 2013 (an average of 91.1 hospitalizations per year). Of those between 15 and 19 years of age who were hospitalized due to assault-related injuries, 81.5% were males, who had an average of 74.3 hospitalizations per year.

Over the 10 year period between 2004 and 2013, assault-related hospitalization rates decreased for each of the age groups. The largest decrease was for infants less than 1 year of age, with an average decrease of 9.0% annually. Youth between 10 and 14 years of age had an average decrease of 7.0% annually. Children between 5 and 9 years of age had an average decrease of 5.9% annually. Youth between 15 and 19 years had an average decrease of 4.5% annually, and toddlers between 1 and 4 years of age had an average decrease of 2.0% annually.

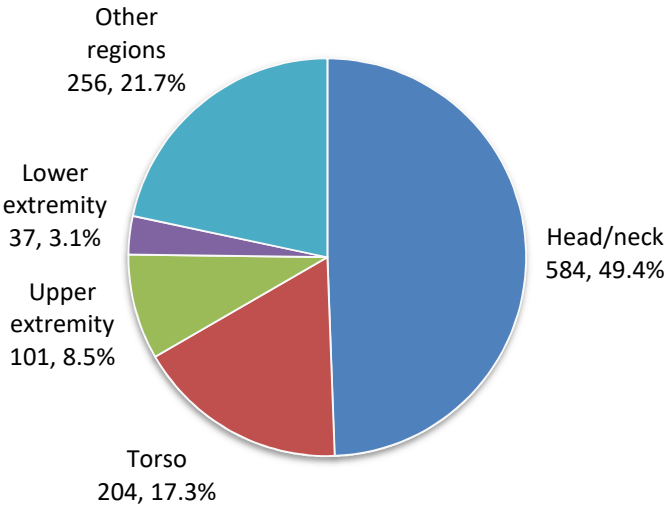
Figure 6.3 Assault-Related Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Assault-Related Hospitalizations by Body Part

The most commonly injured body part due to assault that resulted in hospitalization was the head/neck. Head/neck injuries were responsible for 49.4% of assault-related hospitalizations. This was followed by torso injuries accounting for 17.3%, upper extremity (shoulders, arms, and hands) injuries accounting for 8.5%, and lower extremity (leg and foot) injuries accounting for 3.1% of assault-related hospitalizations. Other body parts, including those that were unspecified or unclassified, accounted for the remaining 21.7%.

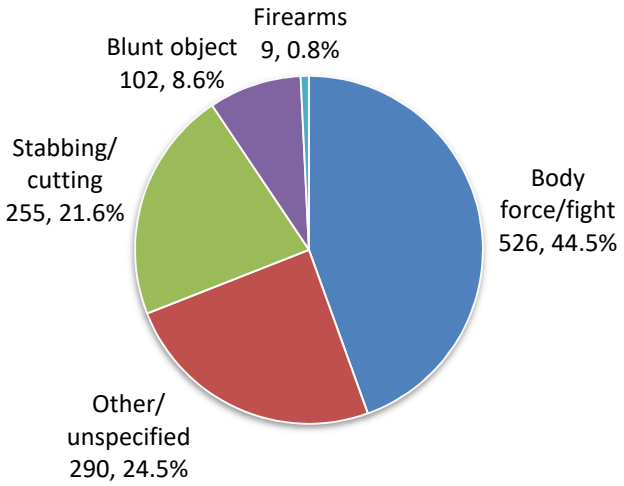
Figure 6.4 Assault-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



The majority of head/neck injuries due to assault that resulted in hospitalization were classified as other head/neck injuries (59.9%), with the majority of these being fractures (e.g., jaw fractures). The remaining 40.1% of head/neck injuries due to assault were classified as traumatic brain injuries, including internal head injuries (35.0% of traumatic brain injuries), concussions (21.8%), and fractures (12.8%). Torso injuries included injuries to the abdomen, lower back, pelvis, and intrathoracic organs (e.g., lungs). Fractures were the most common upper extremity injuries (46.5%) and lower extremity injuries (67.6%) that resulted in assault-related injury hospitalization.

Assault-Related Hospitalizations by Mechanism of Injury

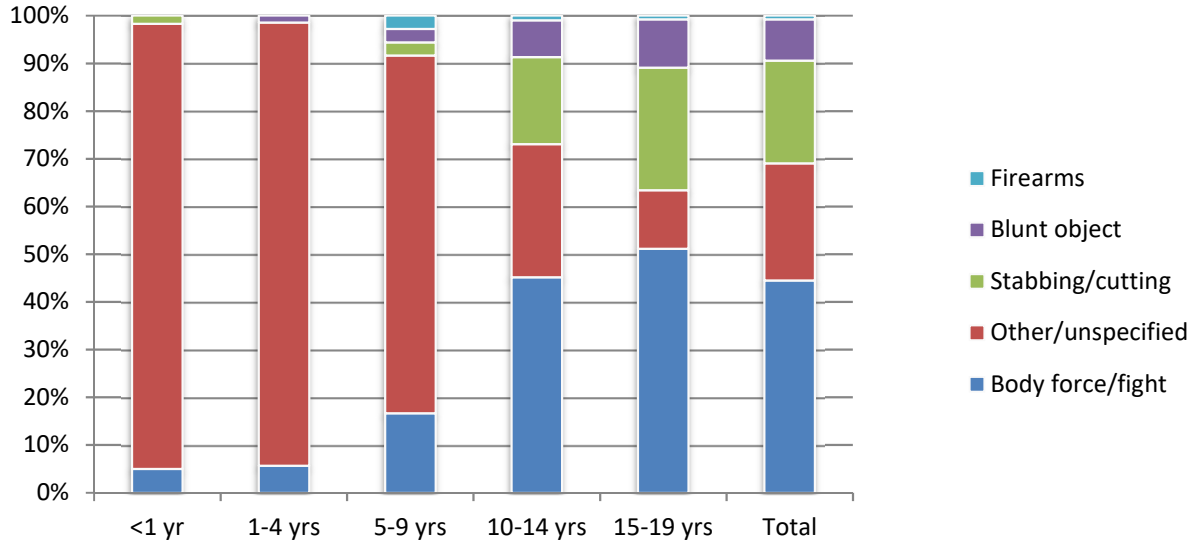
Figure 6.5 Assault-Related Injury Hospitalizations by Mechanism of Injury, Saskatchewan, Under 20 Years of Age, 2004-2013



When the type of assault was examined across the five age groups, the most common assault-related hospitalizations were due to body force/fighting (44.5% of assault-related hospitalizations). Other types of assault accounted for 24.5% of assault-related hospitalizations, including sexual assault; neglect, abandonment, and maltreatment; assault by other means; and unspecified types of assaults. Stabbing/cutting accounted for 21.6%, assault with a blunt object accounted for 8.6%, and firearms accounted for 0.8% of assault-related hospitalizations.

The type of assault-related injury differed between the age groups. For infants less than 1 year of age, all of the "other/unspecified" assaults were due to neglect, abandonment, and maltreatment (accounting for 93.3% of assault-related hospitalizations). For children between 1 and 4 years of age, 78.9% of "other/unspecified" assault-related hospitalizations were due to neglect, abandonment, and maltreatment. For youth aged 10 to 14 years and youth aged 15 to 19 years, body force/fighting was the main type of assault resulting in injury-related hospitalization (45.2% and 51.2% respectively for the age groups).

Figure 6.6 Assault-Related Injury Hospitalizations by Mechanism and Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Prevention Tips

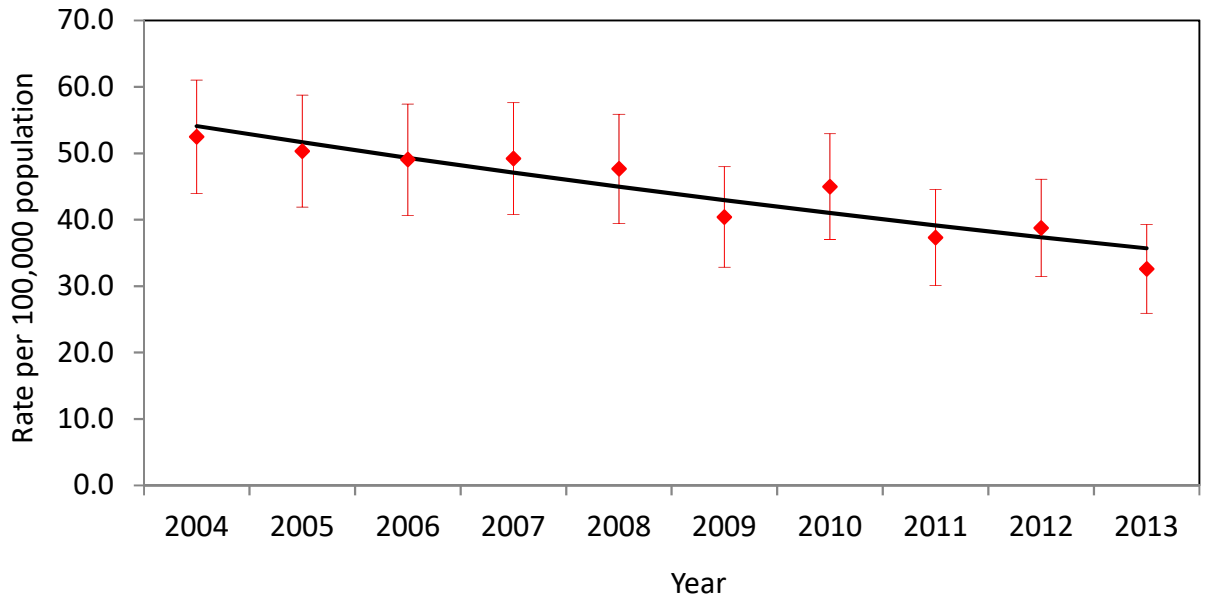
- Provide opportunities for children and youth to learn and build healthy coping skills and express their feelings in healthy ways.
- Educate children and youth about the availability of the Kids Help Line (1-800-668-6868) and other support services.
- Educate children and youth about their rights (see http://www.everychild.ca/uncrc).
- Encourage open and honest discussions about child abuse, bullying, and family violence in communities, schools, and at home. Discuss the warning signs of each and how to access support.
- Encourage community-based and school-based bullying and abuse prevention programs.
- Report all cases of suspected child abuse. Refer to the Saskatchewan Child Abuse Protocol (see http://www.publications.gov.sk.ca/deplist.cfm?d=17&c=3907). Understand your duty to report. You do not have to have proof of the abuse. Suspicion is sufficient.
- Educate caregivers about the importance of creating safety plans with children so that they know who to go to if they feel unsafe.
- Encourage all child-focused organizations, including sport and recreation organizations, to require criminal record checks, including checks with the vulnerable sector for all individuals who are volunteers or in their employ.

Unintentional Poisoning

This section discusses unintentional poisoning as a cause of injury-related hospitalizations, mechanisms of unintentional poisoning, and unintentional poison-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013.

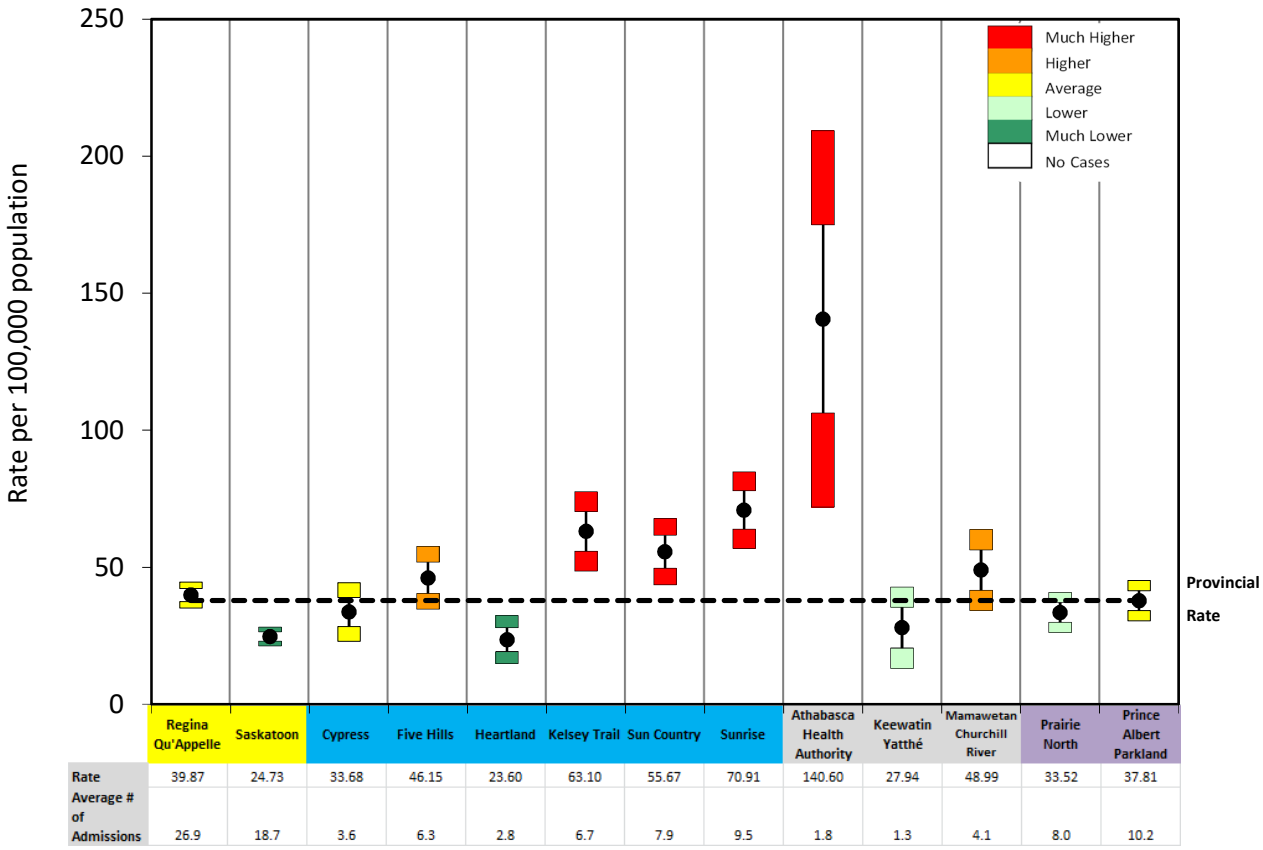
In Saskatchewan, unintentional poisoning was the fifth leading cause of injury resulting in hospitalization. Unintentional poisoning was responsible for 6.7% of all injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 111.3 hospitalizations per year). Over the 10 year period, there was a statistically significant average decrease of 4.5% annually in the rate of hospitalizations due to unintentional poisoning.

Figure 7.1 Unintentional Poisoning Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Kelsey Trail, Sun Country, Sunrise, and Athabasca health regions each had an unintentional poisoning-related hospitalization rate much higher than the provincial rate of 37.9 hospitalizations per 100,000 population. Five Hills and Mamawetan Churchill River health regions each had a rate higher than the provincial rate. Regina Qu'Appelle, Cypress, and Prince Albert Parkland health regions each had a rate similar to the provincial rate. Keewatin Yatthé and Prairie North health regions each had a rate lower than the provincial rate. Saskatoon and Heartland health regions had a rate much lower than the provincial rate.

Figure 7.2 Unintentional Poisoning Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



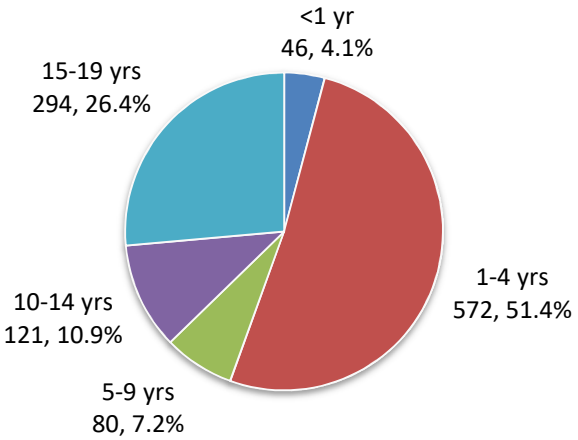
	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	39.87	24.73	33.68	46.15	23.60	63.10	55.67	70.91	140.60	27.94	48.99	33.52	37.81
Average # of Admissions	26.9	18.7	3.6	6.3	2.8	6.7	7.9	9.5	1.8	1.3	4.1	8.0	10.2

Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Unintentional Poisoning-Related Hospitalizations by Age Group

Unintentional poisoning was the second leading cause of injury-related hospitalizations for children aged 1 to 4 years (19.2% of injury-related hospitalizations in this age group). Unintentional poisoning was the third leading cause of injury-related hospitalization for infants under 1 year of age (7.4%), the sixth leading cause for children aged 5 to 9 years (2.8%) and youth aged 15 to 19 years (4.7%), and the seventh leading cause of injury-related hospitalizations for youth aged 10 to 14 years (3.2%).

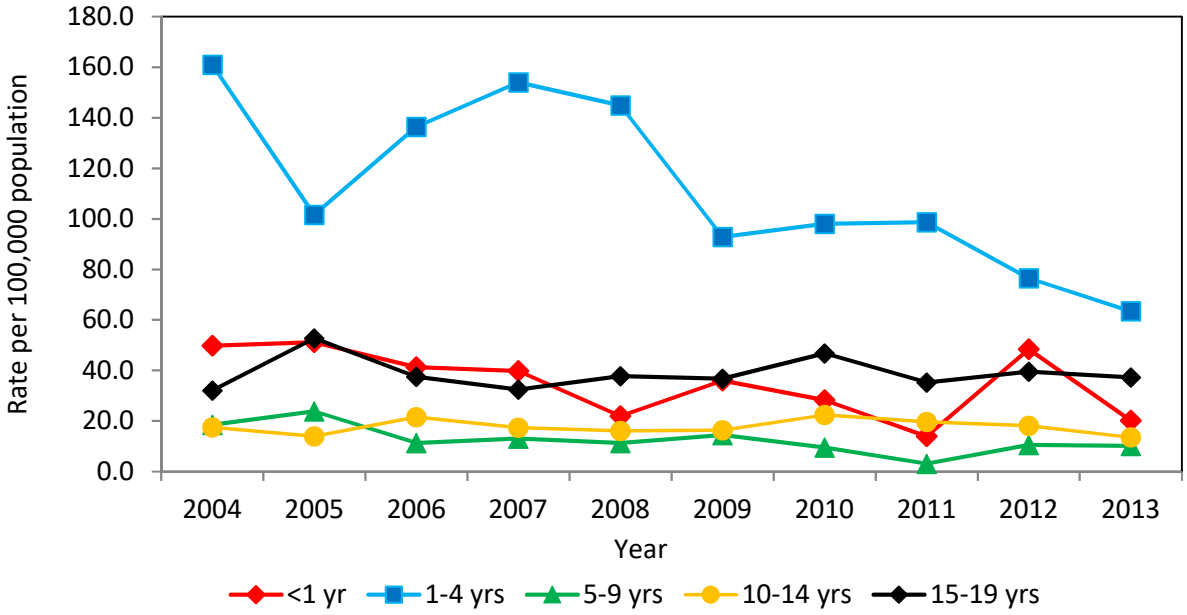
Figure 7.3 Proportion of Unintentional Poisoning-Related Hospitalizations by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Between 2004 and 2013, children aged 1 to 4 years accounted for the majority of unintentional poisoning-related hospitalizations (51.4%), followed by youth aged 15 to 19 years (26.4%) and youth aged 10 to 14 years (10.9%).

With the exception of youth between the ages of 10 and 14, each age group experienced a decrease in unintentional poisoning-related hospitalization rates between 2004 and 2013. Youth between 10 and 14 years of age had an increase of 0.1% annually. The largest statistically significant decrease in unintentional poisoning-related hospitalizations was for children between 5 and 9 years of age (average decrease of 9.2% annually). Children between 1 and 4 years of age had a statistically significant average decrease of 8.0% annually. Infants less than 1 year of age had an average decrease of 5.9% annually, and youth between 15 and 19 years of age had an average decrease of 0.5% annually.

Figure 7.4 Unintentional Poisoning Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Unintentional Poisoning-Related Hospitalizations by Mechanism of Poisoning[4]

The majority of the unintentional poisoning-related hospitalizations were due to ingestion of drugs/medications (76.7%), followed by alcohol (5.8%), other gas/vapours (2.2%), organic solvents (2.0%), and pesticides (0.8%). The remaining unintentional poisoning-related hospitalizations (12.5%) were either unspecified or were categorized as “other”.

[4] This section was updated on January 15, 2018.

Table 7.1 Proportion of Unintentional Poisoning-Related Hospitalizations by Mechanism, Saskatchewan, Under 20 Years of Age, 2004-2013

Mechanism of Unintentional Poisoning	Count	%
Drugs/medications	854	76.7%
Alcohol	64	5.8%
Gas/vapours	25	2.2%
Organic solvents (including petroleum)	22	2.0%
Pesticides	9	0.8%
Other/unspecified	139	12.5%
Total	1113	100%

Prevention Tips

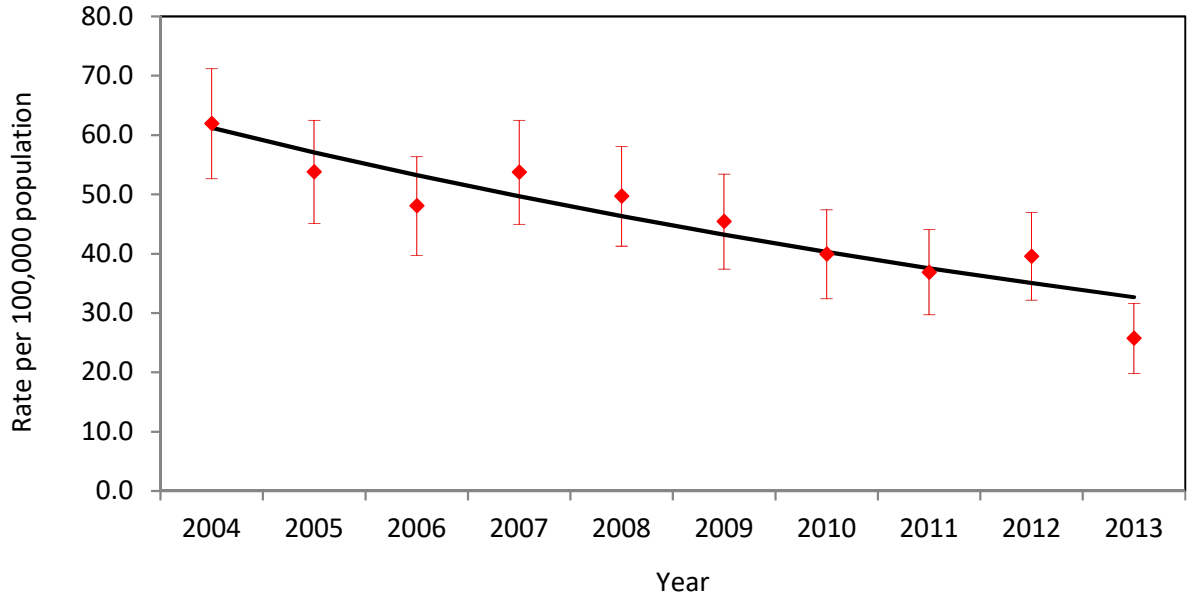
- Educate caregivers about potential poisons in and around the home (e.g., medications, cleaning products, pesticides, products that contain alcohol, certain plants, cosmetics, soaps, detergents).
- Educate caregivers about how to deal with poisons in the home such as using proper labelling, keeping them out of sight and reach of children, and storing them in a locked cabinet.
- Educate caregivers about the importance of adequate adult supervision.
- Educate children about the dangers of poisons and what warning labels mean so that they can identify hazardous substances.
- Promote the availability of the Saskatchewan Poison Control Centre (1-866-454-1212).
- Be aware of emerging poison hazards (e.g., e-cigarettes, laundry pods).

Motor Vehicle Occupant

This section discusses motor vehicle occupant injuries as a cause of injury-related hospitalizations, body parts injured, and motor vehicle occupant-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013.

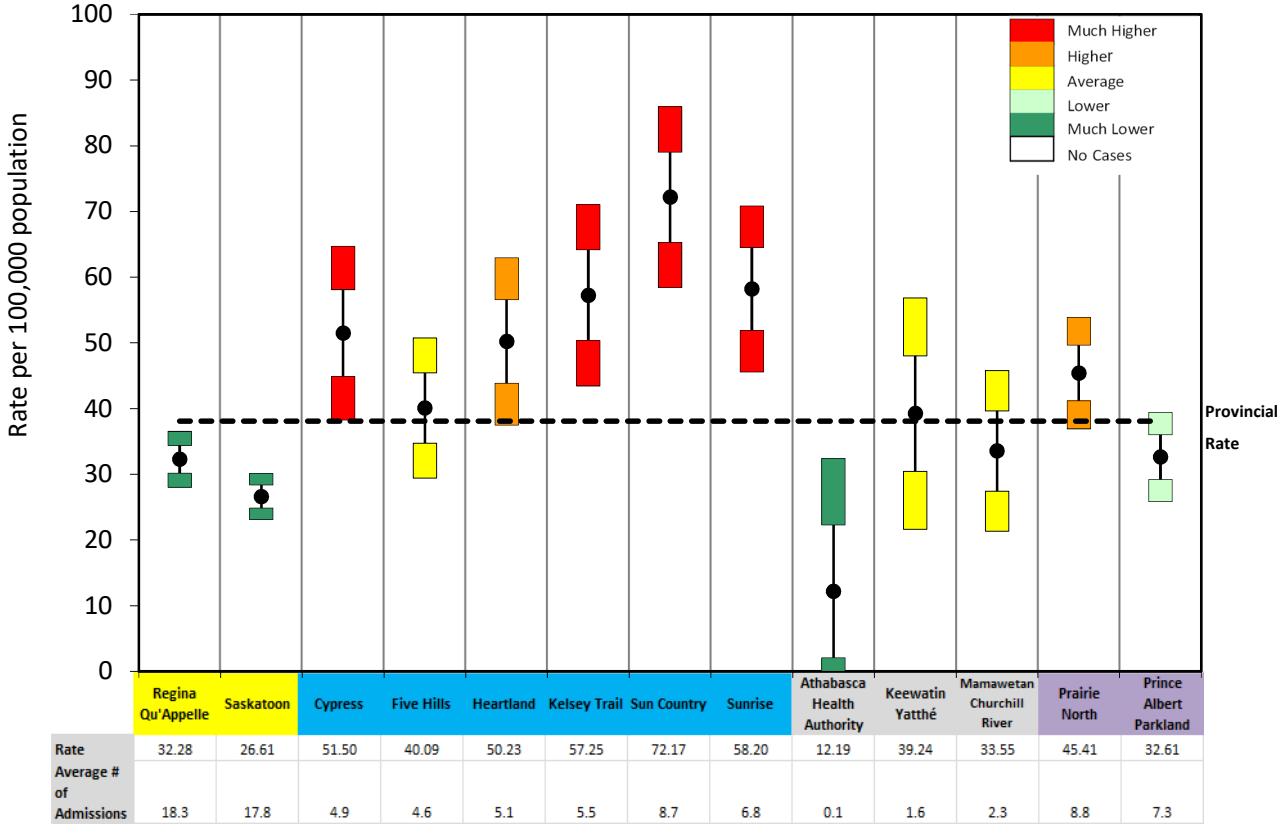
In Saskatchewan, motor vehicle occupant injuries were the seventh leading cause of injury resulting in hospitalization. Motor vehicle occupant injuries were responsible for 6.0% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 99.1 hospitalizations per year). Over the 10 year period, there was a statistically significant average decrease of 6.7% annually in the rate of hospitalizations due to motor vehicle occupant injuries.

Figure 8.1 Motor Vehicle Occupant-Related Injury Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-standardized



Cypress, Kelsey Trail, Sun County, and Sunrise health regions each had a motor vehicle occupant-related hospitalization rate much higher than the provincial rate of 38.1 hospitalizations per 100,000 population. Heartland and Prairie North health regions each had a rate higher than the provincial rate. Five Hills, Keeewatin Yatthé, and Mamawetan Churchill River health regions each had a rate similar to the provincial rate. Prince Albert Parkland Health Region had a rate lower than the provincial rate. Regina Qu'Appelle, Saskatoon, and Athabasca health regions each had a rate much lower than the provincial rate.

Figure 8.2 Motor Vehicle Occupant-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	32.28	26.61	51.50	40.09	50.23	57.25	72.17	58.20	12.19	39.24	33.55	45.41	32.61
Average # of Admissions	18.3	17.8	4.9	4.6	5.1	5.5	8.7	6.8	0.1	1.6	2.3	8.8	7.3

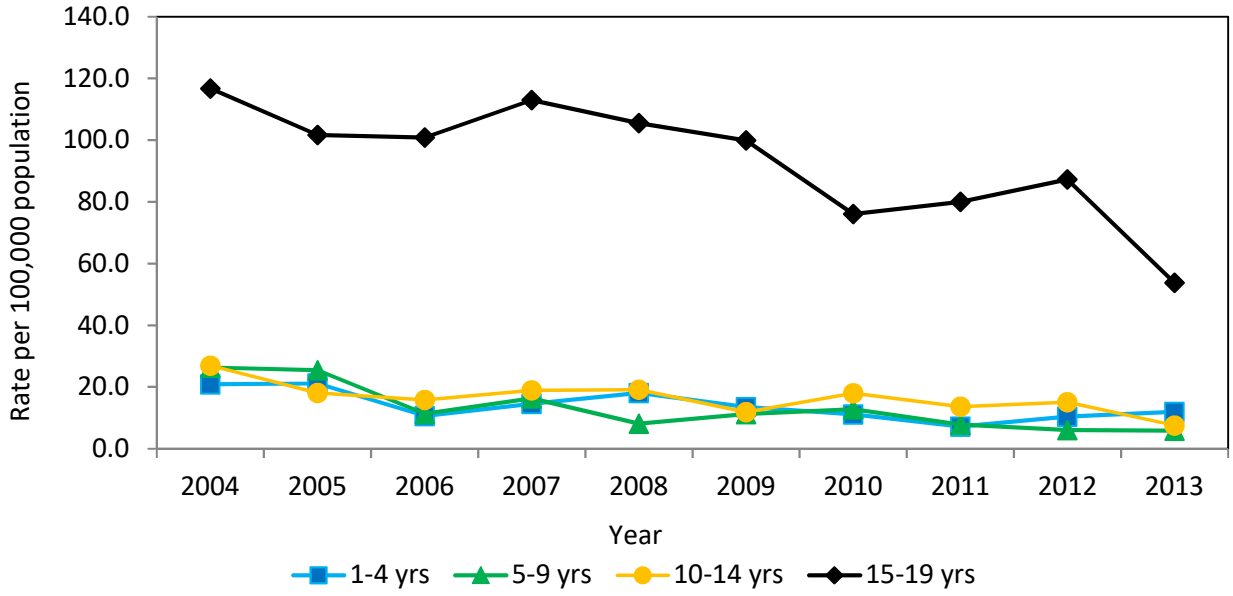
Notes: Large confidence intervals for Athabasca Health Authority are due to the small number of motor vehicle occupant-related hospitalizations.
Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Motor Vehicle Occupant-Related Hospitalizations by Age Group

Motor vehicle occupant injuries were the third leading cause of injury-related hospitalizations for youth aged 15 to 19 years (11.3% of injury-related hospitalizations in this age group) and the fifth leading cause of injury-related hospitalizations for children aged 5 to 9 years (2.9% of injury-related hospitalizations) and children aged 1 to 4 years (2.4% of injury-related hospitalizations). Motor vehicle occupant-related injuries accounted for 3.0% of injury-related hospitalizations in youth aged 10 to 14 years and for 1.9% of injury-related hospitalizations for infants less than 1 year of age.

Youth between 15 and 19 years of age experienced significantly higher rates of motor vehicle occupant-related hospitalizations than the other age groups. Between 2004 and 2013, this age group had a statistically significant average decrease of 5.4% annually. The largest statistically significant decrease in motor vehicle occupant-related hospitalizations was for children between 5 and 9 years of age (average decrease of 15.4% annually). Children between 1 and 4 years of age had a statistically significant average decrease of 7.7% annually. Youth between 10 and 14 years of age had an average decrease of 7.5% annually. For three of the 10 years covered in this report, there were no infants less than 1 year of age hospitalized due to a motor vehicle occupant-related injury.

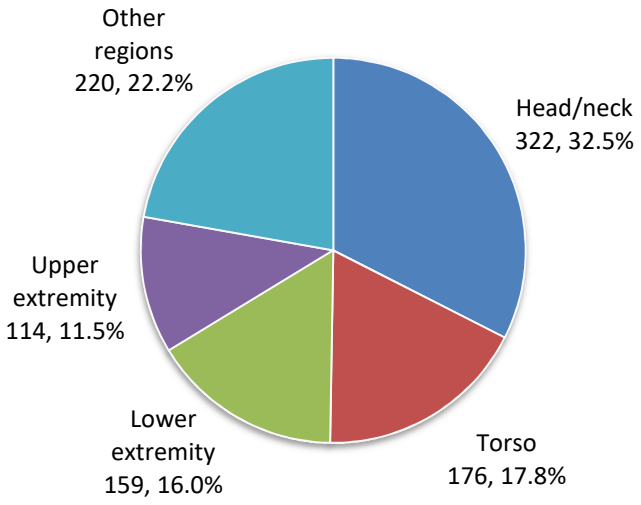
Figure 8.3 Motor Vehicle Occupant-Related Injury Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Motor Vehicle Occupant-Related Hospitalizations by Body Part

The most commonly injured body part in motor vehicle occupant-related hospitalizations was the head/neck (32.5% of motor vehicle occupant-related injuries resulting in hospitalization). This was followed by lower torso injuries which accounted for 17.8%, lower extremity (leg and foot) injuries accounting for 16.0%, and upper extremity (shoulders, arms, and hands) injuries accounting for 11.5% of motor vehicle occupant-related hospitalizations. Other body parts, including those that were unspecified or unclassified, accounted for the remaining 22.2%.

Figure 8.4 Motor Vehicle Occupant-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



The majority of the head/neck injuries were classified as traumatic brain injuries (79.8%). Of these, 36.2% were internal brain injuries, 25.7% were concussions, 17.1% were open wounds, and 8.6% were skull/facial bone fractures. Of the torso body part injuries, 25.0% were intrathoracic (mainly to the lungs) and 22.7% were injuries to the intra-abdominal organs (e.g., spleen, gallbladder, pancreas, stomach, and intestines). The majority of the upper and lower extremity injuries were fractures (78.9% and 77.4% respectively).

Prevention Tips

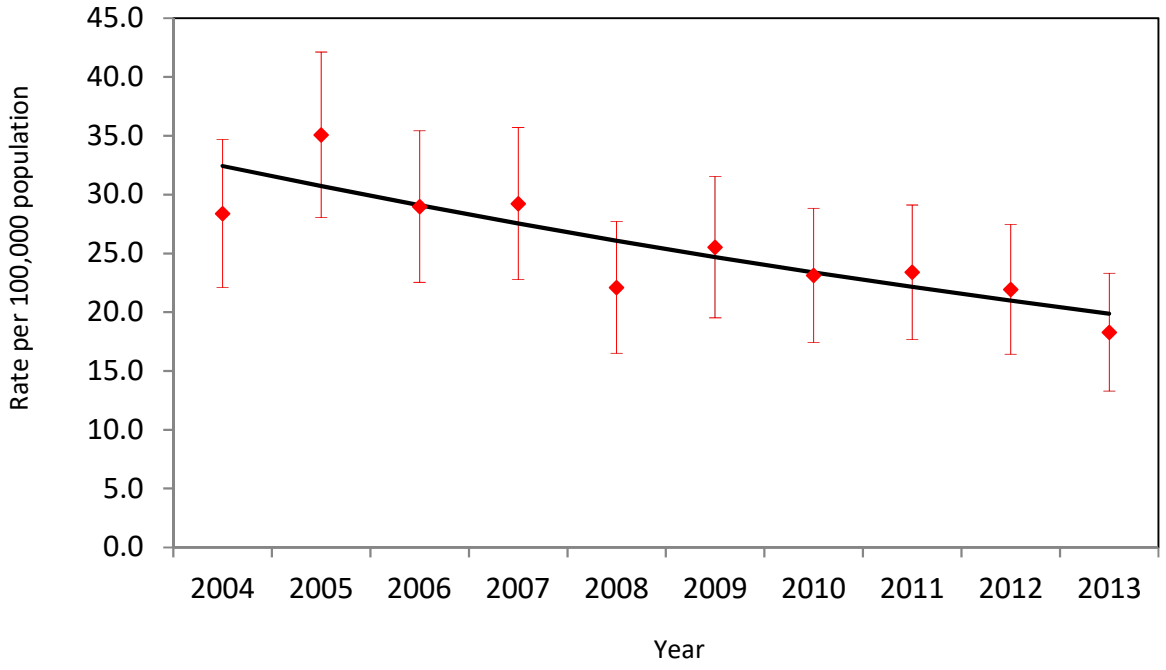
- Promote the proper use of appropriate child restraint systems, including car seats, booster seats, and seat belts at the appropriate ages and body size.
- Increase awareness of the availability of free Car Seat Technician training in the province of Saskatchewan. Offer training updates to ensure new information is being shared.
- Encourage appropriate coverage for child restraint systems through programs such as social assistance.
- Build a strong network of child passenger safety stakeholders (city police, fire, emergency response, healthcare providers, child care workers, social services, and RCMP).
- Work to increase seat belt use among young drivers.
- Continue to educate all drivers about the dangers of impaired driving and distracted driving, with an emphasis on young and/or new drivers.

Cycling, Traffic and Non-Traffic

This section discusses cycling as a cause of injury-related hospitalizations, body parts injured due to cycling, and cycling-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004-2013. The cycling-related injuries discussed in this section include both traffic and non-traffic incidents.

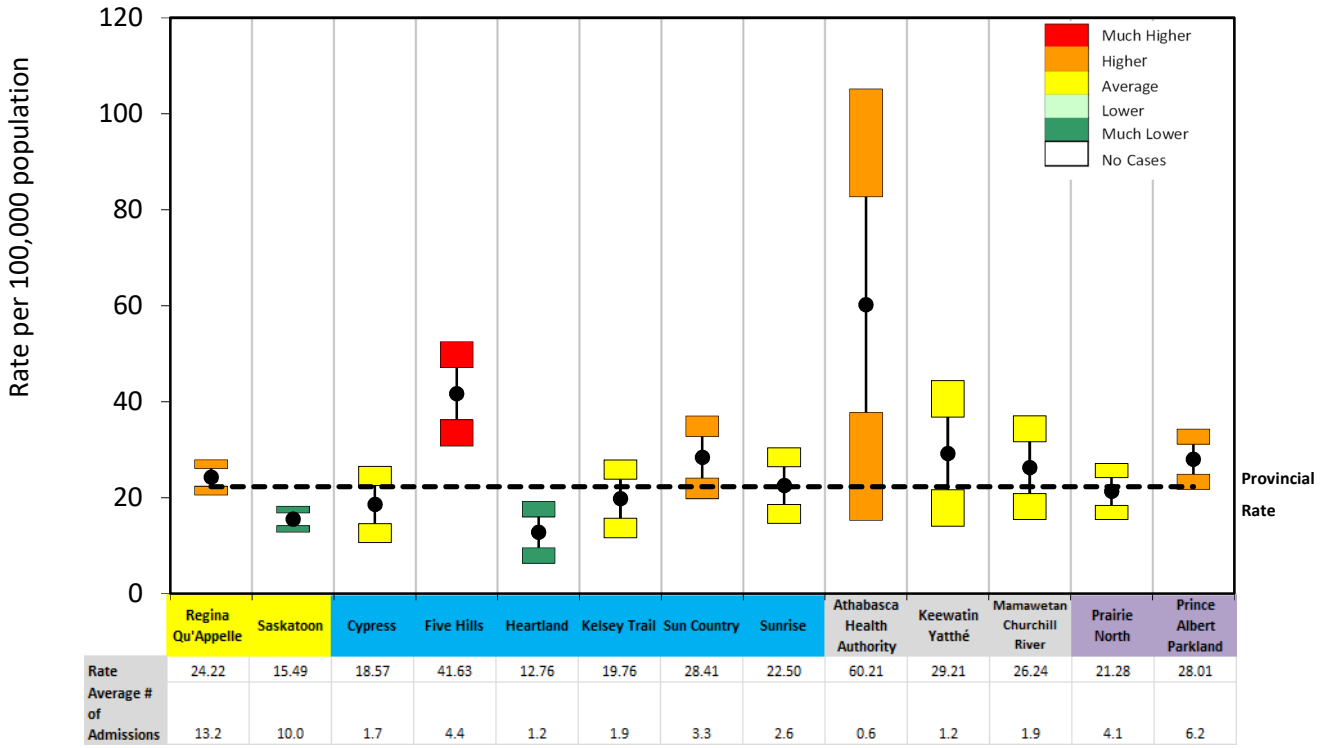
In Saskatchewan, cycling was the eighth leading cause of injury resulting in hospitalization. It was responsible for 3.3% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 53.9 hospitalizations per year). Of these injuries, 86.1% were non-traffic and included falling off of a bicycle or striking a stationary object. The remaining 13.9% of cycling-related hospitalizations were due to children being struck by a motor vehicle. Over the 10 year period, there was a statistically significant average decrease of 5.3% annually in the rate of hospitalizations due to cycling-related injuries.

Figure 9.1 Cycling-Related Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Almost half of the health regions in Saskatchewan had a cycling-related injury hospitalization rate similar to the provincial rate of 22.3 hospitalizations per 100,000 population. Cypress, Kelsey Trail, Sunrise, Keewatin Yatthé, Mamawetan Churchill River, and Prairie North health regions each had a cycling-related injury hospitalization rate similar to the provincial rate. Five Hills Health Region had a cycling-related hospitalization rate much higher than the provincial rate. Regina Qu'Appelle, Sun Country, Athabasca, and Prince Albert Parkland heath regions each had a cycling-related hospitalization rate higher than the provincial rate. Saskatoon and Heartland health regions each had a rate much lower than the provincial rate.

Figure 9.2 Cycling-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	24.22	15.49	18.57	41.63	12.76	19.76	28.41	22.50	60.21	29.21	26.24	21.28	28.01
Average # of Admissions	13.2	10.0	1.7	4.4	1.2	1.9	3.3	2.6	0.6	1.2	1.9	4.1	6.2

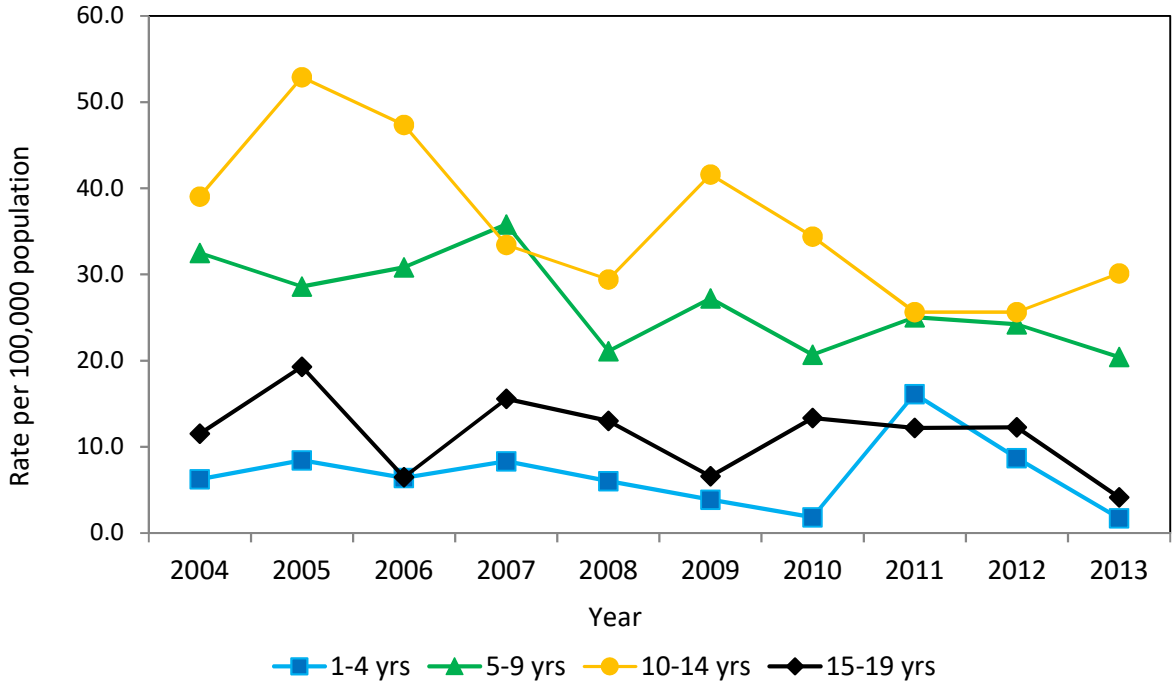
Notes: Large confidence intervals for Athabasca Health Authority are due to the small number of cycling-related hospitalizations.
Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Cycling-Related Hospitalizations by Age Group

For children aged 5 to 9 years and youth aged 10 to 14 years, cycling was the fourth leading cause of injury-related hospitalizations. Cycling-related injuries were responsible for 5.9% of injury-related hospitalizations for 5 to 9 year olds and 6.5% of injury-related hospitalizations for 10 to 14 year olds between 2004 and 2013. Cycling-related injuries were the tenth leading cause of injury-related hospitalizations for 1 to 4 year olds (1.2%) and for 15 to 19 year olds (1.4%).

Cycling-related hospitalization rates decreased over the 10 year period between 2004 and 2013, except for children aged 1 to 4 years. This age group experienced an average increase of 4.3% annually. The largest statistically significant decrease in cycling-related hospitalizations was for youth between 10 and 14 years of age (average decrease of 6.1% annually). Children between 5 and 9 years had a statistically significant average decrease of 4.6% annually, and youth between 15 and 19 years of age had an average decrease of 4.8% annually.

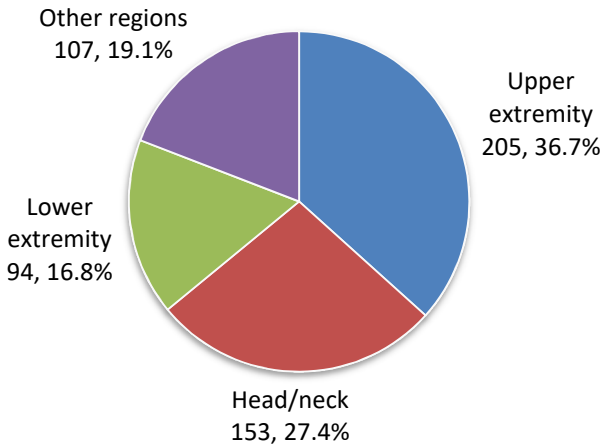
Figure 9.3 Cycling-Related Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Cycling-Related Hospitalizations by Body Part

The most commonly injured body part due to cycling that resulted in hospitalization was the upper extremity (shoulders, arms, and hands). Upper extremity injuries were responsible for 36.7% of cycling-related hospitalizations. This was followed by head/neck injuries accounting for 27.4%, and lower extremity injuries (leg and foot) accounting for 16.8% of cycling-related injuries. Other body parts, including those that were unspecified or unclassified, accounted for the remaining 19.1%.

Figure 9.4 Cycling-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



Fractures accounted for the majority of upper extremity injuries (94.1%) and lower extremity injuries (81.9%) that resulted in hospitalization. The majority of head/neck injuries that resulted in hospitalization were classified as traumatic brain injuries (86.9%). Of these, 51.1% were concussions, 15.8% were internal head injuries, and 9.8% were open wounds.

Prevention Tips

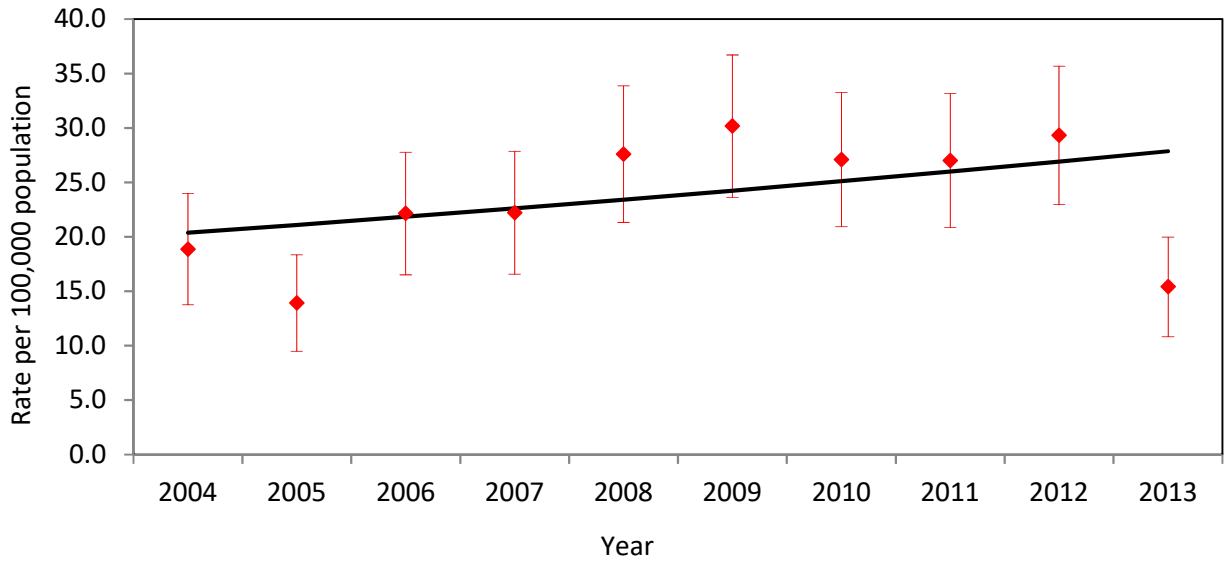
- Encourage bicycle helmet use for all ages on every ride.
- Encourage adults to act as role models for children in regards to helmet use and safe cycling.
- Teach children and youth the rules of the road (e.g., hand signals for turning).
- Teach children bicycle riding skills.

All-Terrain Vehicle (ATV), Non-Traffic

This section discusses non-traffic ATV injuries as a cause of injury-related hospitalizations, body parts injured, and non-traffic ATV-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013. For the purposes of this report, ATV refers to all-terrain vehicles, off-road vehicles, and dirt bikes, and includes incidents that occurred in a place other than a highway or road.

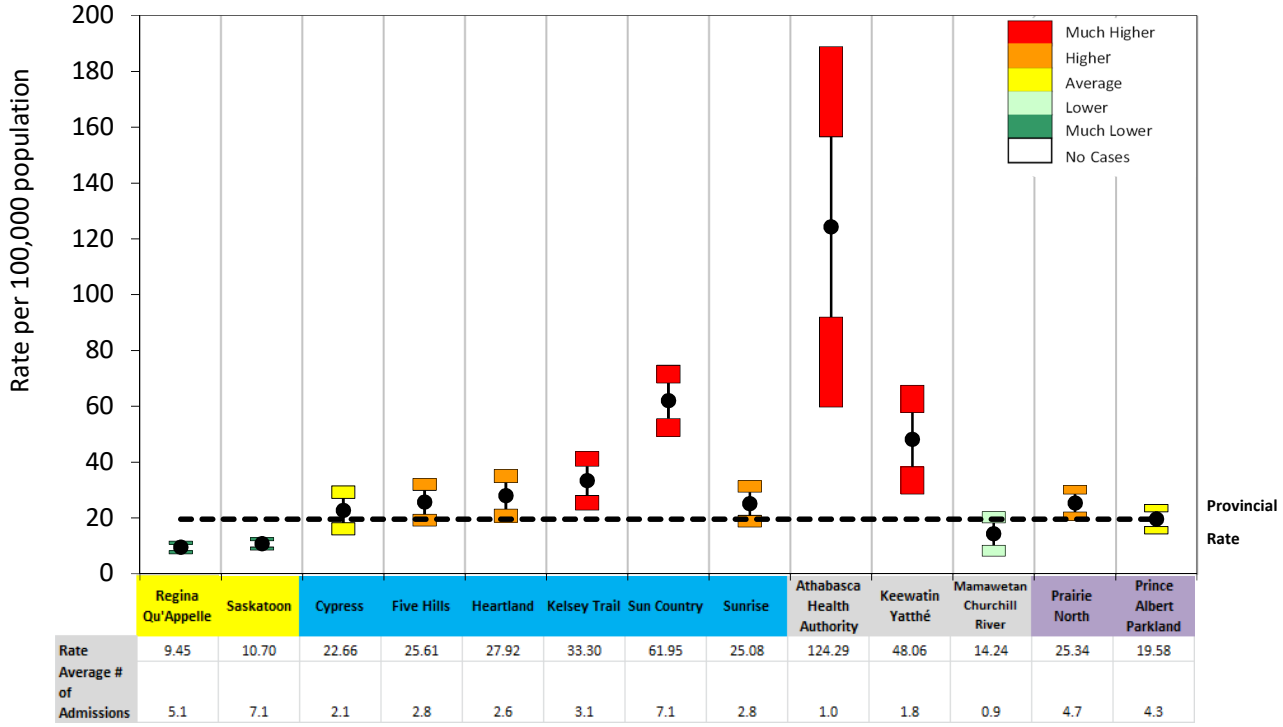
In Saskatchewan, ATV-related injuries were the ninth leading cause of injury resulting in hospitalization. They were responsible for 2.9% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 48.7 hospitalizations per year). Unlike the decreases seen for many of the other main causes of injury-related hospitalizations, the rate of hospitalizations due to ATV-related injuries increased an average of 3.5% annually over the 10 year period.

Figure 10.1 ATV-Related Injury Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Kelsey Trail, Sun Country, Athabasca, and Keewatin Yatthé health regions each had an ATV-related hospitalization rate much higher than the provincial rate of 19.6 admissions per 100,000 population. Five Hills, Heartland, Sunrise, and Prairie North health regions each had a rate higher than the provincial rate. Cypress and Prince Albert Parkland health regions had a rate similar to the provincial rate, and Mamawetan Churchill River Health Region had a rate lower than the provincial rate. Regina Qu'Appelle and Saskatoon health regions each had a rate much lower than the provincial rate.

Figure 10.2 ATV-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	9.45	10.70	22.66	25.61	27.92	33.30	61.95	25.08	124.29	48.06	14.24	25.34	19.58
Average # of Admissions	5.1	7.1	2.1	2.8	2.6	3.1	7.1	2.8	1.0	1.8	0.9	4.7	4.3

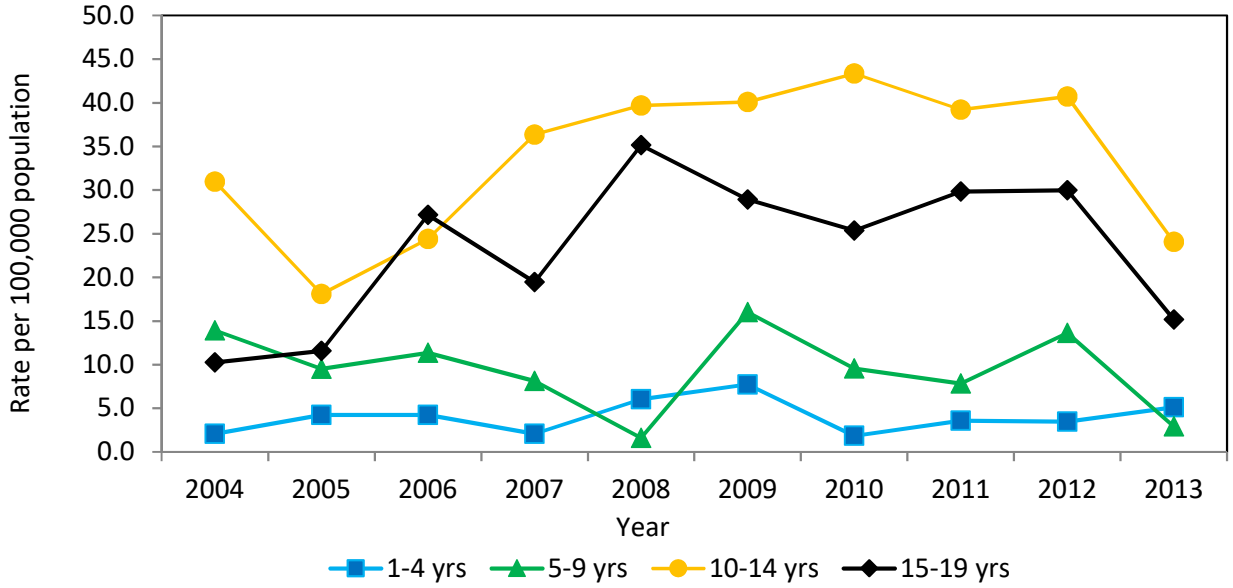
Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

ATV-Related Hospitalizations by Age Group

ATV-related injuries were the fourth leading cause of injury-related hospitalizations for youth aged 10 to 14 years (6.1%), the sixth leading cause for youth aged 15 to 19 years (2.8%), and the eighth leading cause for children aged 5 to 9 years (2.1%). ATV-related injury hospitalizations were less common for children aged 1 to 4 years (eleventh leading cause, 0.7%).

Three of the four age groups experienced an increase in ATV-related injury hospitalization rates between 2004 and 2013. The largest increase in ATV-related injury hospitalizations was for youth between 15 and 19 years of age (average increase of 5.1% annually). Youth between 10 and 14 years of age experienced an overall average increase of 3.7% annually, and children between 1 and 4 years of age experienced an average increase of 2.3% annually. Children between 5 and 9 years of age had an average decrease of 3.6% annually.

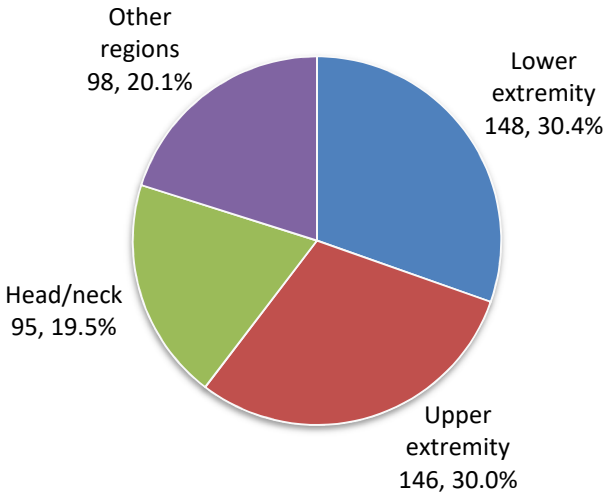
Figure 10.3 ATV-Related Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



ATV-Related Hospitalizations by Body Part

The most commonly injured body part due to an ATV-related incident was the lower extremity (leg and foot). Lower extremity injuries accounted for 30.4% of ATV-related hospitalizations. This was followed by upper extremity (shoulders, arms, and hands) injuries accounting for 30.0% and head/neck injuries accounting for 19.5% of ATV-related hospitalizations. Other body parts, including those that were unspecified or unclassified, accounted for the remaining 20.1%.

Figure 10.4 ATV-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



Fractures accounted for the majority of lower extremity injuries (85.1%) and upper extremity injuries (91.1%). The majority of head/neck injuries that resulted in hospitalization were classified as traumatic brain injuries (80.0%). Of these, 35.5% were concussions, 32.9% were internal head injuries, and 9.2% were fractures. The majority of injuries to other body parts were to the torso (64.2% of the other injuries) and included injuries to intra-abdominal organs such as the spleen, gallbladder, pancreas, stomach, and intestines.

Prevention Tips

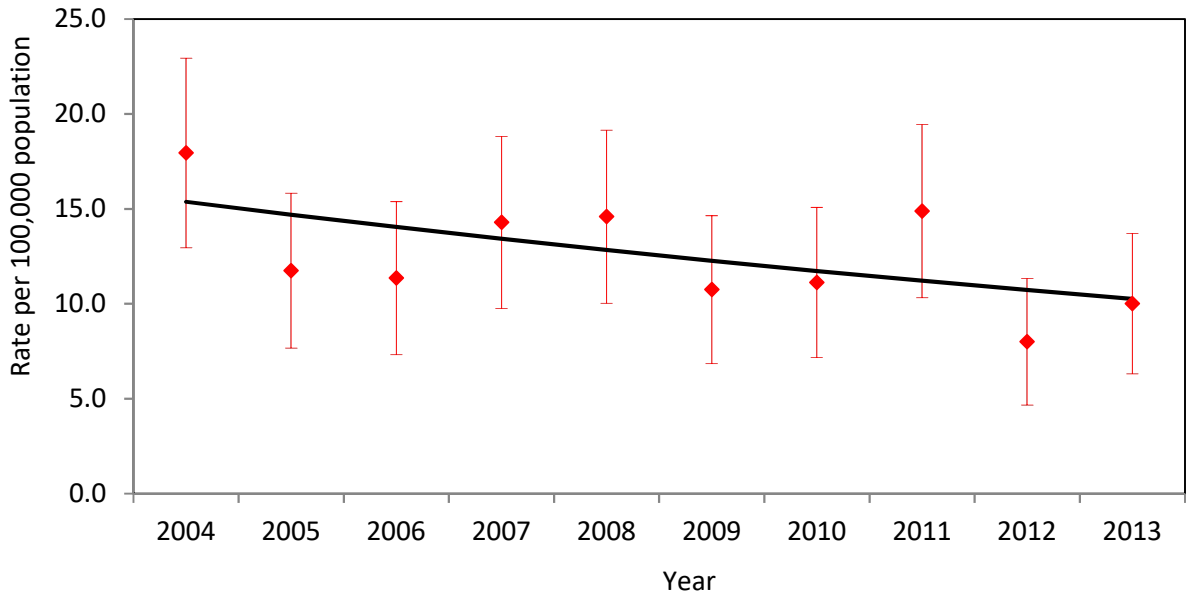
- Educate the public about ATV-related safety, stressing the fact that these are vehicles and not toys.
- Educate caregivers about the fact that children and youth under the age of 16 should not operate ATVs.
- Encourage the use of approved helmets and eye protection when operating ATVs.
- Encourage enrollment in ATV-related safety courses.
- Work with the ATV industry to provide safety messaging at point of sale.

Fire and Burns

This section discusses fire and burns as a cause of injury-related hospitalizations, body parts injured due to fire and burns, and fire and burn-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013. This section includes injury-related hospitalizations that fall under the following categories: exposure to smoke, fire, and flames; and contact with heat and hot substances.

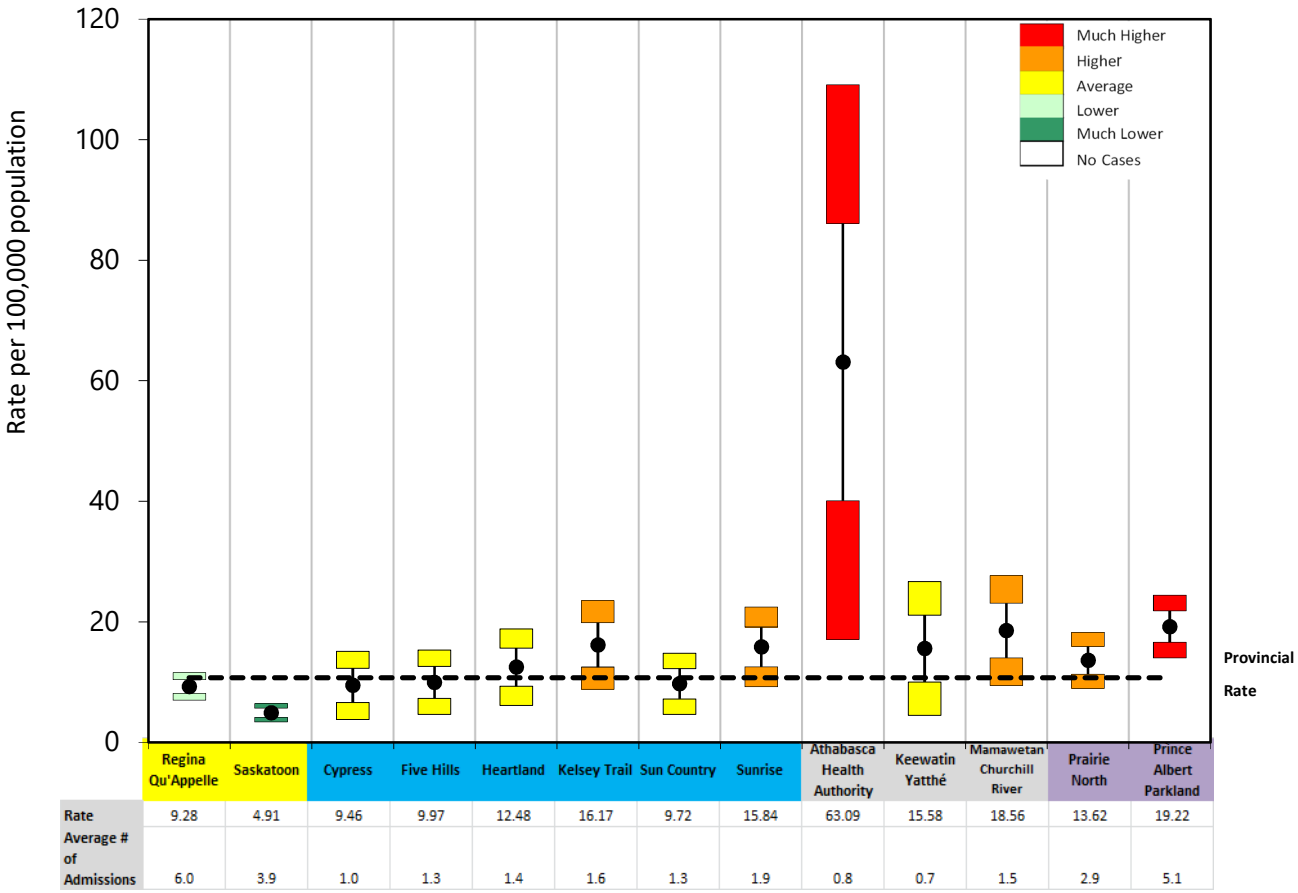
In Saskatchewan, fire and burns were the tenth leading cause of injury resulting in hospitalization. They were responsible for 1.8% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (and average of 30.4 hospitalizations per year). Over the 10 year period, there was an average decrease of 4.4% annually in the rate of hospitalizations due to fire and burn-related injuries.

Figure 11.1 Fire and Burn-Related Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Almost half of the health regions in Saskatchewan had a fire and burn-related injury hospitalization rate similar to the provincial rate of 10.7 hospitalizations per 100,000 population. Cypress, Five Hills, Heartland, Sun Country, and Keewatin Yatthé health regions each had a fire and burn-related injury hospitalization rate similar to the provincial rate. Athabasca and Prince Albert Parkland health regions each had a fire and burn-related hospitalization rate much higher than the provincial rate. Kelsey Trail, Sunrise, Mamawetan Churchill River, and Prairie North health regions each had a rate higher than the provincial rate. Regina Qu'Appelle Health Region had a rate lower than the provincial rate, and Saskatoon Health Region had a rate much lower than the provincial rate.

Figure 11.2 Fire and Burn-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	9.28	4.91	9.46	9.97	12.48	16.17	9.72	15.84	63.09	15.58	18.56	13.62	19.22
Average # of Admissions	6.0	3.9	1.0	1.3	1.4	1.6	1.3	1.9	0.8	0.7	1.5	2.9	5.1

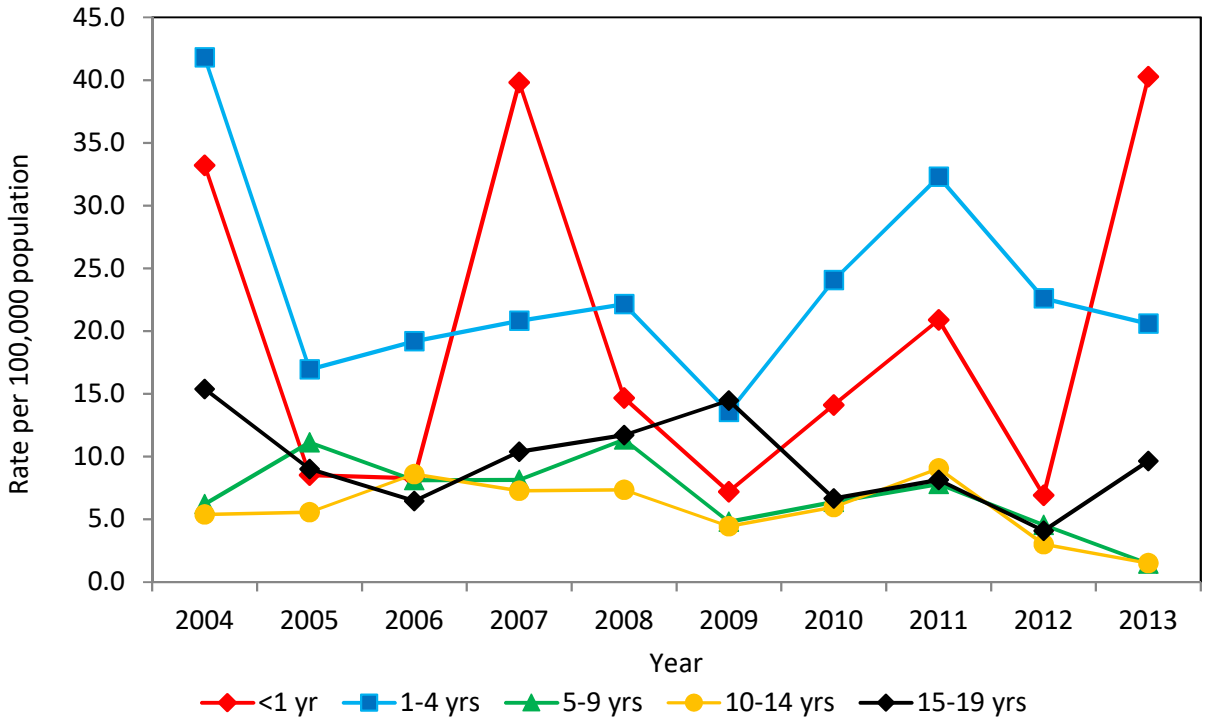
Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Fire and Burn-Related Hospitalizations by Age Group

Fire and burns were the fourth leading cause of injury-related hospitalizations for children aged 1 to 4 years (4.1% of injury-related hospitalizations for this age group) and the fifth leading cause for children under the age of 1 (4.2% of injury-related hospitalizations). Fire and burns were the ninth leading cause of injury-related hospitalizations for those aged 5 to 9 years (1.5 %), the tenth leading cause for youth aged 15 to 19 years (1.2%), and the thirteenth leading cause for youth aged 10 to 14 years (1.1%).

All age groups experienced an overall decrease in fire and burn-related hospitalization rates over the 10 year period between 2004 and 2013, except for infants less than 1 year of age. This age group experienced an average increase of 1.4% annually. The largest decrease in fire and burn-related hospitalizations was for children aged 5 to 9 years (average decrease of 7.5% annually). Youth between 15 and 19 years of age had an average decrease of 5.0% annually, youth between 10 and 14 years of age had an average decrease of 3.2% annually, and children between 1 and 4 years of age had an average decrease of 2.8% annually.

Figure 11.3 Fire and Burn-Related Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013

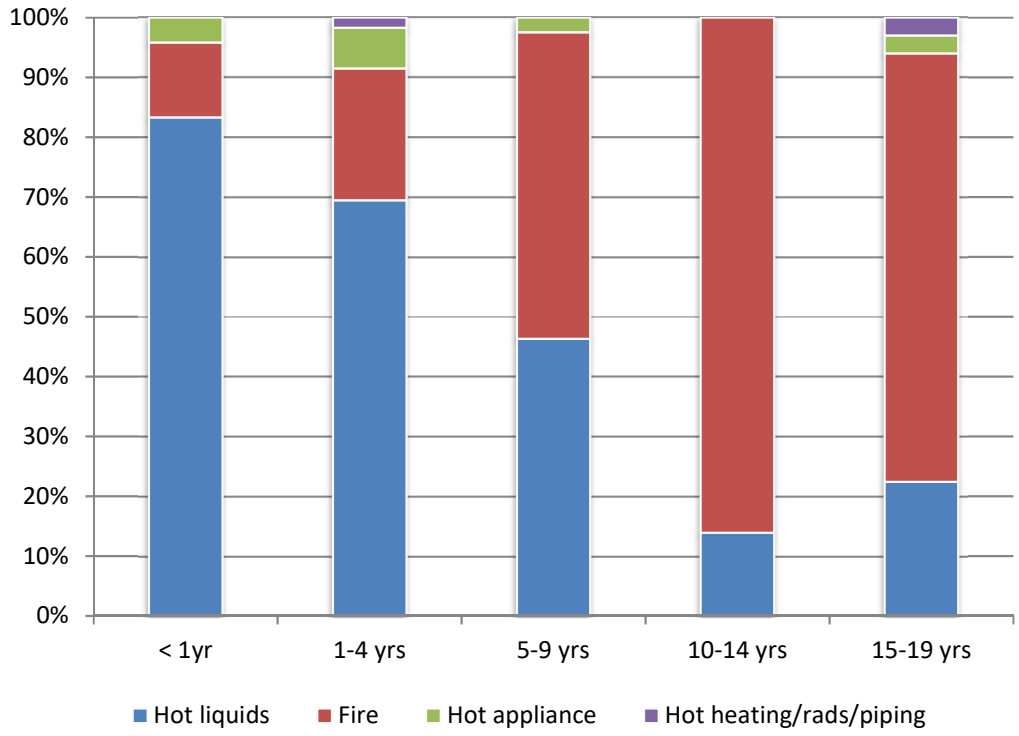


Fire and Burn-Related Hospitalizations by Mechanism

The majority of fire and burn-related hospitalizations overall were due to hot liquids (46.4%), followed by fire and flames (42.2%). Hot appliances, hot heating systems, and unreported mechanisms were responsible for the remaining 11.2% of fire and burn-related hospitalizations.

The cause of fire and burn-related hospitalizations differed with age. Infants less than 1 year of age and children between 1 and 4 years of age were more frequently hospitalized due to burns from hot liquids (83.3% and 69.5%, respectively). The second leading cause for these two age groups was fire and flame (12.5% of fire and burn-related hospitalizations for infants under 1 year of age, 22.0% for children aged 1 to 4 years). Children aged 5 years and older were most often hospitalized due to injuries from fire and flames. Fire and flames accounted for 51.2% of fire and burn-related hospitalizations for children between 5 and 9 years of age, 86.1% of hospitalizations for youth between 10 and 14 years of age, and 71.6% of hospitalizations for youth between 15 and 19 years of age.

Figure 11.4 Fire and Burn-Related Hospitalizations by Mechanism, Saskatchewan, Under 20 Years of Age, 2004-2013



Prevention Tips

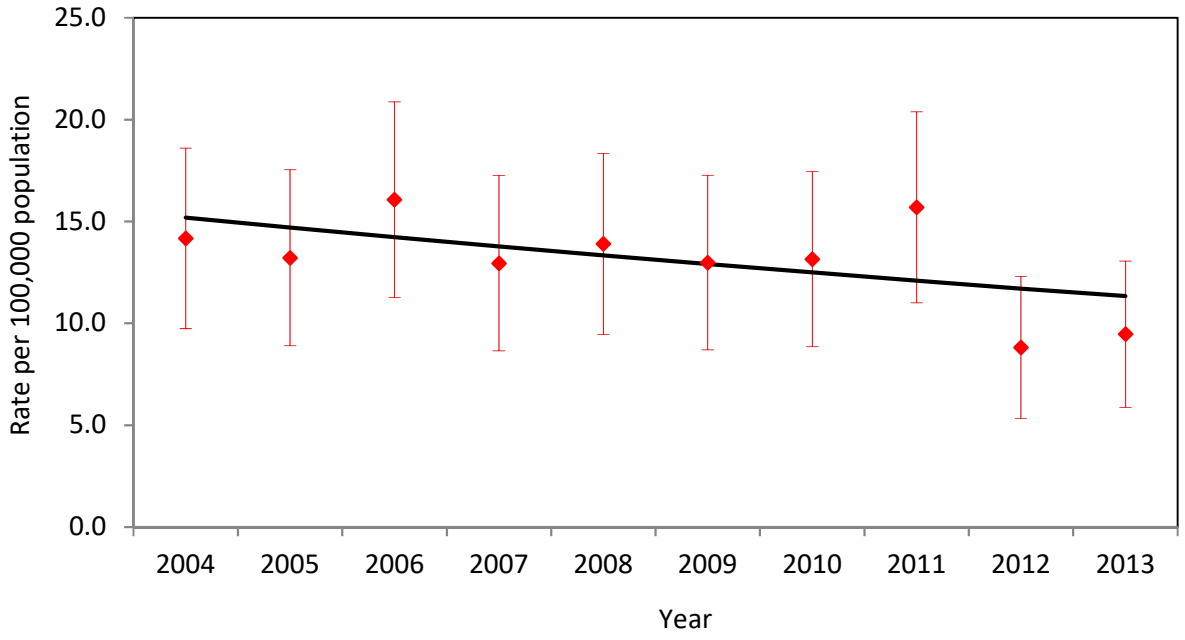
- Educate caregivers and communities about the need for working smoke detectors and the need to develop and practice fire escape plans.
- Educate caregivers about the need to keep lighters, matches, and candles out of the reach of children. Encourage the use of child-resistant lighters.
- Make safety equipment available for all families in the community (e.g., electrical socket covers, covers for radiators, anti-scald devices, stove guards).
- Install fire extinguishers in community program locations. These should be kept out of reach of children.

Pedestrian Traffic and Non-Traffic

This section discusses pedestrian-related injuries as a cause of injury-related hospitalizations, body parts injured, and pedestrian-related hospitalization rates over time for Saskatchewan children and youth under 20 years of age from 2004 to 2013. This section includes both traffic and non-traffic-related pedestrian injuries.

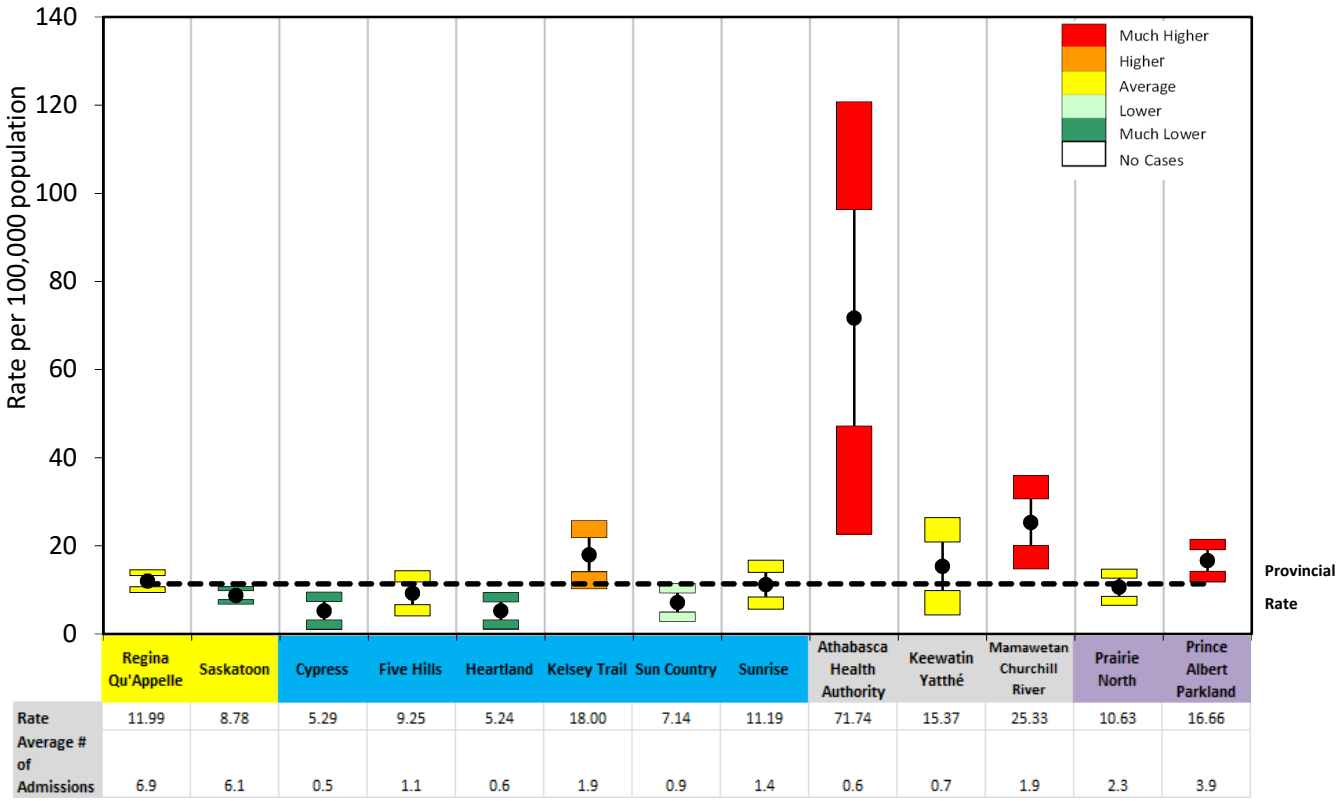
In Saskatchewan, pedestrian-related injuries were the eleventh leading cause of injury resulting in hospitalization. They were responsible for 1.8% of injury-related hospitalizations of Saskatchewan children and youth between 2004 and 2013 (an average of 29.3 hospitalizations per year). Over the 10 year period, there was an average decrease of 3.2% annually in the rate of hospitalizations due to pedestrian-related injuries.

Figure 12.1 Pedestrian-Related Injury Hospitalization Rates, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



Athabasca, Mamawetan Churchill River, and Prince Albert Parkland health regions each had a pedestrian-related hospitalization rate much higher than the provincial rate of 11.4 admissions per 100,000 population. Kelsey Trail Health Region had a rate higher than the provincial rate. Regina Qu'Appelle, Five Hills, Sunrise, Keewatin Yatthé, and Prairie North health regions each had a rate similar to the provincial rate. Sun Country Health Region had a rate lower than the provincial rate, and Saskatoon, Cypress, and Heartland health regions each had a rate much lower than the provincial rate.

Figure 12.2 Pedestrian-Related Hospitalization Rates by Health Region, Saskatchewan, Under 20 Years of Age, 2004-2013, Age-Standardized



	Regina Qu'Appelle	Saskatoon	Cypress	Five Hills	Heartland	Kelsey Trail	Sun Country	Sunrise	Athabasca Health Authority	Keewatin Yatthé	Mamawetan Churchill River	Prairie North	Prince Albert Parkland
Rate	11.99	8.78	5.29	9.25	5.24	18.00	7.14	11.19	71.74	15.37	25.33	10.63	16.66
Average # of Admissions	6.9	6.1	0.5	1.1	0.6	1.9	0.9	1.4	0.6	0.7	1.9	2.3	3.9

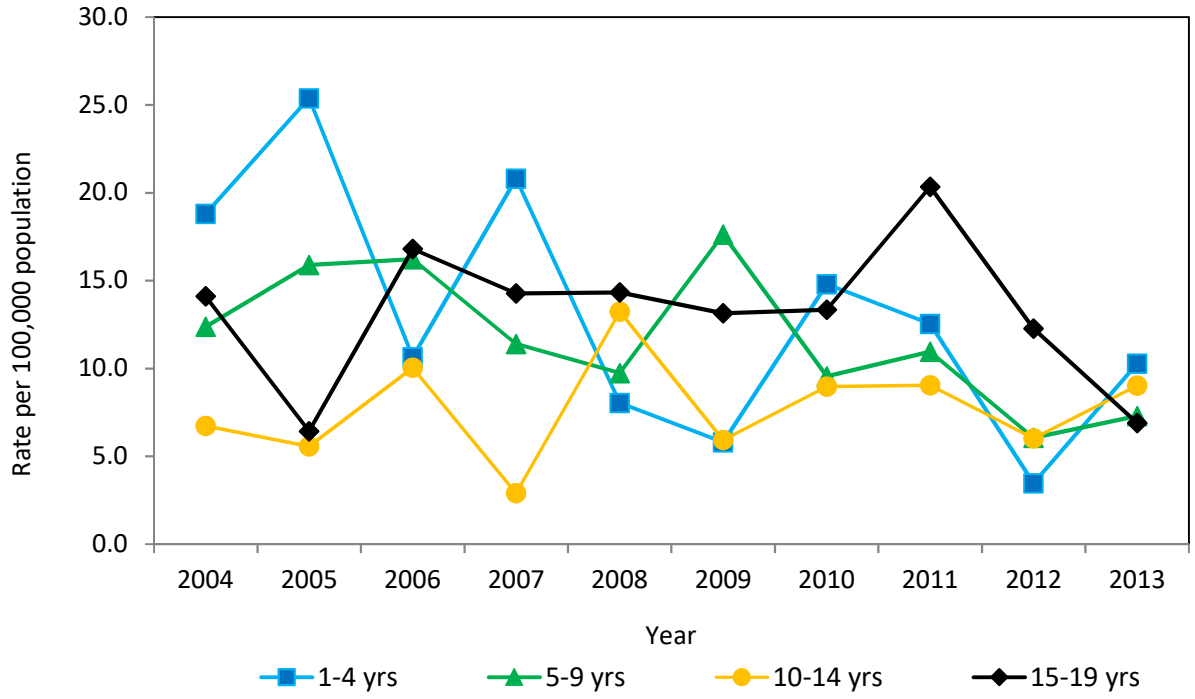
Note: Includes only residents of Saskatchewan based on their postal code at the time of registration to the hospital.

Pedestrian-Related Hospitalizations by Age Group

Pedestrian-related injuries were the seventh leading cause of injury-related hospitalizations between 2004 and 2013 for children between 1 and 4 years of age (2.2% of injury-related hospitalizations for this age group). Pedestrian-related injuries were the eighth leading cause for children between 5 and 9 years of age (2.6%), the ninth leading cause for youth between 15 and 19 years of age (1.6%), and the eleventh leading cause for youth between 10 and 14 years of age (1.4%).

Three of the four age groups experienced a decrease in the average annual hospitalization rate for pedestrian-related injuries over the 10 year period between 2004 and 2013. Youth between 10 and 14 years of age experienced an average increase of 1.7% annually in pedestrian-related hospitalizations. Children between 1 and 4 years of age had the largest decrease over the 10 year period, with an average decrease of 9.7% annually. Children between 5 and 9 years of age had an average decrease of 6.8% annually, and youth between 15 and 19 years of age had an average decrease of 0.1% annually.

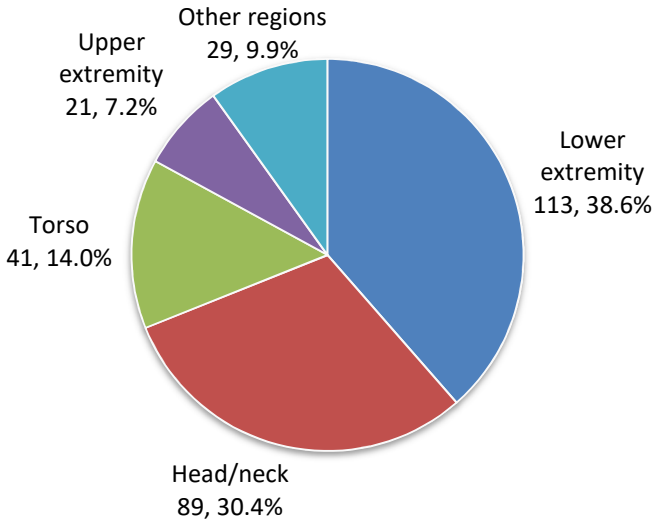
Figure 12.3 Pedestrian-Related Hospitalization Rates by Age Group, Saskatchewan, Under 20 Years of Age, 2004-2013



Pedestrian-Related Hospitalizations by Body Part

The most commonly injured body part due to pedestrian-related incidents was the lower extremity (legs and feet). Lower extremity injuries were responsible for 38.6% of pedestrian-related hospitalizations. This was followed by head/neck injuries accounting for 30.4%, torso injuries accounting for 14.0%, and upper extremity (shoulders, arms, and hands) injuries accounting for 7.2%. Other body parts, including those that were unspecified or unclassified, accounted for the remaining 9.9%.

Figure 12.4 Pedestrian-Related Injury Hospitalizations by Body Part, Saskatchewan, Under 20 Years of Age, 2004-2013



Fractures accounted for the majority of lower extremity injuries (77.9%) and upper extremity injuries (76.2%) that resulted in hospitalization. The majority of head/neck injuries that resulted in hospitalization were classified as traumatic brain injuries (76.4%). Of these, 44.1% were internal head injuries, 27.9% were concussions, and 13.2% were fractures. Of the torso injuries, 41.5% were fractures of the lumbar spine and pelvis.

Prevention Tips

- Educate children, caregivers, and communities about pedestrian safety.
- Increase awareness of school area safety for pedestrians, including reduced speed limits.
- Recognize the complexity of crossing multi-lane streets and prepare children for this task.
- Promote crossing-guard programs for elementary school children.
- Educate parents about aspects of child development including depth perception, peripheral vision, and judgement of speed.

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Methodological References

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Canadian Institute for Health Information (CIHI). *Discharge Abstract Database, 1996-2005*.

National Center for Health Statistics. (2005). *Injury Mortality Diagnosis Matrix - Detailed code and category listing, detailed ICD-10 code listing for all injury diagnosis codes*. Hyattsville, MD: Centers for Disease Control and Prevention. Retrieved from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/injury/icd10matrix/icd10_diamatrix.xls

Appendix A. Methodology

Data Sources

Injury-related hospitalization data were available for calendar years January 2004 to December 2013 based on discharge year and month. Injury-related hospitalization counts for these available years were plotted using Microsoft Excel for each of the various breakdowns (all injury, age groups, sex, main causes). Patients who died in hospital, transferred to another acute care facility, were readmitted, or had an adverse medical/surgical event were excluded from the dataset. Records which were missing or had invalid 'most responsible diagnosis' codes or 'external cause of injury' codes (0.9%) were excluded from the dataset.

The data analyzed for this report were provided from three sources: 10 years of hospitalization data were provided by the Canadian Institute for Health Information (CIHI); 10 years of death data, as well as all corresponding annual population estimates, were accessed from Statistics Canada; and 10 years of death data by Saskatchewan peer group were provided by eHealth Saskatchewan.

Injury hospitalization data from CIHI were provided from the following databases:

- Discharge Abstract Database (DAD), ICD10, 2004-2013. *All of Canada excluding Quebec and Manitoba (outside Winnipeg).*
- Discharge Abstract Database (DAD), ICD10, 2005-2013. Manitoba excluding outside Winnipeg.

Death data were accessed from Statistics Canada:

- Causes of Death Database, 2000-2010. *All of Canada.*

Population Estimates were accessed from Statistics Canada:

- Statistics Canada. Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted). (Accessed December 9, 2015).

Time Trends

Regression analysis of the injury data was performed using the Joinpoint Regression Program (developed by the Statistical Research and Applications Branch of the National Cancer Institute of the United States, National Institutes of Health). Joinpoint uses statistical analyses to fit the most appropriate trend line model based on the time series data (i.e., age-standardized injury rates). For more information, please go to http://surveillance.cancer.gov/joinpoint/.

Changes in the trend line are expressed by the average annual percent change. The sum of the average percentage change between time periods provides the overall change.

Peer Groups

Peer groups are a construct of Statistics Canada, created using a grouping algorithm (cluster analysis) and census data to allow for comparison of health regions with similar socio-economic characteristics. Twenty-four variables were chosen to cover as many of the social and economic determinants of health as possible, in addition to prominent geographic characteristics. Health variables were deliberately not

used in the separation of health regions into peer groups. The resulting 10 peer groups are identified by the letters A through J, which are appended to the health region 4-digit code. Within Saskatchewan, there are four identified peer groups (A, D, F, H). This report refers to the peer groupings created by Statistics Canada as of December 2013, to reflect the year of the data collection. For more information on peer groups, please refer to Statistics Canada *Health Regions: Boundaries and Correspondence with Census Geography (*Statistics Canada, 2013), available from http://www.statcan.gc.ca/pub/82-402-x/82-402-x2013003-eng.htm.

In Saskatchewan, health regions are allocated to following four peer groups:

Peer Group	Saskatchewan Health Region	Principal Characteristics	Colour Code Used in Report
A	Regina Qu'Appelle Health Region Saskatoon Health Region	• Urban-rural mix from coast to coast • Average percentage of Aboriginal population • Average percentage of immigrant population	Yellow
D	Cypress Health Region Five Hills Health Region Heartland Health Region Kelsey Trail Health Region Sun Country Health Region Sunrise Health Region	• Mainly rural regions from Quebec to British Columbia • Average percentage of Aboriginal population • High employment rate	Blue
F	Mamawetan Churchill River Health Region Keewatin Yatthé Health Region Athabasca Health Authority	• Northern and remote regions • Very high proportion of Aboriginal population • Very low employment rate • Low proportion of immigrants	Grey
H	Prairie North Health Region Prince Albert Parkland Health Region	• Rural northern regions from coast to coast • High proportion of Aboriginal population • Low proportion of immigrants	Purple

Health Region Calculations

All health region graphs in this report have been calculated according to the procedure described below. The method was developed to address the effect population sizes of health regions can have on stability. Rates for health regions with smaller populations will be less stable than rates for health regions with larger populations. The mapping method is designed to address this issue and to allow for statistically consistent interpretations to be made.

The following four steps are involved in health region calculations:

1. Calculate the crude rates (proportion) for each cause of injury, for each zone. An example calculation of the crude motor vehicle hospital admission rate for a fictional health region 'A' is shown below:

   Number of motor vehicle related hospital admissions in South health region: 276
   Total population: 285,663
   Crude rate of motor vehicle deaths: 276/285,663 = 0.0009662

2. Using the same methodology, calculate the provincial crude rate and rural crude rate.

Health Region	Motor Vehicle Collisions (MVC)	Total Population	Crude Rate
A	276	285,663	0.0009662
B	841	1,378,984	0.0006099
C	…	…	…
D	802	438,656	0.001828
Total	3,337	3,716,419	0.0008979

3. Calculate the standard error of the probability of an injury event for each health region. For crude rates, calculate the standard error with the following formula:

$$\sqrt{\left(Crude\ Rate * \left(\frac{1 - Crude\ Rate}{Population}\right)\right)} = \sqrt{\left(0.0009662 * \left(\frac{1 - 0.0009662}{285{,}663}\right)\right)}$$

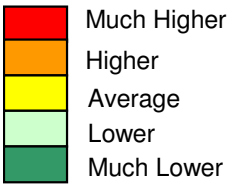
Health Region	Motor Vehicle Collisions (MVC)	Total Population	Crude Rate	Standard Error
A	276	285,663	0.0009662	0.0000588
B	841	1,378,984	0.0006099	0.0000209
C	…	…	…	…
D	802	438,656	0.001828	0.0000647
Total	3,337	3,716,419	0.0008979	0.0000155

4. Calculate the zone-specific standard scores.

$$Standard\ Score = \frac{Zone\ Crude\ Rate - Provincial\ Crude\ Rate}{Zone\ Standard\ Error}$$

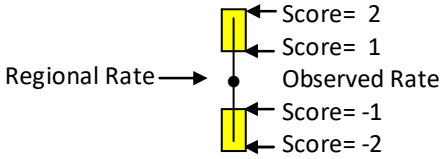
Health Region	Crude Rate	Standard Error	Standard Score	Graph Colour
A	0.0009662	0.0000588	1.62	Orange
B	0.0006099	0.0000209	-13.9	Dark Green
C	…	…	…	…
D	0.001828	0.0000647	14.6	Red
Total	0.0008979	0.0000155	—	—

The health region-specific standard score estimates the degree of statistical certainty associated with the difference between the regional rate and the provincial rate. This degree of certainty is represented by the colour scheme on the graphs. Below are the colour definitions used in the graphs.



Red suggests that it is quite likely that the region's rate is much higher than the provincial rate. **Orange** suggests that it is quite likely that the region's rate is higher than the provincial rate. **Yellow** suggests that the regional rate is not likely to differ from the provincial rate. **Light green** suggests that it is quite likely that the region's rate is lower than the provincial rate. **Dark green** suggests that it is quite likely that the region's rate is much lower than the provincial rate.

The figure below illustrates how to interpret the graphic for each individual health region:



The black dot represents the value for the rate for the region. The colour of the bars above and below the dot represents the standard score of the region (see above for the colour definitions). The portion of the bar closest to the black dot represents the value for a standard score of +1 or -1, while the part of the bars farthest from the dot represent the value for a score of +2 or -2.

Confidence Intervals

Confidence intervals are provided for most rates to aid interpretation. Using confidence 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 limits 19 times out of 20 (95 per cent confidence).

Appendix B. Unintentional and Intentional External Injury Codes

Injury-related hospitalizations and deaths were classified according to categories developed by the World Health Organization's (WHO) International Classification of Diseases (ICD) coding system. More specifically, the 10th Revision, Canadian Enhancement (ICD-10CA) was used.

External cause	***ICD-10CA***
Cycling	V10-V18, V19(.0-.6,.8,.9)
Cycling – traffic	V12-V14(.3-.9), V19(.4-.6)
Cycling – other	V10-V11, V12-V14(.0-.2), V15-V18, V19(.0-.3,.8,.9)
Pedestrian	V1, V2-V4(.0,.1,.9), V5, V6, V9(.0-.3,.9)
Pedestrian – traffic	V2-V4(.1,.9), V09.2
Pedestrian – other	V1, V2-V4(.0), V5, V6, V9(.0,.1,.3,.9)
Motor Vehicle Occupant	V30-V79(.0-.3, .5-.9), V83(.0-.3, .5-.9)
Drowning/submersion	W65-W74
Bathtub	W65, W66
Swimming pool	W67, W68
Poisoning	X40-X49
Drugs/medications	X40-X44
Alcohol	X45
Organic solvents (including petroleum)	X46
Pesticides	X48
Other and unspecified chemicals	X49
Poisonous gases and vapours	X47
Fire/burn	X00-X19
Scalding	X10-X13
Fire/flames	X00-X08
Hot appliances	X15, X16
Other hot objects	X18, X19
Falls	W00-W19
Bed or chair	W06, W07
Playground equipment	W09
Stairs and steps	W10
Suffocation	W75-W84
Inhalation of food	W79, W78
Inhalation of other object	W 80
Accidental mechanical suffocation	W75, W76, W77, W81, W83, W84
ATV/Snowmobile	V86(.00-.68), V87
All intentional injuries	X60-Y09, Y87.0, Y87.1
Self-Harm	X60-X84, Y87.0
Assault	X85-Y09, Y87.1

Source: International Collaborative Effort (ICE) on Injury Statistics. External Cause of Injury Mortality Matrix.

Appendix C. Provincial Comparisons by Injury Cause

This appendix provides comparisons of injury-related hospitalization rates of children under the age of 20 between 2004 and 2013.[5] The data include all unintentional and intentional injury-related hospitalizations, but exclude adverse events, medical/surgical complications, transfers to another facility, in-hospital deaths, and hospitalization readmissions. Rates are provided for each of the Canadian provinces (except Quebec), the Territories (Northwest Territories, Nunavut, and Yukon combined), and Canada overall. The rates below include all intentional and unintentional injury-related hospitalizations overall and rates for each of the ten leading causes of injury-related hospitalizations covered in this report.

The hospitalization rates are age-standardized and are calculated based on population. Population numbers were obtained from Statistics Canada (*Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual*). The hospitalization rates are not adjusted for duration of play/participation or seasonal differences.

All Intentional and Unintentional Injury-Related Hospitalizations, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	515.6	502.2	528.9
Prince Edward Island	516.9	492.6	541.2
Nova Scotia	444.9	435.8	454.1
New Brunswick	567.0	555.5	578.5
Ontario	307.8	305.9	309.8
Manitoba*	502.0	493.9	510.2
Saskatchewan	742.4	732.2	752.6
Alberta	546.2	541.4	551.0
British Columbia	433.6	429.5	437.8
Territories	611.3	585.6	637.0
CANADA	409.6	408.0	411.2
*= Manitoba rates from 2005-2013			

When comparing the overall intentional and unintentional injury-related hospitalization rates, the children and youth of Saskatchewan had a rate significantly higher than the Canadian rate. The Saskatchewan rate for child and youth injury-related hospitalizations was 742.4 hospitalizations per 100,000 population, while the Canadian rate was 409.6 hospitalizations per 100,000 population.

[5] The data for Manitoba covers the years of 2005 to 2013. The Manitoba data for 2004 is not available.

Falls (excluding sports-related), 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	106.3	100.2	112.4
Prince Edward Island	112.2	100.9	123.6
Nova Scotia	115.1	110.5	119.8
New Brunswick	136.4	130.8	142.1
Ontario	70.7	69.7	71.6
Manitoba*	80.5	77.2	83.8
Saskatchewan	143.7	139.2	148.1
Alberta	98.2	96.2	100.3
British Columbia	84.6	82.7	86.4
Territories	81.0	71.6	90.4
CANADA	84.8	84.1	85.5
*= Manitoba rates from 2005-2013			

When comparing the fall-related hospitalization rates, the children and youth of Saskatchewan had a rate significantly higher than the Canadian rate. The Saskatchewan rate for fall-related hospitalizations was 143.7 hospitalizations per 100,000 population, and the Canadian rate was 84.8 hospitalizations per 100,000 population.

Playground Falls, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	17.4	15.0	19.9
Prince Edward Island	27.3	21.7	32.9
Nova Scotia	27.1	24.9	29.4
New Brunswick	30.2	27.5	32.8
Ontario	18.6	18.2	19.1
Manitoba *	21.4	19.7	23.1
Saskatchewan	48.7	46.1	51.3
Alberta	29.5	28.4	30.6
British Columbia	31.1	30.0	32.2
Territories	20.1	15.5	24.8
CANADA	24.3	23.9	24.7
*= Manitoba rates from 2005-2013			

When comparing the playground falls-related hospitalization rates, the children and youth of Saskatchewan had a rate almost twice that of the Canadian rate. The Saskatchewan rate for playground falls-related hospitalizations was 48.7 hospitalizations per 100,000 population, and the Canadian rate was 24.3 hospitalizations per 100,000 population.

Sports-Related, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	42.1	38.2	45.9
Prince Edward Island	77.9	68.4	87.3
Nova Scotia	58.9	55.5	62.2
New Brunswick	70.2	66.2	74.3
Ontario	40.6	39.9	41.3
Manitoba*	49.5	46.9	52.0
Saskatchewan	79.4	76.0	82.7
Alberta	65.7	64.0	67.4
British Columbia	59.0	57.5	60.5
Territories	33.9	27.9	40.0
CANADA	51.0	50.4	51.5
*= Manitoba rates from 2005-2013			

When comparing the sports-related hospitalization rates, the children and youth of Saskatchewan had a rate significantly higher than the Canadian rate. The Saskatchewan rate for sports-related hospitalizations was 79.4 hospitalizations per 100,000 population, and the Canadian rate was 51.0 hospitalizations per 100,000 population.

Intentional Self-Harm, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	62.7	58.1	67.4
Prince Edward Island	41.6	34.7	48.5
Nova Scotia	30.2	27.8	32.5
New Brunswick	47.3	44.0	50.7
Ontario	28.9	28.3	29.5
Manitoba*	58.3	55.5	61.1
Saskatchewan	64.6	61.5	67.6
Alberta	44.7	43.3	46.0
British Columbia	50.4	49.0	51.8
Territories	179.5	165.6	193.5
CANADA	39.6	39.1	40.1
*= Manitoba rates from 2005-2013			

When comparing the intentional self-harm-related hospitalization rates, the children and youth of Saskatchewan had a rate significantly higher than the Canadian rate. The Saskatchewan rate for intentional self-harm-related hospitalizations was 64.6 hospitalizations per 100,000 population, and the Canadian rate was 39.6 hospitalizations per 100,000 population.

Assault, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	17.8	15.3	20.3
Prince Edward Island	17.4	12.9	21.9
Nova Scotia	23.8	21.7	25.9
New Brunswick	20.3	18.1	22.5
Ontario	13.0	12.6	13.4
Manitoba*	55.8	53.1	58.5
Saskatchewan	54.1	51.4	56.9
Alberta	33.8	32.6	35.0
British Columbia	21.3	20.3	22.2
Territories	45.5	38.5	52.6
CANADA	22.0	21.6	22.4
*= Manitoba rates from 2005-2013			

When comparing the assault-related hospitalization rates, the children and youth of Saskatchewan had a rate more than double that of the Canadian rate. The Saskatchewan rate for assault-related hospitalizations was 54.1 hospitalizations per 100,000 population, and the Canadian rate was 22.0 hospitalizations per 100,000 population.

Unintentional Poisoning, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	33.5	30.1	37.0
Prince Edward Island	18.3	13.7	22.8
Nova Scotia	22.6	20.6	24.7
New Brunswick	36.1	33.2	39.0
Ontario	16.7	16.2	17.1
Manitoba*	18.2	16.7	19.8
Saskatchewan	25.7	23.8	27.6
Alberta	24.9	23.9	25.9
British Columbia	29.8	28.7	30.9
Territories	18.0	13.6	22.4
CANADA	21.5	21.1	21.9
*= Manitoba rates from 2005-2013			

When comparing the unintentional poisoning-related hospitalization rates, the children and youth of Saskatchewan had a rate significantly higher than the Canadian rate. The Saskatchewan rate for unintentional poisoning-related hospitalizations was 25.7 hospitalizations per 100,000 population, and the Canadian rate was 21.5 hospitalizations per 100,000 population.

Motor Vehicle Occupant, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	21.4	18.7	24.1
Prince Edward Island	36.1	29.6	42.5
Nova Scotia	25.0	22.9	27.2
New Brunswick	27.8	25.3	30.4
Ontario	12.0	11.6	12.4
Manitoba*	26.4	24.5	28.2
Saskatchewan	45.6	43.1	48.1
Alberta	31.9	30.8	33.1
British Columbia	22.0	21.0	22.9
Territories	14.2	10.2	18.1
CANADA	19.9	19.5	20.2
*= Manitoba rates from 2005-2013			

When comparing the motor vehicle occupant-related hospitalization rates, the children and youth of Saskatchewan had a rate more than double that of the Canadian rate. The Saskatchewan rate for motor vehicle occupant-related hospitalizations was 45.6 hospitalizations per 100,000 population, and the Canadian rate was 19.9 hospitalizations per 100,000 population.

Cycling, Traffic and Non-Traffic, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	16.9	14.5	19.4
Prince Edward Island	8.4	5.3	11.5
Nova Scotia	13.2	11.6	14.8
New Brunswick	15.4	13.5	17.3
Ontario	12.2	11.9	12.6
Manitoba *	15.1	13.7	16.6
Saskatchewan	17.2	15.7	18.8
Alberta	23.0	22.0	23.9
British Columbia	20.8	19.9	21.7
Territories	11.8	8.2	15.4
CANADA	15.7	15.4	16.0
*= Manitoba rates from 2005-2013			

When comparing the cycling-related hospitalization rates, the children and youth of Saskatchewan had a rate similar to that of the Canadian rate. The Saskatchewan rate for cycling-related hospitalizations was 17.2 hospitalizations per 100,000 population, and the Canadian rate was 15.7 hospitalizations per 100,000 population.

All-Terrain Vehicle, Non-Traffic, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	27.7	24.6	30.8
Prince Edward Island	16.4	12.0	20.7
Nova Scotia	14.1	12.5	15.7
New Brunswick	23.2	20.9	25.6
Ontario	6.5	6.2	6.8
Manitoba*	16.5	15.0	18.0
Saskatchewan	23.3	21.5	25.1
Alberta	25.4	24.4	26.4
British Columbia	10.3	9.6	10.9
Territories	17.7	13.3	22.0
CANADA	12.3	12.0	12.6
*= Manitoba rates from 2005-2013			

When comparing the ATV-related hospitalization rates, the children and youth of Saskatchewan had a rate significantly higher than the Canadian rate. The Saskatchewan rate for ATV-related hospitalizations was 23.3 hospitalizations per 100,000 population, and the Canadian rate was 12.3 hospitalizations per 100,000 population.

Fire and Burns, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	12.1	10.0	14.1
Prince Edward Island	9.0	5.8	12.2
Nova Scotia	5.7	4.6	6.7
New Brunswick	7.0	5.7	8.2
Ontario	4.9	4.6	5.1
Manitoba*	11.7	10.4	12.9
Saskatchewan	12.5	11.1	13.8
Alberta	7.6	7.0	8.2
British Columbia	6.2	5.7	6.7
Territories	10.1	6.8	13.4
CANADA	6.4	6.2	6.6
*= Manitoba rates from 2005-2013			

When comparing the fire and burns-related hospitalization rates, the children and youth of Saskatchewan had a rate almost double that of the Canadian rate. The Saskatchewan rate for fire and burn-related hospitalizations was 12.5 hospitalizations per 100,000 population, and the Canadian rate was 6.4 hospitalizations per 100,000 population.

Pedestrian, Traffic and Non-Traffic, 2004-2013

Province	Age-Stnd Rate per 100,000 Population	Lower Confidence Level	Upper Confidence Level
Newfoundland and Labrador	11.9	9.8	13.9
Prince Edward Island	7.0	4.2	9.9
Nova Scotia	8.1	6.9	9.3
New Brunswick	5.4	4.3	6.5
Ontario	5.8	5.5	6.0
Manitoba*	12.1	10.9	13.4
Saskatchewan	13.0	11.6	14.3
Alberta	8.2	7.7	8.8
British Columbia	10.9	10.2	11.5
Territories	9.8	6.5	13.1
CANADA	7.8	7.6	8.0
*= Manitoba rates from 2005-2013			

When comparing the pedestrian-related hospitalization rates, the children and youth of Saskatchewan had a rate significantly higher than the Canadian rate. The Saskatchewan rate for pedestrian-related hospitalizations was 13.0 hospitalizations per 100,000 population, and the Canadian rate was 7.8 hospitalizations per 100,000 population.

Provincial Comparison Summary

Saskatchewan had the highest rate in Canada for injury-related hospitalizations overall between 2004 and 2013, as well as the highest rate for five of the top ten causes of injury-related hospitalizations (falls, sports-related, motor vehicle occupant, fire and burns, and pedestrian). For nine of the ten top causes of injury-related hospitalizations, Saskatchewan's rates were significantly higher than the Canadian rate. For cycling, the Saskatchewan rate was similar to the Canadian rate.

Appendix D. Injury Diagnosis Codes: Body Part of Injury

Body part	***ICD10 code and description***
Traumatic brain injury	S02(.0-.1,.3,.7-.9), S04.0, S06, S07, S09.2, S09.7, S09.9, T90.2, T90(.4,.8), T90.5,T90.9 Fracture of skull, concussion, cerebral edema, diffuse brain injury, local brain injury, crushing injury of the head, unspecified injury of the head, sequelae of injury to the head.
Other head and neck	S00, S02(.2,.4-.6), S03(.0-.5), S04(.1-.9), S05(.0-.9), S08(.0-.9), S09.1, S09.2, S10, S11, S12(.8-.9), S13(.2-.3, .5-.6), S14(.3-.6), S15(.0,.2-.9), S16, S17, S18, S19.7, S19.8, S19.9, T00.0, T01.0, T02.0, T03.0 T04.0, T15-T16, T17(.0-.4), T18.0, T20, T27.0, T27.4, T28.0,T28.5, T33.1, T34.1, T35.2 T90.0, T90.3, T95.0 Superficial injury of the head, open wound of the head, fracture of nose, fracture of jaw, fracture of tooth, dislocation/sprain/strain of joints and ligaments of the head, injury of cranial nerve, injury of eye and orbit, avulsion of part of head, other unspecified injury of the head, superficial injury of neck, open wound of neck dislocation/sprain/strain of joints and ligaments of neck, crushing injury of neck, foreign body on eye/ear/mouth, burn/corrosion of head and neck/trachea, superficial frostbite of head, sequelae of superficial head/neck injury.
Spinal cord	S14(.0-.1), S24(.0-.1), S34(.0-.1,.3), T09.3, T91.3 Injury of nerves and spinal cord at neck level, injury of nerves and spinal cord at thorax level, injury of nerves and lumbar spinal cord at abdomen, lower back and pelvic level.
Vertebral column injury	S12(.0-.7), S13(.0-.1), S13.4, S14.2, S15.1, S22(.0-.1), S23(.0-.1), S23.3, S24.2, S32(.0-.2), S33(.0-.2), S33(.5-.7), S34(.2-.4), T08, T09.4, T91.1 Fracture of neck, traumatic rupture of intervertebral disc, sprain/strain of cervical spine (whiplash), injury of never root of cervical spine fracture of thoracic vertebrae, fracture of sacrum/coccyx, fracture of spine at unspecified level, sequelae of spinal fracture.
Torso	S20, S21, S22(.2-.9), S23.2, S23(.4-.5), S24(.3,.6), S25, S26.0, S26.8, S26.9, S27(.0-.9), S28.0, S28.1, S29(.0,.8), S29.7, S29.9, S30(.0-.2,.7-.9), S31(.0,.1-.5,.7,.8), S32(.3-.8), S33(.3-.4), S34(.5,.6,.8), S35(.0-.5,.7-.9), S36, S37, S38(.0-.3), S39(.0,.6-.9), T00.1, T01.1, T02.1, T03.1, T04.1, T04.7, T06.5, T09(.0-.9), T17.5, T17(.8-.9), T18(.-1- .2, .5,.8-.9), T19, T21, T27(.2-.3,.6-.7), T28(.1-.3,.6-.8), T33.2, T33.3, T34.2, T3.4.3. T35.3, T91.2, T91.4, T91.5, T95.1 Open wound of thorax, fracture of ribs/sternum/thoracic spine, dislocation/sprain/strain of joint and ligament of thorax, injury of blood vessels of thorax, injury of heart, injury of other unspecified intrathoracic organs, crushing injury of thorax and trauma amputation of park of thorax,

	other unspecific injuries of thorax, open wound of abdomen/lower back and pelvis, injury of blood vessels at abdomen/lower back and pelvis, injury of spleen/gallbladder/pancreas/stomach/small intestine/colon/rectum/ multiple intraabdominal organs, other intraabdominal organs, unspecified intraabdominal organs, injury of urinary and pelvic organs, crushing injury and traumatic amputation of part of abdomen/lower back and pelvis.
Upper extremity	S40, S41, S42, S43(.0-.7), S44, S45, S46, S47, S48, S49(.7-.9), S50, S51, S52, S53(.0-.4), S54, S55, S56, S57, S58, S59(.7-.9), S60, S61, S62, S63(0.-.7), S64, S65, S66, S67, S68, S69(.7-.9), T00.2, T01.2, T02(.2,.4), T03.2, T04.2, T05(.0-02), T10, T11(.0-.9), T33(.4-.5), T22-T23, T34(.4-.5), T35.4, T92(.0-.9), T95.2 Superficial injury, open wound, fracture, dislocation/sprain/strain of joints and ligaments, injury of nerves, injury of blood vessels, injury of muscle or tendon, crushing injury, traumatic amputation, other and unspecified injury of: shoulder and upper arm, forearm and elbow, wrist and hand.
Lower extremity	S70(.0.9), S71(.0-.8), S72(.0-.9), S73(.0-.1), S74, S75, S76(.0-.7), S77(.0-.2), S78(.0-.9), S79(.7-.9), S80, S81, S82, S83(.0-.7), S84, S85, S86, S88, S87, S89(.7-.9), S90, S91, S92(.0-.1,.3), S93(.2,.4-.6), S94, S95, S96, S97, S98, S99(.7-.9), T00.3, T01.3, T02(.3,.5), T03.3, T04.3, T05(.3-.5), T12, T13(.0-.9), T24, T25, T33(.6-.8), T35.5, T93(.0-.9), T95.3 Superficial injury, open wound, fracture, dislocation/sprain/strain of joints ligaments, injury of nerves, injury of blood vessels, injury of tendons, crushing injury, traumatic amputation, other unspecified injury of: hip and thigh, knee and lower leg, ankle and foot.
Unclassifiable by site/ Multiple sites	T00(.6,.8-.9), T01(.6,.8, .9), T02(.6-.9), T03(.4,.8-.9), T04(.4,.8-.9), T05(.6-.9), T06(.1-.4,.8), T07, T14(.0-.9), T27(.1,.5), T28(.4,.9), T29(.0-.7), T30-T32, T33.9, T34.9, T35(.0-.1,.6,.7), T36-T50, T51-T65, T66-T75, T79(.0-.9), T91(.0,.8,.9), T94(.0,.1), T95(.4,.8-.9), T96, T97, T98(.0-.2)
Adverse events	T78, T80-T88, T98.3

Source: The Barell Injury Diagnosis Matrix

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