

Hospitalization for Unintentional Falls, Motor Vehicle Traffic, Intentionally Self-inflicted Injuries, and Poisoning in Saskatchewan

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Purpose:

The purpose of this report is to present information about people hospitalized because of injuries due to unintentional falls and motor vehicle traffic, intentionally self-inflicted injuries, and poisoning in Saskatchewan.

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Background

This snapshot report highlights the age and sex profile and regional variations of the four most common mechanisms, circumstances, or conditions that lead to injury hospitalization: unintentional falls, motor vehicle traffic injuries, intentionally self-inflicted injuries (i.e. suicide attempt), and poisoning.

Prevalence is a measure of the total number of individuals who have a health condition at a particular time. For injury hospitalization this

measure is annual prevalence which reflects the number of individuals hospitalized in a fiscal year.

At the provincial level, the report shows annual prevalence for males and females in each year from 1999/2000 to 2013/14, and five-year average annual prevalence in 2009/10 – 2013/14 by age-group. The report also provides average annual prevalence estimates for comparison of injury hospitalization in each regional health authority in 2009/10 – 2013/14.

Key Findings

Between 2009/10 and 2013/14, **fall injury** hospitalization:

- affected almost 4,400 Saskatchewan residents in each year;
- did not change significantly after declining between 2004/05 and 2008/09;
- was significantly and consistently higher for females than for males in each year; and
- occurred mainly at ages older than 60 years (two-thirds of affected people). The rates increased more than ten-fold, from less than 40 per year per 10,000 in the 60 to 65 years age group to almost 440 per year per 10,000 in those older than 85 years.

Between 2009/10 and 2013/14, **motor vehicle traffic injury** hospitalization:

- affected almost 700 Saskatchewan residents in each year;
- has declined significantly;
- was significantly and consistently higher for males than for females in each year; and
- occurred mainly among young people between the ages of 15 and 24 years (about one-third of affected people).

Between 2009/10 and 2013/14, **intentionally self-inflicted injury** hospitalization:

- affected more than 500 Saskatchewan residents in each year;
- did not change significantly after declining between 1999/2000 and 2008/09;
- was significantly and consistently higher for females than for males in each year; and
- occurred mainly among young people between the ages of 15 and 24 years (about one-quarter of affected people).

Between 2009/10 and 2013/14, **poisoning** hospitalization:

- affected almost 400 Saskatchewan residents in each year;
- has declined slightly but significantly (by 0.3 per 10,000 per year) from the previous five years 2004/05 to 2008/09;
- was not significantly different between males and females; and
- was highest on average in the one to four years age group, the 15 to 19 years of age group, and also at ages older than 80 years.

Fall Injury Hospitalization

Between 2009/10 and 2013/14, an average of almost 4,400 Saskatchewan residents were hospitalized in each year because of a fall injury.

Figure 1:

Annual hospitalization rates:

- declined from about 39 per 10,000 in 2004/05 to 34 per 10,000 in 2008/09, after that was variable, with an annual average of about 36 per 10,000 between 2009/10 and 2013/14;
- were significantly and consistently higher for females than for males in each year;
- had a gradually increasing difference between females and males from an average annual difference of 4.9 per year per 10,000 between 1999/2000 and 2003/04 to an average annual difference of 6.4 per year per 10,000 between 2009/10 and 2013/14.

Figure 2:

- Fall injury related hospitalization was uncommon at ages younger than 60 years, with fewer than 30 per 10,000 per year.

- People older than 60 years of age comprised about two-thirds of hospitalizations. Rates increased more than ten-fold from less than 40 per 10,000 per year in the 60 to 65 years age group to almost 440 per 10,000 per year in the group older than 85 years.
- Slightly more males than females at ages younger than 50 years were hospitalized. However, at ages older than 50 years of age, an increasing proportion of women were hospitalized, rising to about three-quarters of cases in the 85 years and older group.

Figure 3:

Compared to the provincial hospitalization rate,

- rates were significantly lower in the Saskatoon, Prince Albert Parkland, and Prairie North health regions; and
- rates were significantly higher in the Sun Country, Sunrise, Regina Qu'Appelle, Five Hills, and combined three northern health regions.

Figure 1: Fall Injury Hospitalization — Age-standardized Annual Prevalence by Sex, Saskatchewan, 1999/2000 to 2013/14

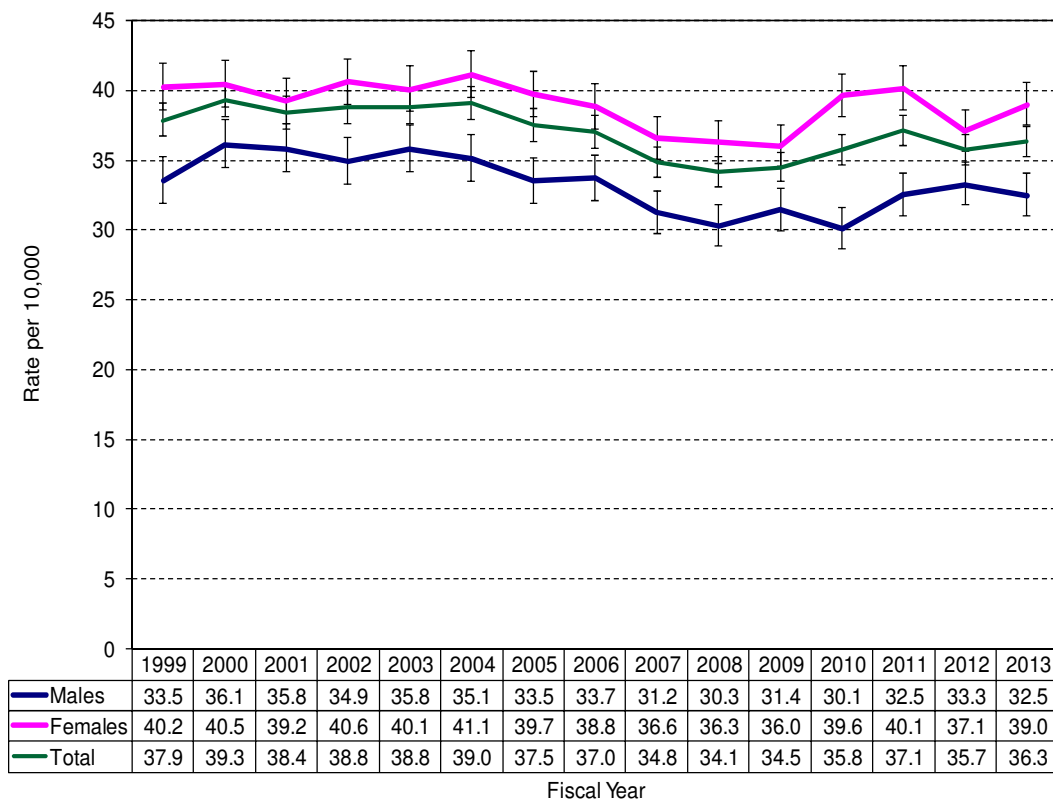
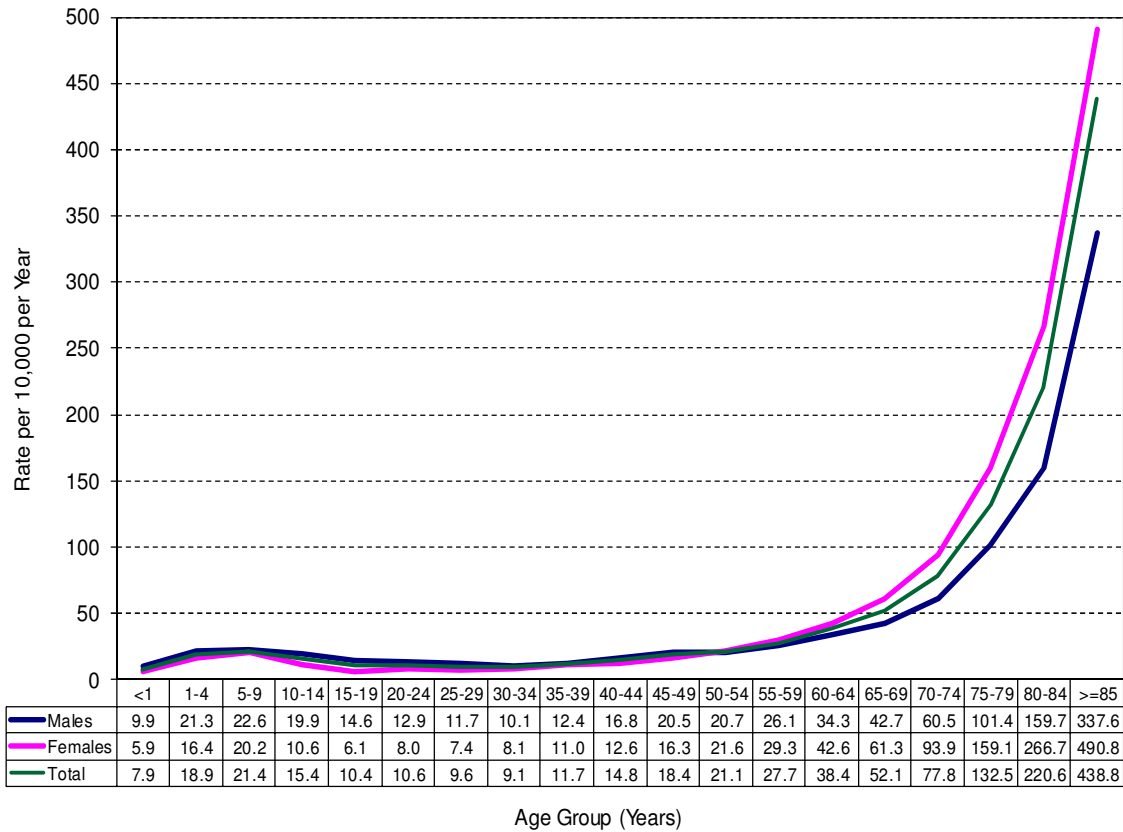


Figure 2: Fall Injury Hospitalization — Five-year Average Annual Prevalence Rate by Age Group and Sex, Saskatchewan, 2009/10 - 2013/14



An individual is identified as a fall injury case if:

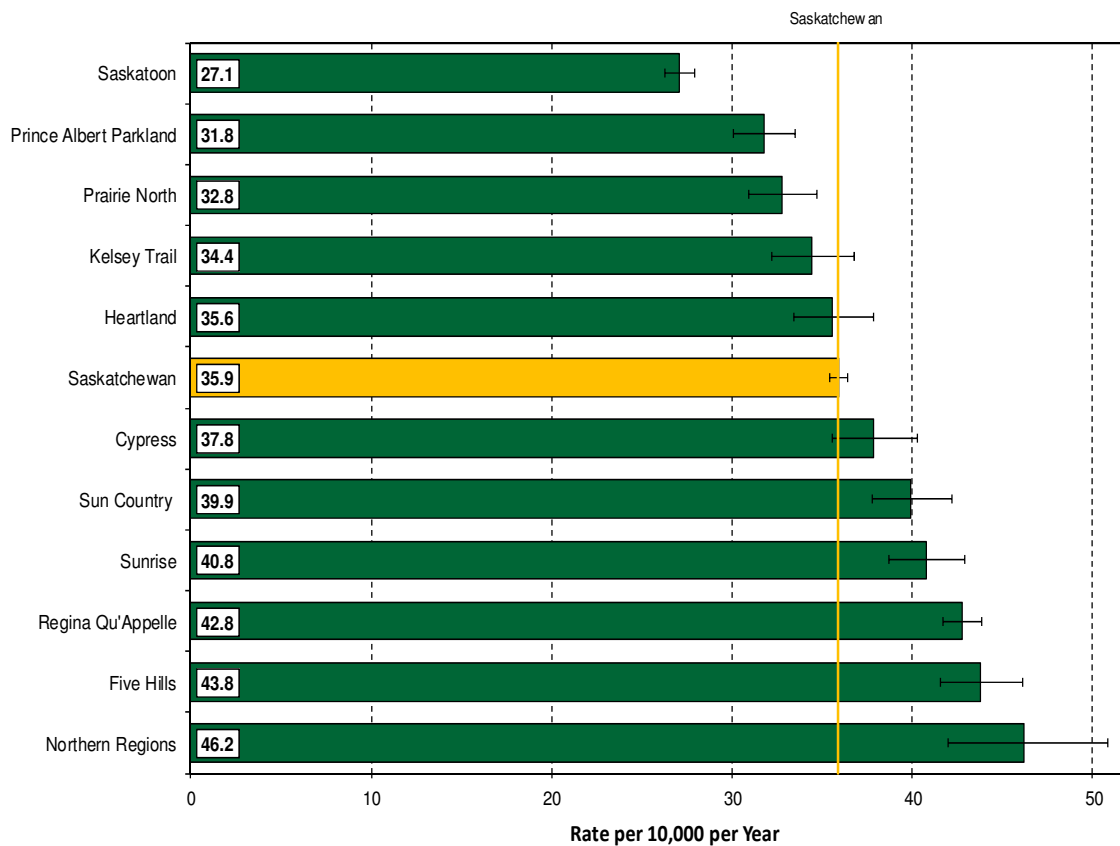
- s/he has one hospital record with a relevant external cause of injury code in any diagnostic field; and
- the external cause of injury code is associated with an injury code with a diagnostic type of M, 1, 2, W, X, or Y; and
- the hospitalization has a level of care of acute; and
- the hospitalization is not within 28 days of the admission date of a previous hospitalization with the same external cause of injury code.

Fall injury diagnostic codes:

ICD-9: E880-E886, E888

ICD-10-CA: W00-W19

Figure 3: Fall Injury Hospitalization — Age-standardized Five-year Average Annual Prevalence Rate by Saskatchewan Region, 2009/10 - 2013/14



Motor Vehicle Traffic Injury Hospitalization

Between 2009/10 and 2013/14, an average of almost 700 Saskatchewan residents were hospitalized because of motor vehicle traffic injury in each year.

Figure 4:

Annual hospitalization rates:

- declined significantly from 9.1 per 10,000 in 1999/2000 to 5.4 per 10,000 in 2013/14; and
- were significantly and consistently higher for males than for females in each year.

Figure 5:

- Almost one-third of hospitalizations affected young people between the ages of 15 and 24 years, at a rate of 11 per year per 10,000.

- Between the ages of 25 and 70, the hospitalization rate declined from seven to five per year per 10,000.
- At ages 75 years and older, the hospitalization rate increased to about eight per year per 10,000.

Figure 6:

- Compared to the provincial hospitalization rate,
- rates were significantly lower in the Saskatoon health region; and
 - rates were significantly higher in the Kelsey Trail, Prairie North, and the combined three northern health regions.

Figure 4: Motor Vehicle Traffic Hospitalization — Age-standardized Annual Prevalence by Sex, Saskatchewan, 1999/2000 to 2013/14

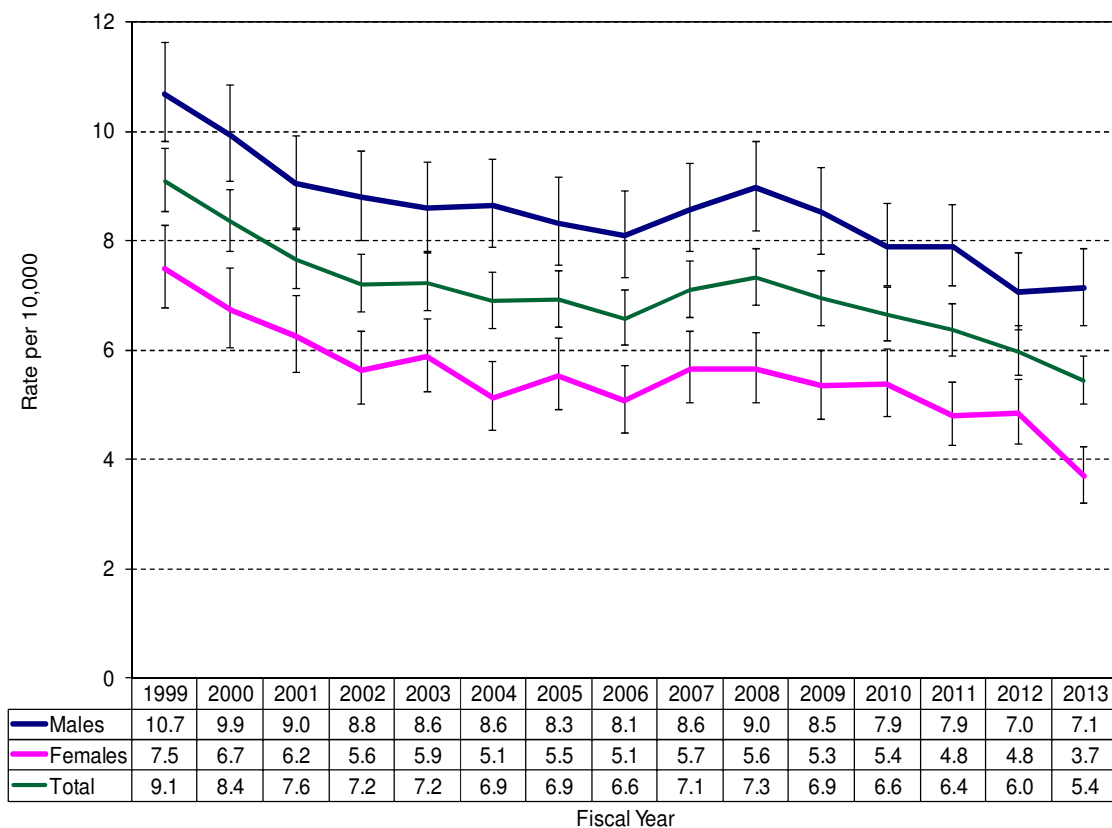
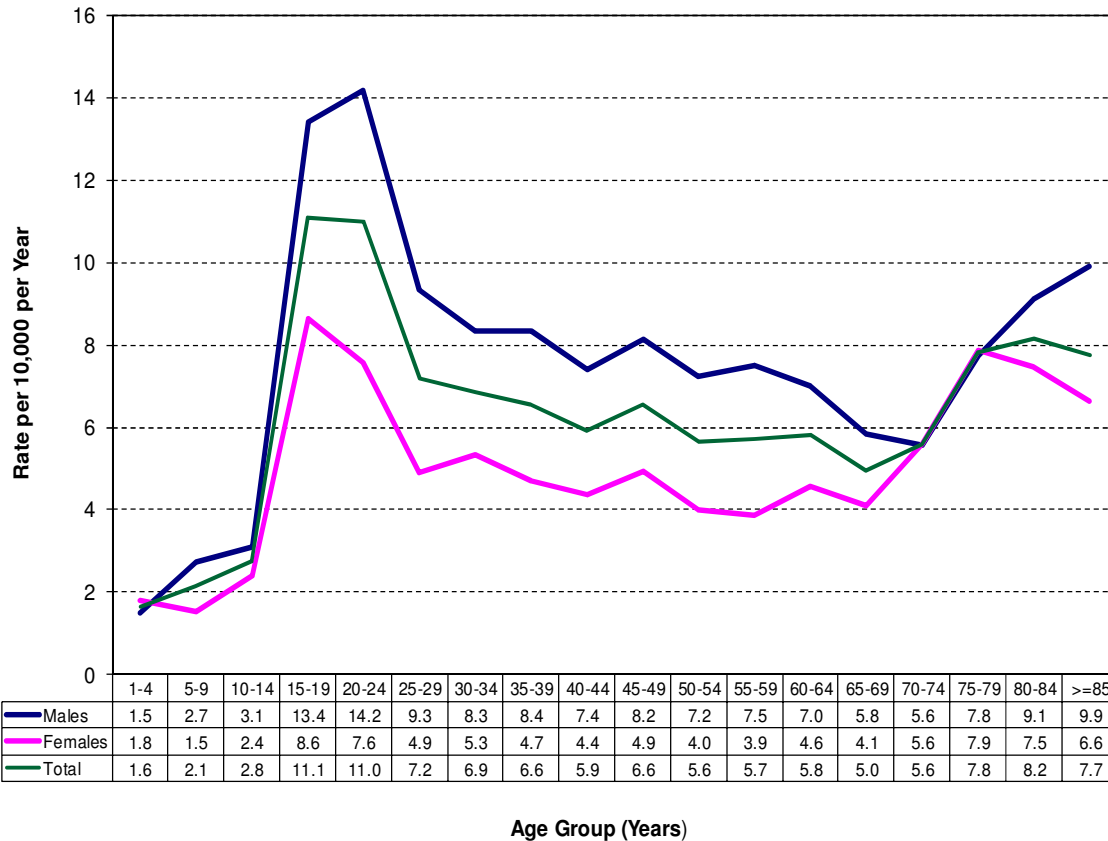


Figure 5: Motor Vehicle Traffic Hospitalization — Five-year Average Annual Prevalence Rate by Age Group and Sex, Saskatchewan, 2009/10 - 2013/14



An individual is identified as a motor vehicle traffic injury case if:

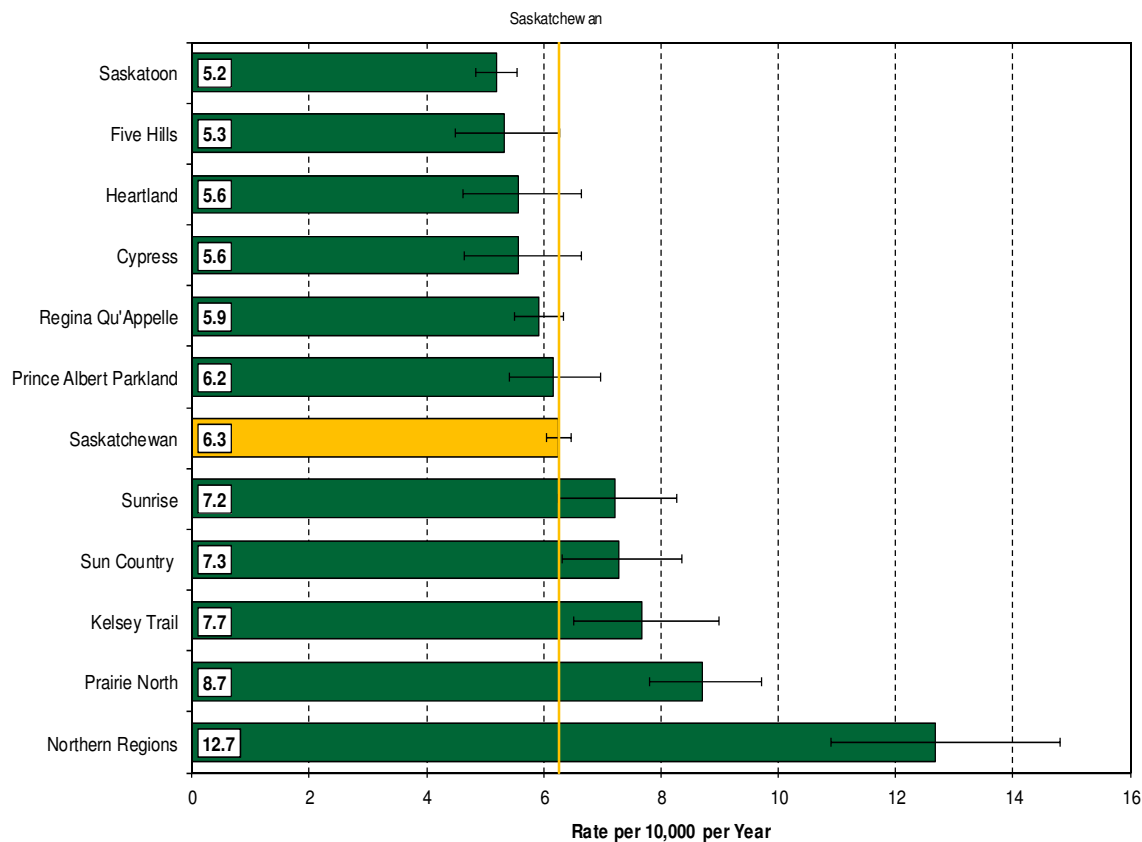
- s/he has one hospital record with a relevant external cause of injury code in any diagnostic field; and
- the external cause of injury code is associated with an injury code with a diagnostic type of M, 1, 2, W, X, or Y; and
- the hospitalization has a level of care of acute; and
- the hospitalization is not within 28 days of the admission date of a previous hospitalization with the same external cause of injury code.

Motor vehicle traffic injury diagnostic codes:

ICD-9: E810-E819

ICD-10-CA: V02-V04(.1), V02-V04(.9), V09.2, V12-V14(.3-.9), V19(.4-.6), V20-V28(.3-.9), V29(.4-.9), V30-V79(.4-.9), V80(.3-.5), V81-V82(.1), V83-V86(.0-.3), V87(.0-.8), V89.2

Figure 6: Motor Vehicle Traffic Hospitalization — Age-standardized Five-year Average Annual Prevalence Rate by Saskatchewan Region, 2009/10 - 2013/14



Intentional Self-inflicted Injury Hospitalization

Between 2009/10 and 2013/14, an average of more than 500 Saskatchewan residents were hospitalized because of intentional self-inflicted injury in each year.

Figure 7:

Annual hospitalization rates:

- have declined significantly from 7.7 per 10,000 in 1999/2000 to 4.4 per 10,000 in 2013/14; and
- were significantly and consistently higher for females than for males in each year.

Figure 8:

- Hospitalizations were highest in the 15 to 19 years of age group at almost 15 per 10,000 and then declined with age.

- About one-quarter of hospitalizations were in young people between the ages of 15 and 24 years.

Figure 9:

Compared to the provincial hospitalization rate,

- rates were significantly lower in the Cypress and Saskatoon health regions; and
- rates were significantly higher in the Prairie North, Kelsey Trail, and combined three northern health regions.

Figure 7: Intentional Self-inflicted Injury Hospitalization— Age-standardized Annual Prevalence by Sex, Saskatchewan, 1999/2000 to 2013/14

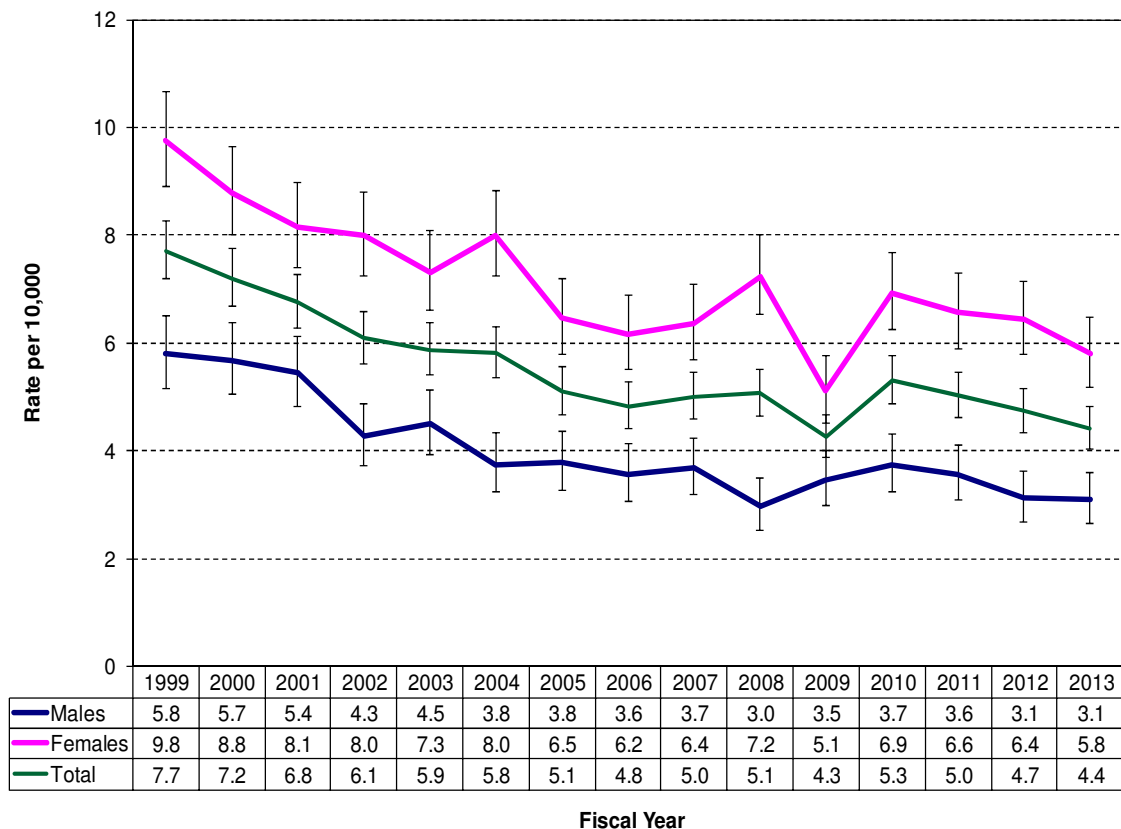
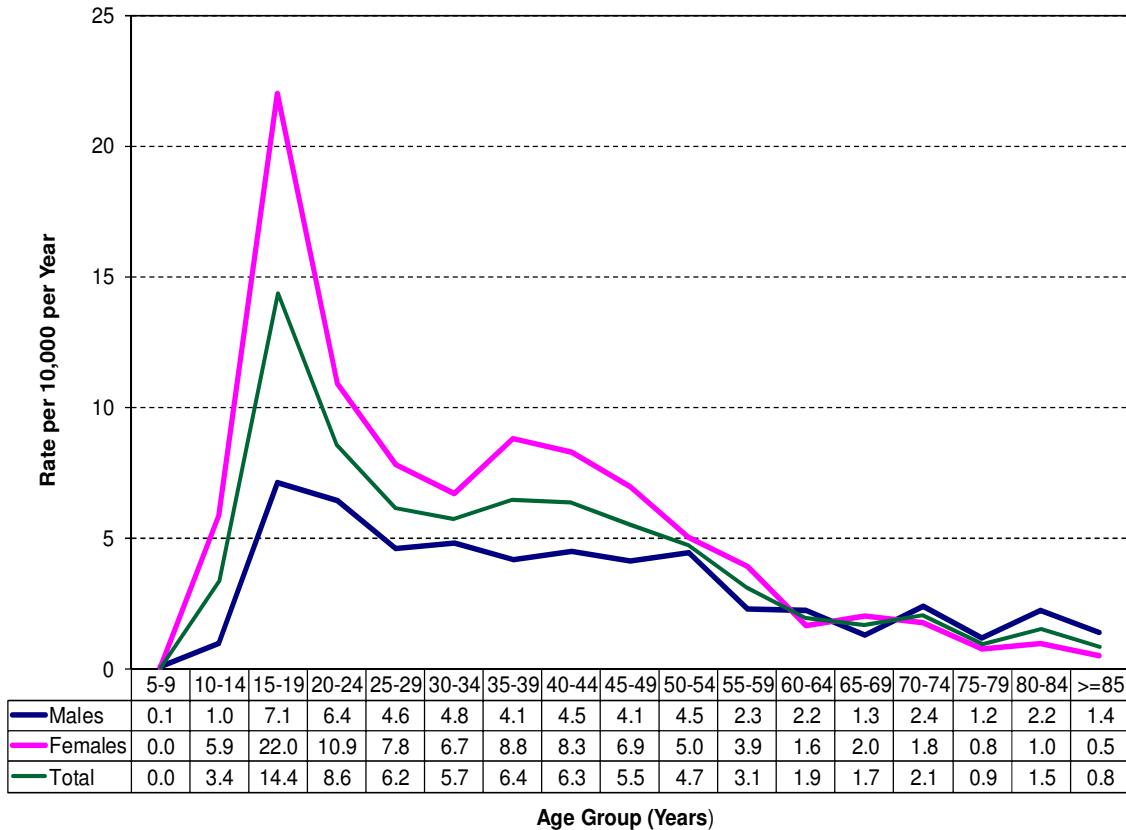


Figure 8: Intentional Self-inflicted Injury Hospitalization — Five-year Average Annual Prevalence Rate by Age Group and Sex, Saskatchewan, 2009/10 - 2013/14



An individual is identified as an intentional self-inflicted injury case if:

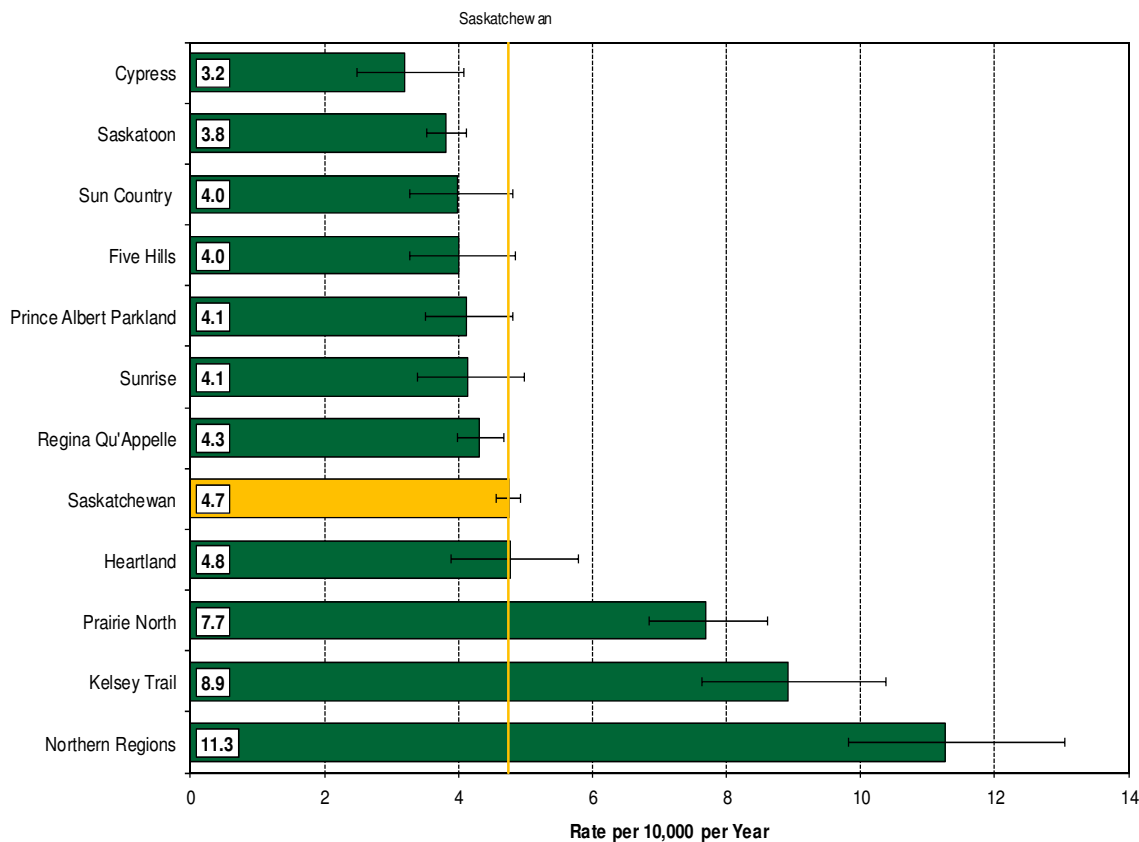
- s/he has one hospital record with a relevant external cause of injury code in any diagnostic field; and
- the external cause of injury code is associated with an injury code with a diagnostic type of M, 1, 2, W, X, or Y; and
- the hospitalization has a level of care of acute; and
- the hospitalization is not within 28 days of the admission date of a previous hospitalization with the same external cause of injury code.

Intentional self-inflicted injury diagnostic codes:

ICD-9: E950—E959

ICD-10-CA: X60-X84,Y87.0

Figure 9: Intentional Self-inflicted Injury Hospitalization — Age-standardized Five-year Average Annual Prevalence Rate by Saskatchewan Region, 2009/10 - 2013/14



Poisoning Hospitalization

Between 2009/10 and 2013/14, an average of almost 400 Saskatchewan residents were hospitalized because of poisoning in each year.

Figure 10:

Annual hospitalization rates:

- showed no discernible trend, but a slight yet significant decline in the average annual prevalence is evident between the five-year periods 2004/05 to 2008/09 and 2009/10 to 2013/14 (from 3.7 to 3.4 per year per 10,000 respectively); and
- were not significantly different between males and females.

Figure 11:

- Hospitalizations were highest in the age one to four years age group, the 15 to 19 years of age group, and also at ages older than 80 years.

Figure 12:

Compared to the provincial hospitalization rate,

- rates were significantly lower in the Heartland and Saskatoon health regions; and
- rates were significantly higher in the Prince Albert Parkland, Kelsey Trail, combined three northern, and Sunrise health regions.

Figure 10: Poisoning Hospitalization — Age-standardized Annual Prevalence by Sex, Saskatchewan, 1999/2000 to 2013/14

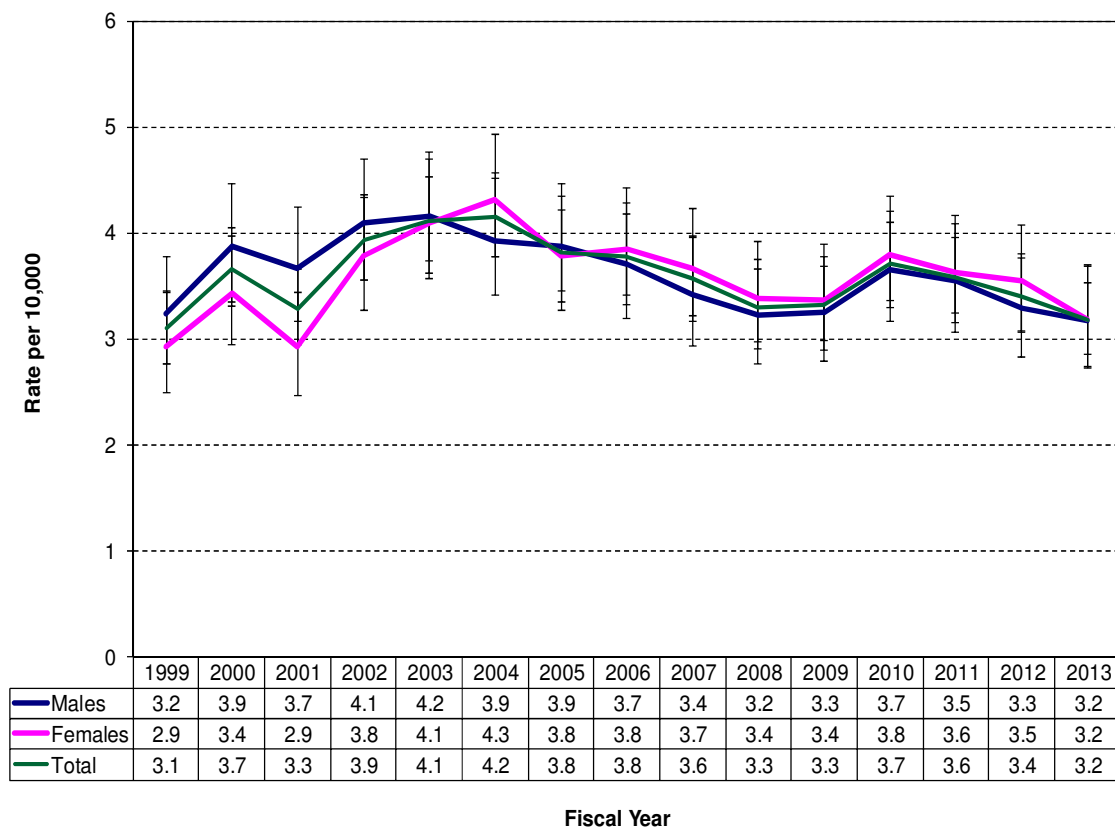
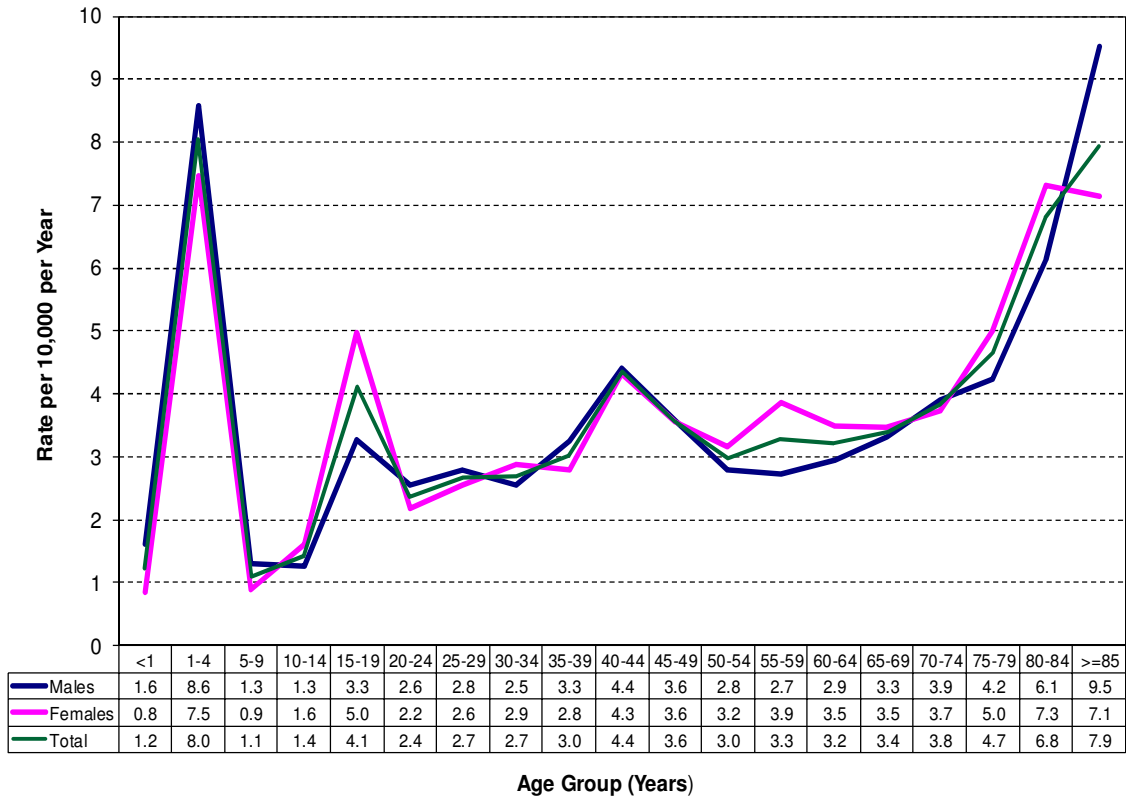


Figure 11: Poisoning Hospitalization — Five-year Average Annual Prevalence Rate by Age Group and Sex, Saskatchewan, 2009/10 - 2013/14



An individual is identified as a poisoning case if:

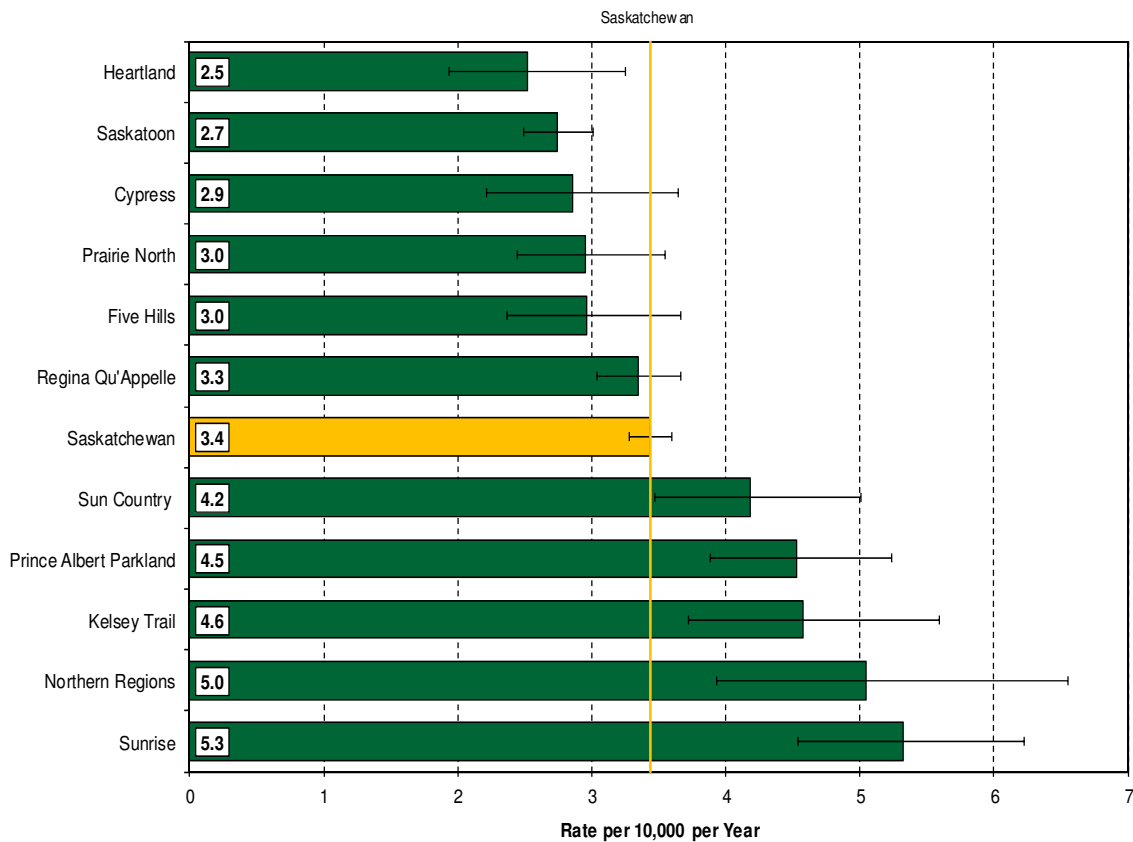
- s/he has one hospital record with a relevant external cause of injury code in any diagnostic field; and
- the external cause of injury code is associated with an injury code with a diagnostic type of M, 1, 2, W, X, or Y; and
- the hospitalization has a level of care of acute; and
- the hospitalization is not within 28 days of the admission date of a previous hospitalization with the same external cause of injury code.

Poisoning diagnostic codes:

ICD-9: E850-E869, E924.1

ICD-10-CA: X40-X49

Figure 12: Poisoning Hospitalization — Age-standardized Five-year Average Annual Prevalence Rate by Saskatchewan Region, 2009/10 - 2013/14



Technical Notes

Method:

Injury hospitalization estimates are based on the infrastructure and case definitions piloted for the Canadian Chronic Disease Surveillance System (CCDSS), with support of the Public Health Agency of Canada. This method is based on linkage of administrative data sources including:

- Person Health Registry System (PHRS) which includes all residents eligible for Saskatchewan Health benefits.
- Hospital services which include data on inpatient separations for patients treated in hospitals.

Diagnoses are coded in hospital according to the ICD-10-CA or ICD-9 system depending on the year.

Calculations:

Age standardization allows comparisons to be made among areas that have populations with different age distributions, or comparisons over time. To adjust for differences in population age distributions and the resulting effect on rates, the rates were age-adjusted using the 2011 Canadian population as a reference. Adjustment was done via the direct method, using five-year age groups to age 85 years and older.

To facilitate comparisons, 95% confidence intervals (CIs) of all age-standardized rates were calculated for rates greater than zero. The CI includes the true value for the estimated rate 19 times out of 20. A rate difference was considered statistically significant if there was no overlap of confidence intervals.

Annual prevalence rates were calculated as five-year averages to reduce year-to-year fluctuations for analysis by age group and health region.

Limitations:

The administrative data used do not capture people with untreated injuries, or who do not access the healthcare system.

Hospital separation data capture only the most serious injuries and cannot provide information on injuries that do not lead to hospitalization. Many injuries are treated at home, and/or general physicians' clinics and therefore would not be included in hospital data.

The case definitions do not identify individuals with injuries who present at hospital, but are not captured within the hospital discharge abstract databases because they are seen in emergency rooms or outpatient clinics without being admitted as an inpatient.

An individual may be hospitalized more than once for the same injury.

Differences in reporting may affect comparison.

Provincial administrative data exclude full-time members of the Canadian Forces, individuals in the Royal Canadian Mounted Police, and individuals residing in federal correctional facilities whose health benefits are covered by federal jurisdiction.