

Unintentional Injuries in Grey Bruce: 2000 – 2009



For more information about this report, please contact:

Alanna Leffley, Senior Epidemiologist at **x1260**

a.leffley@publichealthgreybruce.on.ca

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Prepared by:

Virginia McFarland, Health Data Analyst (x1522)

Alanna Leffley, Senior Epidemiologist (x1260)

Discussion contributed by:

Lynda Bumstead, Manager of Chronic Disease and Injury and Substance Misuse Programs (x1463)

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Message from the Medical Officer of Health

November 2011

Unintentional injuries are a major public health issue for Grey and Bruce Counties. Within our community, the leading causes of injuries are falls, alcohol misuse, and motor vehicle traffic crashes. Injuries especially impact our children, youth and older adults. They are a leading cause of hospitalization and place great stress on our emergency departments. We must address the factors that influence injury rates within our community.

Injuries happen where we live, learn, work and play - they are largely predictable and preventable. Personal risk-taking behaviours play a large part in influencing injury rates, but we cannot forget the impact of socio-economic and environmental factors. It is critical that we work together to develop a comprehensive, community-focused approach to address these factors.

Injury prevention cannot stand alone since the underlying causes of injuries are similar to other public health issues. The impact of our unhealthy lifestyles is reflected in our injury rates. It is no surprise that injury rates are higher in Grey Bruce when you consider that we have high rates of alcohol use, obesity, and low rates of regular physical activity. All of these factors can lead to more severe injuries and poor outcomes.

Strategies must support the development of safer communities and address the social determinants of health by including targeted programs and services to those populations at greatest risk of injuries. We encourage those in health care and the general public to look at this report in order to better understand the impact of unintentional injury in Grey Bruce. We all have a role to play in reducing injuries. What will you do?

Together we can build a safer, healthier community,

Dr. Hazel Lynn, M.D., FCFP, MHSc
Medical Officer of Health
Grey Bruce Health Unit

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About Unintentional Injuries

The Association of Public Health Epidemiologists of Ontario (APHEO) lists 9 specific unintentional injury death code groupings and one overall unintentional injury code grouping for the International Classification of Diseases (ICD) version 10 (known as ICD-10).

The 9 specific code groupings are:

- Motor Vehicle Traffic Crash,
- Traffic-related Pedestrian,
- Pedal Cycle,
- Recreational Boating,
- Unintentional Drowning,
- Unintentional Falls,
- External Causes of [Unintentional] Burns,
- Unintentional Suffocation, and
- Unintentional Poisoning.

An additional 3 categories of unintentional injury are available for hospitalizations and emergency room visits (ERVs), which are coded to a higher degree of specificity than deaths data using a Canadian classification variant of ICD-10 known as ICD-10-CA.

These 3 additional available categories are:

- Motor-driven Snow Vehicle,
- Off-road Motor Vehicle, and
- Sports Injury.

One final unintentional injury code grouping was used in this report: farm-related injuries, which include the cause codes W30, V84 and U98.7 for hospitalizations and ERVs; and W30 and V84 for deaths.

About the Report

In the tables and figures that follow, causes of unintentional injury death, hospitalization and emergency room visits (ERVs) are presented in terms of three- and four-year raw counts and age-standardized rates for Grey Bruce Health Unit and for Ontario in general, and for sex and county of residence. For the farm injuries category, rates have also been presented for the South West Local Health Integration Network (SW LHIN) region.

Age-standardized rates do not represent the actual number of deaths expected in our population—they are the numbers expected if our population had a similar age distribution to a reference population (Canadian population in 1991). This allows for ease of comparability between counties, to another region, or over time.

Other rates that are presented in the following document include crude (unadjusted) rates for age (or age-specific rates). These are reflective of what is actually occurring in the population because they are not adjusted to a reference population.

At the time that this report was prepared, there was no reliable means of extracting ERV data at the county level, and analysis at this level is therefore not presented.

Legend

These symbols will appear in figures, tables and in the body text of the report.

- † Estimate should be used with caution, as there is a high degree of variance in the measure.
- Supp. Estimate has been suppressed because of unreliability or low counts.
- (S) Count has been suppressed to prevent identification of cells with counts of less than 5.

About the Data

All data for this report were extracted from IntelliHEALTH Ontario, the medical services and demography database query system provided and managed by the Ontario Ministry of Health and Long-term Care.

Population Estimates

Population estimates were used as denominators to determine the population rates of ERVs, hospitalizations and deaths. These estimates are prepared by Statistics Canada based on post/intercensal estimates depending on the time period, and shared with the Ministry of Health and Long-term Care for distribution via IntelliHEALTH Ontario. The data citation for these population estimates is:

Population Estimates 2000–2009, Ontario Ministry of Health and Long-term Care, IntelliHEALTH Ontario, Date Extracted: October 19, 2010.

Emergency Room Visits

ERV data were extracted from the Ambulatory Visits tables, which contain data from the National Ambulatory Care Reporting System (NACRS), developed by the Canadian Institute for Health Information (CIHI). The data citation for these emergency room visit data is:

Ambulatory Visits 2003–2009, Ontario Ministry of Health and Long-term Care, IntelliHEALTH Ontario, Date Extracted: February 25, 2011.

Hospitalizations

Hospital visits data were extracted from the Inpatient Discharges tables, which contain records from the Discharge Abstract Database (DAD), originally developed in 1974 by the Hospital Medical Records Institute, which later became CIHI. Technically, hospitalizations are not counted—rather, “discharges” — or hospital separations—are counted in this data source. The data citation for these hospitalizations data is:

Inpatient Discharges 2003–2009, Ontario Ministry of Health and Long-term Care, IntelliHEALTH Ontario, Date Extracted: October 28, 2010.

Deaths

Deaths data were extracted from the Deaths tables, which contain mortality data collected by the Ontario Registrar General. These tables contain only data for deaths that occurred in Ontario regardless of the residence of the deceased. While the Ontario Registrar General does collect data on deaths that occurred outside the province, they will not provide this information to the province.

In order for a death record to be created, two documents must be submitted to the Ontario Registrar General: one from the medical certifier (physician) and one from next-of-kin or a legal certifier.

Ontario Mortality Data 2000–2004, Ontario Ministry of Health and Long-term Care, IntelliHEALTH Ontario, Date Extracted: October 12, 2010.

Query Criteria

Data for deaths, hospitalizations and ERVs were retrieved for residents based on geography: residents of Grey Bruce, residents of Ontario, residents of the SW LHIN region, and residents of Grey and Bruce counties.

For deaths, each case counts as one *death*. Therefore, a mortality rate of 2 per 100,000 population means that 2 in 100,000 people died. For hospitalizations and ERVs, each case is a *visit* or *hospital stay*. As previously noted, hospitalizations are technically defined as *hospital discharges*—i.e., counts of the *ends* of hospitalization periods. Thus, a hospitalization rate of 2 per 100,000 population means that there were 2 cases discharged per 100,000 people. ERVs and hospitalizations have the potential to double count (or more) individuals, as they are counts of hospitalizations or ERVs experienced by patients, not counts of the patients who were hospitalized or provided care at an emergency department.

You cannot add ERVs, hospitalizations and deaths to get the total number of ‘incidents’ of a certain type. You also cannot take the number of hospitalizations or ERVs for a certain injury to represent the number of separate incidents that led to hospitalization or ERVs. Unlike in the case of death, a person can make multiple trips to an emergency room for the same issue and can have multiple hospital stays for the same issue. In addition to possible hospital readmission or multiple ERVs for the same issue, it’s possible that a person is seen in the ER, admitted to hospital, and dies of the same incident (or some other combination of these events).

Executive Summary

This report, *Unintentional Injuries in Grey Bruce 2000-2009*, takes an in-depth look at unintentional injuries in our area—from emergency room visits to hospitalizations and even deaths. As reported previously, the Grey Bruce area has higher rates of unintentional injuries for many major categories.

Unintentional Injury Emergency room visits (ERV):

Grey Bruce has higher age-standardized ERV rates than Ontario for:

- unintentional injuries (19,318.2 ± 105.7 per 100,000 population, 101% higher);
- unintentional falls (4922.4 ± 56.6 per 100,000 population, 72% higher); and
- motor vehicle traffic crashes (767.4 ± 24.0 per 100,000 population, 43% higher).

Grey Bruce has higher age-standardized ERV rates than SW LHIN for:

- farm-related injuries (32.4 ± 4.6 per 100,000 population, 72% higher).

Grey Bruce males have higher age-standardized ERV rates than Grey Bruce females for:

- all unintentional injuries (22,510.2 ± 156.7 per 100,000 population, 41% higher); and
- farm-related injuries (56.2 ± 8.6 per 100,000 population, 553% higher).

Youths aged 15–24 years in Grey Bruce have higher age-specific ERV rates than other age groups for:

- all unintentional injuries (26,966.7 ± 296.0 per 100,000 population, 20% higher); and
- motor vehicle traffic crashes (1428.3 ± 79.2 per 100,000 population, 47% higher).

Children aged 0–14 years in Grey Bruce have higher age-specific ERV rates than other age groups for:

- Unintentional falls (7437.7 ± 161.3 per 100,000 population, 5% higher) relative to seniors (65 and over), (49% higher) relative to 15–24 [next highest group after seniors]).

Unintentional Injury Morbidity/hospitalization:

Grey Bruce has higher age-standardized hospitalization rates than Ontario for:

- all unintentional injuries (649.2 ± 18.9 per 100,000 population, 50% higher);
- unintentional falls (345.6 ± 12.4 per 100,000 population, 39% higher);
- motor vehicle traffic crash injuries (66.3 ± 6.7 per 100,000 population, 73% higher);
- pedal cycle injuries (12.5 ± 2.9 per 100,000 population, 26% higher); and
- unintentional burns (9.7 ± 2.6 per 100,000 population, 52% higher).

Grey Bruce males have higher age-standardized hospitalization rates than Grey Bruce females for:

- all unintentional injuries (717.8 ± 29.6 per 100,000 population, 27% higher);
- motor vehicle traffic crash injuries (84.1 ± 10.8 per 100,000 population, 75% higher);
- pedal cycle injuries (20.6 ± 5.4 per 100,000 population, 402% higher);
- unintentional burns (14.3 ± 4.5 per 100,000 population, 192% higher); and
- other off-road motor vehicle injuries (11.1¹ ± 4.2 per 100,000 population, 171% higher).

Seniors in Grey Bruce have higher age-specific hospitalization rates than other age groups for:

- all unintentional injuries (2585.0 ± 89.4 per 100,000 population, 363% higher),
- unintentional falls (2061.2 ± 80.0 per 100,000 population, 616% higher), and
- unintentional poisonings (44.6 ± 11.9 per 100,000 population, 75% higher).

Unintentional Injury Mortality/deaths:

Grey Bruce has higher age-standardized mortality rates than Ontario for:

- all unintentional injuries (3.9 ± 4.2 per 100,000 population, 36% higher); and
- motor vehicle traffic crashes (10.1 ± 2.6 per 100,000 population, 71% higher).

Grey Bruce males have higher age-standardized mortality rates than Grey Bruce females for:

- all unintentional injuries (38.7 ± 6.8 per 100,000 population, 59% higher).

Seniors in Grey Bruce have higher age-specific mortality rates than other age groups for:

- all unintentional injuries (153.0 ± 23.0 per 100,000 population, 456% higher); and
- unintentional falls (76.0 ± 16.3 per 100,000 population, other groups unreportable).

Injury prevention must be a strategic priority for Public Health. It is crucial that factors contributing to unintentional injuries of Grey Bruce residents be addressed using a comprehensive, community-focused approach. Underlying issues such as alcohol use, obesity rates, physical activity opportunities and the unique rural nature of the area must be considered when developing approaches to injury prevention across the lifespan.

Severe injuries cause morbidity, loss of independence, diminished quality of life, needless deaths and are a significant cost to our health care system as well as to our community. Recognizing and understanding of risk factors leading to unintentional injury and rates of unintentional injury in Grey Bruce will help Public Health, local communities and individuals create a safer place for us all to live, work, play, learn and age.

¹ Use with caution, estimate displays a high degree of variability.

Integrated Provincial Falls Prevention Framework & Toolkit

In July, 2011, the LHIN Collaborative—a provincial advisory structure that involves health service providers, their associations, and the LHINs collectively on system-wide health issues related to the LHINs' mandate—released the *Integrated Provincial Falls Prevention Framework & Toolkit*. This document was designed to guide LHINs, HUs and their partners in reducing falls and reducing the impact of falls on seniors.²

This framework and toolkit highlights specific areas in which Public Health can work within an Integrated Falls Prevention Program to the best advantage. This logic is expandable to the full scope of prevention of injuries—not only to the prevention of fall-related injuries.

Collaboration: PHUs are proficient facilitators of community partnerships, and should continue to seek opportunities in the community for partnership and collaboration on falls prevention initiatives.

Knowledge transfer: PHUs are advocates of evidence-based practice and already undertake knowledge transfer activities. They should continue this work, with a focus on supporting collaborators through knowledge transfer while applying the social determinants of health and health equity lenses to the information they communicate.

Targeted analysis: PHUs actively conduct epidemiological analysis to determine priority populations and interventions. The analyses undertaken contribute to improving public health through better public health programming. The knowledge gained in these analyses should continue to be shared among community partners and provincial health organizations.

Education: This refers in particular to public education as far as falls prevention (and other injury prevention activities). PHUs, alone and in collaboration with other organizations, are well-versed in preparing and disseminating public education and public awareness programming on a variety of topics.

Equipment: PHUs are well positioned to be providers of health and safety equipment for many different health issues, and this includes safety equipment for falls prevention. In addition to being able to facilitate share programs for equipment and helping community partners apply for grants for equipment, Public Health is also very familiar with the provision of education regarding safe use of health and safety equipment.

Environment: PHUs already work to improve the built environment for usability and for the safety of the public.

Physical activity: Some PHUs offer exercise programs, while many others offer information about exercise programs that help to increase strength and balance, and thereby prevent falls.

² LHIN Collaborative, "Integrated Provincial Falls Prevention Framework & Toolkit" (Queen's Printer for Ontario, July 2011).

All Unintentional Injuries

ICD-10 Cause Codes

- V01-X59, “Accidents”
- Y85-Y86, “Sequelae of transport accidents, Sequelae of other accidents”

Accident: An unanticipated event, commonly leading to injury, in traffic, the workplace, or a domestic or recreation setting. Epidemiologic studies have demonstrated that the risk of accidents is often predictable; they are therefore preventable.”³

Summary

Grey Bruce has an age-standardized rate of all unintentional injuries ERVs ($19,318.2 \pm 105.7$ per 100,000 population, RR = 2.01) that is twice as high as that of Ontario. In Grey Bruce, males have a 41% higher age-standardized rate of all unintentional injuries ERVs ($22,510.2 \pm 156.7$ per 100,000 population, Relative Risk [RR] = 1.41) than females. Among age groups, age-specific rates of all unintentional injuries ERVs are highest among 15–24-year-olds ($26,966.7 \pm 296.0$ per 100,000 population, RR = 1.20).

The age-standardized rate of all unintentional injuries hospitalizations for Grey Bruce (649.2 ± 18.9 per 100,000 population, RR = 0.90) has fallen 10% since the previous time period; but still, it is 50% higher than that for Ontario (RR = 1.50). Bruce county has a 23% higher age-standardized rate of all unintentional injuries hospitalizations than Grey county (RR = 1.23). Males in Grey Bruce are 27% more likely than females to be hospitalized for an unintentional injury (male age-standardized rate: 717.8 ± 29.6 per 100,000 population, RR = 1.27). Seniors (people aged 65 years and over) are more than four and a half times as likely as the age group with the next highest age-specific rate (45–64-year-olds) to be hospitalized as a result of an unintentional injury (seniors’ age-specific rate: 2585.0 ± 89.4 per 100,000 population, RR = 4.67). The top three causes of unintentional injury hospitalization in Grey Bruce are unintentional falls (345.3 ± 12.4 per 100,000 population), motor vehicle traffic crashes (66.3 ± 6.7 per 100,000 population), and unintentional poisonings (21.1 ± 3.7 per 100,000 population).

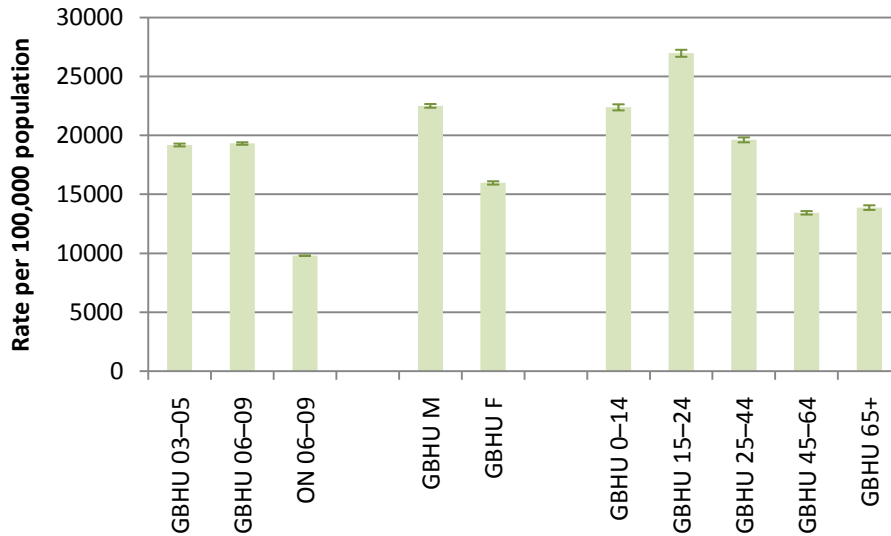
The age-standardized rate of all unintentional injuries mortality (deaths) in Grey Bruce (31.9 ± 4.2 per 100,000 population) is almost 60% higher than in Ontario (RR = 1.59). The male rate is nearly twice as high as that for females (38.7 ± 6.8 per 100,000 population, RR = 1.93), and seniors (65-year-olds and over) have an age-specific rate that is more than five times that of any other age group (153.0 ± 23.0 per 100,000 population, RR = 5.56). The top three causes of unintentional injury mortality in Grey Bruce are motor vehicle traffic crashes (10.1 ± 2.6 per 100,000 population), unintentional falls (7.6 ± 1.6 per 100,000 population) and unintentional poisoning (4.2 ± 1.8 per 100,000 population).

³ John M. Last, *A Dictionary of Epidemiology*, Fourth Edition. (New York: Oxford University Press, 2001).

All Unintentional Injuries Emergency Room Visits

The most recent age-standardized four-year rate of unintentional injuries ERVs for Grey Bruce (19,318.2 \pm 105.7 per 100,000 population) is nearly twice the rate for the province (RR = 1.95). This translates roughly to 80 ERVs made each day for treatment of largely preventable unintentional injuries.

Figure 1. All Unintentional Injuries ERVs, Three- and Four-year Counts and Rates, GBHU and ON



All Unintentional Injuries Emergency Room Visits by Sex

Males in Grey Bruce have a 41% higher age-standardized rate of unintentional injuries ERVs (22,510.2 ± 156.7 per 100,000 population) compared to females in Grey Bruce (RR = 1.41). This is the same relative risk of unintentional injury ER visits seen between males and females at the provincial level.

All Unintentional Injuries Emergency Room Visits by Age Group

The groups with the highest age-specific rates of unintentional injuries ER visits are the three youngest, with the peak occurring in the 15–24-year-old age group (26,966.7 ± 296.0 per 100,000 population, RR to 0–14-year-olds = 1.20). This group has approximately twice the rate as the lowest two groups, the 45–64-year-old and 65-year-old and over age groups.

Table 1. All Unintentional Injuries ERVs, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

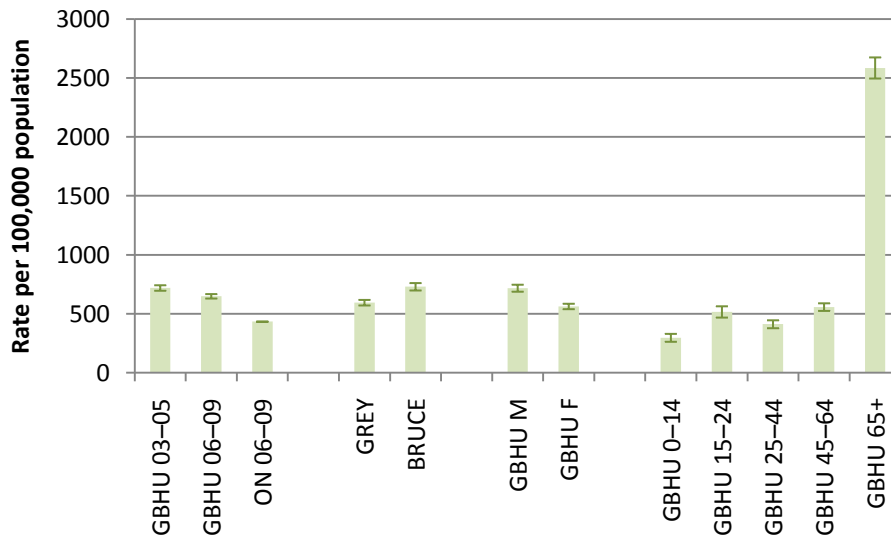
		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		19,193.8 ± 121.1 (87,506)	19,318.2 ± 105.7 (117,618)	9608.2 ± 8.4 (4,962,236)
By Sex	Male	22,818. ± 180.5 (51,200)	22,510.2 ± 156.7 (67,219)	11,441.2 ± 12.7 (2,829,938)
	Female	15,372.6 ± 157.7 (36,306)	15,976.7 ± 139.3 (50,399)	8122.6 ± 10.8 (2,132,298)
By Age	0–14	22,432.0 ± 285.8 (18,355)	22,382.8 ± 256.3 (22,745)	12,018.9 ± 21.3 (1,072,942)
	15–24	27,553.6 ± 342.8 (17,982)	26,966.7 ± 296.0 (23,279)	13,078.9 ± 24.8 (927,692)
	25–44	19,219.6 ± 231.0 (21,476)	19,626.4 ± 208.3 (27,422)	8779.9 ± 14.4 (1,300,343)
	45–64	13,021.4 ± 175.5 (18,401)	13,442.5 ± 148.2 (27,364)	7462.9 ± 13.9 (1,026,777)
	65 and over	13,137.9 ± 225.8 (11,292)	13,885.7 ± 194.8 (16,808)	9226.8 ± 21.6 (634,482)

All Unintentional Injuries Hospitalizations

The age-standardized rate of all unintentional injuries hospitalizations in Grey Bruce (649.2 ± 18.9 per 100,000 population) has fallen 10% since 2003–2005 (RR = 0.90). Compared to the provincial rate, however, our local rate is 50% higher (RR = 1.50). The local rate translates to between three and four hospitalizations on an average day in Grey Bruce for largely preventable injuries.

Between the counties, the rate of all unintentional injuries hospitalizations is 23% higher in Bruce County than Grey County (RR = 1.23).

Figure 2. All Unintentional Injuries Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



All Unintentional Injuries Hospitalizations by Sex

Males have higher age-standardized rates of all unintentional injuries hospitalizations than females. In Grey Bruce, the age-standardized rate for males (717.8 ± 29.6 per 100,000 population) is 27% higher than the rate for females (RR = 1.27). This is similar to the relative risk of all unintentional injuries hospitalizations between males and females at the provincial level (RR = 1.23).

All Unintentional Injuries Hospitalizations by Age Group

Seniors in Grey Bruce are more than four and a half times as likely to experience unintentional injury hospitalizations (age-specific rate: 2585.0 ± 89.4 per 100,000 population) as the next most likely age group (45–54-year-olds, RR = 4.63). This is quite similar to the relative risk seen at the provincial level between these groups (RR = 4.67). Although substantially higher than the provincial rates for the same age groups, the age-specific unintentional injuries hospitalizations rates follow the same pattern locally as the provincial rates.

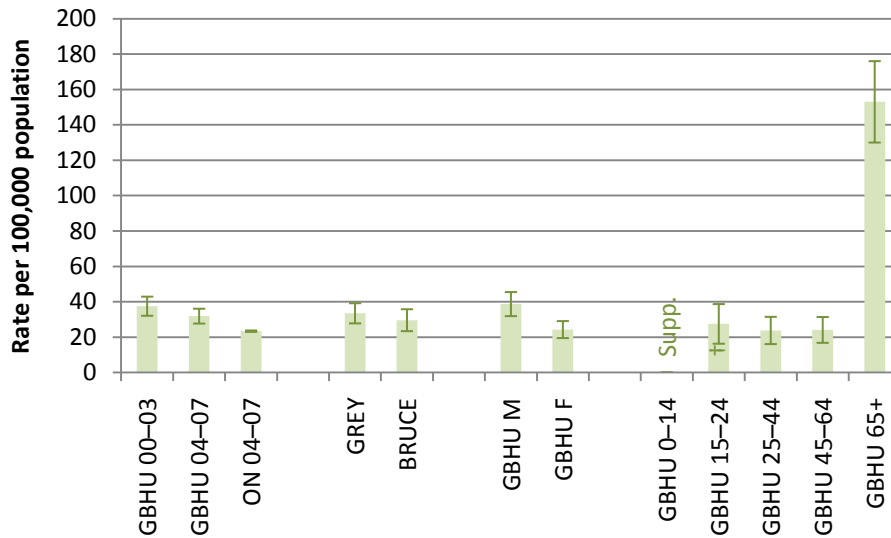
Table 2. All Unintentional Injuries Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU, ON, Grey, and Bruce

		GBHU		Ontario	Grey	Bruce
		2003–05	2006–09	2006–09	2006–09	2006–09
Overall		719.5 ± 23.3 (4366)	649.2 ± 18.9 (5588)	434.0 ± 1.7 (257,589)	594.9 ± 23.5 (3058)	729.9 ± 31.4 (2530)
By Sex	Male	804.6 ± 36.7 (2091)	717.8 ± 29.6 (2655)	472.5 ± 2.7 (124,475)	661.9 ± 37.1 (1443)	799.9 ± 48.8 (1212)
	Female	609.5 ± 28.2 (2275)	563.0 ± 23.0 (2933)	384.9 ± 2.2 (133,114)	510.9 ± 28.3 (1615)	638.2 ± 38.9 (1318)
By Age	0–14	355.6 ± 40.8 (291)	297.2 ± 33.5 (302)	239.1 ± 3.2 (21,346)	264.4 ± 41.2 (158)	344.1 ± 56.1 (144)
	15–24	563.9 ± 57.5 (368)	516.7 ± 47.8 (446)	281.3 ± 3.9 (19,951)	482.9 ± 60.6 (243)	563.8 ± 77.3 (203)
	25–44	514.6 ± 42.0 (575)	412.3 ± 33.6 (576)	243.7 ± 2.5 (36,093)	375.6 ± 41.4 (315)	467.2 ± 56.5 (261)
	45–64	588.1 ± 39.9 (831)	557.6 ± 32.3 (1135)	393.1 ± 3.3 (54,079)	520.1 ± 41.1 (611)	608.7 ± 52.0 (524)
	65 and over	2677.1 ± 107.9 (2301)	2585.0 ± 89.4 (3129)	1834.1 ± 10.0 (126,120)	2401.8 ± 111.8 (1731)	2854.6 ± 147.5 (1398)

All Unintentional Injuries Mortality

In Grey Bruce, the age-standardized rate of all unintentional injuries mortality (31.9 ± 4.2 per 100,000 population) does not differ significantly from the rate in the previous time period. It is, however, significantly higher (36%) than the provincial rate (RR = 1.36). Rates between the counties do not differ significantly.

Figure 3. All Unintentional Injuries Mortality, Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.

All Unintentional Injuries Mortality by Sex

Males in Grey Bruce have a 59% higher age-standardized rate of all unintentional injuries mortality than females (male rate: 38.7 ± 6.8 per 100,000 population, RR = 1.59). At the provincial level, males have a 93% higher age-standardized rate of all unintentional injuries mortality, mainly because the rate for females is lower at the provincial level than it is locally. Both male and female rates of all unintentional injuries are higher at the local level than those at the provincial level.

All Unintentional Injuries Mortality by Age

The age-specific rate of all unintentional injuries mortality is highest for the 65-year-old and higher age group (153.0 ± 23.0 per 100,000 population), a rate that is more than five and a half times the rate of the group with the next highest rate (15–24-year-olds, RR = 5.56).

Table 3. All Unintentional Injury Mortality, Four-year Counts and Rates per 100,000 Population, GBHU, ON, Grey, and Bruce

		GBHU		Ontario	Grey	Bruce
		2000–03	2004–07	2004–07	2004–07	2004–07
Overall		35.8 ± 4.5 (277)	31.9 ± 4.2 (277)	23.4 ± 0.4 (13,905)	33.5 ± 5.7 (170)	29.6 ± 6.2 (107)
By Sex	Male	45.7 ± 7.7 (151)	38.7 ± 6.8 (143)	31.3 ± 0.7 (7928)	41.1 ± 9.2 (89)	35.2 ± 10.0 (54)
	Female	24.5 ± 4.7 (126)	24.3 ± 4.8 (134)	16.2 ± 0.4 (5977)	25.0 ± 6.6 (81)	23.1 ± 7.1 (53)
By Age	0–14	$18.3^\dagger \pm 7.8$ (21)	Supp. (6)	3.1 ± 0.4 (290)	Supp. (S)	Supp. (S)
	15–24	47.8 ± 14.8 (40)	$27.5^\dagger \pm 11.2$ (23)	17.1 ± 1.0 (1095)	Supp. (S)	Supp. (S)
	25–44	27.6 ± 8.3 (43)	23.8 ± 7.7 (37)	14.8 ± 0.6 (2214)	$27.0^\dagger \pm 10.6$ (25)	$19.1^\dagger \pm 10.8$ (12)
	45–64	25.2 ± 7.4 (44)	24.1 ± 7.3 (42)	22.0 ± 0.9 (2474)	$24.1^\dagger \pm 9.7$ (24)	$24.0^\dagger \pm 11.1$ (18)
	65 and over	116.8 ± 20.1 (129)	153.0 ± 23.0 (169)	130.0 ± 2.9 (7832)	162.6 ± 30.9 (106)	139.1 ± 34.3 (63)

† Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Unintentional Falls

ICD-10 Cause Codes

- W00-W19, “Fall on same level involving ice and snow; Fall on same level from slipping, tripping and stumbling; Fall involving skates, skis, sport boards and in-line skates; Other fall on same level due to collision with, or pushing by, another person; Fall while being carried or supported by other persons; Fall involving wheelchair and other types of walking devices; Fall involving bed; Fall involving chair; Fall involving other furniture; Fall involving playground equipment; Fall on and from stairs and steps; Fall on and from ladder; Fall on and from scaffolding; Fall from, out of or through building or structure; Fall from tree; Fall from cliff; Diving or jumping into water causing injury other than drowning or submersion; Fall from one level to another; Other fall on same level; and Unspecified fall”

Summary

Grey Bruce has a 72% higher age-standardized rate of unintentional falls ERVs (4922.4 ± 56.6 per 100,000 population, RR = 1.72) than Ontario. The four-year Grey Bruce age-standardized rate of unintentional falls ERVs has also risen by 5% over that of the last four-year period. Age-specific unintentional falls ERV rates are highest for the 0–14-year old and 65-year-old and over age groups (7434.7 ± 161.3 and 7061.8 ± 144.3 per 100,000 population, respectively).

Unintentional falls hospitalizations are more than seven times as likely among those 65-years-old and over (2061.2 ± 80.0 per 100,000 population, RR = 7.16) than among all other age groups.

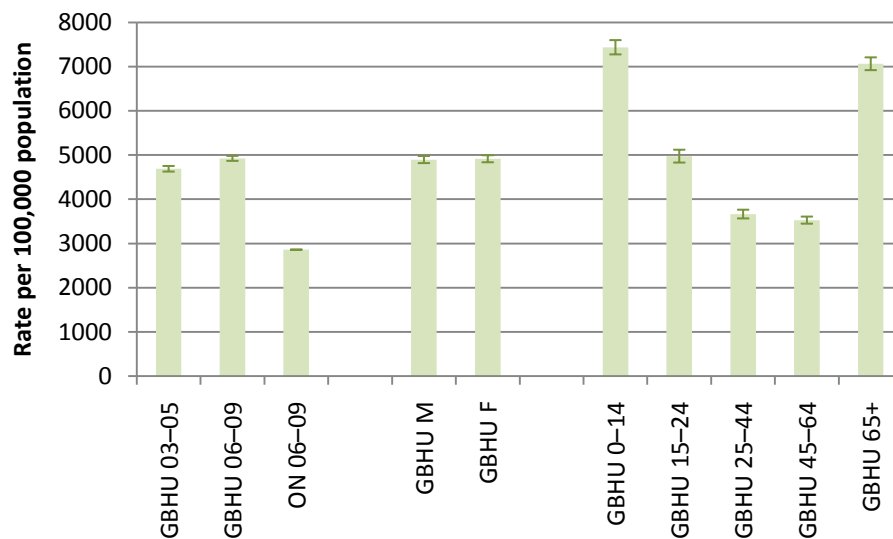
There are no discernable differences in most rates among age or sex groups for these mortality rates at the local level for seniors (other age group rates are too low and therefore too unreliable to report, or are zero).

Unintentional Falls Emergency Room Visits

Unintentional falls account for over one quarter of unintentional injuries ER visits, both at the local and provincial level. Each day, over 20 unscheduled visits to an emergency room can be expected for treatment of injuries resulting from unintentional falls.

The age-standardized rate of unintentional falls ER visits has actually risen slightly in Grey Bruce, and is 5% higher from 2006–2009 (4922.4 ± 56.6 per 100,000 population) than it was in the previous time period ($RR = 1.05$). It is also 72% higher than the provincial rate ($RR = 1.72$). As this rate is age-standardized, the difference cannot be explained by our higher proportion of senior residents and, in fact, across all age categories the local rates of unintentional falls ER visits are substantially higher than provincial rates.

Figure 4. Unintentional Falls ERVs, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



Unintentional Falls Emergency Room Visits by Sex

There is no difference between sexes in local age-standardized rates of unintentional falls ER visits. At the provincial level, there is a 1% difference in rates between males and females—a difference that is so small as to be virtually negligible.

Unintentional Falls Emergency Room Visits by Age Group

Age-specific rates of ER visits for unintentional falls injuries are highest among the 0–14-year-old and the 65-year-old and higher age groups (7434.7 ± 161.3 and 7061.8 ± 144.3 per 100,000 population, respectively). Both of these age groups have about twice the risk of unintentional falls ERVs as the two age groups with the lowest rates (25–44 and 45–64). This pattern echoes that seen at the provincial level among these age groups.

Table 4. Unintentional Falls ERVs, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

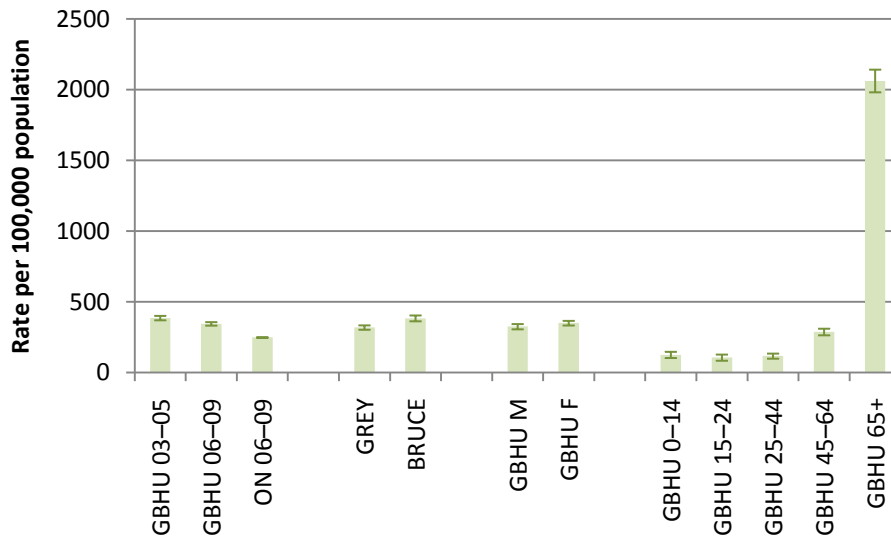
		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		4687.7 ± 63.2 (23,318)	4922.4 ± 56.6 (32,694)	2858.3 ± 4.6 (1,509,895)
By Sex	Male	4799.6 ± 91.0 (11,290)	4896.0 ± 80.3 (15,411)	2860.1 ± 6.6 (713,714)
	Female	4526.0 ± 87.4 (12,028)	4914.1 ± 79.8 (17,283)	2822.1 ± 6.4 (796,181)
By Age	0–14	7225.2 ± 177.4 (5912)	7434.7 ± 161.3 (7555)	4347.4 ± 13.4 (388,094)
	15–24	4865.0 ± 165.1 (3175)	4973.1 ± 145.0 (4293)	2428.1 ± 11.3 (172,229)
	25–44	3310.4 ± 104.9 (3699)	3663.8 ± 98.5 (5119)	1731.0 ± 6.6 (256,369)
	45–64	3342.2 ± 93.7 (4723)	3526.7 ± 80.1 (7179)	2262.3 ± 7.9 (311,256)
	65 and over	6758.6 ± 167.8 (5809)	7061.8 ± 144.3 (8548)	5554.4 ± 17.1 (381,947)

Unintentional Falls Hospitalizations

Unintentional falls hospitalizations account for more than two thirds of the overall unintentional injuries hospitalizations rate. Every day in Grey Bruce there are between two and three hospitalizations for injuries resulting from an unintentional fall.

Locally, the age-standardized rate of unintentional falls hospitalizations has dropped by 11% since 2003–2005 (RR = 0.89). Compared to the provincial rate, however, our local age-standardized rate is high (RR = 1.39, or 39% higher). Between the counties, the age-standardized rate of falls hospitalizations is 20% higher in Bruce County than Grey County (RR = 1.20).

Figure 5. Unintentional Falls Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



Unintentional Falls Hospitalizations by Sex

At the provincial level, females have a more than 10% higher age-standardized rate of unintentional falls hospitalizations than males (RR = 1.11). Local age-standardized rates show a similar difference in magnitude between the sexes' rates of falls hospitalizations, however the 95% confidence intervals of the estimates overlap.

Unintentional Falls Hospitalizations by Age Group

Seniors are more than seven and a half times as likely to experience falls hospitalizations (2061.2 ± 80.0 per 100,000 population) as the age group with the next highest rate (45–54, RR = 7.16), a relative risk similar to that seen at the provincial level (RR = 7.15).

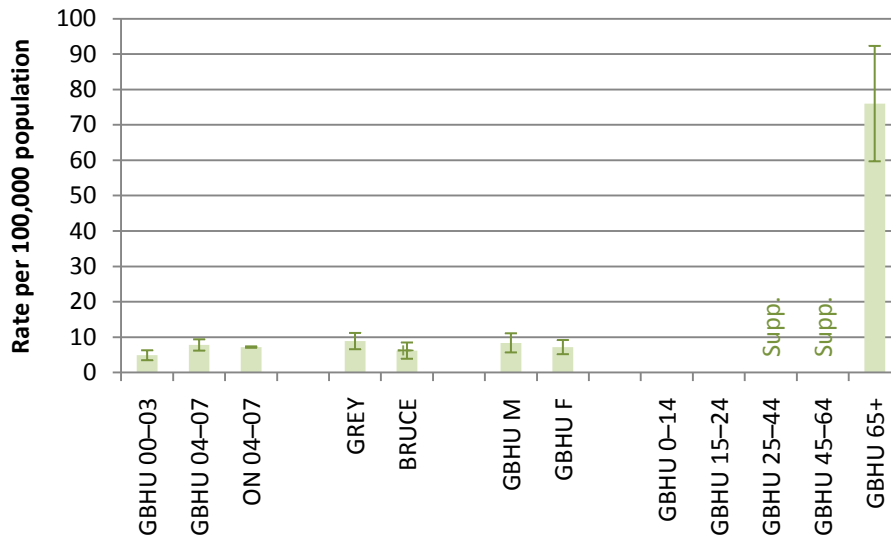
Table 5. Unintentional Falls Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU, ON, Grey, and Bruce

		GBHU		Ontario	Grey	Bruce
		2003–05	2006–09	2006–09	2006–09	2006–09
Overall		386.2 ± 15.6 (2688)	345.3 ± 12.4 (3465)	248.7 ± 1.3 (158,115)	319.2 ± 15.5 (1916)	384.1 ± 20.6 (1549)
By Sex	Male	356.9 ± 23.0 (1018)	325.4 ± 18.6 (1356)	231.3 ± 1.8 (62,365)	300.9 ± 23.1 (748)	361.6 ± 31.0 (608)
	Female	393.3 ± 20.8 (1670)	350.2 ± 16.3 (2109)	255.8 ± 1.7 (95,750)	324.0 ± 20.5 (1168)	389.3 ± 26.6 (941)
By Age	0–14	130.8 ± 24.8 (107)	126.0 ± 21.8 (128)	106.7 ± 2.1 (9523)	128.8 ± 28.8 (77)	121.9 ± 33.4 (51)
	15–24	145.6 ± 29.3 (95)	106.6 ± 21.8 (92)	68.4 ± 1.9 (4849)	117.3 ± 29.9 (59)	91.6 ± 31.3 (33)
	25–44	171.8 ± 24.3 (192)	117.4 ± 18.0 (164)	80.1 ± 1.4 (11,859)	104.9 ± 21.9 (88)	136.0 ± 30.6 (76)
	45–64	299.3 ± 28.5 (423)	287.9 ± 23.3 (586)	209.6 ± 2.4 (28,833)	275.8 ± 30.0 (324)	304.3 ± 36.8 (262)
	65 and over	2176.8 ± 97.6 (1871)	2061.2 ± 80.0 (2495)	1498.6 ± 9.1 (103,051)	1898.1 ± 99.6 (1368)	2301.3 ± 132.8 (1127)

Unintentional Falls Mortality

In Grey Bruce, the age-standardized rate of unintentional falls mortality (7.8 ± 1.6 per 100,000 population) has risen since the previous four-year period (RR = 1.59), although the current rate is not significantly different from the provincial rate. Between the counties, age-standardized rates do not differ significantly.

Figure 6. Unintentional Falls Mortality, Four-year Counts and Rates per 100,000 Population, GBHU and ON



Supp. Estimate has been suppressed because of unreliability or low counts.

Unintentional Falls Mortality by Sex

Between the sexes, age-standardized rates do not differ significantly at the local level. At the provincial level, males have a 47% higher rate of unintentional falls mortality than females (RR = 1.47).

Unintentional Falls Mortality by Age

In Grey Bruce, counts were too low to report age-specific rates for all age groups except the 65-year-old and higher group (76.0 ± 16.3 per 100,000 population). At the provincial level, the age group with the highest rate of unintentional falls mortality was indeed the 65-year-old and higher age group, with a rate nearly twenty times that of the group with the next lowest rate (RR = 19.08).

Table 6. Unintentional Falls Mortality, Four-year Counts and Rates per 100,000 Population, GBHU, ON, Grey, and Bruce

		GBHU		Ontario	Grey	Bruce
		2000–03	2004–07	2004–07	2004–07	2004–07
Overall		4.9 ± 1.4 (48)	7.8 ± 1.6 (90)	7.2 ± 0.2 (4802)	8.9 ± 2.3 (61)	6.2 [†] ± 2.3 (29)
By Sex	Male	7.0 [†] ± 2.6 (28)	8.4 ± 2.7 (38)	8.8 ± 0.4 (2228)	10.4 [†] ± 3.9 (28)	5.5 [†] ± 3.5 (10)
	Female	3.1 [†] ± 1.5 (20)	7.2 ± 2.0 (52)	6.0 ± 0.2 (2574)	7.5 [†] ± 2.6 (33)	6.7 [†] ± 3.1 (19)
By Age	0–14	-- (0)	-- (0)	0.2 [†] ± 0.1 (15)	-- (0)	-- (0)
	15–24	Supp. (S)	-- (0)	0.5 [†] ± 0.2 (31)	-- (0)	-- (0)
	25–44	Supp. (S)	Supp. (S)	0.6 ± 0.1 (90)	Supp. (S)	-- (0)
	45–64	Supp. (S)	Supp. (S)	3.7 ± 0.4 (414)	Supp. (S)	Supp. (S)
	65 and over	35.3 ± 11.1 (39)	76.0 ± 16.3 (84)	70.6 ± 2.1 (4252)	Supp. (S)	Supp. (S)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Motor Vehicle Traffic Crashes

ICD-10 Cause Codes

- V30-V39 (.4-.9), "Occupant of three-wheeled motor vehicle injured in transport accident"
- V40-V49 (.4-.9), "Car occupant injured in transport accident"
- V50-V59 (.4-.9), "Occupant of pick-up truck or van injured in transport accident"
- V60-V69 (.4-.9), "Occupant of heavy transport vehicle injured in transport accident"
- V70-V79 (.4-.9), "Bus occupant injured in transport accident"
- V83-V86 (.0-.3), "Occupant of special vehicle mainly used on industrial premises injured in transport accident, Occupant of special vehicle mainly used in agriculture injured in transport accident, Occupant of special construction vehicle injured in transport accident"
- V20-V28 (.3-.9), "Motorcycle rider injured in transport accident, excl. unspecified"
- V29 (.4-.9), "Motorcycle rider injured in other and unspecified transport accidents"
- V12-V14 (.3-.9), "Pedal cyclist injured in collision with two- or three-wheeled motor vehicle, Pedal cyclist injured in collision with car, pick-up truck or van, Pedal cyclist injured in collision with heavy transport vehicle or bus"
- V19 (.4-.6), "Pedal cyclist injured in other and unspecified transport accidents"
- V02-V04 (.1-.9), "Pedestrian injured in collision with two- or three-wheeled motor vehicle, Pedestrian injured in collision with car, pick-up truck or van, Pedestrian injured in collision with heavy transport vehicle or bus"
- V09.2, "Pedestrian injured in other and unspecified transport accidents"
- V80 (.3-.5), "Animal-rider or occupant of animal-drawn vehicle injured in transport accident"
- V81.1, "Occupant of railway train or railway vehicle injured in collision with motor vehicle in traffic accident"
- V82.1, "Occupant of streetcar injured in collision with motor vehicle in traffic accident"
- V87 (.0-.8), "Traffic accident of specified type but victim's mode of transport unknown" and
- V89.2, "Person injured in unspecific traffic motor-vehicle accident"

Summary

Motor vehicle traffic crashes are among the top causes of ER visits (767.4 ± 24.0 per 100,000 population). Motor vehicle traffic crash ER visits are most likely among those aged 15–24 (age-specific rate: 1428.3 ± 79.2 per 100,000 population, RR=1.47), followed by those aged 25–44.

Motor vehicle traffic crashes are the second most common cause of unintentional injury hospitalization, (66.3 ± 6.7 per 100,000 population), after unintentional falls. Motor vehicle traffic crash hospitalizations are 75% more likely among males than females (age-standardized rate for males: 84.1 ± 10.8 per 100,000 population, RR = 1.75) and are most likely among those aged 15–24 (age-specific rate: 113.5 ± 22.5 per 100,000 population), followed by those aged 65 and over, and those aged 25–44.

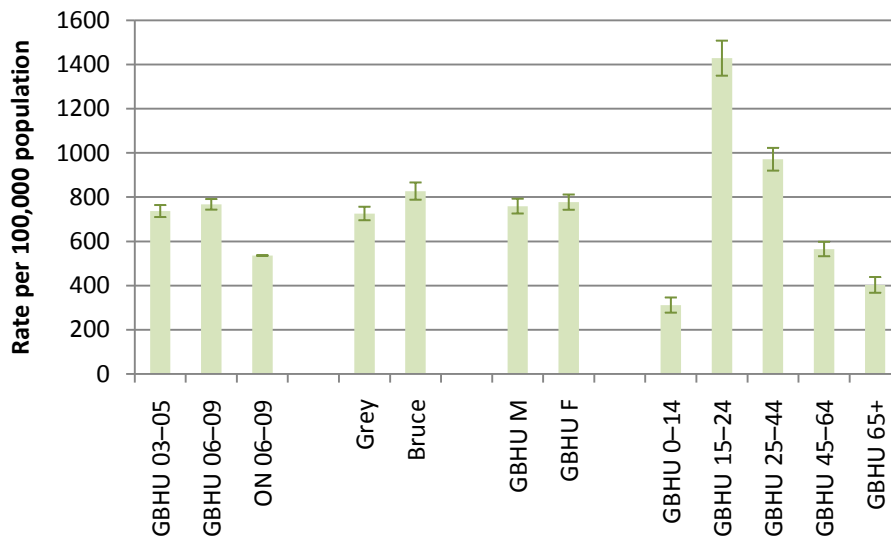
Motor vehicle traffic crashes are the top cause of unintentional injury mortality in Grey Bruce (10.1 ± 2.6 per 100,000 population).

Motor Vehicle Traffic Crash Emergency Room Visits

Locally, the age-standardized rate of motor vehicle traffic crash ER visits has not changed significantly since 2003–2005. Compared to the provincial age-standardized rate, however, our local age-standardized rate is 43% higher (767.4 ± 24.0 per 100,000 population, RR = 1.43). Our local rate is equivalent to about three ER visits for Grey Bruce every day for treatment of motor vehicle traffic crash-related injuries.

Between the counties, the age-standardized rate of motor vehicle traffic crash ER visits is 14% higher in Bruce County than in Grey County (RR = 1.14).

Figure 7. Motor Vehicle Traffic Crash ERVs, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



Motor Vehicle Traffic Crash Emergency Room Visits by Sex

Locally, there is not statistically significant difference between rates of motor vehicle traffic crash ER visits by sex. At the provincial level, females are 5% more likely to visit an ER for motor vehicle traffic crash injuries (RR = 1.05).

Motor Vehicle Traffic Crash Emergency Room Visits by Age

Motor vehicle traffic crash emergency room visit rates differ among age groups, with the 15–24-year-old age group having the highest age-specific rate of motor vehicle traffic crash ER visits (1428.3 ± 79.2 per 100,000 population).

Table 7. Motor Vehicle Traffic Crash ERVs, Three- and Four-year Counts and Rates per 100,000 Population, GBHU, ON, Grey, and Bruce

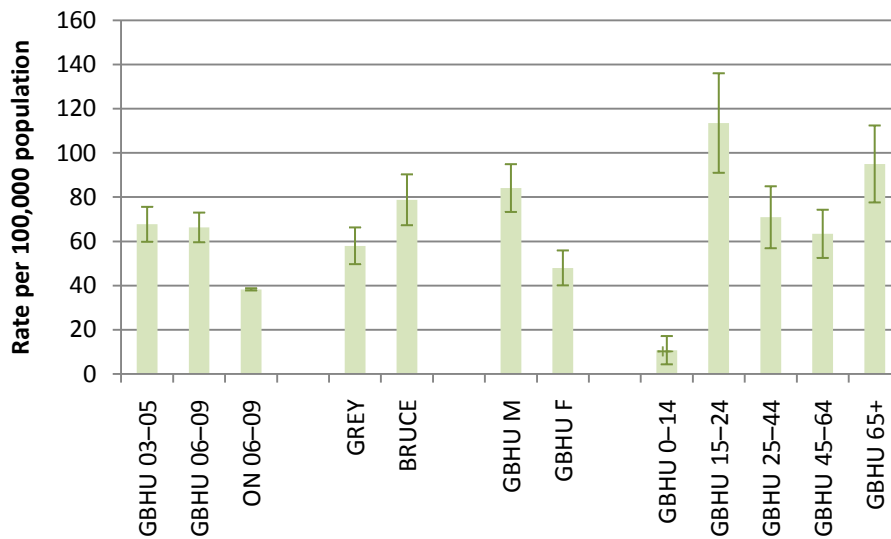
		GBHU		Ontario	Grey	Bruce
		2003–05	2006–09	2006–09	2006–09	2006–09
Overall		737.2 ± 27.1 (3264)	767.4 ± 24.0 (4546)	536.0 ± 2.1 (272,129)	726.0 ± 30.4 (2542)	827.3 ± 39.0 (2004)
By Sex	Male	701.5 ± 37.0 (1559)	759.8 ± 33.5 (2264)	523.7 ± 2.9 (131,687)	715.3 ± 42.5 (1254)	823.7 ± 54.4 (1010)
	Female	773.5 ± 39.7 (1705)	777.3 ± 34.5 (2282)	548.9 ± 2.9 (140,442)	739.3 ± 43.7 (1288)	832.9 ± 56.2 (994)
By Age	0–14	388.6 ± 42.6 (318)	312.0 ± 34.3 (317)	202.7 ± 3.0 (18,096)	314.6 ± 44.9 (188)	308.2 ± 53.1 (129)
	15–24	1391.3 ± 89.9 (908)	1428.3 ± 79.2 (1233)	930.3 ± 7.1 (65,989)	1311.7 ± 99.4 (660)	1591.5 ± 129.3 (573)
	25–44	887.8 ± 55.0 (992)	971.2 ± 51.4 (1357)	651.6 ± 4.1 (96,503)	901.5 ± 64.0 (752)	1075.8 ± 85.5 (601)
	45–64	498.9 ± 36.7 (705)	565.4 ± 32.6 (1151)	484.6 ± 3.7 (66,679)	555.9 ± 42.5 (756)	578.5 ± 50.7 (498)
	65 and over	396.7 ± 42.0 (341)	403.2 ± 35.7 (488)	361.5 ± 4.5 (24,862)	395.4 ± 45.8 (285)	414.5 ± 56.9 (203)

Motor Vehicle Traffic Crash Hospitalizations

Locally, the age-standardized rate of motor vehicle traffic crash hospitalizations has not changed significantly since 2003–2005. Compared to the provincial age-standardized rate, however, our local age-standardized rate is 73% higher (66.3 ± 6.7 per 100,000 population, RR = 1.73). Our local rate is equivalent to a hospitalization of someone from Grey Bruce every three to four days for treatment of motor vehicle traffic crash-related injuries.

Between the counties, the age-standardized rate of motor vehicle traffic crash hospitalizations is 36% higher in Bruce County than in Grey County (RR = 1.36).

Figure 8. Motor Vehicle Traffic Crash Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.

Motor Vehicle Traffic Crash Hospitalizations by Sex

Locally, males have a 75% higher age-standardized rate of motor vehicle traffic crash hospitalizations (84.1 ± 10.8 per 100,000 population) than females ($RR = 1.75$). At the provincial level, this disparity between the sexes is not as pronounced ($RR = 1.57$).

Motor Vehicle Traffic Crash Hospitalizations by Age

Motor vehicle traffic crash hospitalization rates differ among age groups, with the 15–24-year-old age group having the highest age-specific rate of motor vehicle traffic crash hospitalizations (113.5 ± 22.5 per 100,000 population). At the provincial level, the age group with the highest age-specific rate of motor vehicle traffic crash hospitalizations is the 65-year-old and higher age group. It seems at the local level that the boost to the rate of the 15–24-year-old age group comes primarily from Bruce County's high rate of motor vehicle traffic crash hospitalizations in this age range.

Table 8. Motor Vehicle Traffic Crash Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU, ON, Grey, and Bruce

		GBHU		Ontario	Grey	Bruce
		2003–05	2006–09	2006–09	2006–09	2006–09
Overall		67.7 ± 7.9 (335)	66.3 ± 6.7 (452)	38.3 ± 0.5 (20,603)	58.0 ± 8.3 (233)	78.8 ± 11.5 (219)
By Sex	Male	76.2 ± 12.0 (180)	84.1 ± 10.8 (272)	46.8 ± 0.9 (12,129)	71.4 ± 13.2 (133)	103.1 ± 18.5 (139)
	Female	58.9 ± 10.2 (155)	48.0 ± 7.9 (180)	29.9 ± 0.7 (8474)	43.5 ± 9.7 (100)	54.7 ± 13.4 (80)
By Age	0–14	$26.9^{\dagger} \pm 11.2$ (22)	$10.8^{\dagger} \pm 6.4$ (11)	11.9 ± 0.7 (1065)	Supp. (7)	Supp. (S)
	15–24	105.7 ± 24.9 (69)	113.5 ± 22.5 (98)	56.4 ± 1.7 (4001)	91.4 ± 26.4 (46)	144.4 ± 39.2 (52)
	25–44	79.6 ± 16.5 (89)	70.9 ± 14.0 (99)	37.7 ± 1.0 (5588)	58.4 ± 16.4 (49)	Supp. (S)
	45–64	53.8 ± 12.1 (76)	63.4 ± 10.9 (129)	41.1 ± 1.1 (5653)	55.3 ± 13.4 (65)	74.3 ± 18.2 (64)
	65 and over	91.9 ± 20.3 (79)	95.0 ± 17.4 (115)	62.5 ± 1.9 (4296)	91.6 ± 22.1 (66)	100.1 ± 28.0 (49)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

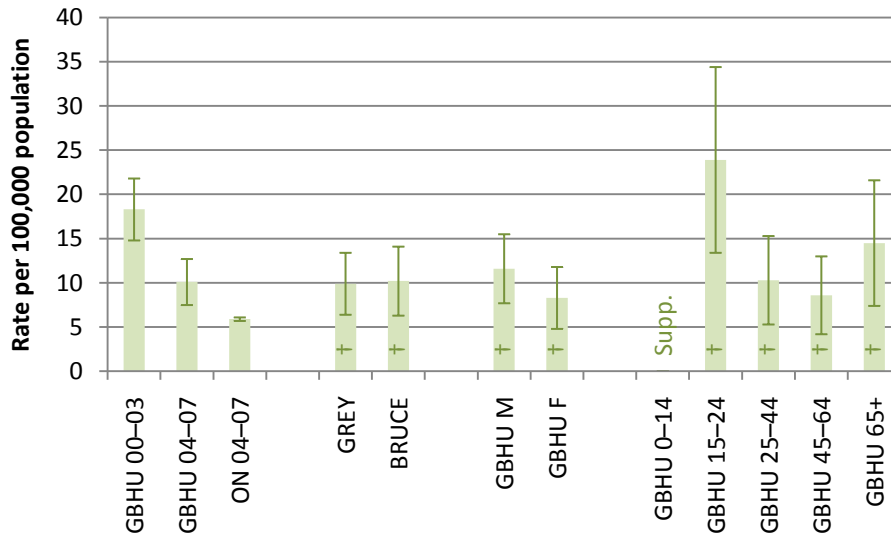
Supp. Estimate has been suppressed because of unreliability or low counts.

(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Motor Vehicle Traffic Crash Mortality

The local age-standardized rate of motor vehicle traffic crash mortality (10.1 ± 2.6 per 100,000 population) has fallen 45% since the previous four-year period ($RR = 0.55$), but it is still 71% higher than the provincial rate ($RR = 1.71$). The age-standardized rates for the counties do not differ significantly.

Figure 9. Motor Vehicle Traffic Crash Mortality, Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.

Motor Vehicle Traffic Crash Mortality by Sex

Age-standardized rates do not differ significantly by sex in Grey Bruce, although at the provincial level, males have more than double the rate of motor vehicle traffic crash mortality than females (RR = 2.24).

Motor Vehicle Traffic Crash Mortality by Age

Locally, age-specific rates are too unreliable to identify any age trends in rates. At the provincial level, age-specific rates of motor vehicle traffic crash mortality are highest for the 15–24-year-old age group and the 65-year-old and higher age group.

Table 9. Motor Vehicle Traffic Crash Mortality, Four-year Counts and Rates per 100,000 Population, GBHU, ON, Grey, and Bruce

		GBHU		Ontario	Grey	Bruce
		2000–03	2004–07	2004–07	2004–07	2004–07
Overall		18.3 ± 3.5 (116)	10.1 ± 2.6 (68)	5.9 ± 0.2 (3075)	9.9 [†] ± 3.5 (37)	10.2 [†] ± 3.9 (31)
By Sex	Male	25.3 ± 6.1 (75)	11.6 [†] ± 3.9 (39)	8.3 ± 0.4 (2072)	9.4 [†] ± 4.7 (17)	14.8 [†] ± 6.6 (22)
	Female	10.9 ± 3.5 (41)	8.3 [†] ± 3.5 (29)	3.7 ± 0.2 (1003)	10.0 [†] ± 5.1 (20)	Supp. (9)
By Age	0–14	11.3 [†] ± 6.2 (13)	Supp. (S)	1.1 ± 0.2 (99)	-- (0)	Supp. (S)
	15–24	43.0 ± 14.1 (36)	23.9 [†] ± 10.5 (20)	11.4 ± 0.8 (728)	23.1 [†] ± 13.6 (11)	25.0 [†] ± 16.4 (9)
	25–44	18.0 [†] ± 6.7 (28)	10.3 [†] ± 5.0 (16)	5.8 ± 0.4 (878)	11.9 [†] ± 7.0 (11)	Supp. (S)
	45–64	14.3 [†] ± 5.6 (25)	Supp. (S)	6.5 ± 0.5 (729)	Supp. (S)	12.0 [†] ± 7.8 (6)
	65 and over	12.7 [†] ± 6.6 (14)	14.5 [†] ± 7.1 (16)	10.6 ± 0.8 (641)	Supp. (S)	Supp. (7)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Unintentional Poisonings

ICD-10 Cause Codes

- X40-X49, “Accidental poisoning by and exposure to noxious substances”

Summary

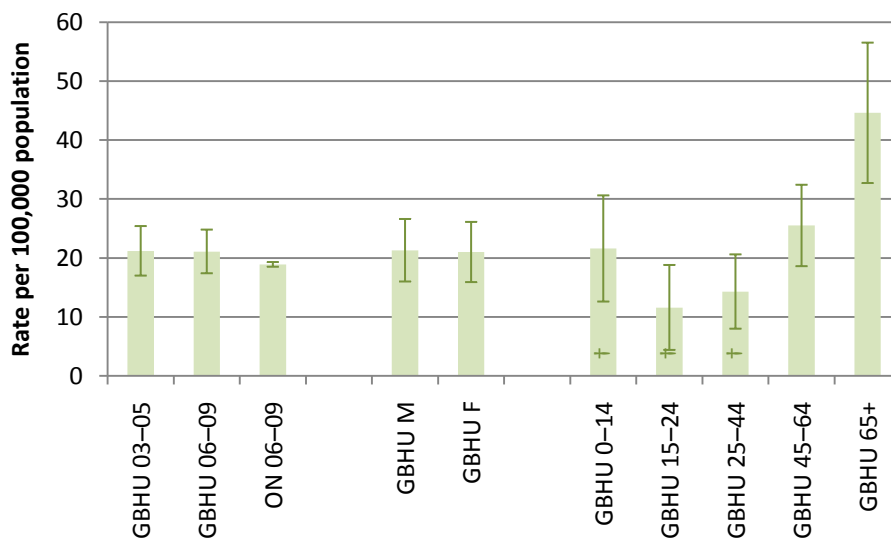
Unintentional poisonings are the third highest contributor to the hospitalizations rate for unintentional injuries. This category includes self-inflicted poisoning when it’s not specified whether it’s accidental or with intent to harm; accidental overdose of drug, wrong drug given or taken in error, and drug taken inadvertently; and accidents in the use of drugs, medicaments and biological substances in medical and surgical procedures. It *excludes* administration of drugs with suicidal or homicidal intent, or intent to harm, or in other circumstances classifiable; and correct drug properly administered in therapeutic or prophylactic dosage as the cause of any adverse effect. Because of time constraints, data were not retrieved for ERVs related to unintentional poisonings.

Unintentional poisonings are the third most common cause of unintentional injury hospitalizations in Grey Bruce (21.1 ± 3.7 per 100,000 population), and are most likely among those aged 65 and over (age-specific rate: 44.6 ± 11.9 per 100,000 population). Unintentional poisonings are also the third most common cause of unintentional injury deaths in Grey Bruce (10.1 ± 2.6 per 100,000 population).

Unintentional Poisoning Hospitalizations

In Grey Bruce, the age-standardized rate of unintentional poisoning hospitalizations (21.1 ± 3.7 per 100,000 population) has not changed significantly since 2003–2005 and is similar to the provincial rate.

Figure 10. Unintentional Poisoning Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



Supp. Estimate has been suppressed because of unreliability or low counts.

Unintentional Poisoning Hospitalizations by Sex

Males and females have similar age-standardized rates of unintentional injury hospitalizations, both at the local and at the provincial level.

Unintentional Poisoning Hospitalizations by Age Group

Unintentional poisoning hospitalization rates do not differ significantly among most age groups, though the 65 and over age group has a 75% higher age-specific rate (44.6 ± 11.9 per 100,000 population) than the age group with the next highest rate (45–54, RR = 1.75). This is similar to the relative risk found at the provincial level between the same age groups (1.82).

Table 10. Unintentional Poisoning Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

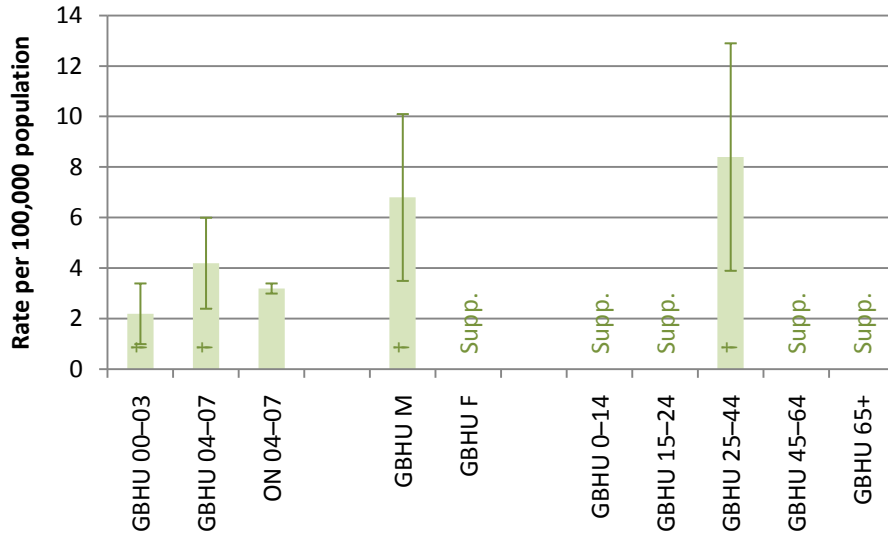
		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		21.2 ± 4.2 (114)	21.1 ± 3.7 (156)	18.9 ± 0.4 (10,330)
By Sex	Male	23.2 ± 6.2 (59)	21.3 ± 5.3 (76)	19.1 ± 0.5 (4991)
	Female	18.9 ± 5.6 (55)	21.0 ± 5.1 (82)	18.8 ± 0.5 (5339)
By Age	0–14	23.2 [†] ± 10.4 (19)	21.6 [†] ± 9.0 (22)	13.3 ± 0.8 (1188)
	15–24	15.3 [†] ± 9.5 (10)	11.6 [†] ± 7.2 (10)	16.5 ± 0.9 (1167)
	25–44	15.2 [†] ± 7.2 (17)	14.3 [†] ± 6.3 (20)	15.5 ± 0.6 (2303)
	45–64	23.4 [†] ± 8.0 (33)	25.5 ± 6.9 (52)	21.6 ± 0.8 (2967)
	65 and over	40.7 [†] ± 13.5 (35)	44.6 ± 11.9 (54)	39.3 ± 1.5 (2705)

† Estimate should be used with caution, as there is a high degree of variance in the measure.

Unintentional Poisoning Mortality

In Grey Bruce, the age-standardized rate of unintentional poisoning mortality ($4.2^{\dagger} \pm 1.8$ per 100,000 population) has not changed significantly since the last four-year period and is not significantly different from the provincial rate.

Figure 11. Unintentional Poisoning Mortality, Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.

Unintentional Poisoning Mortality by Sex

In Grey Bruce, the age-standardized rate for females is too unreliable to release, however at the provincial level the rate for males is more than two and a half times the rate for females (RR = 2.56).

Unintentional Poisoning Mortality by Age

Locally, age-specific rates are too unreliable for most age groups to be released. At the provincial level, rates are low among all age groups.

Table 11. Unintentional Poisoning Mortality, Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2000–03	2004–07	2004–07
Overall		2.2 [†] ± 1.2 (14)	4.2 [†] ± 1.8 (24)	3.2 ± 0.2 (1735)
By Sex	Male	Supp. (S)	6.8 [†] ± 3.3 (18)	4.6 ± 0.3 (1212)
	Female	Supp. (S)	Supp. (6)	1.8 ± 0.2 (523)
By Age	0–14	-- (0)	Supp. (S)	Supp. (S)
	15–24	Supp. (S)	Supp. (S)	Supp. (S)
	25–44	Supp. (8)	8.4 [†] ± 4.5 (13)	5.0 ± 0.4 (751)
	45–64	Supp. (S)	Supp. (5)	6.0 ± 0.5 (670)
	65 and over	Supp. (S)	Supp. (S)	3.0 ± 0.4 (179)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Unintentional Pedal Cycle Injuries

ICD-10 Cause Codes

- V10-V14, “Pedal cyclist injured in collision with pedestrian or animal, Pedal cyclist injured in collision with other pedal cycle, Pedal cyclist injured in collision with two- or three-wheeled motor vehicle, Pedal cyclist injured in collision with car, pick-up truck or van, Pedal cyclist injured in collision with heavy transport vehicle or bus”
- V16-V19, “Pedal cyclist injured in collision with other nonmotor vehicle, Pedal cyclist injured in collision with fixed or stationary object, Pedal cyclist injured in noncollision transport accident, Pedal cyclist injured in other and unspecified transport accidents”

Summary

Because of time constraints, data were not retrieved for ERVs related to pedal cycle injuries.

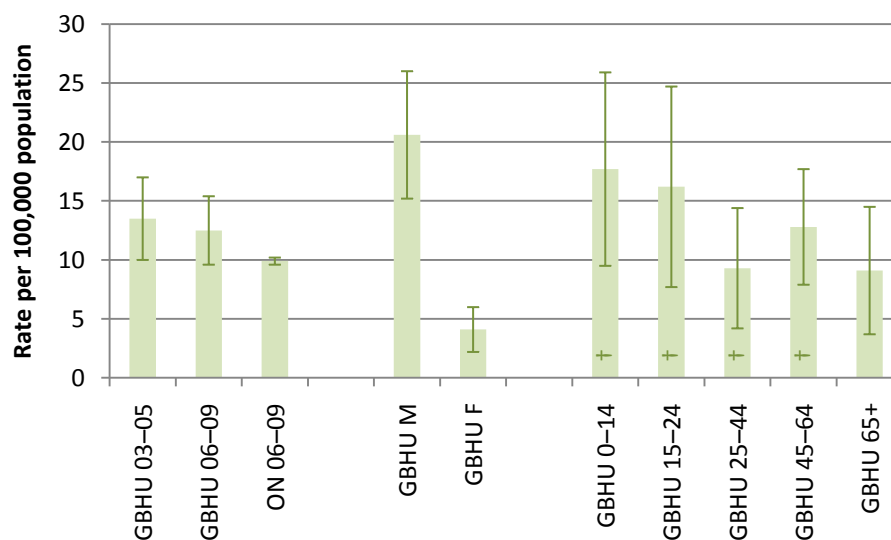
While the age-standardized rate of unintentional pedal cycle injury hospitalizations has not changed significantly since 2003–2005, it is somewhat higher than that provincial rate.

The local rate of unintentional pedal injury mortality is zero.

Unintentional Pedal Cycle Injury Hospitalizations

In Grey Bruce, the age-standardized rate of unintentional pedal cycle injury hospitalizations (12.5 ± 2.9 per 100,000 population) has not changed significantly since 2003–2005 and is not significantly different than the provincial rate.

Figure 12. Unintentional Pedal Cycle Injury Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.

Unintentional Pedal Cycle Injury Hospitalizations by Sex

Locally, males have five times the age-standardized pedal cycle hospitalization rate (20.6 ± 5.4 per 100,000 population) as females (RR = 5.02). At the provincial level, males have just over three times the rate of females (RR = 3.12).

Unintentional Pedal Cycle Injury Hospitalizations by Age Group

In Grey Bruce, age-specific pedal cycle hospitalization rates do not differ significantly among age groups. At the provincial level, 0–14-year-olds, 15–24-year-olds and 45–54-year-olds have higher age-specific rates than 65-year-olds and older, and 25–49-year-olds.

Table 12. Pedal Cycle Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		13.5 ± 3.5 (65)	12.5 ± 2.9 (82)	9.9 ± 0.3 (5146)
By Sex	Male	18.7 ± 5.7 (46)	20.6 ± 5.4 (64)	15.0 ± 0.5 (3884)
	Female	8.3 [†] ± 4.0 (19)	4.1 [†] ± 1.9 (18)	4.8 ± 0.3 (1262)
By Age	0–14	23.2 [†] ± 10.4 (19)	17.7 [†] ± 8.2 (18)	15.0 ± 0.8 (1337)
	15–24	19.9 [†] ± 10.8 (13)	16.2 [†] ± 8.5 (14)	11.3 ± 0.8 (799)
	25–44	11.6 [†] ± 6.3 (13)	9.3 [†] ± 5.1 (13)	7.3 ± 0.4 (1074)
	45–54	9.2 [†] ± 5.0 (13)	12.8 [†] ± 4.9 (26)	10.3 ± 0.5 (1415)
	65 and over	Supp. (7)	9.1 ± 5.4 (11)	7.6 ± 0.7 (521)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.
Supp. Estimate has been suppressed because of unreliability or low counts.

Unintentional Pedal Cycle Injury Mortality

The local age-standardized unintentional pedal cycle injury mortality rate is zero—there have been no deaths from unintentional pedal cycle injuries in the last six years. The Ontario rate overall is less than 1 per 100,000 population—66 deaths occurred between 2003 and 2005. At the provincial level, the age-standardized rates of unintentional pedal cycle injury mortality by sex and by age are too low to report differences.

Unintentional Burns

ICD-10 Cause Codes

- W85-91, “Exposure to electric transmission lines; Exposure to other specified electric current; Exposure to unspecified electric current; Exposure to ionizing radiation; Exposure to man-made visible and ultraviolet light; Exposure to other nonionizing radiation; Exposure to unspecified type of radiation”
- X00-X19, “Exposure to smoke, fire and flames”

Summary

Because of time constraints, data were not retrieved for ERVs related to unintentional burns.

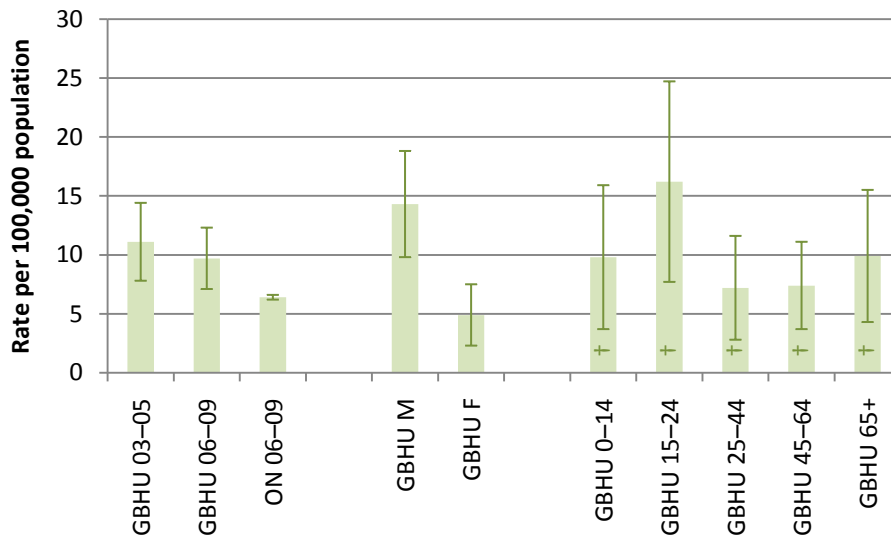
While the local rate of unintentional burns hospitalizations has not changed significantly since 2003–2005, it is significantly higher than the provincial rate.

The local age-standardized unintentional burns mortality rate is based on low counts and cannot be released. The Ontario rate overall is less than 1 per 100,000 population.

Unintentional Burns Hospitalizations

In Grey Bruce, the age-standardized rate of unintentional burns hospitalizations (9.7 ± 2.6 per 100,000 population) has not changed significantly since 2003–2005. However, it is 52% higher than the provincial rate (RR = 1.52).

Figure 13. Unintentional Burns Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.

Unintentional Burns Hospitalizations by Sex

In Grey Bruce, males have nearly three times the age-standardized unintentional burns hospitalization rate of females (male rate: 14.3 ± 4.5 per 100,000 population, RR = 2.92). At the provincial level, the male rate is just over twice the female rate (RR = 2.07).

Unintentional Burns Hospitalizations by Age

Age-specific unintentional burns hospitalization rates do not differ significantly among age groups at the Grey Bruce level. At the provincial level, the young and old tend to have higher age-specific rates of unintentional burns hospitalization than those in the age groups in between.

Table 13. Unintentional Burns Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		11.1 ± 3.3 (54)	9.7 ± 2.6 (61)	6.4 ± 0.2 (3341)
By Sex	Male	15.4 ± 5.4 (37)	14.3 ± 4.5 (45)	8.7 ± 0.4 (2200)
	Female	$6.9^{\dagger} \pm 3.6$ (17)	$4.9^{\dagger} \pm 2.6$ (16)	4.2 ± 0.3 (1141)
By Age	0–14	$17.1^{\dagger} \pm 9.0$ (14)	$9.8^{\dagger} \pm 6.1$ (10)	8.5 ± 0.6 (758)
	15–24	Supp. (S)	$16.2^{\dagger} \pm 8.5$ (14)	4.4 ± 0.5 (310)
	25–44	Supp. (S)	$7.2^{\dagger} \pm 4.4$ (10)	4.9 ± 0.4 (723)
	45–54	$14.9^{\dagger} \pm 6.4$ (21)	$7.4^{\dagger} \pm 3.7$ (15)	6.1 ± 0.4 (843)
	65 and over	$10.5^{\dagger} \pm 6.8$ (9)	$9.9^{\dagger} \pm 5.6$ (12)	10.3 ± 0.8 (707)

† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.
 (S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Unintentional Burns Mortality

The local age-standardized unintentional burns mortality rate is based on low counts and cannot be released. The Ontario rate overall is less than 1 per 100,000 population.

Unintentional Burns Mortality by Sex

Counts are too low to release age-standardized mortality rates by sex and the local level. At the provincial level rates for both sexes are lower than 1 per 100,000 population.

Unintentional Burns Mortality by Age

Similarly to sex, counts of unintentional burns mortality by age are too low to release age-specific rates at the local level. At the provincial level, rates for all age groups are lower than 2 per 100,000 population.

Table 14. Unintentional Burns Mortality, Three-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2000–03	2004–07	2004–07
Overall		Supp. (S)	Supp. (5)	0.6 ± 0.1 (321)
By Sex	Male	Supp. (S)	Supp. (S)	0.8 ± 0.1 (200)
	Female	Supp. (S)	Supp. (S)	0.4 ± 0.1 (121)
By Age	0–14	-- (0)	-- (0)	0.2 [†] ± 0.1 (23)
	15–24	-- (0)	-- (0)	0.4 [†] ± 0.2 (26)
	25–44	Supp. (S)	Supp. (S)	0.5 ± 0.1 (77)
	45–64	Supp. (S)	-- (0)	0.8 ± 0.2 (92)
	65 and over	Supp. (S)	Supp. (S)	1.7 ± 0.3 (103)

† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.
 (S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Other Off-road Motor Vehicle Injuries

ICD-10-CA Cause Codes

- V86.08, “Driver of other all-terrain or other off road motor vehicle injured in traffic accident”
- V86.18, “Passenger of other all-terrain or other off road motor vehicle injured in traffic accident”
- V86.2, “Person on outside of all-terrain or other off road motor vehicle injured in traffic accident”
- V86.38, “Unspecified occupant of all-terrain or other off road motor vehicle injured in traffic accident”
- V86.4, “Person injured while boarding or alighting from all-terrain or other off road motor vehicle”
- V86.58, “Driver of other all-terrain or other off road motor vehicle injured in nontraffic accident”
- V86.68, “Passenger of other all-terrain or other off road motor vehicle injured in nontraffic accident”
- V86.7, “Person on outside of all-terrain or other off road motor vehicle injured in nontraffic accident”
- V86.98, “Unspecified occupant of other all-terrain or other off-road motor vehicle injured in nontraffic accident”

Summary

Because of time constraints, data were not retrieved for ERVs related to other off-road motor vehicle injuries.

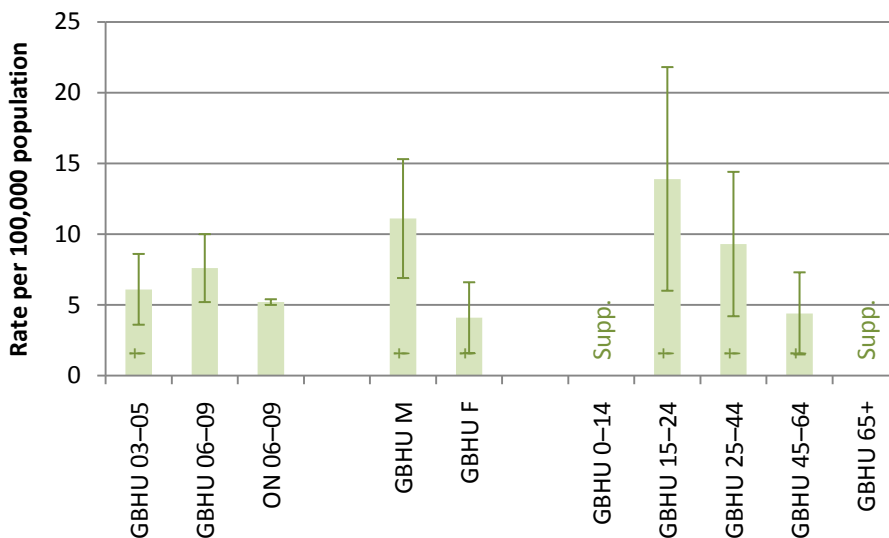
Locally, the age-standardized rate of other off-road motor vehicle injury hospitalizations has neither changed significantly since 2003–2005, nor does it differ significantly from the provincial rate.

Other off-road motor vehicle injury mortality rate cannot be calculated since the coding system used for deaths data describes slightly less detail than that used for hospital diagnoses.

Other Off-road Motor Vehicle Injury Hospitalizations

In Grey Bruce, the age-standardized rate of other off-road motor vehicle injury hospitalizations (7.6 ± 2.4 per 100,000 population) has not changed significantly since 2003–2005 and does not differ from the provincial rate.

Figure 14. Other Off-road Vehicle Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.

Other Off-road Motor Vehicle Hospitalizations by Sex

In Grey Bruce, males have nearly three times the age-standardized rate of other off-road motor vehicle hospitalizations for females (male rate: 11.1 ± 4.2 per 100,000 population, RR = 2.71).

Other Off-road Motor Vehicle Hospitalizations by Age

Other off-road motor vehicle hospitalization rates do not differ significantly among age groups. At the provincial level, age-specific rates peak in the 15–24-year-old age group, and trend downward in subsequent age groups.

Table 15. Other Off-road Vehicle Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		6.1 [†] ± 2.5 (26)	7.6 ± 2.4 (43)	5.2 ± 0.2 (2543)
By Sex	Male	9.0 [†] ± 4.3 (19)	11.1 [†] ± 4.2 (31)	8.5 ± 0.4 (2102)
	Female	3.0 [†] ± 2.3 (7)	4.1 [†] ± 2.5 (12)	1.8 ± 0.2 (441)
By Age	0–14	Supp. (6)	Supp. (5)	4.4 ± 0.4 (391)
	15–24	Supp. (8)	13.9 [†] ± 7.9 (12)	11.1 ± 0.8 (785)
	25–44	8.1 [†] ± 5.3 (9)	9.3 [†] ± 5.1 (13)	5.5 ± 0.4 (813)
	45–54	Supp. (5)	4.4 [†] ± 2.9 (9)	3.1 ± 0.3 (433)
	65 and over	Supp. (5)	Supp. (5)	1.8 ± 0.3 (121)

† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.
 (S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Sports Injuries

ICD-10-CA Cause Codes

- W02, “Fall involving skates, skis, sport boards and in-line skates”
- W21, “Striking against or struck by sports equipment”
- W22.00-W22.07, “Striking against or struck by other objects, excl. non-sports or unspecified”
- W51.00-W51.07, “Striking against or bumped into by another person, excl. non-sports or unspecified”

Summary

Because of time constraints, data were not retrieved for ERVs related to sports injuries.

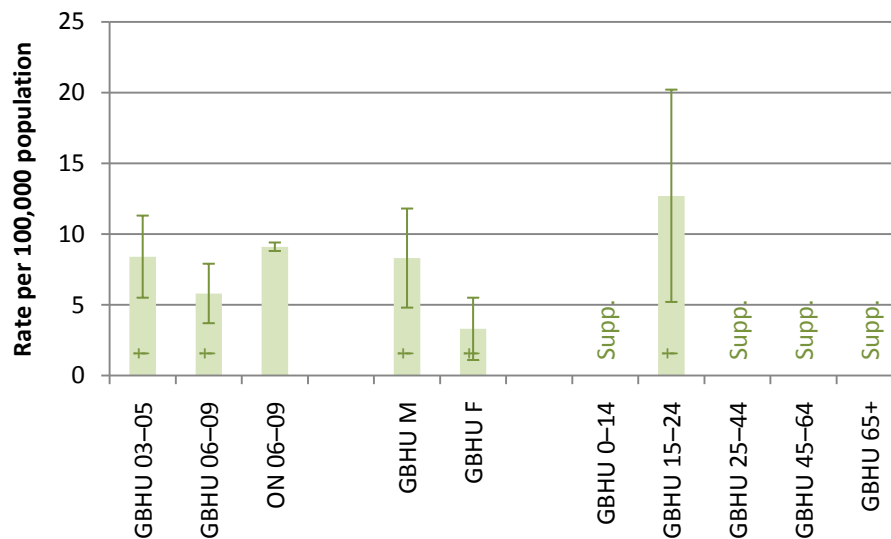
Locally, the age-standardized rate of sports injury hospitalization has not changed significantly since 2003–2005, though it is significantly lower than the provincial rate.

Sports injury mortality rate cannot be calculated since the coding system used for deaths data describes slightly less detail than that used for hospital diagnoses.

Sports Injury Hospitalizations

Locally, the age-standardized rate of sports injury hospitalizations ($5.8^{\dagger} \pm 2.1$ per 100,000 population) has not changed significantly since 2003–2005. The Grey Bruce rate of sports injury hospitalizations is 36% lower than the provincial rate, however (RR = 0.64).

Figure 15. Sports Injury Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



[†] Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.

Sports Injury Hospitalizations by Sex

Locally, males and females do not have significantly different age-standardized rates of sports injury hospitalization because of large 95% confidence intervals and unreliability of estimates. At the provincial level, the male age-standardized sports injury hospitalization rate is about five times that of females (RR = 4.84)

Sports Injury Hospitalizations by Age

Sports injury hospitalization rates do not differ significantly among age groups at the local level. At the provincial level, age-specific rates are highest for the 15–24-year-old age group, the 0–14-year-old age group and the 25–44-year-old age group, respectively.

Table 16. Sports Injury Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		8.4 [†] ± 2.9 (35)	5.8 [†] ± 2.1 (33)	9.1 ± 0.3 (4371)
By Sex	Male	12.3 [†] ± 5.1 (25)	8.3 [†] ± 3.5 (24)	15.0 ± 0.5 (3648)
	Female	4.3 [†] ± 2.8 (10)	3.3 [†] ± 2.2 (9)	3.1 ± 0.2 (723)
By Age	0–14	Supp. (7)	Supp. (8)	13.4 ± 0.8 (1197)
	15–24	15.3 [†] ± 9.5 (10)	12.7 [†] ± 7.5 (11)	22.4 ± 1.1 (1587)
	25–44	10.7 [†] ± 6.1 (12)	Supp. (8)	7.7 ± 0.4 (1140)
	45–54	Supp. (S)	Supp. (S)	2.9 ± 0.3 (396)
	65 and over	Supp. (S)	Supp. (S)	0.7 ± 0.2 (51)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Motor-driven Snow Vehicle Injuries

ICD-10-CA Cause Codes

- V86.00, “Driver of snowmobile injured in traffic accident”
- V86.10, “Passenger of snowmobile injured in traffic accident”
- V86.30, “Unspecified occupant of snowmobile injured in traffic accident”
- V86.50, “Driver of snowmobile injured in nontraffic land accident”
- V86.51, “Driver of snowmobile injured in nontraffic accident, falling through ice”
- V86.60, “Passenger of snowmobile injured in nontraffic land accident”
- V86.61, “Passenger of snowmobile injured in nontraffic accident, falling through ice”
- V86.90, “Unspecified occupant of snowmobile injured in nontraffic land accident”
- V86.91, “Unspecified occupant of snowmobile injured in nontraffic accident, falling through ice”

Summary

Because of time constraints, data were not retrieved for ERVs related to motor-driven snow vehicle injuries.

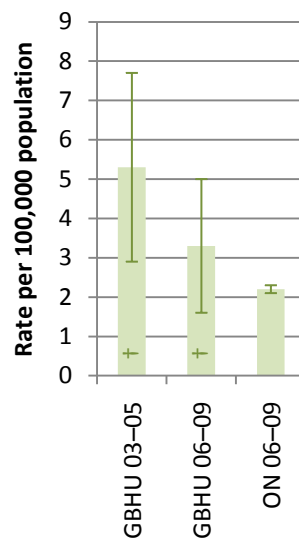
Locally, the age-standardized rate of motor-driven snow vehicle injury hospitalization has not changed significantly since 2003–2005 and does not differ significantly from the provincial rate.

Motor-driven snow vehicle injury mortality rate cannot be calculated since the coding system used for deaths data describes slightly less detail than that used for hospital diagnoses.

Motor-driven Snow Vehicle Injury Hospitalizations

In Grey Bruce, the age-standardized rate of motor-driven snow vehicle injury hospitalizations ($3.3^{\dagger} \pm 1.7$ per 100,000 population) has not changed significantly since 2003–2005, and does not differ significantly from the provincial rate, which is just over 2 per 100,000 population.

Figure 16. Motor-driven Snow Vehicle Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Motor-driven Snow Vehicle Injury Hospitalizations by Sex

Counts are too low in Grey Bruce to report rates by sex. At the provincial level, rates for both sexes are quite low (less than 4 per 100,000 population).

Table 17. Motor-driven Snow Vehicle Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		5.3 [†] ± 2.4 (19)	3.3 [†] ± 1.7 (17)	2.2 ± 0.1 (1105)
By Sex	Male	Supp. (S)	Supp. (S)	3.7 ± 0.2 (929)
	Female	Supp. (S)	Supp. (S)	0.7 ± 0.1 (176)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.
 (S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Farm-related Injuries

Because Grey Bruce is a rural area with much agricultural activity, comparing the rates of farm-related injury to those of Ontario will not be of much value, though the Ontario rates are included nonetheless. It would be far preferable to make a comparison to a geography with a similar proportion of agricultural sector jobs. For this reason, comparisons with the South West Local Health Integration Network (SW LHIN) boundaries have been included, as farming activities are prevalent in South Western Ontario (which includes our geography).

ICD-10 Cause Codes

- W30, “Contact with agricultural machinery”
- V84, “Occupant of special vehicle mainly used in agriculture injured in transport accident”
- U987, “Place of occurrence, farm” [NOT available in deaths data]

Summary

Grey Bruce has a higher age-standardized rate of farm-related injuries ERVs (32.4 ± 4.6 per 100,000 population, RR = 1.72) than SW LHIN. In Grey Bruce, males more than six times the age-standardized rate of farm-related injuries ERVs (56.2 ± 8.6 per 100,000 population, RR = 6.53) compared to females.

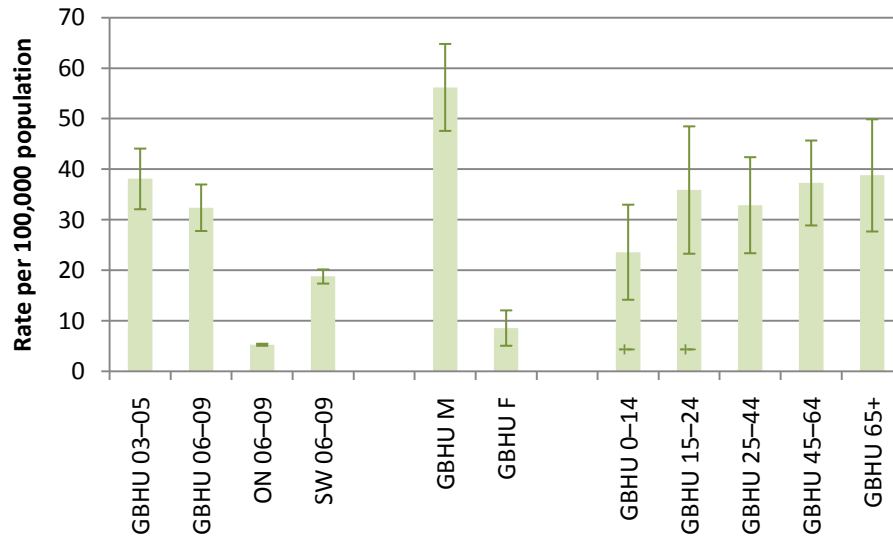
The local age-standardized rate of farm-related injury hospitalizations has not changed significantly since 2002–2005 and is not significantly higher than the SW LHIN rate.

The local age-standardized farm-related injury mortality rate is too low to report, and the rate for the SW LHIN is less than 1 per 100,000 population. It is important to note that the same level of detail is not included in death diagnosis codes, and as such some farm-related injuries cannot be accurately captured in deaths data.

Farm-related Injury Emergency Room Visits

The age-standardized rate of farm-related injury ERVs is 72% higher at the local level (32.4 ± 4.6 per 100,000 population) than it is for the entire SW LHIN region (RR = 1.72).

Figure 17. Farm-related Injuries ERVs, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



† Estimate should be used with caution, as there is a high degree of variance in the measure.

Farm-related Injuries Emergency Room Visits by Sex

Males are approximately six and a half times as likely as females to make an unscheduled ER visit for a farm-related injury (male age-standardized rate: 56.2 ± 8.6 per 100,000 population, RR = 6.53). At the provincial level, the difference in rates between sexes is even greater (RR = 7.23).

Farm-related Injuries Emergency Room Visits by Age Group

Interestingly, farm-related injuries age-specific rates are quite similar at the local level among age groups.

Table 18. Farm-related Injuries ERVs, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

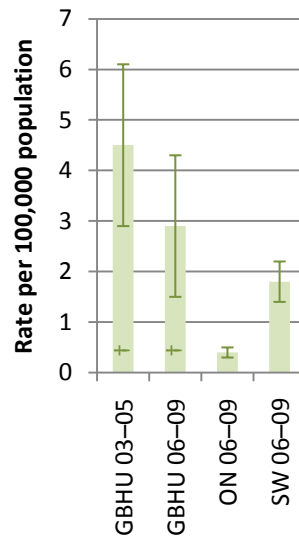
		GBHU		SW LHIN	Ontario
		2003–05	2006–09	2006–09	2006–09
Overall		38.1 ± 6.0 (184)	32.4 ± 4.6 (224)	18.8 ± 1.4 (730)	5.3 ± 0.2 (2860)
By Sex	Male	70.9 ± 11.4 (173)	56.2 ± 8.6 (197)	34.0 ± 2.7 (660)	9.4 ± 0.4 (2526)
	Female	5.1 ± 3.1 (11)	8.6 ± 3.5 (27)	3.7 ± 0.9 (70)	1.3 ± 0.1 (334)
By Age	0–14	$15.9^\dagger \pm 8.6$ (13)	$23.6^\dagger \pm 9.4$ (24)	11.6 ± 2.6 (75)	2.7 ± 0.3 (238)
	15–24	$46.0^\dagger \pm 16.4$ (30)	$35.9^\dagger \pm 12.6$ (31)	21.2 ± 3.9 (114)	5.4 ± 0.5 (380)
	25–44	50.1 ± 13.1 (56)	32.9 ± 9.5 (46)	20.2 ± 2.8 (199)	5.0 ± 0.4 (742)
	45–64	36.8 ± 10.1 (52)	37.3 ± 8.4 (76)	22.4 ± 2.9 (232)	7.3 ± 0.5 (998)
	65 and over	$38.4^\dagger \pm 13.1$ (33)	38.8 ± 11.1 (47)	19.4 ± 3.6 (110)	7.3 ± 0.6 (502)

† Estimate should be used with caution, as there is a high degree of variance in the measure.

Farm-related Injury Hospitalizations

In Grey Bruce, the age-standardized rate of farm-related injury hospitalizations ($2.9^{\dagger} \pm 1.4$ per 100,000 population) has not changed significantly since 2002–2005, and it is not significantly higher than the SW LHIN rate.

Figure 18. Farm-related Injury Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Table 19. Farm-related Injury Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

	GBHU		SW LHIN	Ontario
	2003–05	2006–09	2006–09	2006–09
Overall	4.5 [†] ± 2.0 (22)	2.9 [†] ± 1.4 (20)	1.8 ± 0.4 (70)	0.4 ± 0.1 (221)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Farm-related Injury Mortality

The local age-standardized farm-related injury mortality rate is too low to report, and the rate for the SW LHIN is less than 1 per 100,000 population.

Farm-related Injury Mortality by Sex

All of the deaths at the provincial level for farm-related injuries were male deaths, and the age-standardized rate for the SW LHIN was less than 1 per 100,000 population.

Farm-related Injury Mortality by Age

The only age group with enough farm-related injury deaths to report at the SW LHIN level was the 65-years-old and higher age group with 8 deaths from 2004–2007. Because of this low count, the age-specific rate is too unreliable to release.

Table 20. Farm-related Injury Mortality, Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		SW LHIN	Ontario
		2000–03	2004–07	2004–07	2004–07
Overall		Supp. (9)	Supp. (S)	0.4 [†] ± 0.2 (17)	0.1 [†] ± <0.1 (34)
By Sex	Male	Supp. (9)	Supp. (S)	0.8 [†] ± 0.4 (17)	0.1 [†] ± <0.1 (34)
	Female	-- (0)	-- (0)	-- (0)	-- (0)
By Age	0–14	Supp. (S)	-- (0)	-- (0)	-- (0)
	15–24	Supp. (S)	Supp. (S)	Supp. (S)	Supp. (S)
	25–44	Supp. (S)	-- (0)	Supp. (S)	Supp. (S)
	45–64	Supp. (S)	Supp. (S)	Supp. (S)	Supp. (S)
	65 and over	Supp. (S)	Supp. (S)	Supp. (8)	0.3 [†] ± 0.1 (18)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Pedestrian Traffic-related Injuries

ICD-10 Cause Codes

- V02.1, “Pedestrian injured in collision with two- or three-wheeled motor vehicle, traffic accident”
- V03.1, “Pedestrian injured in collision with car, pick-up truck or van, traffic accident”
- V04.1, “Pedestrian injured in collision with heavy transport vehicle or bus”
- V09.2, “Pedestrian injured in traffic accident involving other and unspecified motor vehicles”
- V09.3, “Pedestrian injured in unspecified traffic accident” [only code from this category that is NOT included in the Motor-vehicle traffic crash category]

Summary

Because of time constraints, data were not retrieved for ERVs related to pedestrian traffic-related injuries.

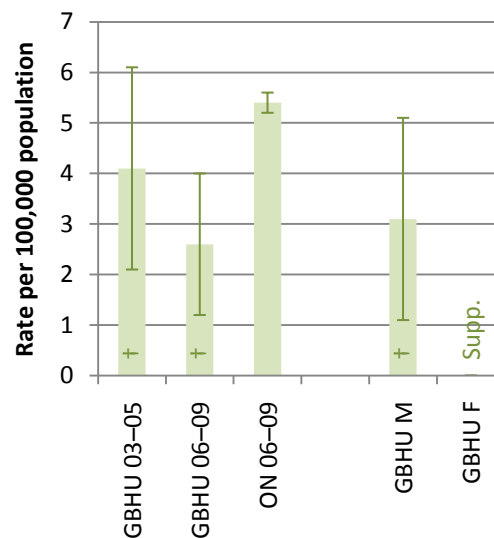
The local age-standardized rate of pedestrian traffic-related hospitalizations has not changed significantly since 2003–2005, though it is half as high as provincial rate.

The local age-standardized pedestrian traffic-related injury mortality rate is based on low counts and cannot be released.

Pedestrian Traffic-related Injury Hospitalizations

In Grey Bruce, the age-standardized rate of pedestrian traffic-related hospitalizations ($2.6^{\dagger} \pm 1.4$ per 100,000 population) has not changed significantly since 2003–2005, though it is 52% lower than the rate for the province (RR = 0.48).

Figure 19. Pedestrian Traffic-related Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

Pedestrian Traffic-related Injury Hospitalizations by Sex

Locally, the age-standardized rate for females is too unreliable to be reported. At the provincial level, males have a 20% higher age-standardized rate of pedestrian traffic-related injury hospitalizations than females (RR = 1.20), although rates are still quite low (less than 6 per 100,000 population).

Table 21. Pedestrian Traffic-related Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		4.1 [†] ± 2.0 (20)	2.6 [†] ± 1.4 (17)	5.4 ± 0.2 (2937)
By Sex	Male	Supp. (6)	3.1 [†] ± 2.0 (10)	5.9 ± 0.3 (1525)
	Female	5.5 [†] ± 3.1 (20)	Supp. (7)	4.9 ± 0.3 (1412)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

Pedestrian Traffic-related Injury Mortality

The local age-standardized pedestrian traffic-related injury mortality rate is based on low counts and cannot be released. The Ontario rate overall is less than 1 per 100,000 population.

Pedestrian Traffic-related Injury Mortality by Sex

Counts are too low to release age-standardized mortality rates by sex at the local level. At the provincial level, rates for both sexes are 1 per 100,000 population or lower.

Pedestrian Traffic-related Injury Mortality by Age

Similarly to sex, counts of pedestrian traffic-related injury mortality by age are too low to release age-specific rates at the local level. At the provincial level, rates for all age groups are lower than 3 per 100,000 population.

Table 22. Unintentional Pedestrian Traffic Mortality, Three-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2000–03	2004–07	2004–07
Overall		Supp. (5)	Supp. (S)	0.8 ± 0.1 (428)
By Sex	Male	Supp. (S)	Supp. (S)	1.0 ± 0.1 (252)
	Female	Supp. (S)	Supp. (S)	0.6 ± 0.1 (176)
By Age	0–14	-- (0)	-- (0)	0.2 ± 0.1 (16)
	15–24	Supp. (S)	Supp. (S)	0.9 ± 0.2 (56)
	25–44	-- (0)	-- (0)	0.5 ± 0.1 (79)
	45–64	Supp. (S)	Supp. (S)	1.0 ± 0.2 (117)
	65 and over	-- (0)	Supp. (S)	2.7 ± 0.4 (160)

† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.
 (S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Unintentional Suffocation

ICD-10 Cause Codes

- W75-W84, “Accidental suffocation and strangulation in bed; Other accidental hanging and strangulation; Threat to breathing due to cave-in, falling earth and other substances; Inhalation of gastric contents; Inhalation and ingestion of food causing obstruction of respiratory tract; Inhalation and ingestion of other objects causing obstruction of respiratory tract; Confined to or trapped in low-oxygen environment; Other specified threats to breathing; Unspecified threat to breathing”

Summary

Because of time constraints, data were not retrieved for ERVs related to unintentional suffocation.

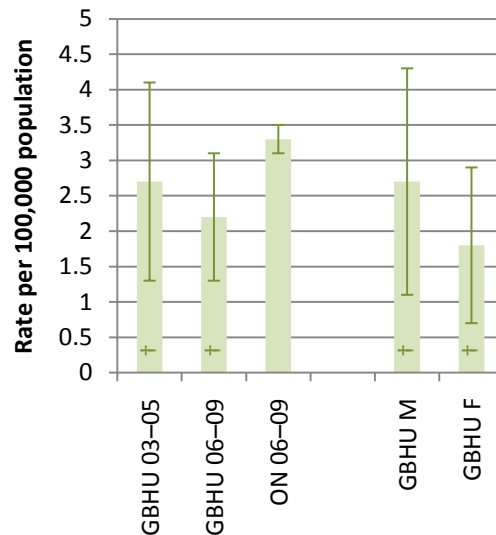
The local age-standardized rate of unintentional suffocation hospitalization has not changed since 2003–2005 and is not significantly different from the provincial rate.

Age-standardized rates are too unreliable to report in Grey Bruce.

Unintentional Suffocation Hospitalizations

In Grey Bruce, the age-standardized rate of unintentional suffocation hospitalization ($2.2^{\dagger} \pm 0.9$ per 100,000 population) has not changed since 2003–2005, and does not differ significantly from the provincial rate.

Figure 20. Unintentional Suffocation Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON



[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Unintentional Suffocation Hospitalizations by Sex

In Grey Bruce, the age-standardized rates of unintentional suffocation hospitalization are low for both males and females (less than 3 per 100,000 population).

Table 23. Unintentional Suffocation Hospitalizations, Three- and Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2003–05	2006–09	2006–09
Overall		2.7 [†] ± 1.4 (17)	2.2 [†] ± 0.9 (22)	3.3 ± 0.2 (2010)
By Sex	Male	Supp. (8)	2.7 [†] ± 1.6 (12)	4.1 ± 0.2 (1092)
	Female	Supp. (9)	1.8 [†] ± 1.1 (10)	2.7 ± 0.2 (918)

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.
Supp. Estimate has been suppressed because of unreliability or low counts.

Unintentional Suffocation Mortality

Age-standardized rates are too unreliable to report in Grey Bruce, however the counts for the last and previous four-year period are identical. At the provincial level, the age-standardized rate of unintentional suffocation mortality is 1 per 100,000 population.

Unintentional Suffocation Mortality by Sex

Counts are too low to report locally, and at the provincial level rates for both males and females are less than 2 per 100,000 population.

Unintentional Suffocation Mortality by Age

Counts are too low to report locally, however at the provincial level the highest rate of unintentional suffocation mortality is seen in the 65-year-old and higher age group (7.0 ± 0.7 per 100,000 population), compared with less than 1 per 100,000 population for all other age groups.

Table 24. Unintentional Suffocation Mortality, Four-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2000–03	2004–07	2004–07
Overall		Supp. (8)	Supp. (8)	1.0 ± 0.1 (617)
By Sex	Male	Supp. (S)	Supp. (S)	1.4 ± 0.1 (342)
	Female	Supp. (S)	Supp. (S)	0.7 ± 0.1 (275)
By Age	0–14	-- (0)	Supp. (S)	0.4 ± 0.1 (41)
	15–24	-- (0)	-- (0)	$0.2^{\dagger} \pm 0.1$ (11)
	25–44	Supp. (S)	Supp. (S)	0.4 ± 0.1 (53)
	45–64	Supp. (S)	Supp. (S)	0.8 ± 0.2 (93)
	65 and over	Supp. (S)	Supp. (S)	7.0 ± 0.7 (419)

† Estimate should be used with caution, as there is a high degree of variance in the measure.
 Supp. Estimate has been suppressed because of unreliability or low counts.
 (S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Recreational Boating

ICD-10 Cause Codes

- V90.2-V90.8, “Accident to watercraft causing drowning and submersion, excl. merchant ship, passenger ship and unspecified watercraft”
- V91.2-V91.8, “Accident to watercraft causing other injury, excl. merchant ship, passenger ship and unspecified watercraft”
- V92.2-V92.8, “Water-transport-related drowning and submersion without accident to watercraft, excl. merchant ship, passenger ship and unspecified watercraft”
- V93.2-V93.8, “Accident on board watercraft without accident to watercraft, not causing drowning and submersion, excl. merchant ship, passenger ship and unspecified watercraft”
- V94.2-V94.8, “Other and unspecified water transport accidents, excl. merchant ship, passenger ship and unspecified watercraft”

Summary

Because of time constraints, data were not retrieved for ERVs related to recreational boating.

The local age-standardized rate of recreational boating hospitalizations is too low to report.

The local age-standardized recreational boating mortality rate is zero.

Recreational Boating Hospitalizations

In Grey Bruce, the age-standardized rate of recreational boating hospitalizations is too low to report, but counts for the last four-year period and previous three-year period are identical at 5. At the provincial level, the age-standardized rate is less than 1 per 100,000 population.

Table 25. Recreational Boating Hospitalizations, Four-year Counts and Rates per 100,000 Population, GBHU and ON

	GBHU		Ontario
	2003–05	2006–09	2006–09
Overall	Supp. (5)	Supp. (5)	0.6 ± 0.1 (281)

Supp. Estimate has been suppressed because of unreliability or low counts.

Recreational Boating Mortality

The local age-standardized recreational boating mortality rate is zero and was zero for the previous three-year period. There were 33 recreational boating deaths between 2003 and 2005 in Ontario, representing an age standardized mortality rate of less than 0.1 per 100,000 population.

Unintentional Drowning

ICD-10 Cause Codes

- V90, “Accident to watercraft causing drowning and submersion”
- V92, “Water-transport-related drowning and submersion without accident to watercraft”
- W65-W74, “Accidental drowning and submersion”

Summary

Because of time constraints, data were not retrieved for ERVs related to unintentional drowning.

The local age-standardized rate of unintentional drowning hospitalizations is too low to report.

The rate of unintentional drowning mortality is too unreliable to report at the local level.

Unintentional Drowning Hospitalizations

Locally, the age-standardized rate of unintentional drowning hospitalizations is too low to report. At the provincial level, the age-standardized rate is less than 1 per 100,000 population.

Table 26. Unintentional Drowning Hospitalizations, Four-year Counts and Rates per 100,000 Population, GBHU and ON

	GBHU		Ontario
	2003–05	2006–09	2006–09
Overall	Supp. (S)	Supp. (S)	0.7 ± 0.1 (327)

Supp. Estimate has been suppressed because of unreliability or low counts.
(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Unintentional Drowning Mortality

Age-standardized rates are too unreliable to be released at the local level, however at the provincial level the unintentional drowning mortality rate is less than 1 per 100,000 population.

Unintentional Drowning Mortality by Sex

Counts are too low at the local level to produce age-standardized rates by sex, however at the provincial level unintentional drowning mortality rates are lower than 2 per 100,000 population for both males and females.

Unintentional Drowning Mortality by Age

Similarly to sex, counts are too low at the local level to produce age-specific rates, however at the provincial level rates for all age groups are lower than 2 per 100,000 population.

Table 27. Unintentional Drowning Mortality, Three-year Counts and Rates per 100,000 Population, GBHU and ON

		GBHU		Ontario
		2000–03	2004–07	2004–07
Overall		Supp. (S)	Supp. (7)	0.8 ± 0.1 (430)
By Sex	Male	Supp. (S)	Supp. (S)	1.4 ± 0.1 (348)
	Female	Supp. (S)	Supp. (S)	0.3 ± 0.1 (82)
By Age	0–14	Supp. (S)	-- (0)	0.7 ± 0.2 (65)
	15–24	-- (0)	-- (0)	0.9 ± 0.2 (59)
	25–44	-- (0)	-- (0)	0.7 ± 0.1 (100)
	45–64	-- (0)	Supp. (S)	1.0 ± 0.2 (114)
	65 and over	Supp. (S)	Supp. (S)	1.5 ± 0.3 (92)

Supp. Estimate has been suppressed because of unreliability or low counts.
(S) Count has been suppressed to prevent identification of cells with counts of less than 5.

Discussion

Unintentional injuries are a major public health issue for Grey and Bruce Counties. Understanding the factors that lead to injury is the first step in developing a strategic approach to identify priorities and develop plans for injury prevention. As identified by the data presented in this report, the priority areas for public health promotion are falls across the lifespan, alcohol misuse and injuries, and motor vehicle traffic crashes. Populations identified to be at greatest risk of injury are children and youth up to age 24, seniors aged 65+, and males in most age groups for most types of injury. This report serves as a call to action to create healthy and safe communities and thereby reduce injuries in Grey and Bruce Counties.

Grey Bruce Health Unit works with individuals, families, organizations and communities to support injury prevention strategies and create healthy environments where we live, work, play, learn and age. Since the underlying causes of injuries are similar to other public health issues, these problems need to be addressed using an holistic, integrated approach.⁴ This includes ensuring communities are safe, addressing the social determinants of health, as well as targeting programs and services to those populations at greatest risk of injury.

Historically, injury prevention efforts have focused on individual behaviour change, creating awareness and educating the public about injury prevention activities. This has proven to have little impact, which may indicate that the risk of injuries relies on factors at the systemic, rather than individual, level. The following discussion examines the impact of priority health issues within Grey Bruce, reviews strategies currently in place, and provides recommendations for future approaches to injury prevention.

Risk-taking

Risk is a part of everyday life. Some people take more risks than others; for some, this is related to age or to life changes, while for many others it happens as a matter of difference of culture or of genetic predisposition. Taking risks encourages better decision-making skills and improves self-esteem.⁵ However, it is the negative risks such as harmful use of alcohol and other drugs, binge drinking, or dangerous thrill-seeking that require strategies to help prevent injuries.

Public health has been working with community partners to help provide positive substitutes for negative risks. The FOCUS initiative addressed the negative risks of binge drinking and the harmful use of alcohol and other drugs. As we move forward, we help to create supportive environments and policies that keep people safe and encourage them to engage in positive risk taking. Letting people take positive risks helps develop resiliency in adulthood and better coping skills.⁶ We will continue to build on current initiatives, such as raising awareness of the dangers of risk-taking (Smartrisk) and legislation like Ontario's *Safer Roads for a Safer Ontario Act*.

⁴ Department of Health Promotion and Protection, Injury Free Nova Scotia, *Nova Scotia's Renewed Injury Prevention Strategy 2010* (Nova Scotia: Department of Health Promotion and Protection, Injury Free Nova Scotia, 2010).

⁵ Ibid.

⁶ Ibid.

Alcohol Misuse and Injuries

The financial and emotional burdens of alcohol-related injuries have been well documented. While the emotional burden is difficult to quantify, the financial burden of alcohol-associated injuries is estimated to cost Ontario \$440 million every year.⁷

Alcohol consumption is a major public health concern because of its negative health consequences, including its association with injuries. Local rates of high-risk drinking are higher relative to the province: 24.1% of Grey Bruce drinkers are heavy drinkers, compared to 15.9% of Ontario drinkers.⁸ Moreover, in Ontario, 72% of people aged 15 and older report drinking in the past year and 84% of post secondary students report drinking in the past year, with 19% drinking at dangerous levels.⁹ Given our higher adult heavy drinking rate, the percentage of post secondary students drinking at dangerous levels may also be higher than 19% for Grey Bruce.

As little as 0.05 mg/ml blood alcohol concentration (BAC) can impair tracking performance, information processing, psychomotor skills, visual function, attention and reaction time.¹⁰ Alcohol is a drug, and the amount of alcohol intake required to inebriate a person depends on their height, weight, sex, age, metabolism and many other factors; for most people, a BAC of .05mg/ml can be reached with as few as two standard servings of alcoholic beverages. The variability of body sizes and metabolism makes it easy for people to overestimate how much alcohol they can consume before becoming impaired. Moreover, people often drink with the express intention of reaching a state of intoxication, resulting in seriously impaired mental and somatic function. When intoxicated (drunk), a person suffers from reduced perception (visual, auditory, olfactory, gustatory, and physical—including balance and proprioception [the ability to recognize your body and its movements within its surroundings]), reduced motor control, and reduced inhibitions; all of which can lead to injury and possibly death.

Although fatalities due to drinking and driving have been consistently declining since 2006, a staggering 790 Canadians were killed in traffic accidents involving a drunk driver in 2008.¹¹ In Grey Bruce, 8% of residents admit to having been drinking and driving a recreational vehicle within the last year; while 4% admit to drinking and driving a car/truck within the last year.¹²

During the summer of 2010, as stated in a review by Ontario's chief coroner, two thirds of all drowning deaths in Ontario involved alcohol as a contributing factor.¹³ It was also reported that, in 2000/2001,

⁷ Ontario Injury Prevention Resource Centre, *Alcohol Related Injury: Evidence-based Practice Synthesis Document* (SMARTRISK, November 2008).

⁸ Virginia McFarland and Alanna Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit* (Owen Sound, Ontario: Grey Bruce Health Unit, November 2010).

⁹ Ontario Injury Prevention Resource Centre, *Alcohol Related Injury: Evidence-based Practice Synthesis Document*.

¹⁰ Ibid.

¹¹ W. G. M. Vanlaar and R. D. Robertson, *Road Safety Monitor 2010: Drinking and Driving in Canada* (Ottawa, Ontario: Traffic Injury Research Foundation, 2010).

¹² Virginia McFarland and Alanna Leffley, *Alcohol: Drinking and Driving* (Owen Sound, Ontario: Grey Bruce Health Unit, April 2011).

¹³ SMARTRISK, "Alcohol, lack of PFDs linked to Ontario Drownings" (SMARTRISK, June 23, 2011), http://www.smartrisk.ca/index.php/news/item/alcohol_lack_of_pfds_linked_to_ontario_drownings.

27% of patients hospitalized due to falls had a blood alcohol level above the legal limit.¹⁴ Many studies have estimated that 10-18% of emergency department visits due to injuries are alcohol-related.¹⁵

Ontario has legislated acceptable blood alcohol concentration for drivers of vehicles (motor and non-motor), regulations for selling and serving alcohol in a public bar, restaurant or festival, and prohibition of consumption of alcohol while driving, boating, or while using public property. Within Grey Bruce awareness and education initiatives provide information to the public about the dangers of alcohol consumption and intoxication. In addition, several initiatives are underway to provide mandatory education in responsible alcohol service for hospitality workers, and Public Health is working with local politicians to support the development of municipal alcohol policies.

Of particular concern, many young adults engage in “pre-drinking,” which is a term used to describe drinking before going out to bars. Problems arise since pre-drinking occurs in locations where there are no serving restraints or other social controls. Excessive amounts of alcohol are consumed in a short period of time, increasing the risk of alcohol poisoning, blackouts, loss of consciousness, and hangovers.¹⁶ This problem strongly suggests that “existing alcohol policies may not apply to the contemporary public drinking culture of young people and may exacerbate rather than reduce alcohol-related problems in this population.”¹⁷

The key to reducing injuries related to alcohol and substance abuse is to take a comprehensive approach involving prevention and education, harm reduction treatment, enforcement and healthy public policy.¹⁸ A shift in cultural views needs to be addressed as well, since the perception of social norms in Grey Bruce regarding alcohol use surpasses guidelines for low risk drinking. A sustained commitment to reduce alcohol-related injuries along with community stakeholders and partners is required to effect change within our social environments and related alcohol policy.¹⁹

Motor Vehicle Traffic Crashes

Motor vehicle traffic crashes are the most common cause of death for young people in Grey Bruce, accounting for the majority of youth deaths, and one of the most common causes of death and injury for all age groups.²⁰ Speed, distracted driving, alcohol and substance misuse and improper use of safety

¹⁴ Ontario Injury Prevention Resource Centre, *Falls Across the Lifespan: Evidence-based Practice Synthesis Document* (SMARTRISK, November 2008).

¹⁵ World Health Organization Regional Office for Europe, “Addressing the Socioeconomic Safety Divide: A policy briefing” (World Health Organization, 2009).

¹⁶ Centre for Addiction and Mental Health (CAMH), *Policy implications of the widespread practice of “pre-drinking” or “pre-gaming” before going to public drinking establishment—are current prevention strategies backfiring?* (London, Ontario: University of Western Ontario and University of Toronto, n.d.).

¹⁷ Ibid.

¹⁸ Glenda Clarke & Associates and Marie Barclay, *Current Priority Issues Regarding Substance Misuse in Grey Bruce and Strategic Directions for Moving Forward* (Owen Sound, Ontario: Grey Bruce Health Unit, August 27, 2010).

¹⁹ Ontario Injury Prevention Resource Centre (OIPRC), “Alcohol Related Injury—Evidence Based Practice Synthesis Document”, November 2008.

²⁰ Ontario Registrar General, *Deaths 1986 – 2007* (IntelliHEALTH Ontario, Ministry of Health and Long-term Care, n.d.).

equipment can all contribute to motor vehicle traffic crash injuries and deaths. Public Health engages in safety promotion campaigns to address these issues.

Grey Bruce was recognized provincially for the initiative “Think and Drive.” Over 150 teen drivers and parents participated in an interactive evening at the Public Health building aimed to increase awareness of the risks of drinking and driving, and to reduce the number of deaths, associated with motor vehicle collisions. A Grand Prize of \$600 towards a youth’s driver education or vehicle insurance was presented to a local youth who participated in the Think and Drive event.

Locally, the rural geography and corresponding increased reliance on motor vehicle transportation, as well as a lack of public transportation infrastructure may be significant factors contributing to the higher local rate of motor vehicle traffic crashes. An estimated 80% of the Grey Bruce labour force uses a motor vehicle to get to and from work, and the majority of children travel to and from school by bus or car.²¹ In 2010, the Board of Health passed two resolutions to support healthy public policy development regarding active and alternative transportation.²² In addition, Public Health is evaluating the potential impacts of active transportation initiatives and exploring implementation strategies, such as the Youth Moving Safely with Active Transportation project in 2011. Increasing opportunities for youth to use active transportation may not only help to address inactivity and obesity issues, but may also help to decrease motor vehicle traffic crashes.²³ An initiative such as this requires cooperation across all levels of government as well as among city planners, residents and community partners.

The incidence of child deaths resulting from motor vehicle traffic crashes may be reduced with the correct use of child seats and restraints. Child restraints in vehicles, when installed and properly used, have been demonstrated to reduce the risk of death by as much as 71% in infants and 54% in toddlers.²⁴

Working with community partners, Public Health staff conducts community car seat safety checks. Parents and care givers are provided with feedback on proper child restraint placement. In collaboration with Bruce Power, families in need are provided with car seats and booster seats. Future approaches to child safety could involve a community safety coalition that would examine child safety in a broad community context, taking into account child restraints, falls, burns, poisonings and other preventable injuries that cause morbidity and mortality among children.

²¹ Statistics Canada, *2006 Census*, n.d.

²² Grey Bruce Health Unit, “Grey Bruce Board of Health Minutes”, February 19, 2010; Grey Bruce Health Unit, “Grey Bruce Board of Health Minutes”, December 17, 2010.

²³ Grey Bruce Healthy Community Partnership, *Grey Bruce Community Picture* (Owen Sound, Ontario, February 2011).

²⁴ National Highway Traffic Safety Administration, “Revised Estimates of Child Restraint Effectiveness” (U. S. Department of Transportation, 1996); Thomas M. Rice and Craig L. Anderson, “The Effectiveness of Child Restraint Systems for Children Aged 3 Years or Younger During Motor Vehicle Collisions: 1996 to 2005,” *American Journal of Public Health Research* 99, no. 2 (February 2009): 252–7.

Obesity and Falls

People who are overweight, although usually having greater absolute strength, demonstrate weaker strength in relation to their Body Mass Index (BMI). This has implications for impaired balance and postural stability, and may result in an increased risk of falling.²⁵

Middle aged and older adults who are obese experience almost twice as many falls compared to those within recommended BMI ranges, and have increased risks for multiple falls.²⁶ Consequently, those who are obese have a 15-79% higher risk of requiring medical treatment following a fall.²⁷ In Grey Bruce, 3 in 5 residents are either overweight or obese.²⁸

According to one study, BMI has a linear relationship with the rate of injury claims filed at work—as BMI increases, so does the number of injury claims filed at work.²⁹ Exercise programs such as resistance training, stretching and other activities that improve muscle coordination and balance can help individuals lose weight and decrease their fear of falling, consequently decreasing their risk of injury and thus improving quality of life.³⁰

Results of the 2007 Bluewater Nutrition Study found that in a sample of Grey Bruce school-aged children, there was a significantly greater percentage above a healthy weight. Pomerantz, Timm and Gittelman found that obese children experience increased rates of injury to the lower extremities partly because of increased stress placed on the lower extremities and that youth obesity is associated with prolonged injury recovery time, increased injury rate and increased mortality.³¹

Since the majority of individuals spend a great deal of their time either at work or school, employers and School Boards need to create environments that support attaining and maintaining a healthy weight. Initiatives need to emphasize physical activity and healthy eating as part of their goals and provide the appropriate support to achieve success.³²

Injury prevention strategies cannot stand alone. Future approaches will require us to work together to create healthy communities that mitigate health disparities by ensuring healthy food choices for all, ease of active transportation, and a clean and safe environment for individuals and families.

²⁵ E. Miller, S. Matrangola, and S. Madigan, "Effects of obesity on balance recovery from small postural perturbations," *Ergonomics* 54, no. 6 (2011): 547–554.

²⁶ Ibid.

²⁷ B. N. Wilson et al., "Use of the Bruininks - Osoretsky test of motor proficiency in occupational therapy," *American Journal of Occupational Therapy* 49 (1995): 8–17.

²⁸ McFarland and Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit*.

²⁹ T. Ostbye, J. M. Dement, and K. M. Krause, "Obesity and workers' compensation: results from the Duke Health and Safety Surveillance System," *Archives of Internal Medicine* 167, no. 8 (2007): 766–73.

³⁰ C. Fjeldstad et al., "The influence of obesity on falls and quality of life," *Dynamic Medicine* 7, no. 4 (2008).

³¹ W. J. Pomerantz, N. L. Timm, and M. A. Gittelman, "Injury patterns in obese versus nonobese children presenting to a pediatric emergency department," *Pediatrics* 125, no. 4 (April 2010): 681–5.

³² Keshia M. Pollack et al., "Obesity Increases Risk of Injury on the Job", October 10, 2011, http://www.jhsph.edu/publichealthnews/press_releases/2007/pollack_bmi_injury.html.

Activity Limitations

People with activity limitations are at a higher risk of injuring themselves. This is true regardless of sex and age. Arthritis often imposes activity limitations and may have an impact on a person's ability to react to a precarious situation, as do preexisting injuries. Asthma has been found to be associated with increased risk of injury. Obesity predisposes people to injuries primarily related to overexertion relative to their physical limitations. Finally, physical inactivity can result in people being unprepared to undertake some activities without recognizing these activity limitations. Education of the public on how to accommodate conditions that lead to activity limitation (such as asthma, arthritis and preexisting injuries) as well as prevention programs to address modifiable conditions (obesity through physical activity and nutrition promotion, physical inactivity through physical activity promotion) are major activities of public health.

Physical Activity, Sports and Recreational Injuries

The local rate of sports injury hospitalizations is lower than the Ontario rate of about 9 per 100,000 population. Still, sports and recreation injuries are a largely preventable type of injury. The most common cause of injury resulting in hospitalization for those aged 14 and younger and one of the most common causes of all injury in all other age groups is bicycle falls.³³

Head injuries represented the most common type of injury associated with cycling in Ontario, accounting for 25% of emergency department visits and 19% of hospitalizations.³⁴ It is also reported by Safe Kids Canada that 8% of injuries that children sustain while riding a bicycle result in brain injury³⁵ When Ontario's bicycle helmet legislation was introduced in 1995, bicycle helmet use rose for all income groups in several Toronto areas.³⁶ Helmet use among the wealthier areas remained high, with 85% of children wearing helmets by 2001, but a significant decrease was observed in the middle- and lower-income areas, with only 50% and 33% of children wearing helmets, respectively.³⁷ Although the implementation of the Ontario bicycle helmet legislation had positive impacts for all income areas, the lack of helmet use in some groups and head injuries sustained are still issues of concern. Cycling is an excellent physical activity that has many benefits, which is why increasing helmet use and creating safe and accessible infrastructure that promotes this type of active transportation is important.

In collaboration with Bruce Power, Public Health partnered with municipalities to have "Helmets Save Lives" signage located in key locations, such as municipal parks and trails, and in privately owned campgrounds. However, prevention strategies for sports and recreational injuries need to go beyond merely education. Strategies need to create supportive environments and policies that keep people of all income levels safe. Partnerships with a variety of stakeholders within the community, such as coaches, parents, municipal leaders and provincial partners are required when strategies are currently

³³ Ontario Injury Prevention Resource Centre, *Sports and Recreation Injuries: Evidence-based Practice Synthesis Document* (Ontario Injury Prevention Resource Centre, November 2008).

³⁴ Ibid.

³⁵ Ontario Ministry of Health Promotion, *Prevention of Injury Guidance Document 2010* (Ontario Ministry of Health Promotion, 2010).

³⁶ Ibid.

³⁷ Ibid.

being implemented.³⁸ Policy development and enforcement will ensure that strategies can be sustained for the long-term.

The Office of the Chief Coroner conducted a detailed review of accidental drowning deaths in Ontario that occurred between May 1, 2010 and September 30, 2010. The numbers of drowning deaths in Grey Bruce were similar to previous years. The review found that drowning is largely a male-related phenomenon that occurs largely in those using lakes/ponds or private pools. For those operating power or unpowered boats, 96% of drowning victims were not wearing life jackets or personal floatation devices. Alcohol was a contributing factor, especially for those aged 15–64; though ability to swim played a role. Recommendations from this report include: legislative changes directed towards municipalities regarding pool enclosure bylaws, amendments to the *Canada Shipping Act* requiring boat operators and passengers of powered and unpowered boats less than 6 metres in length to continuously wear their life jackets or personal floatation devices, legislative changes to require admission and tracking standards for recreational non-instructional swimming in public pools, inclusion of swimming part of the elementary school curriculum, creation of water safety and swimming education programs.³⁹

Public Health currently provides educational materials to support municipal “Swim to Survive” programs targeting grade three students. Future directions include meeting with local community leaders to address the factors contributing to drowning.

Social Determinants of Health

Complex interactions between socioeconomic factors, individual conditions, and the physical environment have an influence on health and injury rates within communities. These factors are the social determinants of health and—more specifically—they include gender, age, income, education, employment, and housing among other factors. The social determinants do not act in isolation, but demonstrate a combined effect on both individual and population health.

In 2009, the World Health Organization released a policy briefing stating that people who live in impoverished environments and have low socioeconomic status are more likely to die as a result of intentional and unintentional injuries than people who reside in wealthy areas.⁴⁰ Aboriginal populations in Ontario, which happen to be among the poorest, have an injury death rate that is three times greater than the Canadian average.⁴¹ In Grey and Bruce Counties, 2.4% of the population self-identifies as Aboriginal.⁴² When implementing policies and initiatives for injury prevention, all of the determinants of

³⁸ Ontario Injury Prevention Resource Centre, *Sports and Recreation Injuries: Evidence-based Practice Synthesis Document*.

³⁹ Office of the Chief Coroner of Ontario, *Drowning Review: A review of all accidental drowning deaths in Ontario from May 1st to September 30th 2010* (Office of the Chief Coroner of Ontario, June 2011).

⁴⁰ World Health Organization Regional Office for Europe, “Addressing the Socioeconomic Safety Divide: A policy briefing.”

⁴¹ Ontario Ministry of Health Promotion, *Prevention of Injury Guidance Document 2010*.

⁴² Statistics Canada, 2007. *Grey Bruce Health Unit, Ontario (Code 3533) (table). 2006 Community Profiles*. 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. <http://www12.statcan.ca/census-recensement/2006/dp-p/prof/92-591/index.cfm?Lang=E> (accessed November 16, 2011).

health must be considered, instead of focusing on individual behaviours. Addressing all of the determinants of health may seem like a lofty goal, but when specific at-risk populations are targeted for public health action, addressing social determinants of health becomes both efficient and effective. Future approaches to working with neighbourhoods to address the risk of preventable injuries should take into account the economic, social and environmental factors that impact those most at risk of injuries. Building trust with priority populations and developing a comprehensive and sustainable approach to working in partnership with the community are key to promoting better population health outcomes.

Conclusion

Injury prevention must be a strategic priority for Public Health. It is crucial that factors contributing to unintentional injuries of Grey Bruce residents be addressed using a comprehensive, community-focused approach. Underlying issues such as alcohol use, obesity rates, physical activity opportunities and the unique rural nature of the area must be considered when developing approaches to injury prevention across the lifespan. Social determinants of health are also critically important to consider when developing activities, environmental supports and policies that may impact priority populations. Centralized, coordinated and interdisciplinary approaches will have the greatest impact, sustainability and uptake from residents. By working together we can help to reduce injuries and ensure Grey Bruce residents have safe environments and healthy lifestyles.

Resources

For more information on best practices for child safety, please visit:

Safe Kids Canada

http://www.safekidscanada.ca/Professionals/Documents/34938-gpg_cps.pdf.

Grey Bruce Health Unit: Current Priority Issues Regarding Substance Misuse in Grey Bruce and Strategic directions for Moving Forward August 2010

http://www.publichealthgreybruce.on.ca/Injury/AlcoholDrugs/Substance-Misuse_Grey-Bruce_Priority-Issues_Strategic-Directions.pdf

Grey Bruce Healthy Communities Partnership: Grey Bruce Community Picture February 2011

http://www.publichealthgreybruce.on.ca/HOME/Publications/Reports/General/Grey%20Bruce%20Healthy%20Community%20Picture%20Feb%202015%202011%20FINAL_reduced%20file.pdf

LHIN Collaborative: Integrated Provincial Falls Prevention Framework & Toolkit July 2011

http://www.southwestlhinc.on.ca/uploadedFiles/Public_Community/Current_Initiatives/Falls_Prevention/Integrated%20Provincial%20Falls%20Prevention%20Framework%20Toolkit%20July%202011.pdf

Standards, Programs & Community Development Branch Ministry of Health Promotion: Prevention of Injuries Guidance Document May 2010

<http://www.mhp.gov.on.ca/en/healthy-communities/public-health/guidance-docs/PreventionofInjury.PDF>

Appendix I: Explanation of Selected Statistical Concepts

What's a Population Parameter?

A population parameter is a true value that in some way describes a population. For example, if you were to add up the ages of the entire population of Canada and then take the mean (divide the total by the number of people in the population) the result would be a population parameter. There is no doubt about a population parameter: if you know all the values present in the population, you can compute any true value for a population. Population parameters do not need confidence intervals. If you have calculated it, you know what it is and there is no doubt about the validity or the reliability of the number.

What's a Statistic?

A statistic is an *estimate* of a value of a population parameter. Because it's neither cost-effective to talk to everyone in a population, nor is it time-effective, smaller samples are taken of a population in order to generalize to the larger population. Unlike a population parameter, there is the possibility of error for a statistic. We can't be sure it equals the true population parameter.

But Isn't a Population Rate a Parameter?

Yes, a population rate is a parameter. Therefore, it doesn't technically *need* a confidence interval calculated around it. That said, epidemiologists usually construct confidence intervals around population rates because they recognize that rates fluctuate, and they want to be able to assess whether a rate is reasonably similar or different from other rates. For example, if a rate is 3 per 100,000 population in 2006, but it's 2 per 100,000 population in 2007, we want to know if that could be qualified as a significant difference. We therefore treat the population rate as a statistic and construct confidence intervals around it to help us decide whether or not the difference is *significant*, and we use relative risk to determine whether the difference is *meaningful*.

What Are Confidence Intervals & How Should I Interpret Them?

Confidence intervals are "windows" that we generate around a sample statistic that we estimate with a degree of certainty to contain the true population parameter. The data in this report are presented with 95% confidence intervals, which is to say that there is a 95% chance that the true population parameter would fall within the window—the interval for which the upper and lower limits are provided.

Confidence intervals, when used to present rates with a common denominator (such as percentages—a *number per 100 persons*) are useful tools that can allow you to easily compare an estimate with one or more other estimates. They are used to identify situations where population values are likely to be different from group to group.

If confidence intervals overlap, it is not possible to say with any degree of certainty that the real population values are different. The reason for this is because since there is overlap, it is possible that the true values for two different groups fall within that same overlap, which gives them a chance of having the same value. If there is a chance that they are equal (represented by overlapping confidence intervals), you cannot conclude that they aren't equal.

If confidence intervals DO NOT overlap, you can say with a reasonable degree of certainty that the two population values are likely to be different.

Relative Risk

The relative risk or risk ratio is a measure of one group's probability of an event occurring divided by another group's probability of the same event occurring. It is a measure of *effect size*, which is simply the amount of 'effect' that an independent variable has on an outcome. In this case, the independent variables are political geography—that is, health unit region, province, country or LHIN region—and time.

Relative risk is important to present because knowing that something is significantly different in itself doesn't mean it's an important or large difference.

A relative risk above 1 means that one group is more likely to experience a certain event than the comparison group, geography or time frame. A relative risk below 1 conversely means that that event is less likely. A relative risk can be used to communicate how many times as likely a group is to experience an event. A relative risk of 2 would mean they're twice as likely, a relative risk of 0.5 would mean they're half as likely.

What is Age Standardization?

Age standardization is used to standardize (or make comparable) the rates for two or more different groups. It does this by calculating the rates as though the groups have the same age distribution. In this report, the overall, male and female rates are standardized to the 1991 Canadian population, which means that they are the rates you would see if our population had the same proportion of people in each five-year age range (0–4, 5–9, 10–14, etc.) as Canada did in 1991.

Appendix II: Unintentional Injury Summary Tables

Table 28. Selected Causes of Unintentional Injury ERVs, 2006–2009 Rates per 100,000 Population, GBHU

Rank	ALL	0–14	15–24	25–44	45–64	65 and over	M	F
1	Unintentional Falls 4922.4 ± 56.6	Unintentional Falls 7434.7 ± 161.3	Unintentional Falls 4973.1 ± 145.0	Unintentional Falls 3663.8 ± 98.5	Unintentional Falls 3526.7 ± 80.1	Unintentional Falls 7061.8 ± 144.3	Unintentional Falls 4896.0 ± 80.3	Unintentional Falls 4914.1 ± 79.8
2	Farm-related Injuries 32.4 ± 4.6	Farm-related Injuries 23.6† ± 9.4	Farm-related Injuries 35.9† ± 12.6	Farm-related Injuries 32.9 ± 9.5	Farm-related Injuries 37.3 ± 8.4	Farm-related Injuries 38.8 ± 11.1	Farm-related Injuries 56.2 ± 8.6	Farm-related Injuries 8.6 ± 3.5
	All Causes 19,318.2 ± 105.7	All Causes 22,382.8 ± 256.3	All Causes 26,966.7 ± 296.0	All Causes 19,626.4 ± 208.3	All Causes 13,442.5 ± 148.2	All Causes 13885.7 ± 194.8	All Causes 22,510.2 ± 156.7	All Causes 15,976.7 ± 139.3

† Estimate should be used with caution, as there is a high degree of variance in the measure.

Table 29. Selected Causes of Unintentional Injury Hospitalization, 2006–2009 Rates per 100,000 Population, GBHU

Rank	ALL	0–14	15–24	25–44	45–64	65 and over	M	F
1	Unintentional Falls 345.3 ± 12.4	Unintentional Falls 126.0 ± 21.8	Motor Vehicle Traffic Crash 113.5 ± 22.5	Unintentional Falls 117.4 ± 18.0	Unintentional Falls 287.9 ± 23.3	Unintentional Falls 2061.2 ± 80.0	Unintentional Falls 325.4 ± 18.6	Unintentional Falls 350.2 ± 16.3
2	Motor Vehicle Traffic Crash 66.3 ± 6.7	Unintentional Poisoning 21.6† ± 9.0	Unintentional Falls 106.6 ± 21.8	Motor Vehicle Traffic Crash 70.9 ± 14.0	Motor Vehicle Traffic Crash 63.4 ± 10.9	Motor Vehicle Traffic Crash 95.0 ± 17.4	Motor Vehicle Traffic Crash 84.1 ± 10.8	Motor Vehicle Traffic Crash 48.0 ± 7.9
3	Unintentional Poisoning 21.1 ± 3.7	Pedal Cycle Injury 17.7† ± 8.2	Pedal Cycle Injury 16.2† ± 8.5	Unintentional Poisoning 14.3† ± 6.3	Unintentional Poisoning 25.5 ± 6.9	Unintentional Poisoning 44.6 ± 11.9	Unintentional Poisoning 21.3 ± 5.3	Unintentional Poisoning 21.0 ± 5.1
4	Pedal Cycle Injury 12.5 ± 2.9	Motor Vehicle Traffic Crash 10.8† ± 6.4	Unintentional Burns 16.2† ± 8.5	Pedal Cycle Injury 9.3† ± 5.1	Pedal Cycle Injury 12.8† ± 4.9	Unintentional Burns 9.9† ± 5.6	Pedal Cycle Injury 20.6 ± 5.4	Unintentional Burns 4.9† ± 2.6
5	Unintentional Burns 9.7 ± 2.6	Unintentional Burns 9.8† ± 6.1	Other Off-road Motor Vehicle 13.9† ± 7.9	Other Off-road Motor Vehicle 9.3† ± 5.1	Unintentional Burns 7.4† ± 3.7	Pedal Cycle Injury 9.1 ± 5.4	Unintentional Burns 14.3 ± 4.5	Other Off-road Motor Vehicle 4.1† ± 2.5
6	Other Off-road Motor Vehicle 7.6 ± 2.4	Sports Injury Supp. Supp.	Sports Injury 12.7† ± 7.5	Unintentional Burns 7.2† ± 4.4	Other Off-road Motor Vehicle 4.4† ± 2.9	Other Off-road Motor Vehicle Supp. Supp.	Other Off-road Motor Vehicle 11.1† ± 4.2	Pedal Cycle Injury 4.1† ± 1.9
7	Sports Injury 5.8† ± 2.1	Other Off-road Motor Vehicle Supp. Supp.	Unintentional Poisoning 11.6† ± 7.2	Sports Injury Supp. Supp.	Sports Injury Supp. Supp.	Sports Injury Supp. Supp.	Sports Injury 8.3† ± 3.5	Sports Injury 3.3† ± 2.2
8	Motor-driven Snow Vehicle 3.3† ± 1.7						Pedestrian Traffic-related 3.1† ± 2.0	Unintentional Suffocation 1.8† ± 1.1
9	Farm-related Injuries 2.9† ± 1.4						Unintentional Suffocation 2.7† ± 1.6	Pedestrian Traffic-related Supp. Supp.
10	Pedestrian Traffic-related 2.6† ± 1.4						Motor-driven Snow Vehicle Supp. Supp.	Motor-driven Snow Vehicle Supp. Supp.
11	Unintentional Suffocation 2.2† ± 0.9							
	All Causes 649.2 ± 18.9	All Causes 297.2 ± 33.5	All Causes 516.7 ± 47.8	All Causes 412.3 ± 33.6	All Causes 557.6 ± 32.3	All Causes 2585.0 ± 89.4	All Causes 717.8 ± 29.6	All Causes 563.0 ± 23.0

† Estimate should be used with caution, as there is a high degree of variance in the measure.
Supp. Estimate has been suppressed because of unreliability or low counts.

Table 30. Selected Causes of Unintentional Injury Mortality, 2004–2007 Rates per 100,000 Population, GBHU

Rank	ALL	0–14	15–24	25–44	45–64	65 and over	M	F
1	Motor Vehicle Traffic Crash 10.1 ± 2.6	Unintentional Poisoning Supp.	Motor Vehicle Traffic Crash 23.9 [†] ± 10.5	Motor Vehicle Traffic Crash 10.3 [†] ± 5.0	Motor Vehicle Traffic Crash Supp.	Unintentional Falls 76.0 ± 16.3	Motor Vehicle Traffic Crash 11.6 [†] ± 3.9	Motor Vehicle Traffic Crash 8.3 [†] ± 3.5
2	Unintentional Falls 7.8 ± 1.6	Motor Vehicle Traffic Crash Supp.	Unintentional Poisoning Supp.	Unintentional Poisoning 8.4 [†] ± 4.5	Unintentional Falls Supp.	Motor Vehicle Traffic Crash 14.5 [†] ± 7.1	Unintentional Falls 8.4 ± 2.7	Unintentional Falls 7.2 ± 2.0
3	Unintentional Poisoning 4.2 [†] ± 1.8	Unintentional Suffocation Supp.	Farm-related Injuries Supp.	Unintentional Falls Supp.	Unintentional Poisoning Supp.	Unintentional Poisoning Supp.	Unintentional Poisoning 6.8 [†] ± 3.3	Unintentional Poisoning Supp.
	All Causes 31.9 ± 4.2	All Causes Supp.	All Causes 27.5 [†] ± 11.2	All Causes 23.8 ± 7.7	All Causes 24.1 ± 7.3	All Causes 153.0 ± 23.0	All Causes 38.7 ± 6.8	All Causes 24.3 ± 4.8

[†] Estimate should be used with caution, as there is a high degree of variance in the measure.

Supp. Estimate has been suppressed because of unreliability or low counts.

Appendix III: Health Behaviours

Many health behaviours can impact injury rates and the rates of other illnesses or conditions. The following is a general discussion of some chronic conditions and modifiable health behaviours that have some degree of influence on risk of injury. It is important to bear in mind that modifiable health behaviours may need to be targeted as a systemic rather than individual level in order to achieve improved public health status.

Arthritis

In 2007/8, 22.4% of the Grey Bruce population reported suffering from arthritis, a rate that is statistically higher than the rates of arthritis in Ontario and Canada.⁴³ This is likely because of the higher local proportion of seniors compared to that of Ontario or Canada. Arthritis is a known predisposing factor to falls-related injuries.^{44,45}

Diabetes

In 2007/8, the rate of diabetes in Grey Bruce was 6.1%, similar to the rates in Ontario and Canada.⁴⁶ Diabetes puts people at risk of injury, specifically at risk of falls injury, because of decreased sensory capacity in the extremities (including the feet) and diabetic eye disease (including glaucoma, diabetic retinopathy and cataracts).

Asthma

In 2007/8, the rate of asthma in Grey Bruce was 8.8%, similar to the rates in Ontario and Canada.⁴⁷ Children with asthma are several times as likely as children without asthma to experience injury.⁴⁸

Hypertension

In 2007/8, the rate of hypertension in Grey Bruce was 21.6%, a rate that is significantly higher than the rates in Ontario and Canada.⁴⁹ Antihypertensive medications may be associated with an increased risk of falls in older people.⁵⁰

⁴³ McFarland and Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit*.

⁴⁴ Gwi-Ryung Son Hong, Sung-Hyun Cho, and YoungRan Tak, "Falls among Koreans 45 years of age and older: incidence and risk factors," *Journal of Advanced Nursing* 66, no. 9 (September 2010): 2014–24.

⁴⁵ C. O. Bekibebe and O. Gureje, "Fall Incidence in a Population of Elderly Persons in Nigeria," *Gerontology* 56, no. 3 (2010): 278–83.

⁴⁶ McFarland and Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit*.

⁴⁷ Ibid.

⁴⁸ David C. Schwebel and Carl M. Brezausk, "Injury risk in children with asthma," *Journal of Asthma* 46 (August 2009): 560–3.

⁴⁹ McFarland and Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit*.

⁵⁰ Jonathan Gribbin et al., "Risk of falls associated with antihypertensive medication: population-based case-control study," *Age and Ageing* 39, no. 5 (September 2010): 592-7.

Pain and Activity Limitation

In 2007/8, the rate of pain and activity limitation in Grey Bruce was 10.9%, similar to the rates in Ontario and Canada.⁵¹

Pain or Discomfort that Prevents Activities

In 2007/8, 12.1% of the Grey Bruce population reported pain or discomfort that prevents activities, similar to the rates in Ontario and Canada.⁵²

Participation and Activity Limitation

In 2007/8, 32.4% of the Grey Bruce population reported sometimes or often being unable to participate in selected activities, similar to the rates in Ontario and Canada.⁵³

Alcohol Consumption

In 2007/8, 24.1% of the Grey Bruce population reported heavy drinking, a rate that is significantly higher than that of Ontario and Canada for the same time period (RR to Ontario = 1.52; RR to Canada = 1.43).⁵⁴

Obesity

In 2007/08, 61.5% of Grey Bruce residents reported being overweight or obese, a rate that is 1.19 times the Ontario rate and 1.21 times the Canadian rate.⁵⁵

Physical Inactivity

In 2007/8, 47.5% of Grey Bruce residents reported being physically inactive, a rate not significantly different from those of Ontario and Canada.⁵⁶

Nutrition

In 2007/8, 44.7% of Grey Bruce residents reported consuming five or more servings of fruits and vegetables a day.⁵⁷

Smoking

Smoking is associated with an increased risk of certain injuries, including pelvis fracture in older adults.^{58,59} Smokers experience impaired healing following some types of injury than non-smokers and may require more vigilant medical follow-up after treatment of an injury.⁶⁰

⁵¹ McFarland and Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit*.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ J. J. Sacks and D. E. Nelson, "Smoking and injuries: an overview," *Preventive Medicine* 23, no. 4 (July 1994): 515–20.

⁵⁹ Jennifer L. Kelsey et al., "Risk Factors for Pelvis Fracture in Older Persons," *American Journal of Epidemiology* 162, no. 9 (October 12, 2005): 879–886.

⁶⁰ A. Moghaddam et al., "Cigarette smoking influences the clinical and occupational outcome of patients with tibial shaft fractures," *Injury* (June 10, 2011); K. M. Sarraf et al., "Non-union of an undisclosed radial styloid fracture in a heavy smoker: revisiting the association of smoking and bone healing," *Hand Surgery* 16, no. 1 (2011): 73–6.

In 2007/8, 21.7% of the Grey Bruce population reported being current smokers, similar to the rates in Ontario and Canada.⁶¹

Activity Limitations—Arthritis, Asthma, Injuries, Obesity, Physical Inactivity

In 2007/8 rate of 32% of the Grey Bruce population who sometimes or often can't participate in selected activities is not significantly different from the Ontario or Canada rate.

Industry

Industry of work is a major contributor to some injury rates; in particular, to farm injury rates. Most of the land in Grey and Bruce Counties is farm land; domestic cattle alone outnumber people 2:1.⁶² Aside from cattle farming, Grey Bruce is home to myriad other farming operations: hog, sheep, chicken and other livestock; many types of grain and feed farms; many types of vegetable farms; and many fruit and nut farms and orchards. Farming is an occupation with a very high risk of injury.

Health Care Utilization

Patterns of health care utilization and health care accessibility impact the rates of hospitalizations and emergency room visits in different geographic areas, and may impact mortality rates if proper care is not sought or is inaccessible or delayed soon after an injury occurs.

In 2007/8, 87.1% of Grey Bruce residents reported having a regular doctor, however only 74.1% reported having visited a doctor in the last 12 months (lower than the Ontario and Canada rates).⁶³

⁶¹ McFarland and Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit*.

⁶² Statistics Canada, "Census of Agriculture" (Statistics Canada, May 16, 2007).

⁶³ McFarland and Leffley, *Canadian Community Health Survey, 2007/08 Grey Bruce Health Unit*.

Appendix IV: Public Health Requirements

The Ontario Public Health Standards includes one standard for the Prevention of Injury and Substance Misuse, which includes five requirements:⁶⁴

1. To conduct epidemiological analysis of surveillance data, including monitoring trends over time, emerging trends, and priority populations, in accordance with the *Population Health Assessment and Surveillance Protocol, 2008* (or as current) in the areas of:
 - Alcohol and other substances;
 - Falls across the lifespan;
 - Road and off-road safety; and
 - Other areas of public health importance for the prevention of injuries.
2. To work with community partners, using a comprehensive health promotion approach, to influence the development and implementation of healthy policies and programs, and the creation or enhancement of safe and supportive environments that address the following:
 - Alcohol and other substances;
 - Falls across the lifespan;
 - Road and off-road safety; and may include
 - Other areas of public health importance for the prevention of injuries as identified by local surveillance in accordance with the *Population Health Assessment and Surveillance Protocol, 2008* (or as current).
3. To use a comprehensive health promotion approach to increase the capacity of priority populations to prevent injury and substance misuse by:
 - Collaborating with and engaging community partners;
 - Mobilizing and promoting access to community resources;
 - Providing skill-building opportunities; and
 - Sharing best practices and evidence for the prevention of injury and substance misuse.
4. To increase public awareness of the prevention of injury and substance misuse in the following areas:
 - Alcohol and other substances;
 - Falls across the lifespan;
 - Road and off-road safety; and may include
 - Other areas of public health importance for the prevention of injuries, as identified by local surveillance in accordance with the *Population Health Assessment and Surveillance Protocol, 2008* (or as current).

These efforts shall include:

- Adapting and/or supplementing national and provincial health communications strategies; and/or

⁶⁴ Ontario Ministry of Health and Long-term Care, "Ontario Public Health Standards 2008" (Queen's Printer for Ontario, 2008).

- Developing and implementing regional/local communications strategies.
5. To use a comprehensive health promotion approach in collaboration with community partners, including enforcement agencies, to increase public awareness of and adoption of behaviours that are in accordance with current legislation related to the prevention of injury and substance misuse in the following areas:
- Alcohol and other substances;
 - Falls across the lifespan;
 - Road and off-road safety; and may include
 - Other areas of public health importance for the prevention of injuries as identified by local surveillance in accordance with the *Population Health Assessment and Surveillance Protocol, 2008* (or as current).

It is evident from the above-stated requirements that the primary areas of focus for reporting and for health promotion with respect to specific injury categories are *falls across the lifespan* and *road and off-road safety*. Indeed, these are the two areas that see the highest rates of unintentional injury hospitalizations and of unintentional injury deaths. Nevertheless, rates for a number of other injury types relevant to public health practice are included in this report. The definitions for these injury categories are those specified in the APHEO Core Indicators for Public Health.