ICES Institute for Clinical Evaluative Sciences

Injuries in Ontario

ICES Atlas

September 2005

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About the Institute for Clinical Evaluative Sciences (ICES)

Ontario's resource for informed health care decision-making

ICES (Institute for Clinical Evaluative Sciences) is an independent, non-profit organization that conducts health services evaluations on a broad range of topical issues to enhance the effectiveness of health care for Ontarians. Internationally recognized for its innovative use of population-based health information, ICES knowledge provides evidence to support health policy development and changes to the organization and delivery of health care services.

Unbiased ICES evidence offers fact-based measures of health system performance; a clearer understanding of the shifting health care needs of Ontarians; and a stimulus for discussion of practical solutions to optimize scarce resources.

Key to ICES' work is our ability to link anonymous population-based health information on an individual patient basis, using unique encrypted identifiers that ensure privacy and confidentiality. This allows scientists to obtain a more comprehensive view of specific health care issues than would otherwise be possible. Linked databases reflecting 12 million of 30 million Canadians allow researchers to follow patient populations through diagnosis and treatment, and to evaluate outcomes.

ICES brings together the best and the brightest talent under one roof. Many of our faculty are not only internationally recognized leaders in their fields, but are also practising clinicians who understand the grassroots of health care delivery, making ICES knowledge clinically-focused and useful in changing practice. Other team members have statistical training, epidemiological backgrounds, project management or communications expertise. The variety of skill sets and educational backgrounds ensures a multi-disciplinary approach to issues management and creates a real-world mosaic of perspectives that is vital to shaping Ontario's future health care.

ICES collaborates with experts from a diverse network of institutions, government agencies, professional organizations and patient groups to ensure that its findings are relevant.

Executive Summary

Issue

Injuries represent an important health problem. They are the leading cause of death for young people, and contribute substantially to the burden on the health care system. Many injuries are predictable and preventable.

Study

This atlas describes emergency department (ED) and hospital utilization related to injuries in Ontario in 2002/03.

Key findings

1. Injury is a significant health problem in Ontario

- Injuries are a common reason for Ontarians to visit health care facilities.
- In just one year, there were more than 1.2 million injury-related ED visits and over 62,000 injury-related hospitalizations.
- On average, someone visits an ED every 30 seconds and someone is hospitalized every 10 minutes for injury.
- About 1 in 4 ED visits is injury-related, and among children aged 10–14 years, the frequency increases to almost 1 in 2.
- About 1 in 17 hospitalizations is related to injury.

2. Injury rates vary substantially

- Rate of injury is highest among people aged 15–24 years and 65+ years, compared to other age groups.
- Men are 1.5 times more likely to be injured than women.
- Children and young adults in the lowest income areas are 40% more likely to be injured than those in the highest income areas.
- Rural areas have injury rates over 1.5 times higher than urban areas.

3. Causes of injury vary

- Falls are the most common cause of injury regardless of age.
- Falls result in more than one-quarter of all injury-related ED visits.
- Other types of injuries (e.g., motor vehicle traffic, poisoning) are somewhat less common, but often have a higher percentage of hospitalization and in-hospital deaths.
- The proportion of injuries classified as assault-related is highest in young adults (e.g., 6.7% of injuries among 15–24 year-olds compared to 1.7% of injuries among 25–35 year-olds).

Implications

Implementation of effective strategies for injury prevention can ease the burden injuries place on the health care system.

Introduction

Injuries represent a significant health problem. In Canada, they are the leading cause of death among young people and a major cause of disability. In the United States, unintentional injuries are the leading cause of death among young people aged 1 to 35 years, and the fourth leading cause of death overall. They can be devastating to victims and their families, and place a heavy burden on the health care system.

A large proportion of annual ED visits and hospitalizations in Canada are caused by acute injuries, many of which are predictable, and preventable. For example, bicycle helmets can prevent head injuries, traffic calming can prevent pedestrian injuries, and design improvements can prevent injuries from falls.

Injury prevention organizations often have difficulty determining the numbers of people injured each year, and the factors associated with increased risk. While hospitalization and death data have been previously available, it is also now possible to report the number of Ontarians visiting EDs with injuries, through the National Ambulatory Care Reporting System (NACRS) database collected by the Canadian Institute for Health Information (CIHI) and the Ontario Ministry of Health and Long-Term Care (MOHLTC).

Injuries in Ontario provides a snapshot of injuries in fiscal 2002/03, and investigates the following questions:

1. How many Ontarians go to an ED for an injury; how many are admitted to hospital and how many are discharged from the ED?
2. What are the most common types of injuries?
3. Do injuries vary by age, sex, and socioeconomic status (SES)?
4. Are injuries more or less common in certain parts of the province or on certain days of the week?
5. What proportion of injuries are self-inflicted or related to an assault?

Discussion

In Ontario, 1 in 4 ED visits is related to injury, suggesting that effective prevention strategies could reduce injuries and health care costs. Several groups are at higher risk of injury; prevention programs may be more effective if they are targeted at the higher-risk groups and regions.

This report helps identify the most at-risk groups and regions within Ontario. Specifically, people in the age groups 15–24 years and 65+ years are at greatest risk of injury compared with those aged 25–65 years. The overall injury rate among men is higher than for women, though women have a higher rate of poisoning. Rates for injury-related ED visits and hospitalizations are higher in rural and remote areas compared to urban and suburban areas, and in lower socioeconomic areas as compared with higher SES areas.

Significant barriers to implementing effective injury prevention strategies remain. The first is society's continued willingness to accept injuries as random accidents rather than predictable and preventable. Second, is the complexity of implementing prevention strategies, which often require legislation and effective enforcement. The greatest potential for injury prevention appears to lie largely outside the health care system. For example, bicycle helmets appear to be effective in reducing head injuries among cyclists,[1] pool fencing appears to reduce drowning,[2] and graduated licensing can reduce motor vehicle crashes.[3]

As Ontario moves toward a regionalized health system there may be opportunities to address the local differences in injury patterns and severity demonstrated in this report. Prevention programs and policies tailored to meet local needs can be implemented and evaluated. Although a comprehensive population-based approach is required to address a public health issue of this magnitude, the findings presented here suggest that certain people and regions are at higher risk, and that prevention strategies targeted to specific populations may work best to address these differences.

Conclusion

Ultimately, everyone is at risk of injury. *Injuries in Ontario* documents the extent of a complex public health problem and its acute impact on the health system. This report can serve to inform injury prevention strategies and to provoke questions that help shape further research. The results presented in this report highlight the need for a comprehensive and population-based approach to reducing injury across the province, and strategies that target specific at-risk groups.

Appendix A

How the Research was Done

Data sources

All Ontario EDs are required to submit data to the National Ambulatory Care Reporting System (NACRS). For emergency department (ED) visits, this database includes:

- Patient demographic information (age, sex, geographic area of residence);
- Reason for injury-related visit (external causes according to the International Classification of Disease 10th [ICD-10] version);
- Where the patient went after leaving the ED (admitted to hospital or sent home); and,
- Other diagnostic information.

This study included patients with an ICD external cause of injury code and a diagnosis consistent with injury. Injuries were further categorized as intentional, self-inflicted, intent unknown, or not classified. Hospitalization data was obtained from the Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD), which also uses ICD-10 classification. The groupings for cause of injury are based on the International Collaborative Effort on Injury Statistics, which can be found at: http://www.cdc.gov/nchs/advice.htm.

Population estimates from Statistics Canada were used to calculate rates. Data on SES were obtained based on the average family income of the injured person's residential postal code.

Limitations

Not all injuries result in an ED visit or hospitalization, and furthermore, the proportions that do may vary by region depending on the availability of non-hospital health services. This may artificially inflate the variation in injury rates stated in this report.

A further caution is the reporting of injury rates. The data used in this report exclude mild cases that do not reach medical attention, and deaths occurring outside hospital are not be captured by the databases used. Other limitations include a focus on a single year, possible errors in injury coding, a lack of information related to potential contributing factors (e.g., alcohol and drug use, personality factors, educational levels). Finally, this report does not consider direct or indirect economic costs of injury.

References

1. Thompson DC, Rivara FP, Thompson R. Helmets for preventing head and facial injuries in bicyclists. *The Cochrane Database of Systematic Reviews* 1999, Issue 4. Art. No.: CD001855. DOI: 10.1002/14651858.CD001855.

2. Thompson DC, Rivara FP. Pool fencing for preventing drowning in children. *The Cochrane Database of Systematic Reviews* 1998, Issue 1. Art. No.: CD001047. DOI: 10.1002/14651858.CD001047.

3. Hartling L, Wiebe N, Russell K, Petruk J, Spinola C, Klassen TP. Graduated driver licensing for reducing motor vehicle crashes among young drivers. *The Cochrane Database of Systematic Reviews* 2004, Issue 2. Art. No.: CD003300.pub2. DOI: 10.1002/14651858.CD003300.pub2.

INSIDE

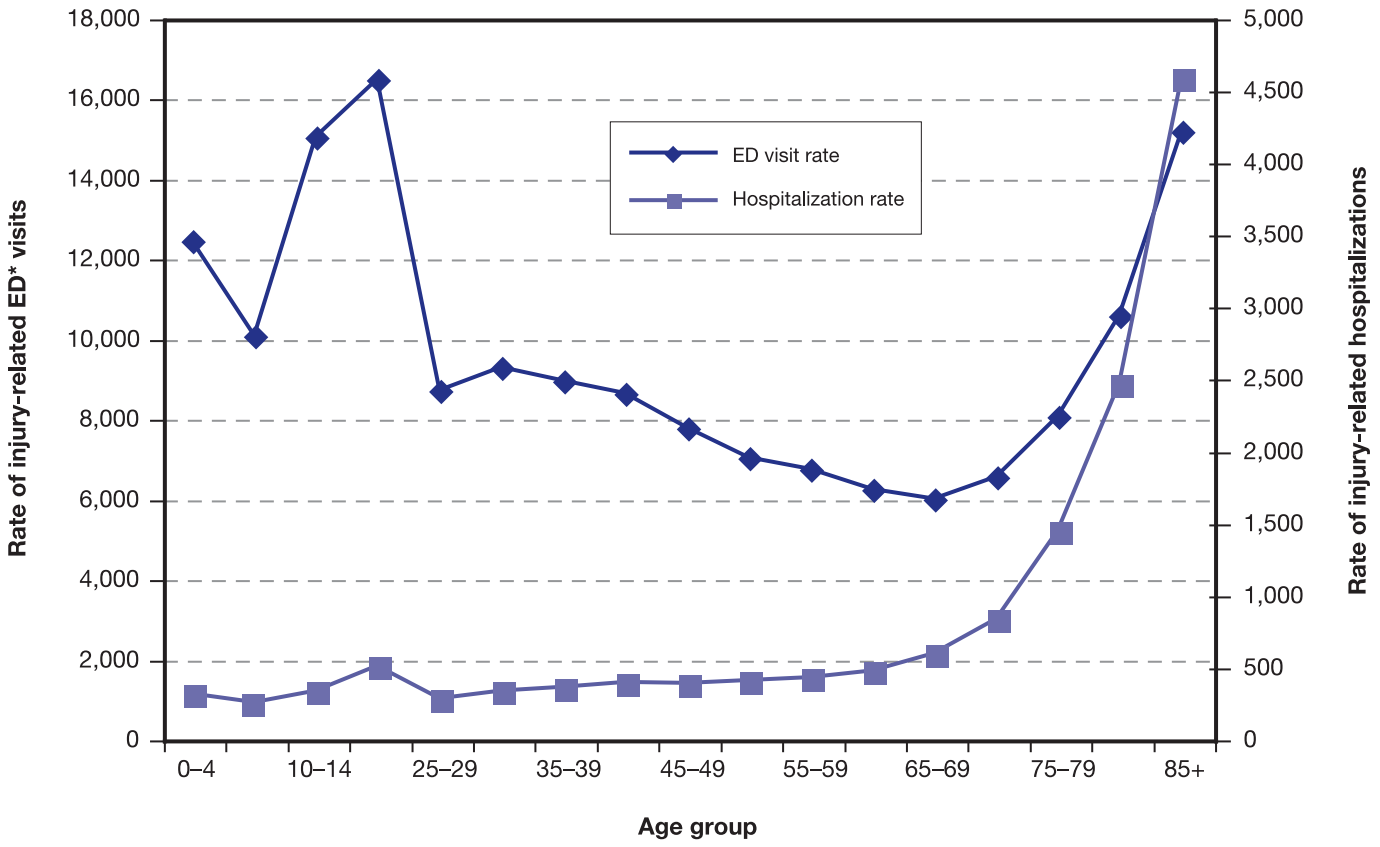
1

Chapter

General Description of Injuries in Ontario

Chapter 1—List of Exhibits

1.1 Rate of injury-related emergency department visits and hospitalizations per 100,000 population, by age group, in Ontario, 2002/03



Data table	0–4	5–9	10–14	15–19	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
ED visit rate	12,410	10,042	15,010	16,430	8,683	9,240	8,926	8,601	7,746	7,008	6,719	6,206	5,975	6,519	8,031	10,555	15,139
Hospitalization rate	305	249	325	500	276	328	353	388	377	397	417	463	587	825	1,436	2,455	4,578

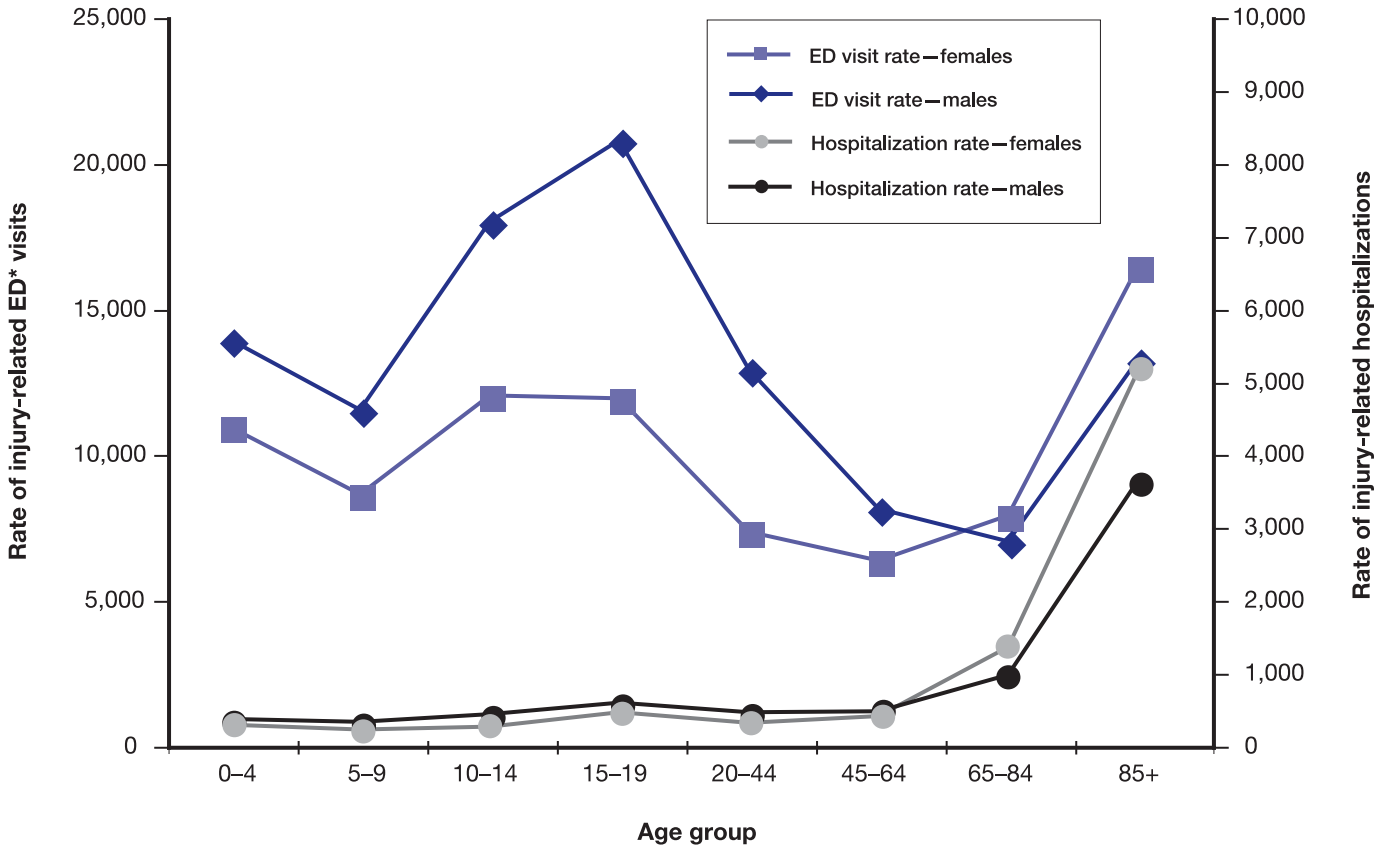
*ED = Emergency Department

Findings

- For all ages, injury is a common reason to seek ED care.
- Rates of ED utilization are highest among young children, adolescents, and the very elderly (85+).
- Hospitalization rates are substantially higher among older people.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.2 Rate of injury-related emergency department visits and hospitalizations per 100,000 population, by age group and sex, in Ontario, 2002/03



Data table

	0–4	5–9	10–14	15–19	20–44	45–64	65–84	85+
ED visit rate—females	10,879	8,551	11,951	11,871	7,275	6,293	7,845	16,379
ED visit rate—males	13,870	11,456	17,902	20,730	12,834	8,063	6,946	13,173
Hospitalization rate—females	263	199	234	428	289	379	1,332	5,115
Hospitalization rate—males	345	297	412	567	438	445	942	3,614

*ED = Emergency Department

Findings

- Among children, youth, and adults, males have higher rates of injury-related ED visits and hospitalizations.
- The greatest difference in ED visit rates for injury in males vs. females is among young adults (15–19 years).
- Older women are more likely to visit EDs and be admitted to hospital more often than older men.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.3 Number of injury-related emergency department visits, hospitalizations and in-hospital deaths, by age group, in Ontario, 2002/03

Age Group	Number of Injury-Related ED* Visits	Number of Injury-Related Hospitalizations	Number of Injury-Related In-Hospital Deaths	Ratio of ED Visits: Hospitalizations: In-Hospital Deaths
0–4	83,466	2,050	25	3,339:82:1
5–9	79,628	1,977	19	4,191:104:1
10–14	122,775	2,660	21	5,846:127:1
15–19	131,248	3,993	66	1,989:60:1
20–44	463,844	16,761	252	1,841:67:1
45–64	204,663	11,742	321	637:37:1
65–84	101,356	15,770	1,121	90:14:1
85+	24,570	7,426	882	28:8:1
Total all ages	**1,211,550**	**62,379**	**2,707**	**448:23:1**

*ED = Emergency Department

Findings

- Injuries resulted in over 1.2 million ED visits and more than 62,000 hospitalizations in one year.
- The likelihood of injury resulting in hospitalization or death is highest in older people (65+) and lowest in children (0–14 years).

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.4 Rate of injury-related emergency department visits, hospitalizations, and in-hospital deaths per 100,000 population, by common causes of injury, in Ontario, 2002/03

Common Causes of Injury	Rate of Injury-Related ED* Visits per 100,000 Population	Rate of Injury-Related Hospitalizations per 100,000 Population	Rate of Injury-Related In-Hospital Deaths per 100,000 Population	Ratio of ED Visits: Hospitalizations: In-Hospital Deaths
Fall	2,765	247.6	13.98	198:18:1
Struck by/against	1,821	29.7	0.32	5,691:93:1
Cut/pierce	980	18.9	0.24	4,083:79:1
Overexertion	890	13.6	0.22	4,045:62:1
Motor vehicle traffic	523	38.9	2.30	227:17:1
Natural/environmental	360	6.2	0.16	2,250:39:1
Poisoning	284	78.7	1.02	278:77:1
Other bicycle (non motor vehicle collision)	165	7.3	0.03	5,500:243:1
Other land transport	158	14.9	0.47	336:32:1
Hot object/scald	115	3.2	0.07	1,642:46:1
Machinery	104	3.5	0.07	1,486:50:1
Fire/flame	42	2.5	0.26	162:10:1
Other pedestrian (non motor vehicle collision)	16	1.6	0.14	114:11:1
Suffocation	13	2.1	0.08	163:26:1
Firearm	10	1.3	0.75	13:2:1
Drowning	5	0.6	0.25	20:2:1
Other or not specified	1,786	45.4	1.82	980:25:1

*ED = Emergency Department

Findings

- Falls are the most common cause of ED visits, hospitalizations, and in-hospital deaths.
- Firearms are an uncommon reason for ED visits and hospitalizations, and are less likely than falls, motor vehicle crashes, or poisoning, to cause in-hospital death.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.5 Number of injury-related emergency department visits, by common causes of injury, in Ontario, 2002/03

	Females	Males	Total
Common Causes of Injury	Number of Injury-Related ED* Visits	Number of Injury-Related ED Visits	Number of Injury-Related ED Visits
Fall	169,596	164,071	333,667
Struck by/against	66,313	153,461	219,774
Cut/pierce	38,169	80,077	118,246
Overexertion	46,849	60,518	107,367
Motor vehicle traffic	32,546	30,587	63,133
Natural/environmental	21,705	21,791	43,496
Poisoning	18,768	15,520	34,288
Other bicycle (non motor vehicle collision)	5,123	14,808	19,931
Other land transport	7,255	11,851	19,106
Hot object/scald	6,818	7,032	13,850
Machinery	1,859	10,689	12,548
Fire/flame	1,404	3,723	5,127
Other pedestrian (non motor vehicle collision)	835	1,037	1,872
Suffocation	511	686	1,197
Firearm	64	512	576
Drowning	101	172	273
Other or not specified	79,376	136,124	215,500

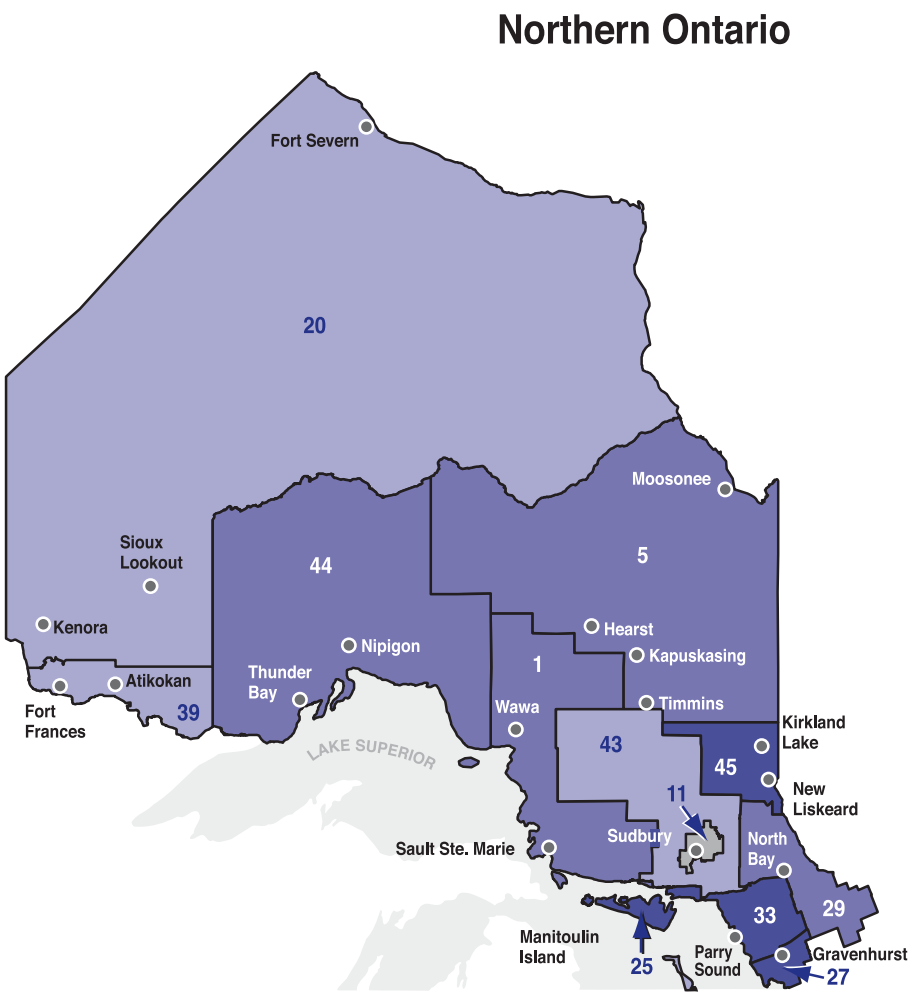
*ED = Emergency Department

Findings

- Males are more likely to visit EDs for injuries of all types, except those caused by falls, motor vehicle crashes, and poisoning.
- Females are much less likely to visit an ED for injuries related to machinery or firearms.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.6 Rate of injury-related emergency department visits per 100,000 population, by county, in Ontario 2002/03



Ontario Counties

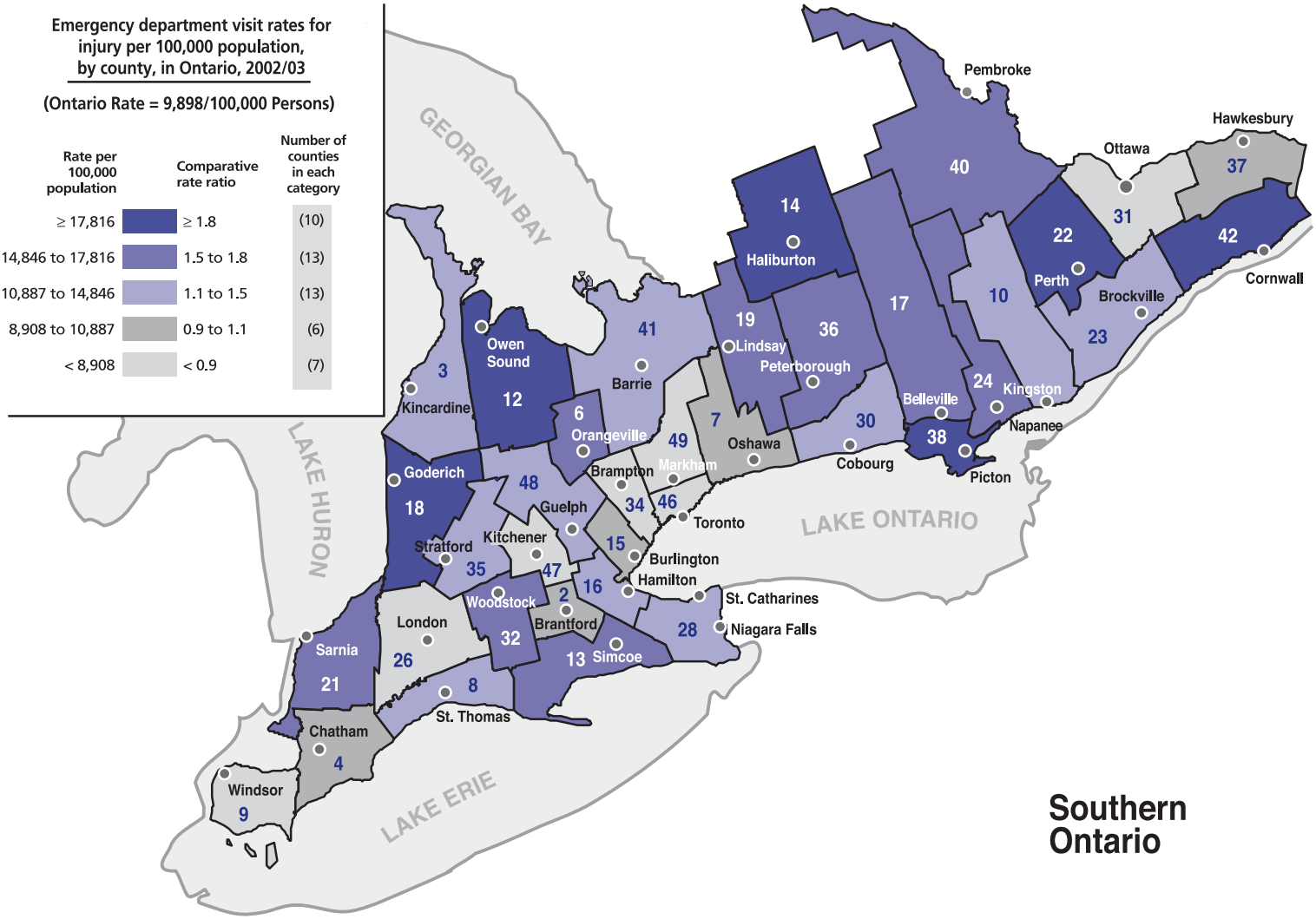
1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
6	Dufferin	31	Ottawa
7	Durham	32	Oxford
8	Elgin	33	Parry Sound
9	Essex	34	Peel
10	Frontenac	35	Perth
11	Greater Sudbury	36	Peterborough
12	Grey	37	Prescott-Russell
13	Haldimand-Norfolk	38	Prince Edward
14	Haliburton	39	Rainy River
15	Halton	40	Renfrew
16	Hamilton	41	Simcoe
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- Ten counties (one-fifth of all counties) have injury-related ED* visit rates that are 80% higher than the provincial average.
- Rural counties have higher rates of injury.
- The lowest rates of injury-related ED visits were found in 7 urban counties.

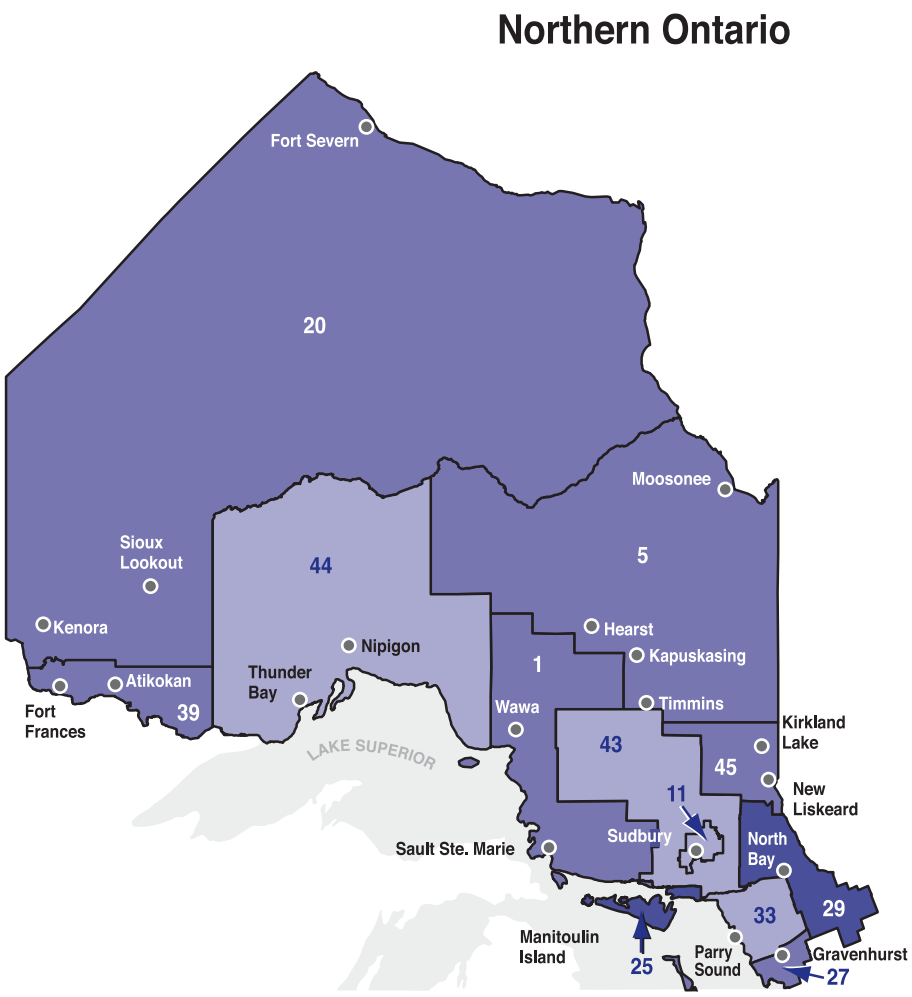
*ED = Emergency Department

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System



Southern Ontario

1.7 Rate of injury-related hospitalizations per 100,000 population, by county, in Ontario 2002/03



Ontario Counties

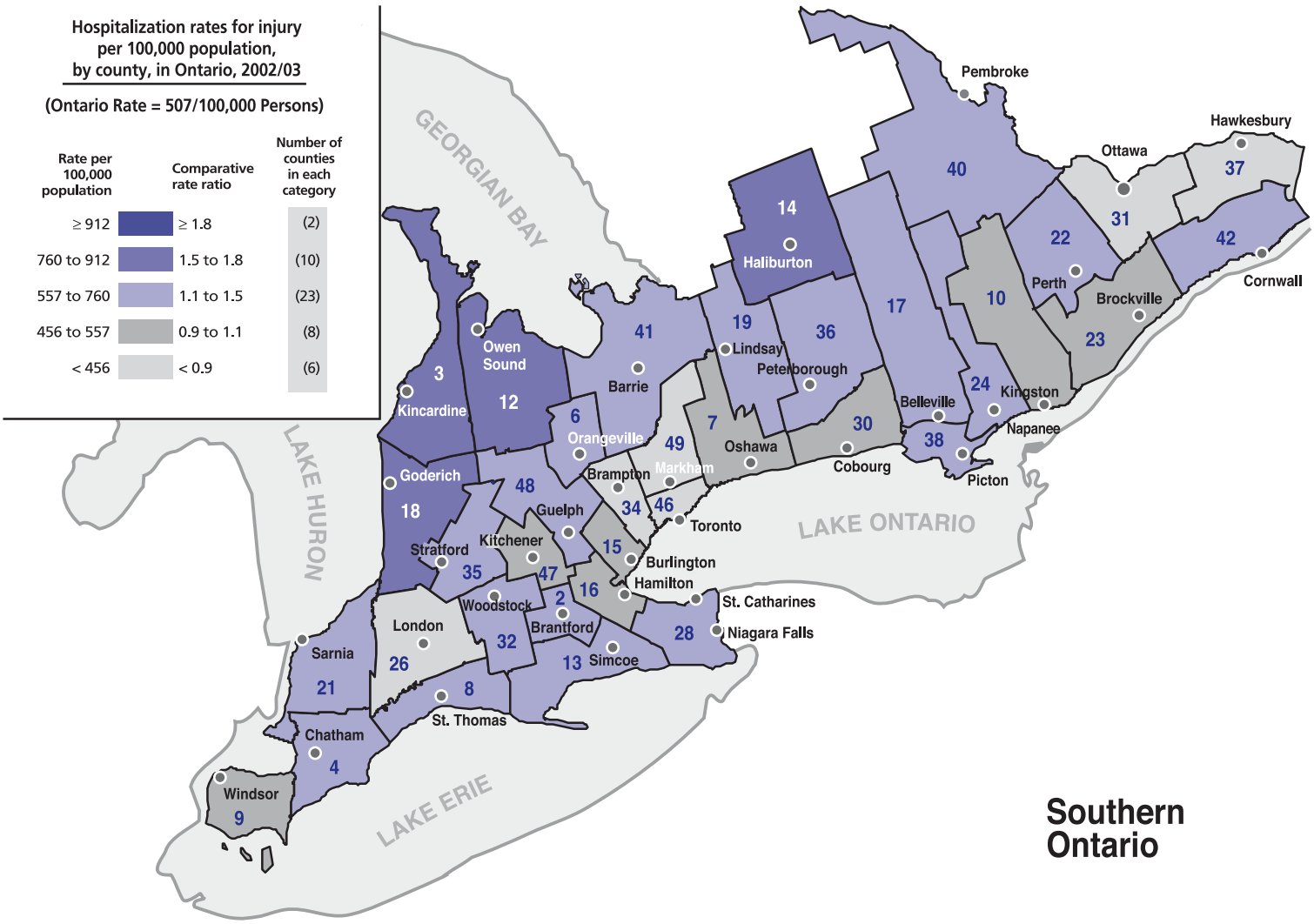
1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
6	Dufferin	31	Ottawa
7	Durham	32	Oxford
8	Elgin	33	Parry Sound
9	Essex	34	Peel
10	Frontenac	35	Perth
11	Greater Sudbury	36	Peterborough
12	Grey	37	Prescott-Russell
13	Haldimand-Norfolk	38	Prince Edward
14	Haliburton	39	Rainy River
15	Halton	40	Renfrew
16	Hamilton	41	Simcoe
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- There is less variation among counties for injury-related hospitalizations than ED* visits.
- Rates of injury-related hospitalizations tend to be highest in rural areas and lowest in urban areas.

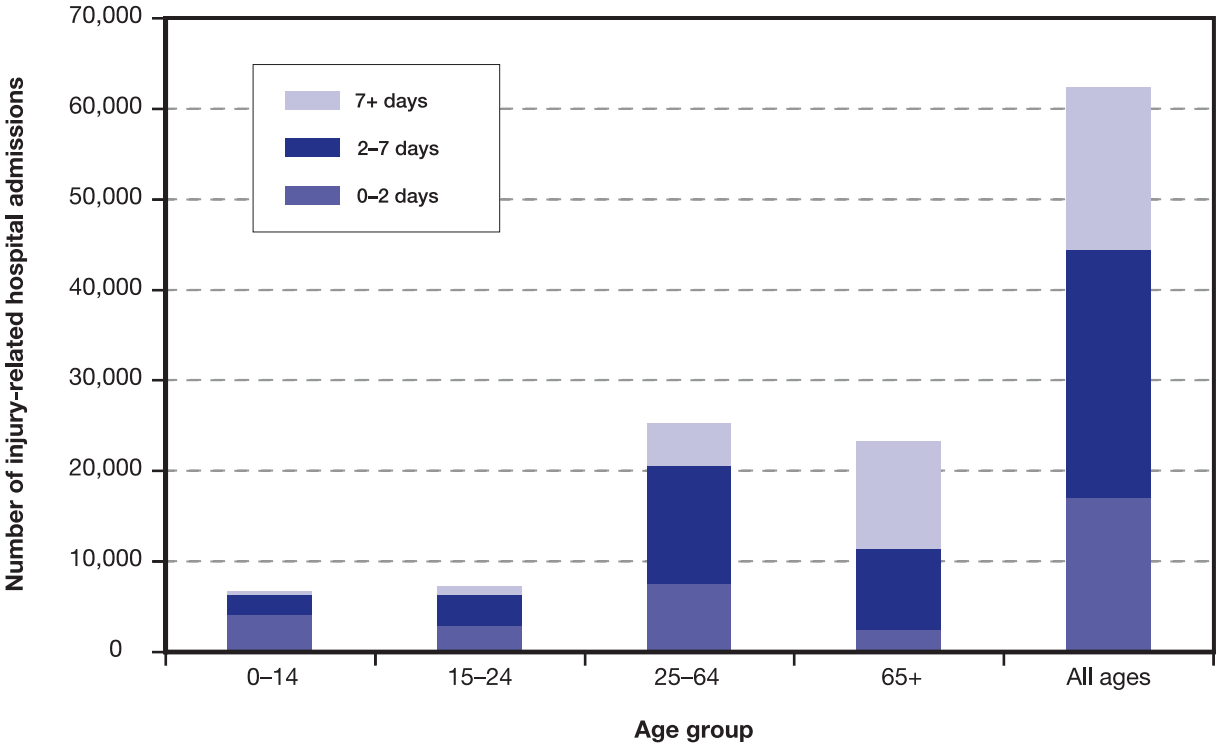
*ED = Emergency Department

Data source: Canadian Institute for Health Information—Discharge Abstract Database



Southern Ontario

1.8 Length of stay for injury-related hospitalizations, by age group, in Ontario, 2002/03



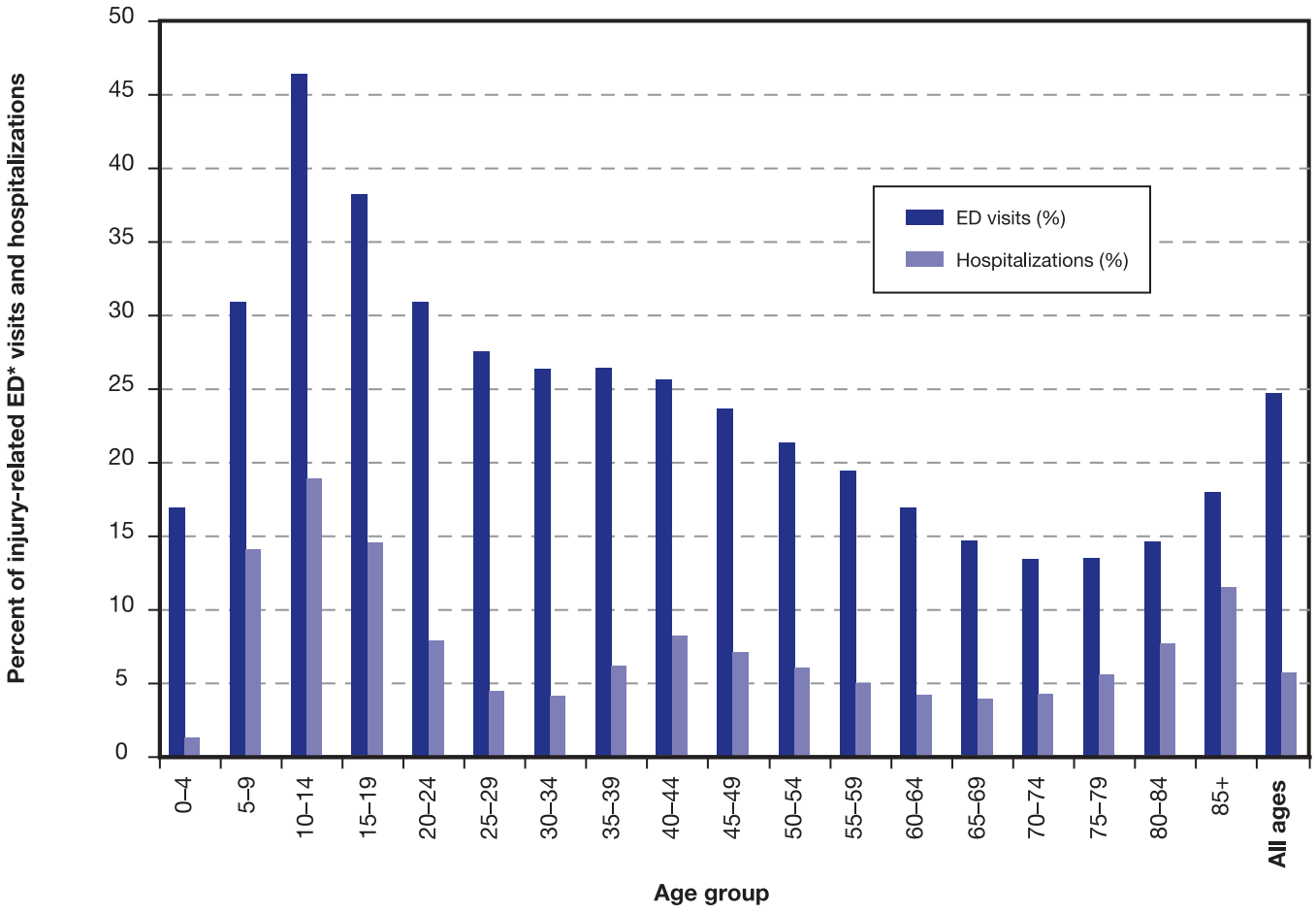
Data table	0–14	15–24	25–64	65+	All ages
7+ days	414	946	4,759	11,841	17,960
2–7 days	2,181	3,370	12,990	8,887	27,428
0–2 days	4,092	2,922	7,508	2,467	16,989

Findings

- Most injury-related hospitalizations last between 2 and 7 days.
- Children and youth generally have shorter hospitalizations (0–1 day).
- Injury-related hospitalizations among older people most commonly result in longer stays (7+ days).

Data source: Canadian Institute for Health Information—Discharge Abstract Database

1.9 Percent of total emergency department visits and hospitalizations caused by injury, by age group, in Ontario, 2002/03



Data tables	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44
ED visits (%)	17	31	46	38	31	27	26	26	26
Hospitalizations (%)	1	14	19	14	8	4	4	6	8

	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	all ages
ED visits (%)	24	21	19	17	15	13	13	15	18	25
Hospitalizations (%)	7	6	5	4	4	4	5	8	11	6

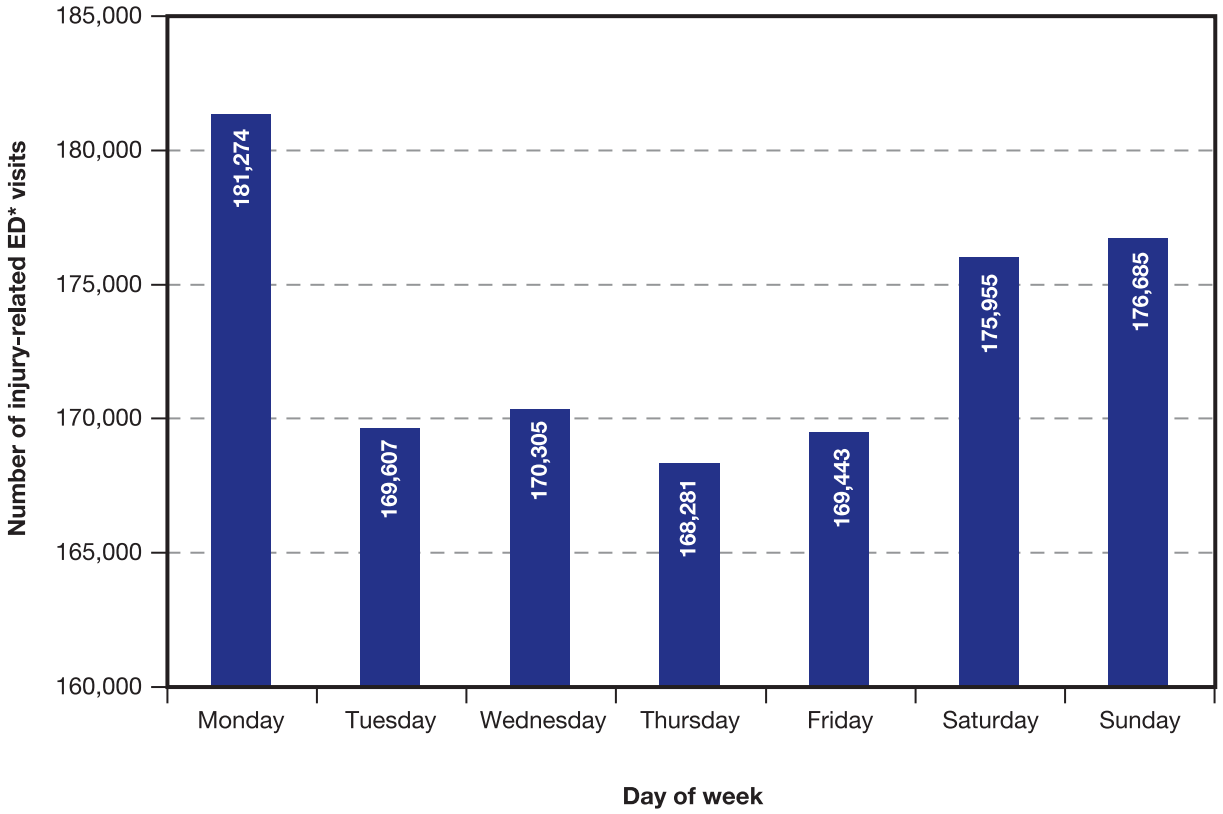
Findings

- Injury is responsible for about 1 in 4 ED visits and 1 in 17 hospitalizations in Ontario.
- Among 10–14 year-olds, almost 50% of all ED visits and almost 20% of all hospitalizations are due to injuries.

*ED = Emergency Department

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.10 Number of injury-related emergency department visits, by day of the week, in Ontario, 2002/03



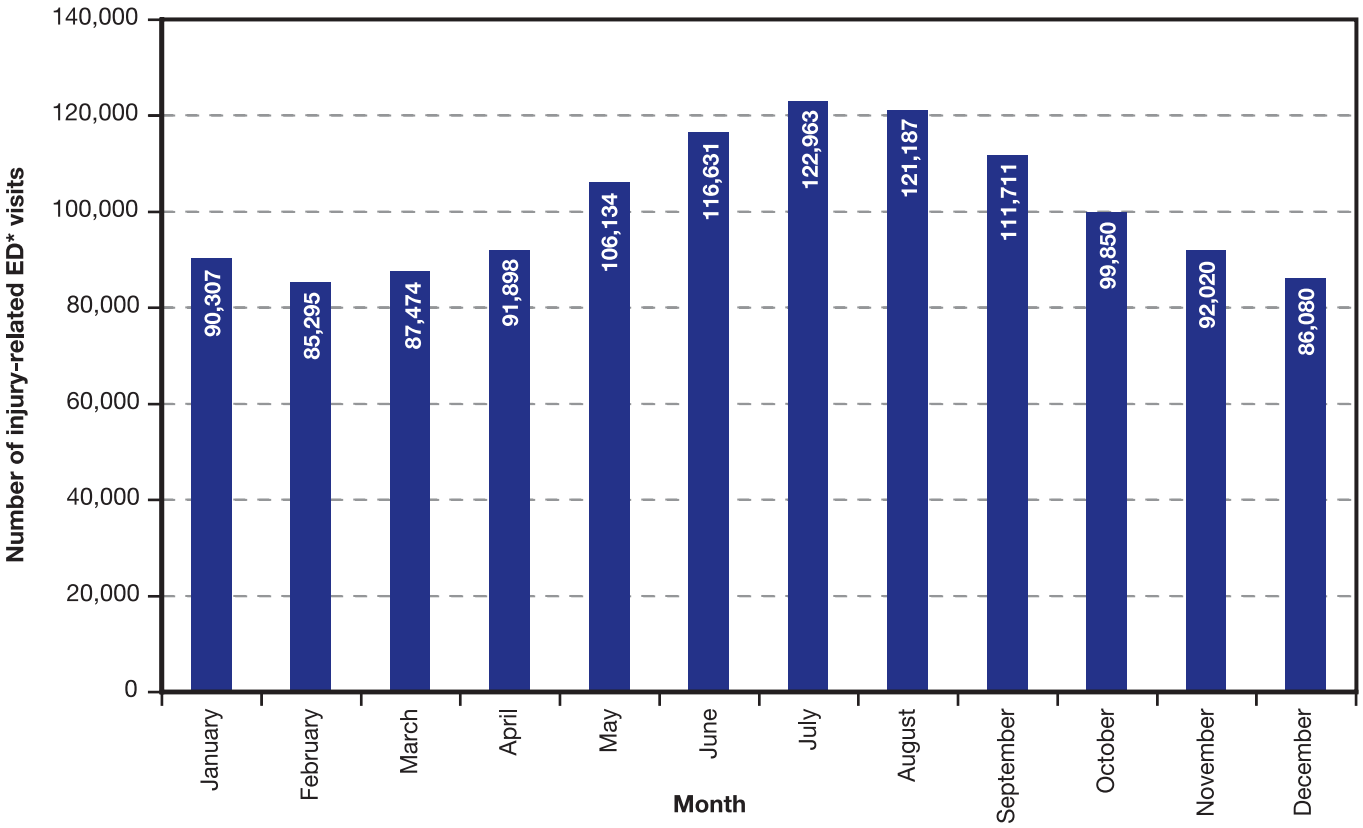
*ED = Emergency Department

Findings

- ED visits for injuries vary slightly by day of the week, and are highest on Mondays.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System

1.11 Number of injury-related emergency department visits, by month, in Ontario, 2002/03



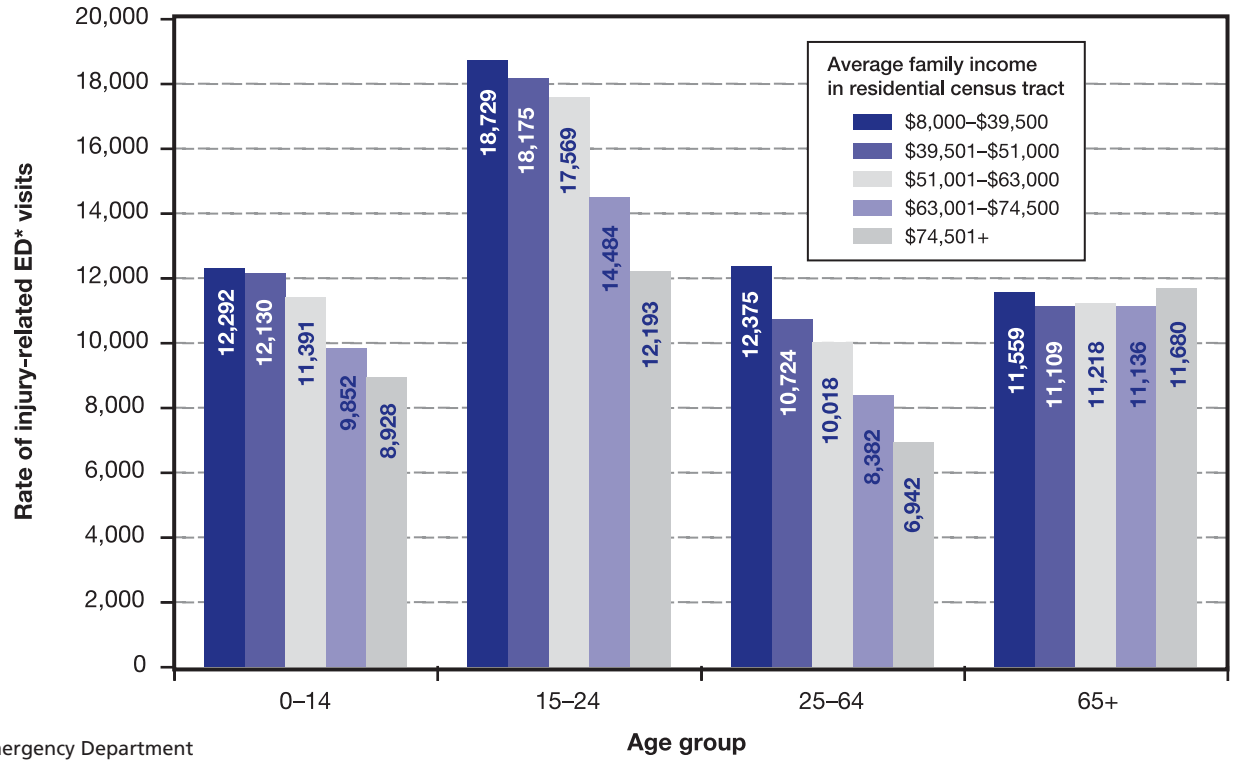
*ED = Emergency Department

Findings

- Injury volumes peak in the summer and are lowest in mid-winter.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System

1.12 Rate of injury-related emergency department visits per 100,000 population, by age group and income quintile, in Ontario, 2002/03



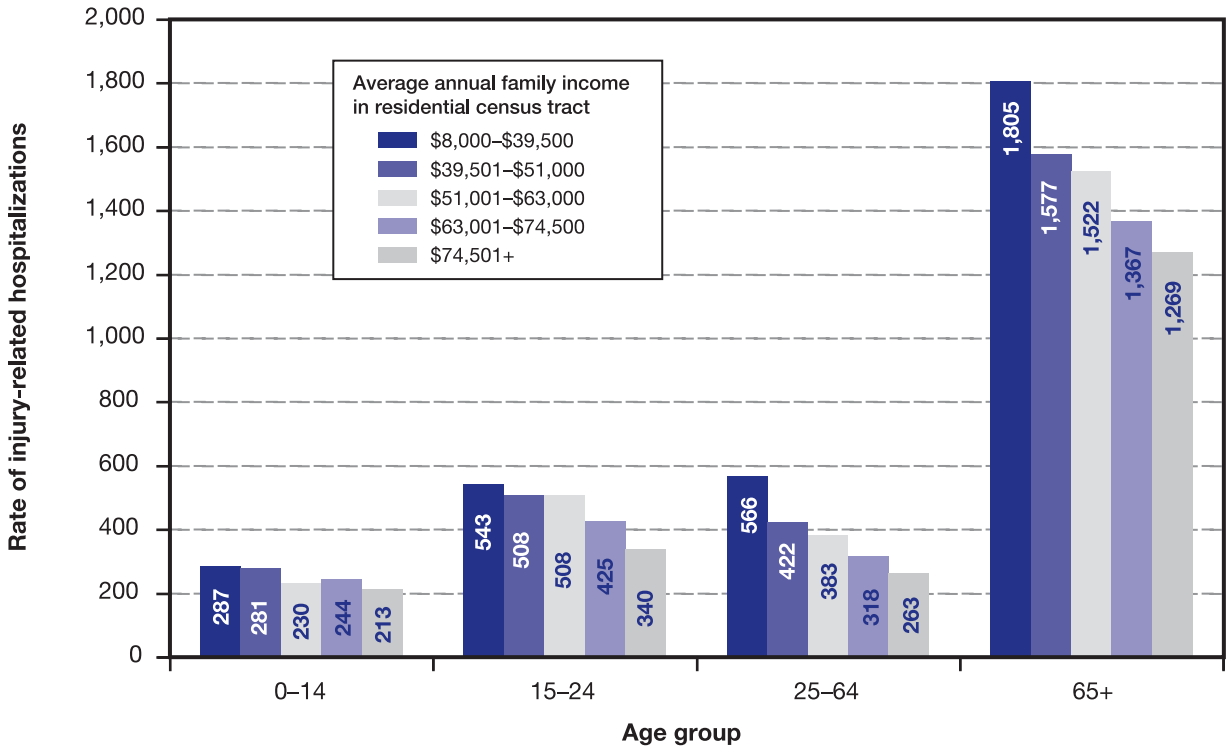
*ED = Emergency Department

Findings

- ED visits for injury are more common among people living in low-income neighbourhoods for all ages except older people.
- The gradient is steepest among youth.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System

1.13 Rate of injury-related hospitalizations per 100,000 population, by age group and income quintile, in Ontario, 2002/03



Findings

- Hospitalization for injuries is more common among individuals from lower income neighbourhoods.
- Injury-related hospitalizations occur most frequently among older people with lower income.

Data source: Canadian Institute for Health Information—Discharge Abstract Database

1.14 Number of emergency department visits for unintentional and intentional injury, by age group, in Ontario, 2002/03

Age Group	Number of ED* Visits for Unintentional/Intent Unknown Injuries	Number of ED Visits for Assault-Related Injuries	Number of ED Visits for Self-Inflicted Injuries
0–4	83,255	184	27
5–9	79,254	354	20
10–14	120,171	1,851	753
15–19	120,569	7,637	3,042
20–24	96,720	6,931	2,017
25–29	81,937	3,861	1,490
30–34	81,589	3,094	1,520
35–39	89,486	3,123	1,847
40–44	85,678	2,719	1,832
45–49	68,596	1,763	1,350
50–54	54,715	972	834
55–59	43,461	543	412
60–64	31,501	267	249
65–69	26,359	190	123
70–74	25,988	102	94
75–79	25,980	84	80
80–84	22,243	63	50
85+	24,481	56	33

*ED = Emergency Department

Findings

- Conclusions regarding intent should be made cautiously, as the accuracy of attribution is unknown.
- The vast majority of ED visits are coded as unintentional or intent unknown.
- Intentional injuries are more likely to be attributed to assault than self-inflicted.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.15 Number of emergency department visits for unintentional and intentional injury, by common causes of injury, in Ontario, 2002/03

Common Causes of Injury	Number of ED* Visits for Unintentional/Intent Unknown Injuries	Number of ED Visits for Assault-Related Injuries	Number of ED Visits for Self-Inflicted Injuries
Fall	333,544	53	70
Struck by/against	194,327	25,340	107
Cut/pierce	113,542	2,110	2,594
Overexertion	107,367	0	0
Motor vehicle traffic	63,133	0	0
Natural/environmental	43,496	0	0
Poisoning	22,121	88	12,079
Other bicycle (non motor vehicle collision)	19,931	0	0
Other land transport	19,075	21	10
Hot object/scald	13,819	22	9
Machinery	12,548	0	0
Fire/flame	5,078	14	35
Other pedestrian (non motor vehicle collision)	1,872	0	0
Suffocation	1,000	42	155
Firearm	419	111	46
Drowning	261	11	**
Other or not specified	208,851	5,992	657

*ED = Emergency Department

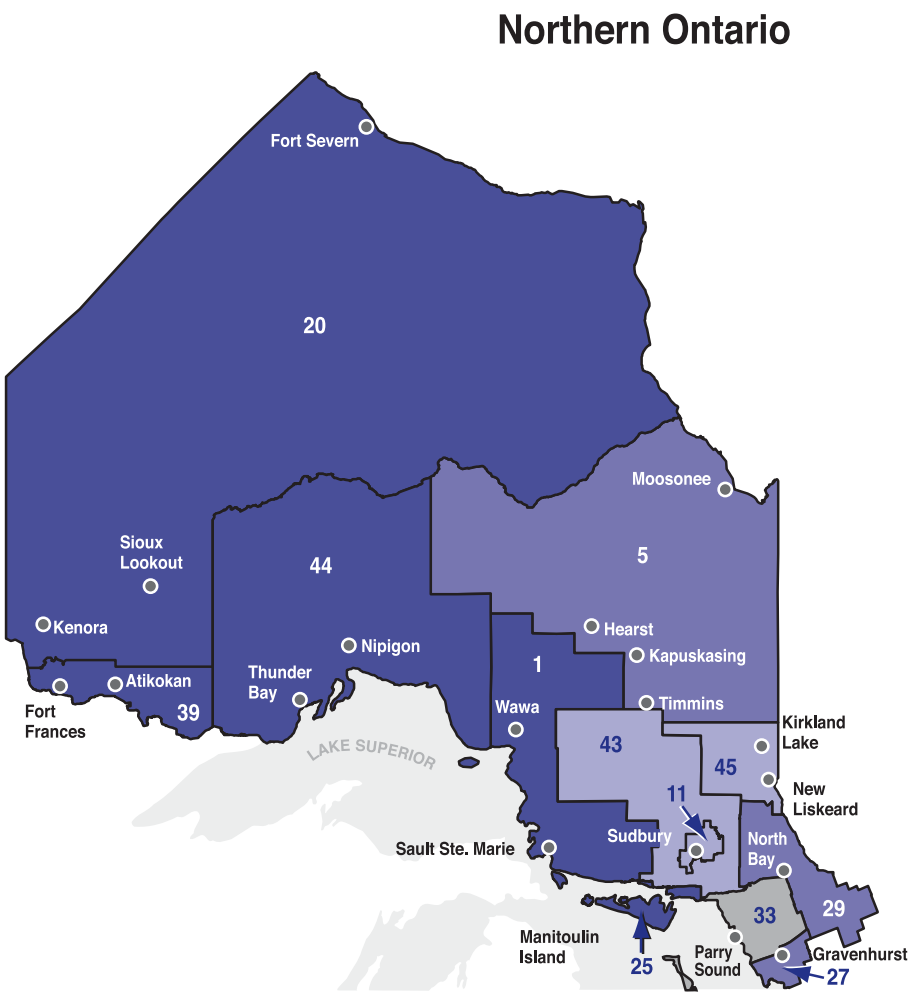
** = cell size < 6

Findings

- Conclusions regarding intent should be made cautiously, as the accuracy of attribution is unknown.
- By far, the most common cause of self-inflicted injury seen in EDs is poisoning.
- Being struck by, or against, an object is 12 times more likely than the second most common type of assault-related injury (cut/pierce).

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

1.16 Rate of emergency department visits for intentional injury per 100,000 population, by county, in Ontario, 2002/03



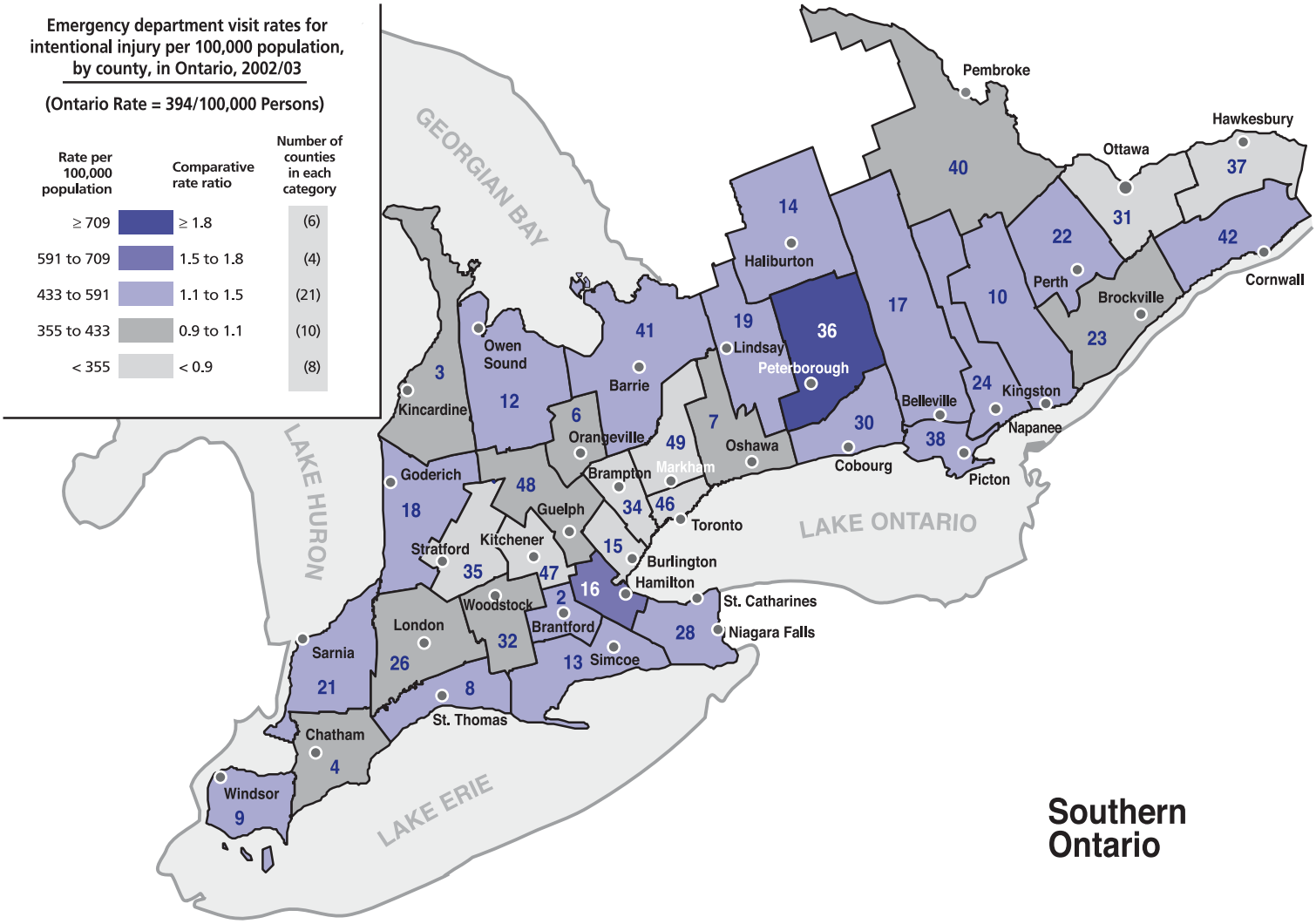
Ontario Counties

1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
6	Dufferin	31	Ottawa
7	Durham	32	Oxford
8	Elgin	33	Parry Sound
9	Essex	34	Peel
10	Frontenac	35	Perth
11	Greater Sudbury	36	Peterborough
12	Grey	37	Prescott-Russell
13	Haldimand-Norfolk	38	Prince Edward
14	Haliburton	39	Rainy River
15	Halton	40	Renfrew
16	Hamilton	41	Simcoe
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- The accuracy of the attribution of intent is unknown, therefore conclusions regarding intent should be made cautiously.
- Six counties have rates of intentional injury that are more than 80% above the provincial average, 5 of which are located in Northern Ontario.
- Two large urban centres (Toronto, Ottawa) are among the areas with the lowest intentional injury rates.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System



Southern Ontario

INSIDE

2

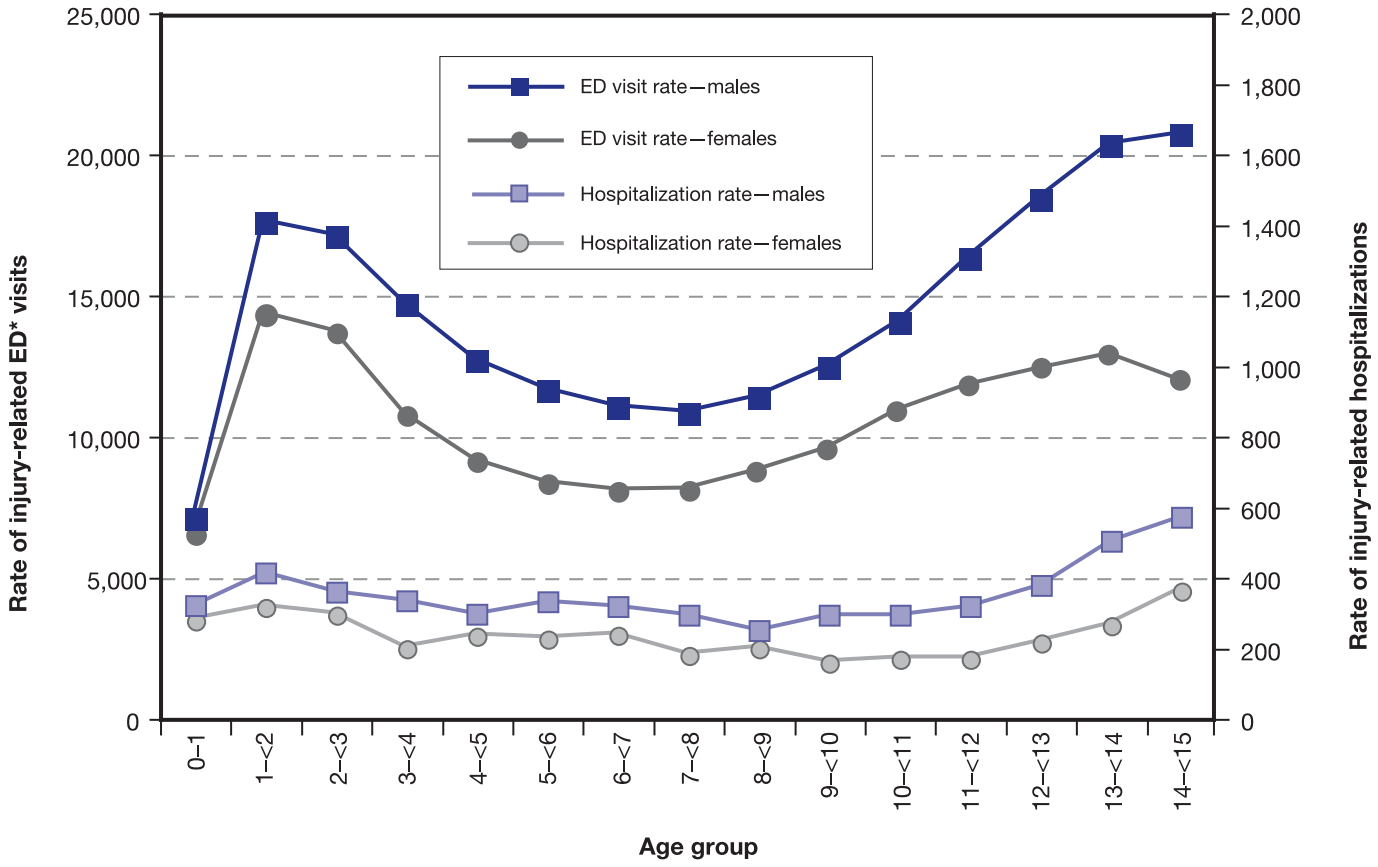
Chapter

Injuries to Children (Aged 0–14 years)

Children are not little adults, and because they interact differently with the environment depending on their developmental stage, risk of injury varies from that for youth, adults, and older people. This chapter of *Injuries in Ontario* reflects emergency department (ED) visit rates and hospitalizations for children aged 0–14 years, with an additional analysis of children under 6 years of age.

Chapter 2—List of Exhibits

2.1 Rate of injury-related emergency department visits and hospitalizations per 100,000 population aged 0–14 years, by age group and sex, in Ontario, 2002/03



Data table

	0–1	1–< 2	2–<3	3–<4	4–<5	5–<6	6–<7	7–<8	8–<9	9–<10	10–<11	11–<12	12–<13	13–<14	14–<15
ED visit rate—males	7,083	17,585	17,086	14,651	12,698	11,622	11,036	10,816	11,349	12,458	14,030	16,296	18,408	20,312	20,668
ED visit rate—females	6,520	14,319	13,660	10,742	9,104	8,320	8,048	8,091	8,725	9,536	10,890	11,755	12,358	12,843	11,936
Hospitalization rate—males	322	413	360	336	297	332	319	295	251	294	295	319	379	504	572
Hospitalization rate—females	276	315	293	199	235	226	236	181	198	157	168	169	216	264	362

*ED = Emergency Department

Findings

- The injury rate is highest among toddlers and older children.
- Boys have higher injury rates than girls, except in infancy.
- The disparity between boys and girls in relation to injury increases with age (e.g., older boys are 1.7 times more likely to visit an ED for injury compared to girls).

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

2.2 Rate of injury-related emergency department visits, hospitalizations and in-hospital deaths per 100,000 population aged 0–14 years, by common causes of injury, in Ontario, 2002/03

Common Causes of Injury	Rate of Injury-Related ED* Visits per 100,000 Population	Rate of Injury-Related Hospitalizations per 100,000 Population	Rate of Injury-Related In-Hospital Deaths per 100,000 Population	Ratio of ED Visits: Hospitalizations: In-Hospital Deaths
Fall	4,521	124.0	0.35	12,917:354:1
Struck by/against	2,931	31.0	0.00	2,931:31:0
Overexertion	841	5.1	0.00	841:5:0
Cut/pierce	643	7.0	0.04	16,075:175:1
Natural/environmental	536	6.7	0.04	13,400:168:1
Other bicycle (non motor vehicle collision)	445	16.8	0.04	11,125:420:1
Poisoning	240	27.5	0.13	1,846:212:1
Motor vehicle traffic	216	19.4	0.88	245:22:1
Hot object/scald	151	7.1	0.00	151:7:0
Fire/flame	32	1.7	0.18	178:9:1
Other pedestrian (non motor vehicle collision)	18	1.6	0.00	18:2:0
Machinery	17	0.8	0.04	425:20:1
Suffocation	14	2.2	0.26	54:8:1
Other land transport	115	0.4	0.00	115:1:1
Drowning	6	2.0	0.53	11:4:1
Firearm	3	0.2	0.04	75:5:1
Other or not specified	1,783	31.6	0.22	8,104:144:1

*ED = Emergency Department

Findings

- Falls are the most frequent cause of ED visits and hospitalization for this age group.
- Motor vehicle crashes are the most frequent cause of in-hospital death for this age group.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

2.3 Number of injury-related emergency department visits, and rate per 100,000 population aged 0–14 years, by sex and common causes of injury, in Ontario, 2002/03

	Females		Males		Total	
Common Causes of Injury	Number of Injury-Related ED* Visits	Rate of Injury-Related ED* Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population
Fall	44,196	3,975	59,039	5,039	103,235	4,521
Struck by/against	22,018	1,980	44,916	3,834	66,934	2,931
Overexertion	10,075	906	9,127	779	19,202	841
Cut/pierce	5,622	506	9,068	774	14,690	643
Natural/environmental	5,529	497	6,706	572	12,235	536
Other bicycle (non motor vehicle collision)	2,911	262	7,260	620	10,171	445
Poisoning	2,639	237	2,833	242	5,472	240
Motor vehicle traffic	2,332	210	2,604	222	4,936	216
Hot object/scald	1,479	133	1,960	167	3,439	151
Other land transport	1,108	100	1,524	130	2,632	115
Fire/flame	283	25	439	37	722	32
Other pedestrian (non motor vehicle collision)	175	16	231	20	406	18
Suffocation	128	12	182	16	310	14
Machinery	121	1,110	255	22	376	17
Drowning	42	4	89	8	131	6
Firearm	11	1	60	5	71	3
Other or not specified	17,492	1,573	23,214	1,981	40,706	1,783

*ED = Emergency Department

Findings

- Boys have higher ED visit rates for every cause except overexertion (e.g., dehydration or repetitive movements).
- The ED visit rate is similar between boys and girls for poisoning.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System

2.4 Number of injury-related emergency department visits, and rate per 100,000 population aged 0–6 years, by sex and common causes of injury, in Ontario, 2002/03

	Females		Males		Total	
Common Causes of Injury	Number of Injury-Related ED* Visits	Rate of Injury-Related ED* Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population
Fall	20,421	4,276	27,331	5,459	47,752	4,881
Struck by/against	6,822	1,428	11,984	2,394	18,806	1,922
Overexertion	2,529	530	2,001	400	4,530	463
Natural/environmental	2,865	600	3,383	676	6,248	639
Cut/pierce	1,953	409	2,936	586	4,889	500
Poisoning	1,660	348	2,124	424	3,784	387
Other bicycle (non motor vehicle collision)	669	140	1,452	290	2,121	217
Hot object/scald	989	207	1,516	303	2,505	256
Motor vehicle traffic	643	135	758	151	1,401	143
Fire/flame	194	41	234	47	428	44
Other land transport	166	35	206	41	372	38
Suffocation	99	21	136	27	235	24
Other pedestrian (non motor vehicle collision)	75	16	105	21	180	18
Machinery	49	10	98	20	147	15
Drowning	24	5	57	11	81	8
Firearm	**	0	**	0	**	0
Other or not specified	8,760	1,834	11,100	2,217	19,860	2,030

*ED = Emergency Department

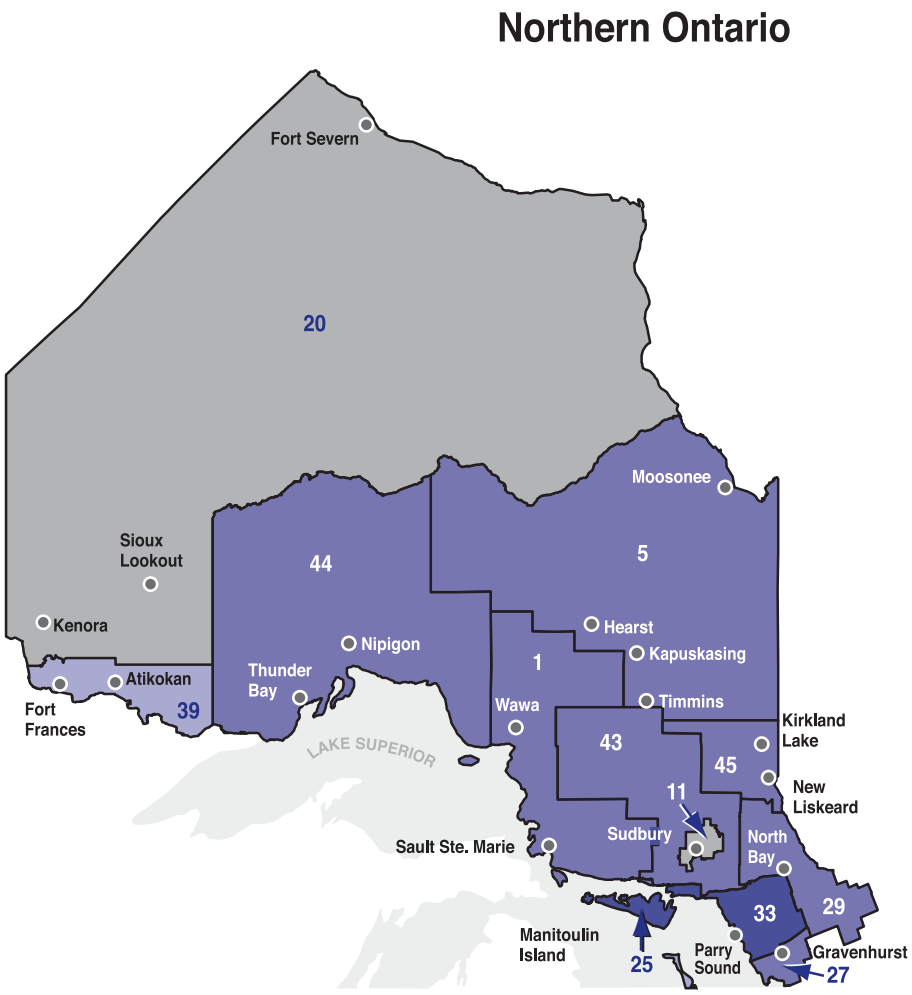
** = cell size < 6

Findings

- Young boys have higher ED visit rates for all causes except overexertion (e.g., dehydration or repetitive movements).
- Young boys and girls have similar rates of ED visits for fire- and flame-related injuries.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

2.5 Rate of injury-related emergency department visits per 100,000 population aged 0–14 years, by county, in Ontario, 2002/03



Ontario Counties

1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
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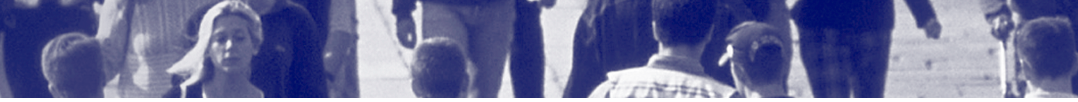
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

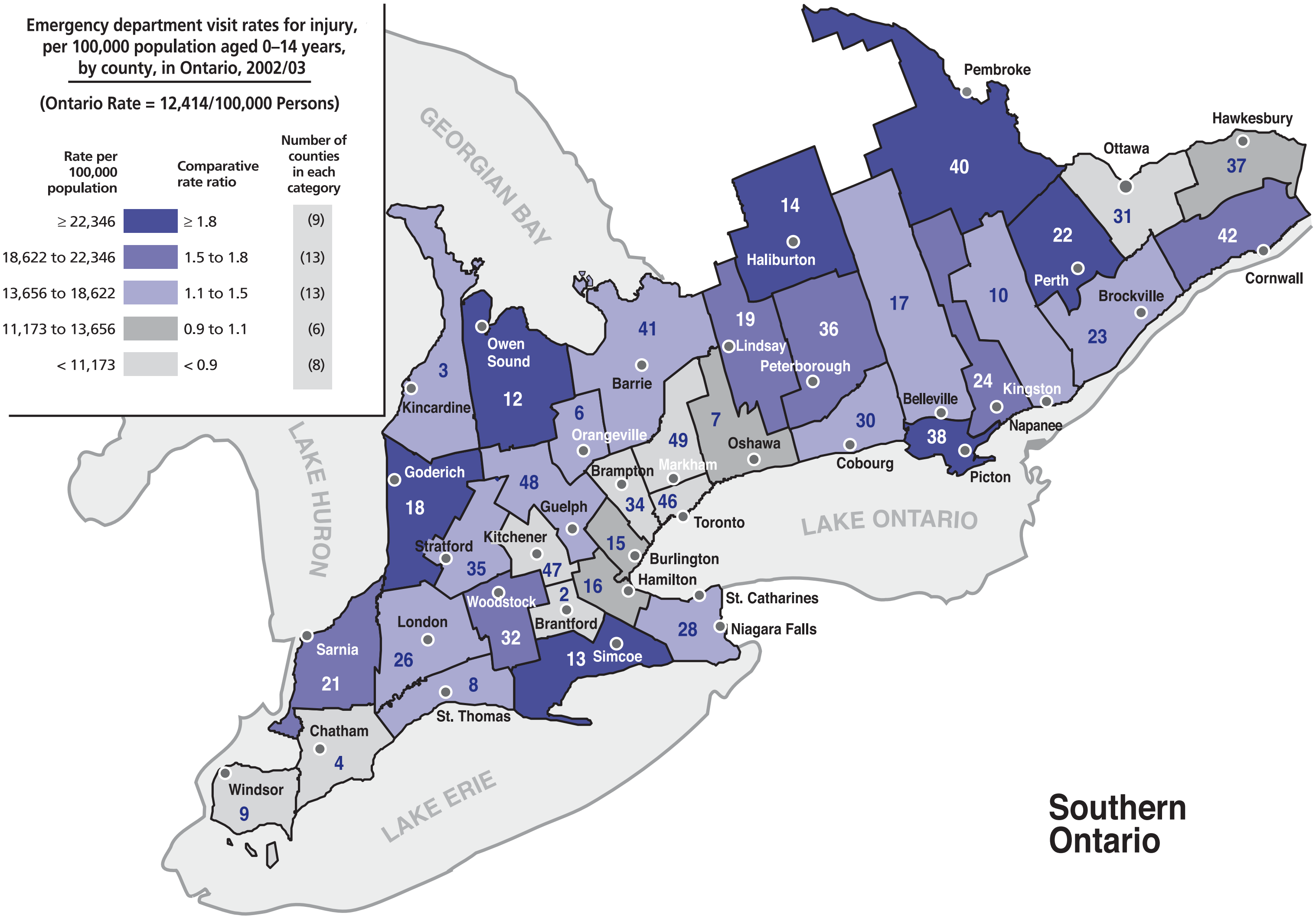
Findings

- Nine counties have child injury ED* visit rates more than 80% higher than the provincial average.
- Eight counties have injury rates lower than the provincial average including 2 large urban centres (Toronto and Ottawa).

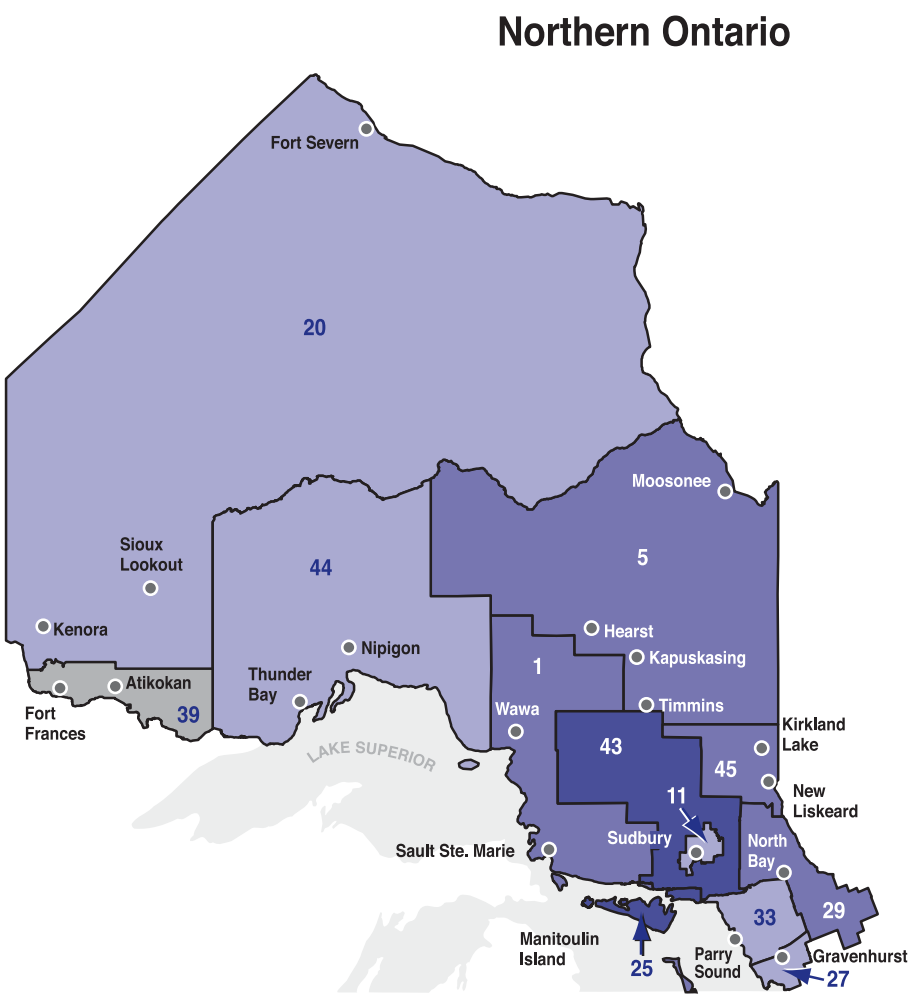
*ED = Emergency Department

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System




Emergency department visit rates for injury, per 100,000 population aged 0–14 years, by county, in Ontario, 2002/03
(Ontario Rate = 12,414/100,000 Persons)
Rate per 100,000 population
Comparative rate ratio
Number of counties in each category
≥ 22,346 ≥ 1.8 (9)
18,622 to 22,346 1.5 to 1.8 (13)
13,656 to 18,622 1.1 to 1.5 (13)
11,173 to 13,656 0.9 to 1.1 (6)
< 11,173 < 0.9 (8)
GEORGIAN BAY
LAKE HURON
LAKE ONTARIO
LAKE ERIE
Pembroke
Hawkesbury
Ottawa
Cornwall
Perth
Brockville
Kingston
Napanee
Picton
Belleville
Cobourg
Peterborough
Lindsay
Haliburton
Oshawa
Markham
Toronto
Brampton
Barrie
Orangeville
Owen Sound
Kincardine
Goderich
Guelph
Kitchener
Stratford
Burlington
Hamilton
St. Catharines
Niagara Falls
Woodstock
Brantford
Simcoe
London
St. Thomas
Sarnia
Chatham
Windsor
Southern Ontario

2.6 Rate of injury-related hospitalizations per 100,000 population aged 0–14 years, by county, in Ontario, 2002/03



Ontario Counties

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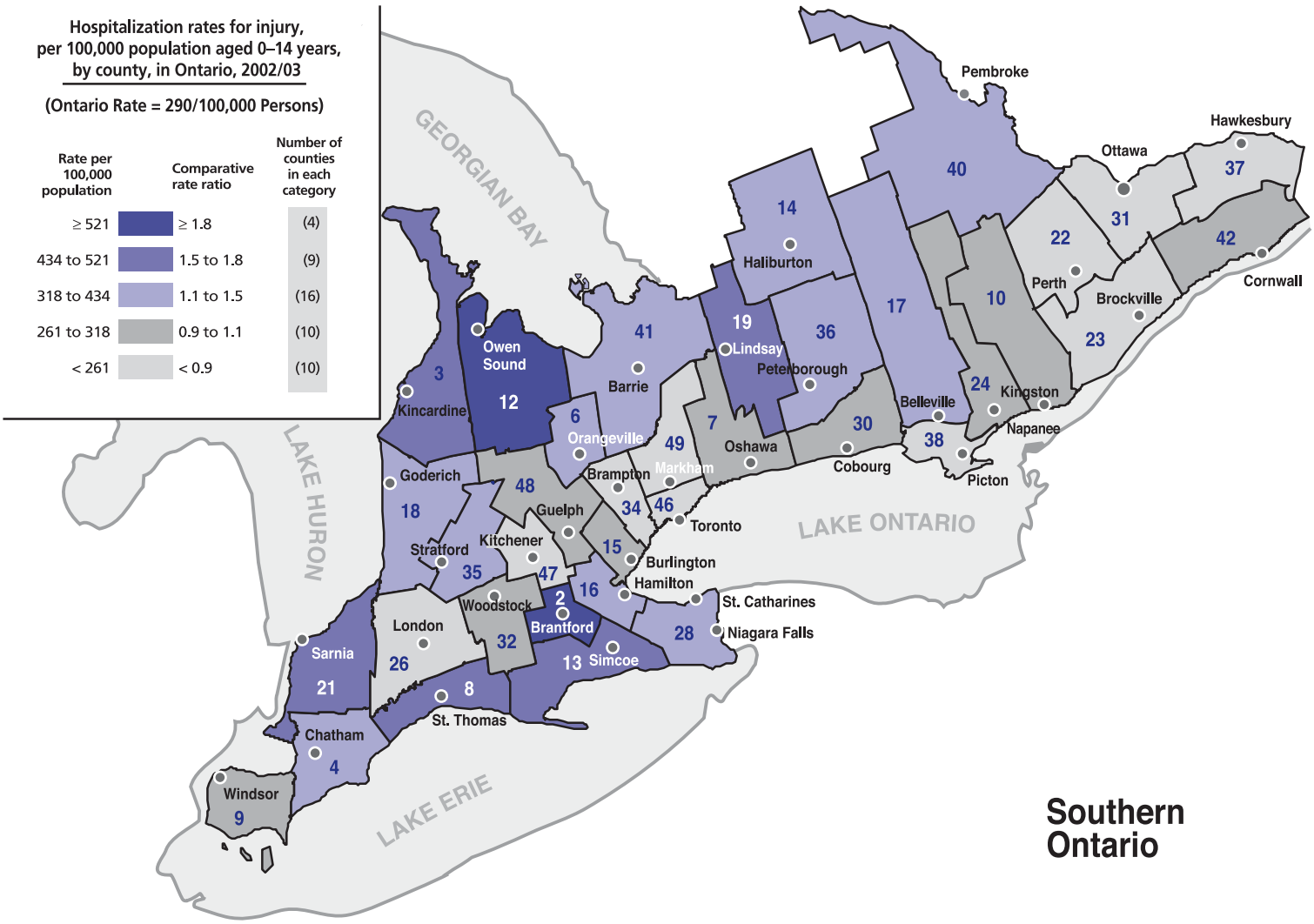
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

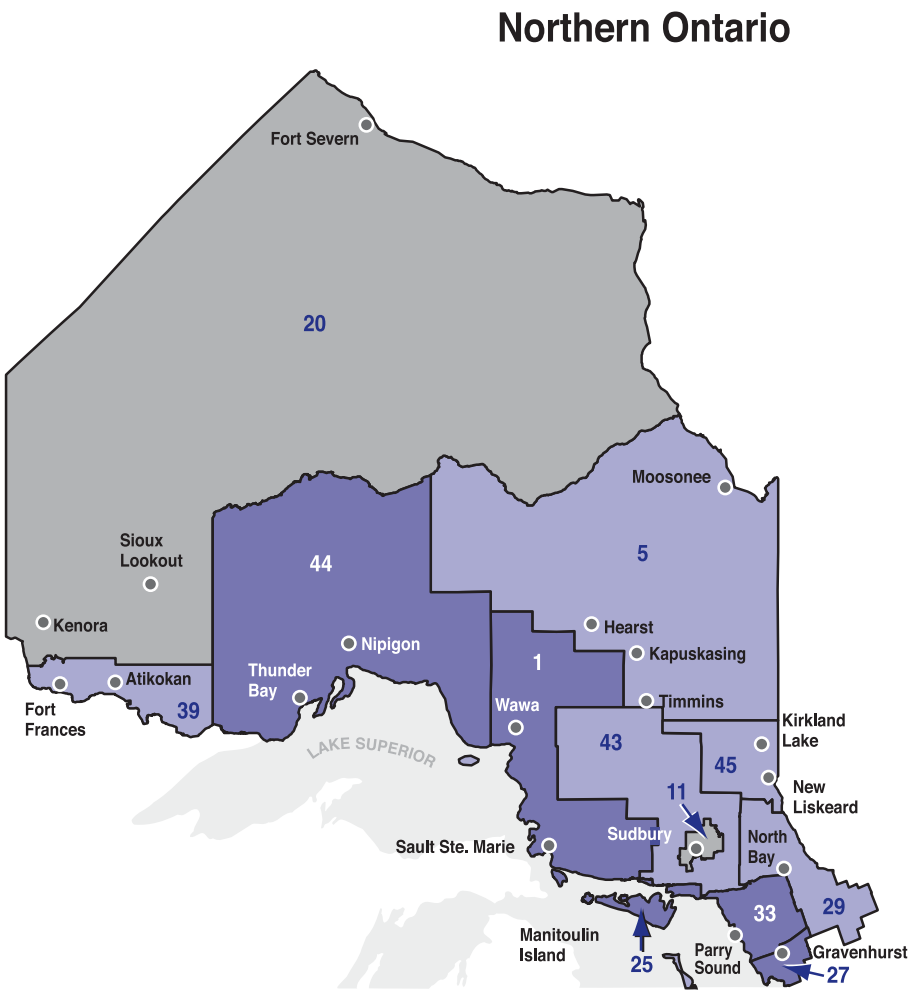
- Four counties have child injury hospitalization rates more than 80% higher than the provincial average.
- Ten counties have child injury hospitalization rates lower than the provincial average, including all major urban centres (Toronto, Ottawa, London).

Data source: Canadian Institute for Health Information—Discharge Abstract Database



Southern Ontario

2.7 Rate of injury-related emergency department visits per 100,000 population aged 0–6 years, by county, in Ontario, 2002/03



Ontario Counties

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2	Brant	27	Muskoka
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4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
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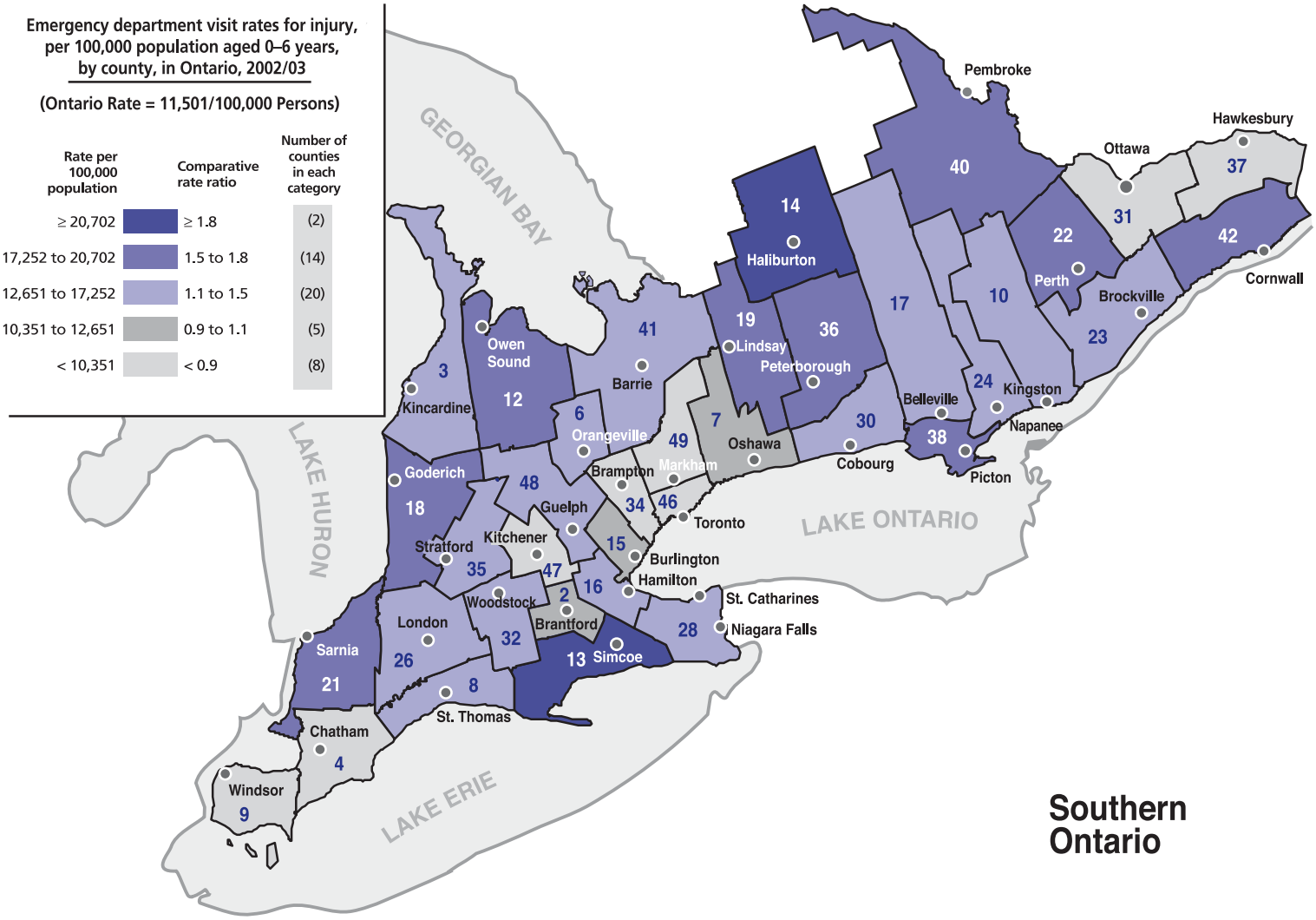
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- Two counties have injury rates for young children more than 80% above the provincial average.
- Injury rates for young children vary less than injury rates including all children, although the ranking of counties (highest to lowest) is similar.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System



Southern Ontario

INSIDE

3

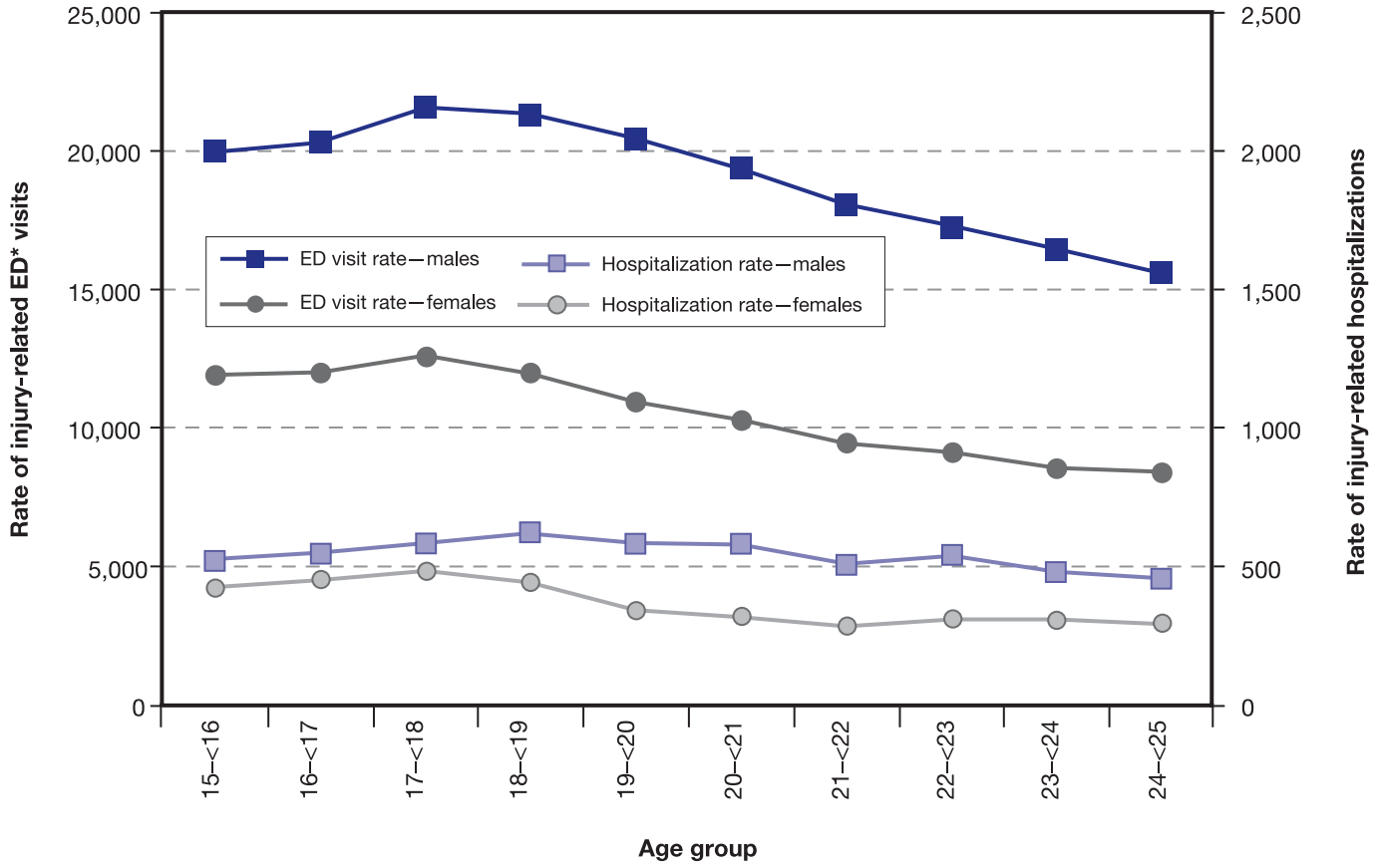
Chapter

Injuries to Youth (Aged 15–24 years)

Youth is a period of transition, and throughout ages 15 to 24 years, many young people engage in adult activities such as driving a car, starting a job, or drinking alcohol for the first time. Their lack of experience and developmental stage results in an injury pattern that differs from both childhood and adulthood. The objective of this chapter of *Injuries in Ontario* is to describe emergency department (ED) visit and hospitalization rates for young people.

Chapter 3—List of Exhibits

3.1 Rate of injury-related emergency department visits and hospitalizations per 100,000 population aged 15–24 years, in Ontario, 2002/03



Data table

	15–<16	16–<17	17–<18	18–<19	19–<20	20–<21	21–<22	22–<23	23–<24	24–<25
ED visit rate—males	19,967	20,343	21,612	21,272	20,446	19,362	18,040	17,232	16,408	15,591
ED visit rate—females	11,882	11,988	12,567	11,996	10,924	10,246	9,466	9,107	8,518	8,404
Hospitalization rate—males	518	542	578	622	577	581	504	536	478	454
Hospitalization rate—females	422	452	484	442	342	320	286	312	306	295

*ED = Emergency Department

Findings

- Male youth are at much higher risk for ED visits and hospitalizations for injury than female youth (e.g., males 17–19 years-old are 1.7 times more likely to visit an ED for injury compared to their female counterparts).
- The rate of injury-related ED visits is highest among 17–19 year-olds, and subsequently declines.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

3.2 Rate of injury-related emergency department visits, hospitalizations and in-hospital deaths per 100,000 population aged 15–24 years, by common causes of injury, in Ontario, 2002/03

Common Causes of Injury	Rate of Injury-Related ED* Visits	Rate of Injury-Related Hospitalizations	Rate of Injury-Related In-Hospital Deaths	Ratio of ED Visits: Hospitalizations: In-Hospital Deaths
Struck by/against	3,836	57.5	0.44	8,725:131:1
Fall	2,421	63.7	0.38	6,371:168:1
Cut/pierce	1,698	40.8	0.25	6,792:163:1
Overexertion	1,553	10.0	0.00	1,553:10:0
Motor vehicle traffic	1,027	59.3	2.89	355:21:1
Poisoning	481	132.8	0.38	1,265:350:1
Natural/environmental	380	4.3	0.06	6,333:70:1
Other land transport	351	27.8	1.00	351:28:1
Other bicycle (non motor vehicle collision)	237	8.0	0.00	237:8:0
Hot object/scald	187	1.8	0.00	187:2:0
Machinery	142	3.6	0.13	1,092:28:1
Fire/flame	67	2.8	0.19	352:15:1
Other pedestrian (non motor vehicle collision)	22	1.4	0.19	116:7:1
Firearm	15	3.9	0.38	39:10:1
Suffocation	8	2.6	1.13	7:2:1
Drowning	3	0.4	0.13	23:3:1
Other or not specified	2,424	31.5	0.31	7,819:102:1

*ED = Emergency Department

Findings

- Unlike all other age groups, falls are not the leading cause of injury-related visits to an ED.
- The most common reason for ED visits is being struck by/against a person or object.
- The most common reason for admission to hospital is poisoning.
- The most common cause of in-hospital death is motor vehicle collision.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

3.3 Number of injury-related emergency department visits and rate per 100,000 population aged 15–24 years, by sex and common causes of injury, in Ontario, 2002/03

	Females		Males		Total	
Common Causes of Injury	Number of Injury-Related ED* Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population
Struck by/against	15,016	1,930	46,080	5,656	61,096	3,836
Fall	15,453	1,987	23,110	2,837	38,563	2,421
Cut/pierce	7,777	1,000	19,257	2,364	27,034	1,698
Overexertion	9,112	1,171	15,618	1,917	24,730	1,553
Motor vehicle traffic	8,537	1,097	7,816	959	16,353	1,027
Poisoning	4,631	595	3,024	371	7,655	481
Natural/environmental	3,112	400	2,936	360	6,048	380
Other land transport	2,072	266	3,510	431	5,582	351
Other bicycle (non motor vehicle collision)	587	75	3,183	391	3,770	237
Hot object/scald	1,526	196	1,454	178	2,980	187
Machinery	403	52	1,861	228	2,264	142
Fire/flame	249	32	824	101	1,073	67
Other pedestrian (non motor vehicle collision)	143	18	213	26	356	22
Suffocation	22	3	212	26	234	15
Firearm	45	6	85	10	130	8
Drowning	15	2	26	3	41	3
Other or not specified	12,859	1,653	25,746	3,160	38,605	2,424

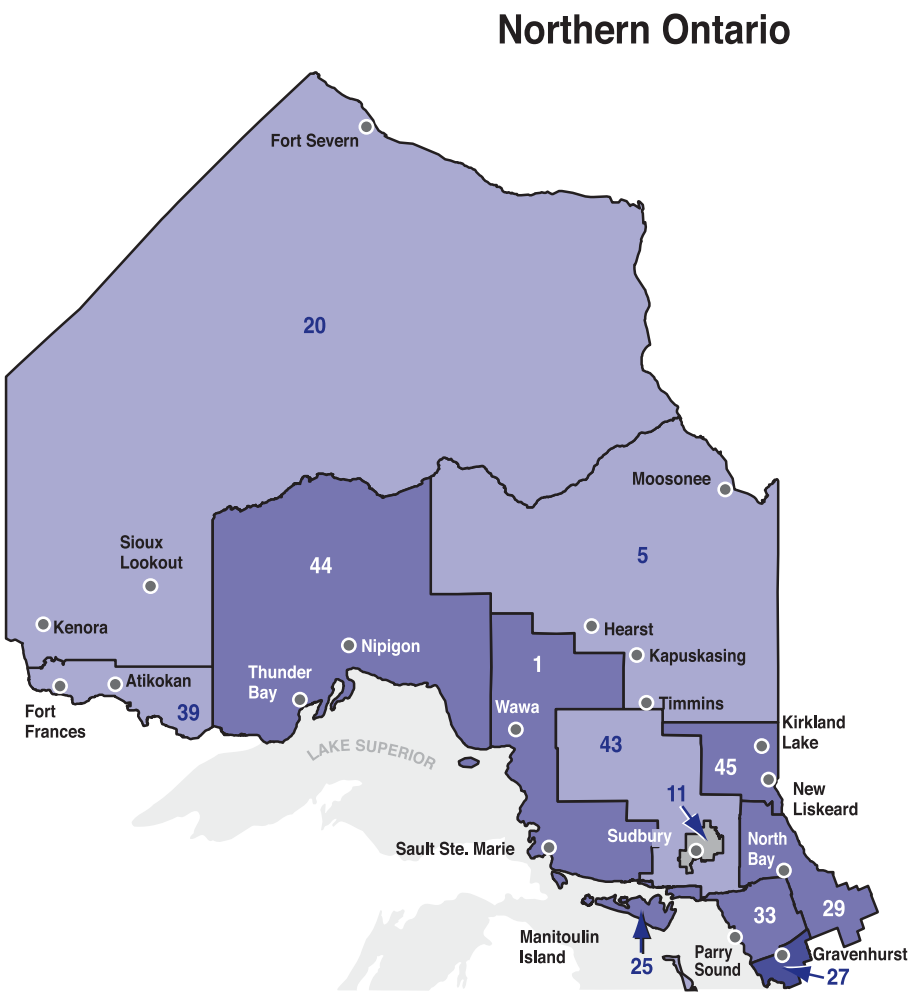
*ED = Emergency Department

Findings

- Males are more likely than females to visit an ED for all causes except motor vehicle traffic, poisoning, natural/environmental (e.g., exposure to extreme heat, cold, or flood), and burns/scalds from hot objects or liquids.
- Males are much more likely than females to visit an ED as a result of being struck by a person or against an object, and for injuries related to machinery or firearms.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System

3.4 Rate of injury-related emergency department visits per 100,000 population aged 15–24 years, by county, in Ontario, 2002/03



Ontario Counties

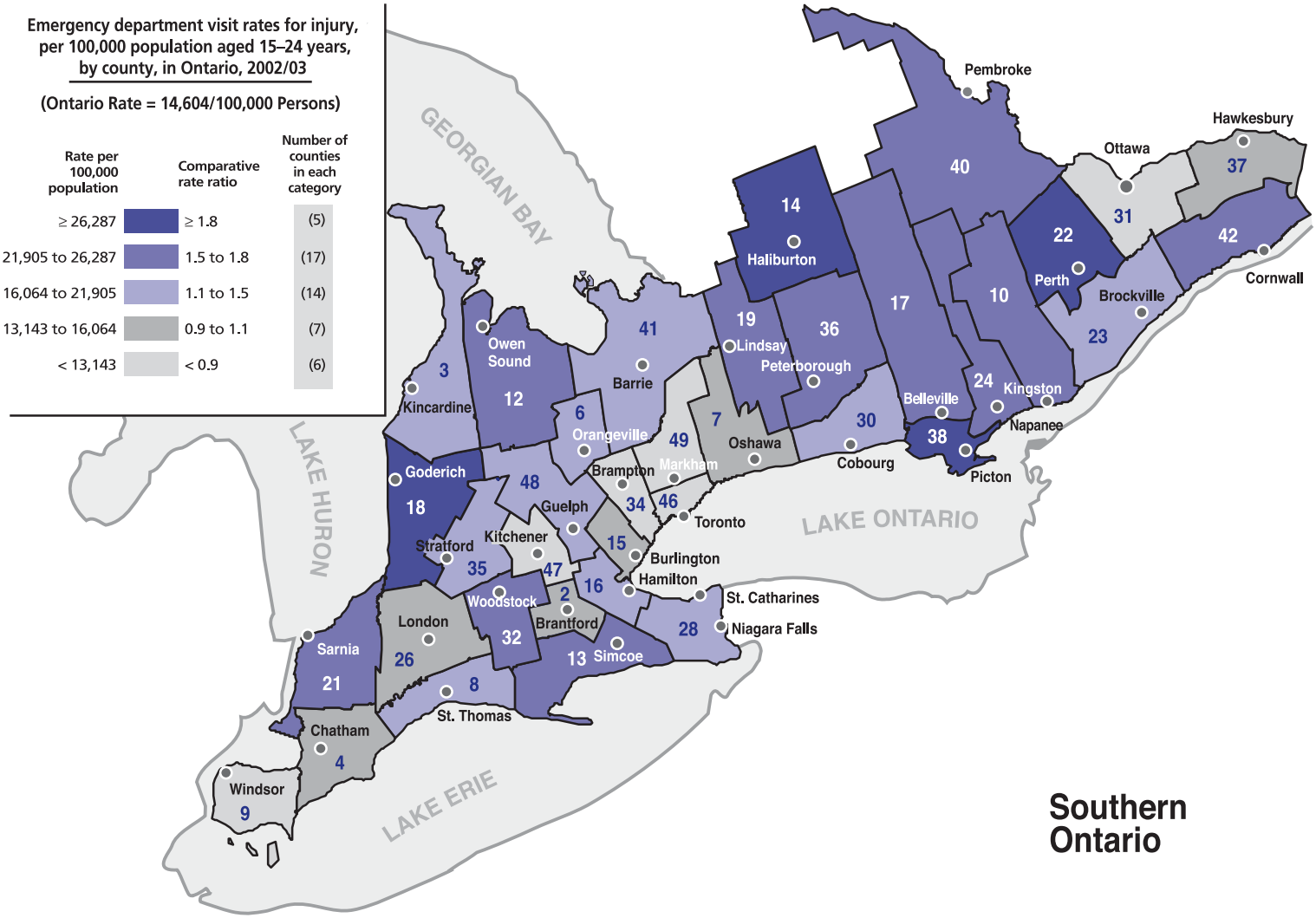
1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
6	Dufferin	31	Ottawa
7	Durham	32	Oxford
8	Elgin	33	Parry Sound
9	Essex	34	Peel
10	Frontenac	35	Perth
11	Greater Sudbury	36	Peterborough
12	Grey	37	Prescott-Russell
13	Haldimand-Norfolk	38	Prince Edward
14	Haliburton	39	Rainy River
15	Halton	40	Renfrew
16	Hamilton	41	Simcoe
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- Five counties have youth injury ED* visit rates more than 80% higher than the provincial average.
- Six counties, including the regions of Toronto and Ottawa, have injury rates below the provincial average.

*ED = Emergency Department

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System



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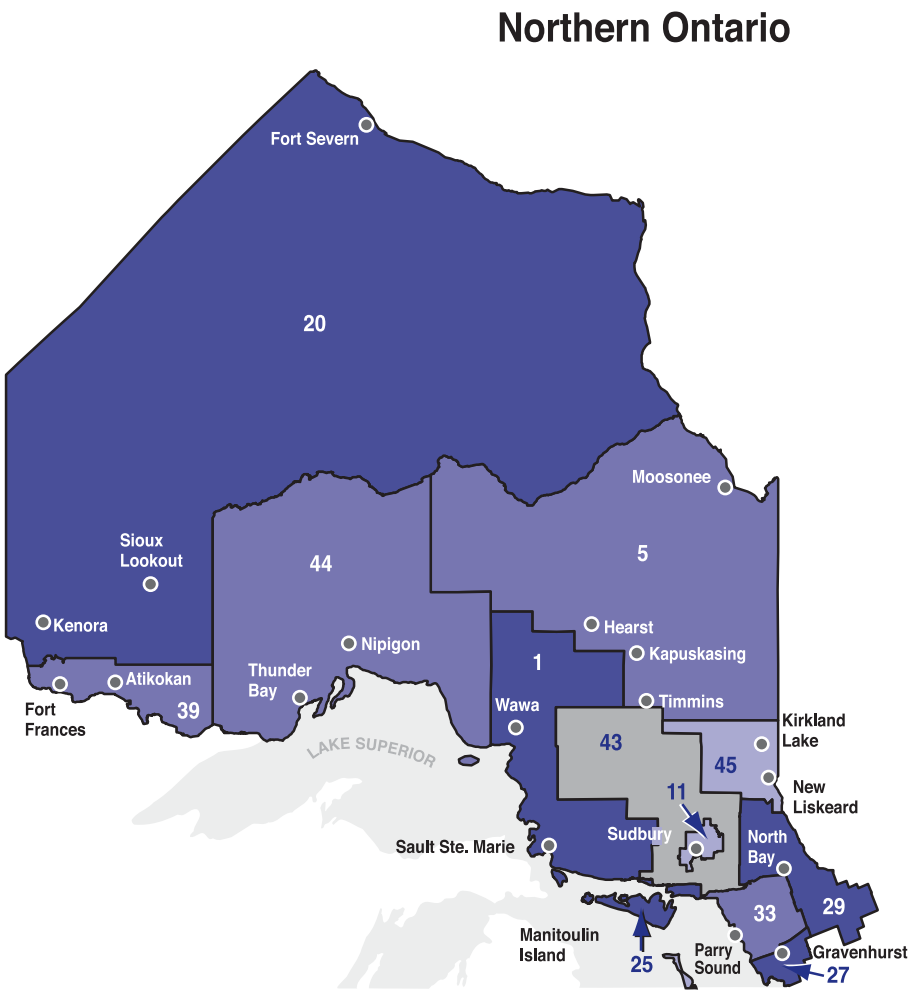
3.5 Rate of injury-related hospitalizations per 100,000 population aged 15–24 years, by county, in Ontario, 2002/03



Ontario Counties

1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
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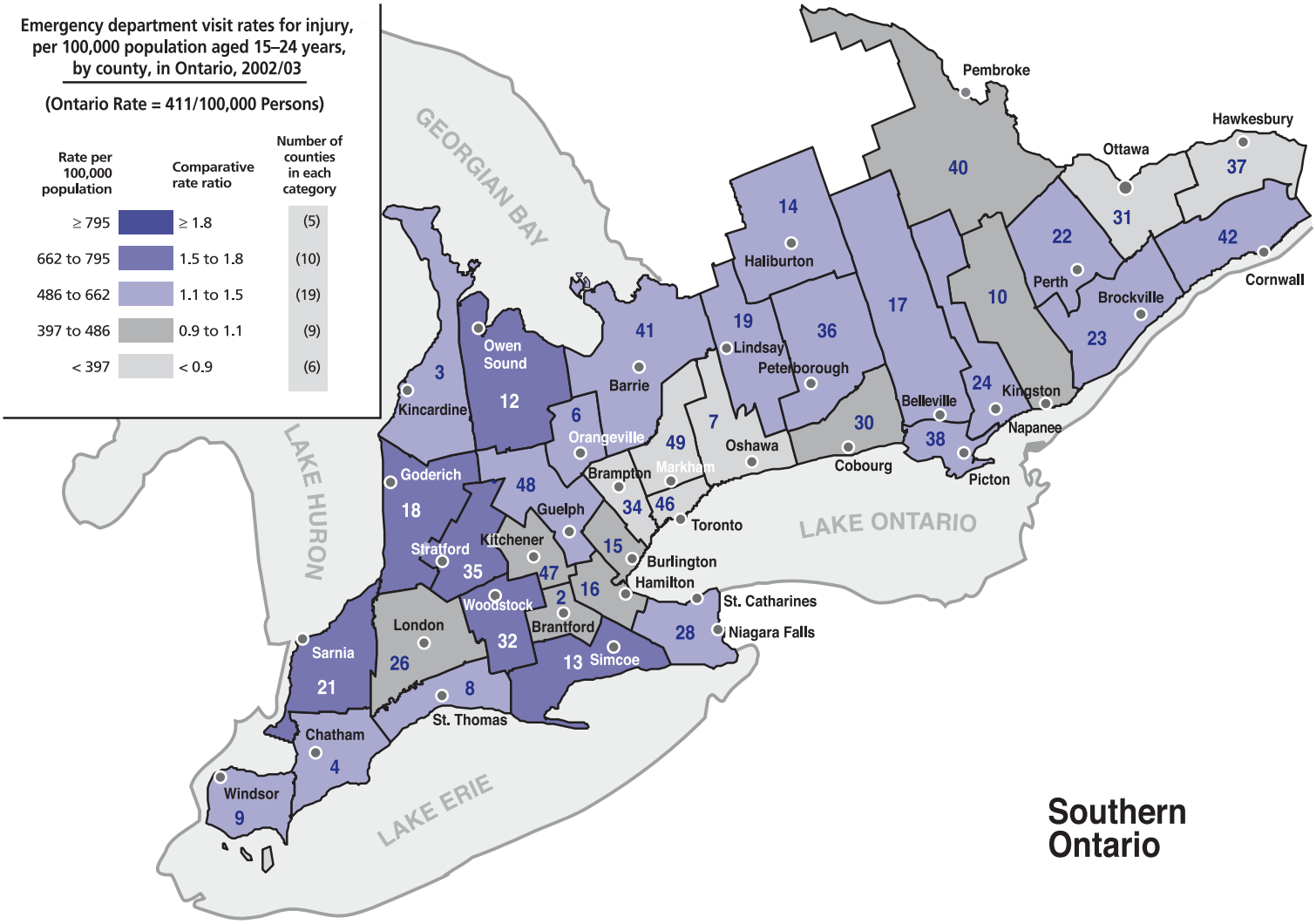
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- Five counties have injury-related hospitalization rates more than 80% higher than the provincial average.
- Six counties have injury-related hospitalization rates below the provincial average.
- Hospitalization rates, whether high or low, do not necessarily correlate with ED* visit rates.

*ED = Emergency Department

Data source: Canadian Institute for Health Information—Discharge Abstract Database



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4

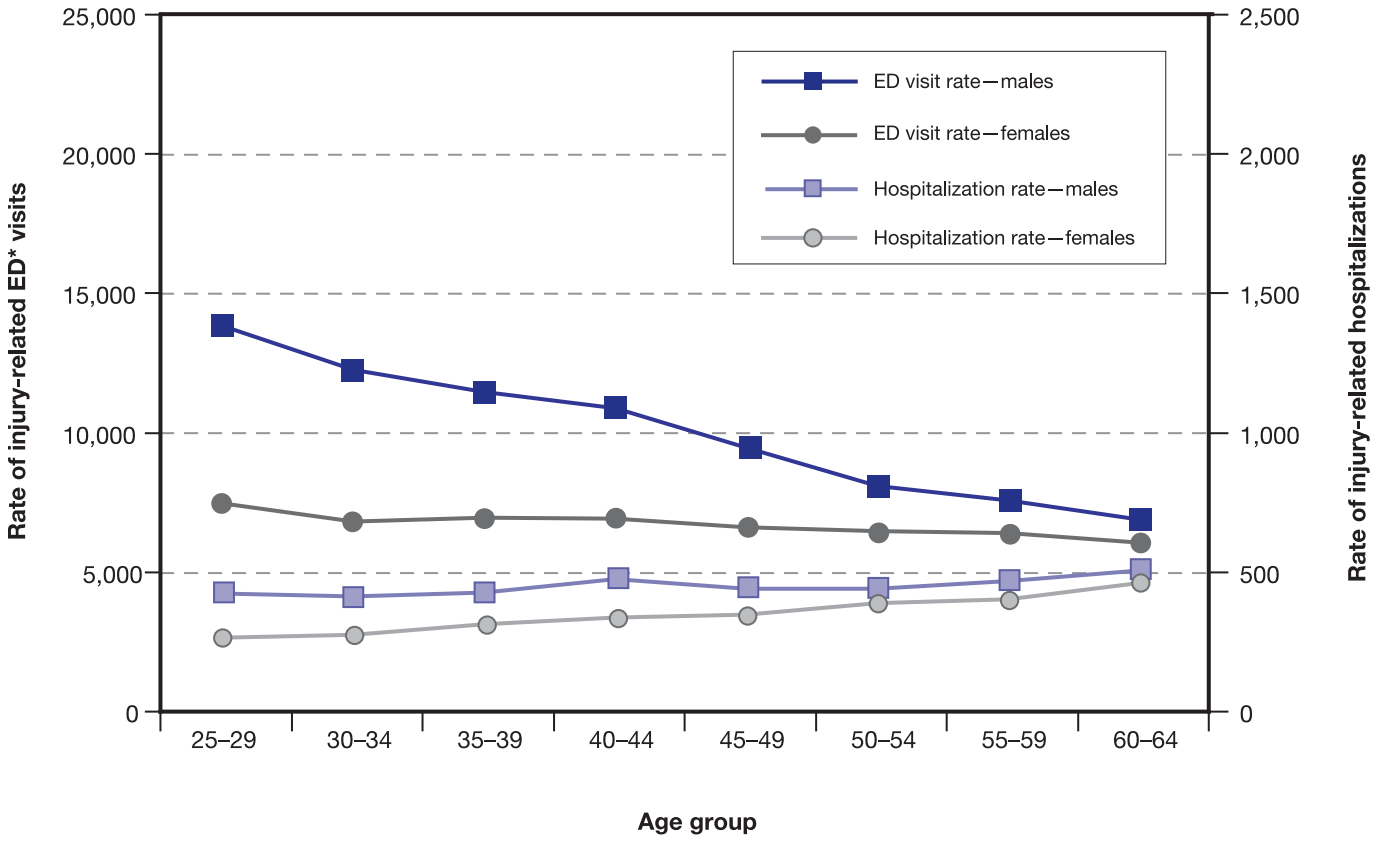
Chapter

Injuries to Adults (Aged 25–64 years)

Adults comprise the largest proportion of the Ontario population. Adults are involved in a wide array of work and recreational activities that may expose them to injury. In general, adults engage in less risk-taking behaviour than youth, and can be less vulnerable to the health effects of injury than older people.

Chapter 4—List of Exhibits

4.1 Rate of injury-related emergency department visits and hospitalizations per 100,000 population aged 25–64 years, in Ontario, 2002/03



	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64
ED visit rate—males	7,343	6,687	6,822	6,776	6,476	6,342	6,272	5,924
ED visit rate—females	13,711	12,121	11,332	10,751	9,325	7,952	7,434	6,748
Hospitalization rate—males	252	261	300	323	334	377	390	446
Hospitalization rate—females	411	399	413	463	427	427	455	493

*ED = Emergency Department

Findings

- Men are at greater risk than women for an injury-related ED visit throughout adulthood.
- The disparity of injury-related emergency department visit and hospitalization rates between men and women decreases with age.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

4.2 Rate of injury-related emergency department visits, hospitalizations and in-hospital deaths per 100,000 population aged 25–64 years, by common causes of injury, in Ontario, 2002/03

Common Causes of Injury	Rate of Injury-Related ED* Visits per 100,000 Population	Rate of Injury-Related Hospitalizations per 100,000 Population	Rate of Injury-Related In-Hospital Deaths per 100,000 Population	Ratio of ED Visits: Hospitalizations: In-Hospital Deaths
Fall	1,777	116.5	1.87	950:62:1
Struck by/against	1,271	24.0	0.19	6,689:126:1
Cut/pierce	1,041	20.1	0.30	3,471:67:1
Overexertion	867	14.3	0.07	12,385:204:1
Motor vehicle traffic	550	36.7	1.59	346:23:1
Natural/environmental	316	5.6	0.12	2,639:47:1
Poisoning	285	92.2	1.06	268:87:1
Machinery	136	4.5	0.03	4,550:151:1
Hot object/scald	100	2.0	0.04	2,500:50:1
Other bicycle (non motor vehicle collision)	84	4.5	0.03	2,814:152:1
Fire/flame	46	2.5	0.21	217:12:1
Other land transport	149	14.9	0.30	496:50:1
Other pedestrian (non motor vehicle collision)	14	1.2	0.12	113:10:1
Suffocation	7	1.4	0.51	14:3:1
Firearm	4	1.1	0.22	17:5:1
Drowning	1	0.3	0.00	5:1:1
Other or not specified	1,776	35.6	0.70	2,521:51:1

*ED = Emergency Department

Findings

- Falls are the leading cause of injury-related ED visits, hospitalizations, and in-hospital deaths for adults.
- Adults are 3.7 times more likely to visit an ED for falls compared to motor vehicle collisions.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

4.3 Number of injury-related emergency department visits and rate per 100,000 population aged 25–64 years, by sex and common causes of injury, in Ontario, 2002/03

	Females		Males		Total	
Common Causes of Injury	Number of Injury-Related ED* Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population
Fall	58,761	1,777	57,544	1,760	116,305	1,768
Struck by/against	25,343	766	58,964	1,803	84,307	1,282
Cut/pierce	22,105	668	46,655	1,427	68,760	1,046
Overexertion	23,987	725	33,486	1,024	57,473	874
Motor vehicle traffic	18,647	564	17,721	542	36,368	553
Natural/environmental	10,593	320	10,210	312	20,803	315
Poisoning	10,080	305	8,783	269	18,863	287
Other land transport	3,549	107	6,261	192	9,810	149
Machinery	1,265	38	7,742	237	9,007	137
Hot object/scald	3,305	100	3,293	101	6,598	100
Other bicycle (non motor vehicle collision)	1,489	45	4,089	125	5,578	85
Fire/flame	753	23	2,270	69	3,023	46
Other pedestrian (non motor vehicle collision)	395	12	501	15	896	14
Suffocation	179	5	279	9	458	7
Firearm	30	1	214	7	244	4
Drowning	33	1	49	1	82	1
Other or not specified	38,728	1,171	78,706	2,407	117,434	1,786

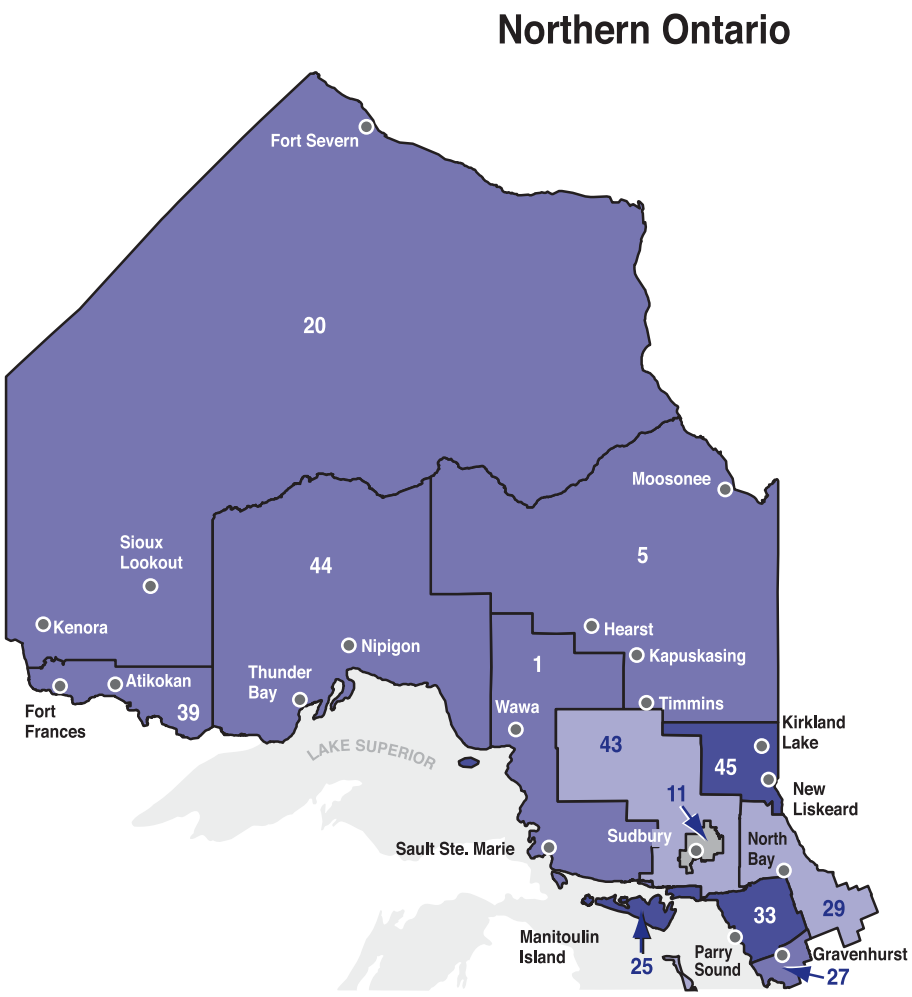
*ED = Emergency Department

Findings

- Adult males are more likely to have an injury-related ED visit for all causes except falls, motor vehicle traffic, poisoning, and natural/environmental causes.
- For females, falls are the most common reason for injury-related ED visits; for males, being struck by/against an object is the most common cause of injury-related ED visits.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System

4.4 Rate of injury-related emergency department visits per 100,000 population aged 25–64 years, by county, in Ontario, 2002/03



Ontario Counties

1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
6	Dufferin	31	Ottawa
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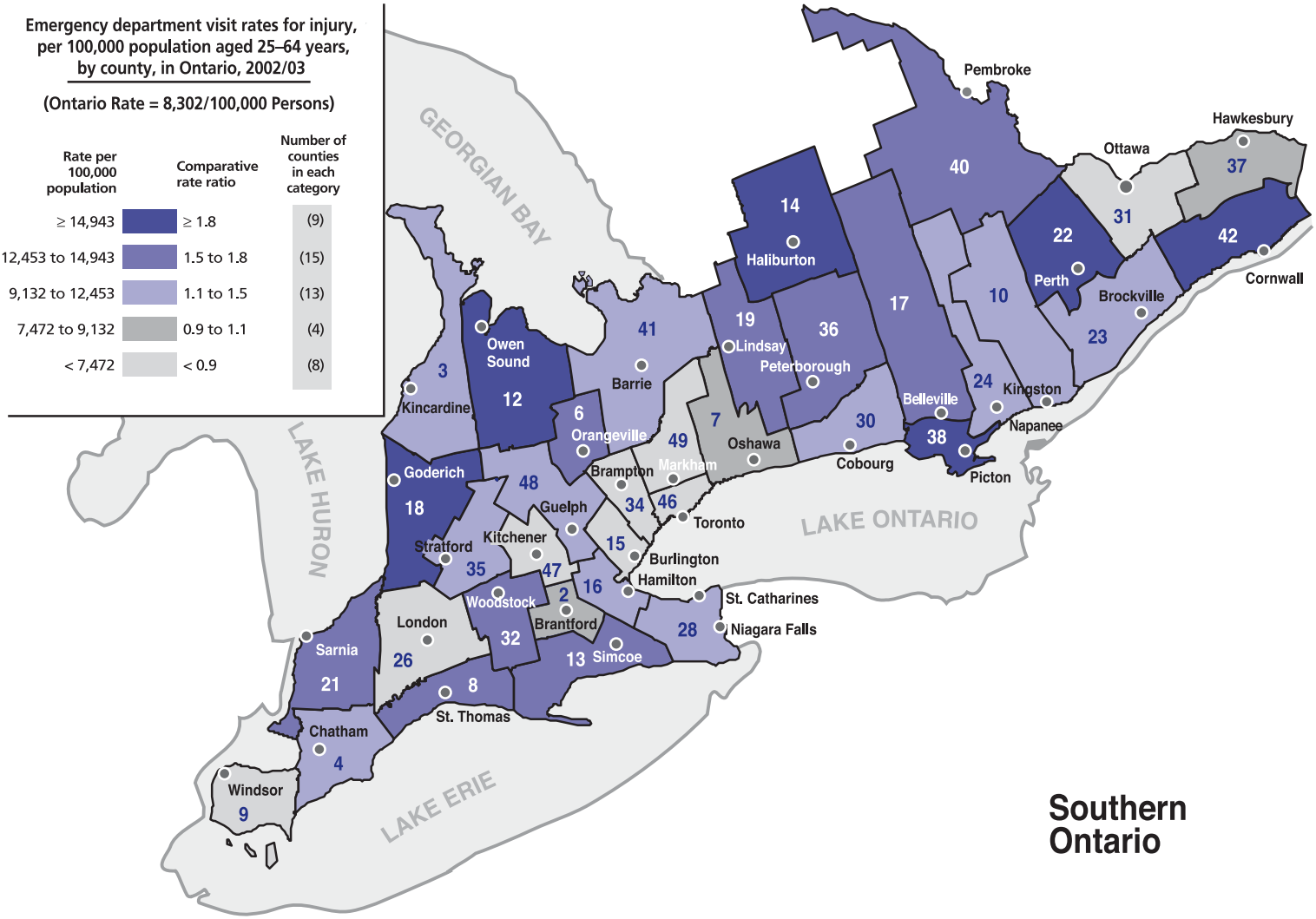
15	Halton	40	Renfrew
16	Hamilton	41	Simcoe
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- Injury-related ED* visit rates for adults in 9 counties were more than 80% higher than the provincial average.
- In 8 counties, injury-related ED visit rates were lower than the provincial average, including 3 regions with large urban centres (Toronto, Ottawa, and London)

*ED = Emergency Department

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System


Emergency department visit rates for injury, per 100,000 population aged 25–64 years, by county, in Ontario, 2002/03
(Ontario Rate = 8,302/100,000 Persons)
Rate per 100,000 population
Comparative rate ratio
Number of counties in each category
≥ 14,943
≥ 1.8
(9)
12,453 to 14,943
1.5 to 1.8
(15)
9,132 to 12,453
1.1 to 1.5
(13)
7,472 to 9,132
0.9 to 1.1
(4)
< 7,472
< 0.9
(8)
GEORGIAN BAY
LAKE HURON
LAKE ONTARIO
LAKE ERIE
Pembroke
Hawkesbury
Ottawa
Haliburton
Perth
Brockville
Cornwall
Lindsay
Peterborough
Barrie
Owen Sound
Kincardine
Orangeville
Oshawa
Belleville
Kingston
Napanee
Cobourg
Picton
Goderich
Brampton
Markham
Toronto
Guelph
Stratford
Kitchener
Burlington
Hamilton
St. Catharines
Niagara Falls
Woodstock
Brantford
Simcoe
London
Sarnia
St. Thomas
Chatham
Windsor
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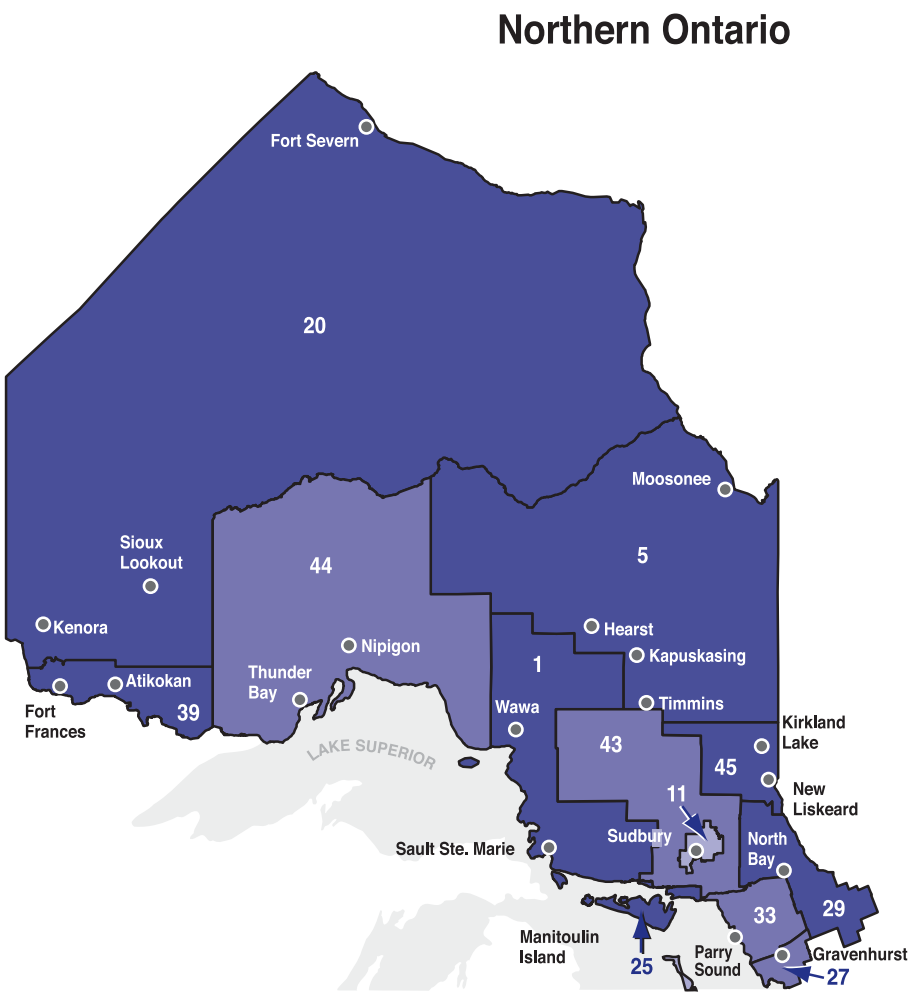
Southern Ontario

4.5 Rate of injury-related hospitalizations per 100,000 population aged 25–64 years, by county, in Ontario, 2002/03



Ontario Counties

1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
6	Dufferin	31	Ottawa
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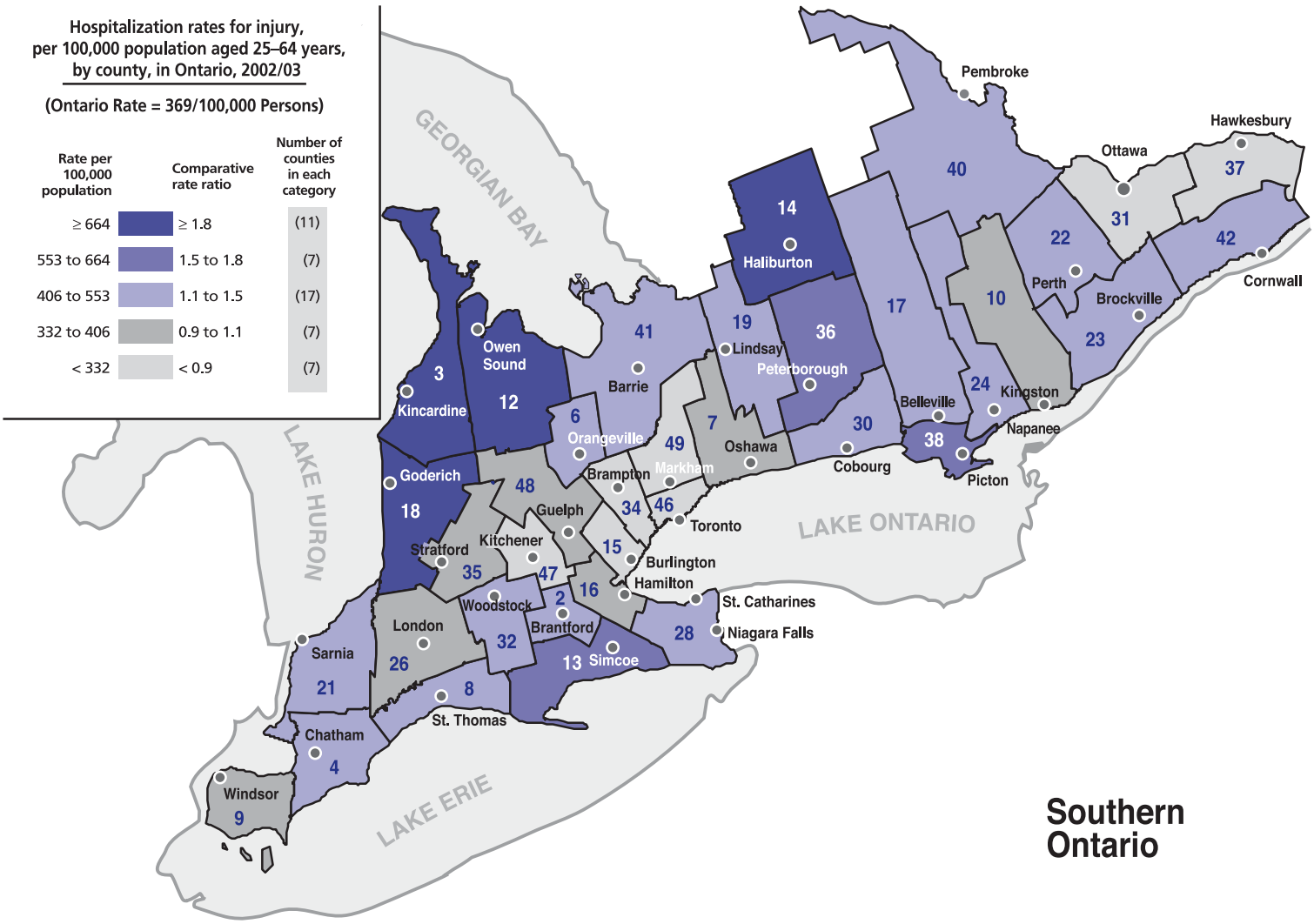
13	Haldimand-Norfolk	38	Prince Edward
14	Haliburton	39	Rainy River
15	Halton	40	Renfrew
16	Hamilton	41	Simcoe
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- Unlike all other age groups in this study, the injury-related hospitalization rate for adults varies more than the injury-related ED* visit rate; 11 counties had hospitalization rates more than 80% higher than the provincial average.
- The 7 counties with lower rates of injury-related hospitalization included 2 regions with large urban centres (Toronto and Ottawa).

*ED = Emergency Department

Data source: Canadian Institute for Health Information—Discharge Abstract Database



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5

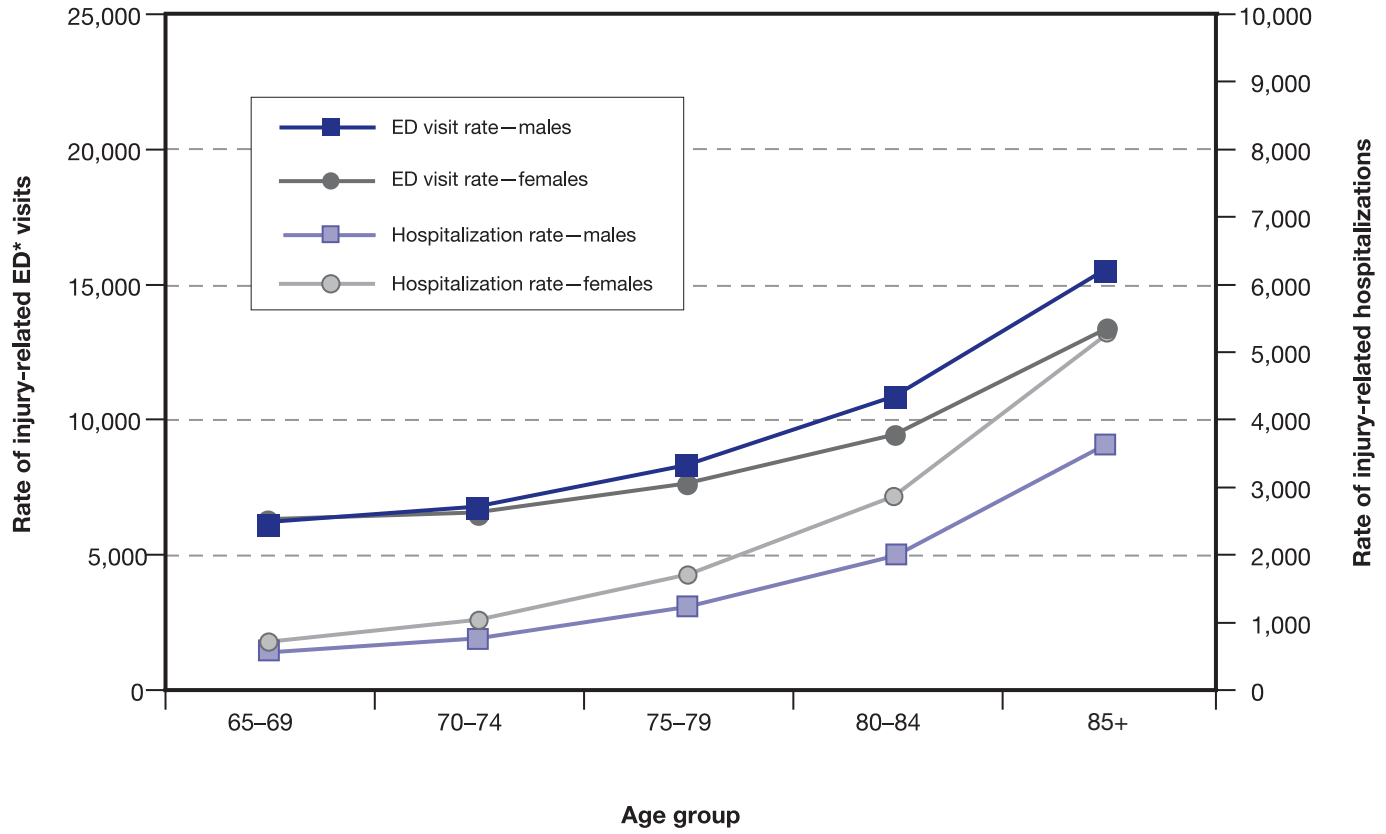
Chapter

Injuries to Older People (Aged 65+ years)

Older people make up an increasing proportion of Ontario's population. While they are less likely than adults and youth to be exposed to work-related injuries, older people can be at increased risk of injuries in the home. Injuries sustained by older individuals may be more serious or complicated in combination with age-related health conditions (e.g., osteoporosis, diabetes, or heart disease).

Chapter 5—List of Exhibits

5.1 Rate of injury-related emergency department visits and hospitalizations per 100,000 population aged 65 years and older, by age group and sex, in Ontario, 2002/03



	65–69	70–74	75–79	80–84	85+
ED visit rate—males	6,082	6,638	8,170	10,729	15,388
ED visit rate—females	6,168	6,413	7,500	9,304	13,173
Hospitalization rate—males	564	727	1,220	1,975	3,614
Hospitalization rate—females	624	933	1,628	2,809	5,115

Findings

- Unlike other age groups, older males and females have similar ED visit rates.
- Older males are slightly more likely to visit the ED for an injury, while older females are more likely to be hospitalized for injury.
- Rates of injury-related ED visits and hospitalizations increase with age for both males and females.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

5.2 Rate of injury-related emergency department visits, hospitalizations and in-hospital deaths per 100,000 population aged 65 years and older, by common causes of injury, in Ontario, 2002/03

Common Causes of Injury	Rate of Injury-Related ED* Visits per 100,000 Population	Rate of Injury-Related Hospitalizations per 100,000 Population	Rate of Injury-Related In-Hospital Deaths per 100,000 Population	Ratio of ED Visits: Hospitalizations: In-Hospital Deaths
Fall	4,821	1,200.7	101.77	47:12:1
Cut/pierce	467	8.7	0.26	1,775:33:1
Struck by/against	458	23.7	1.25	367:20:1
Overexertion	368	26.9	1.38	267:20:1
Motor vehicle traffic	338	56.0	6.97	46:8:1
Natural/environmental	270	9.6	0.59	456:16:1
Poisoning	142	39.9	2.83	50:14:1
Other land transport	65	11.6	1.12	59:10:1
Machinery	53	2.7	0.20	270:14:1
Hot object/scald	50	4.1	0.33	153:12:1
Other bicycle (non motor vehicle collision)	24	4.2	0.07	363:64:1
Fire/flame	19	3.6	0.66	30:5:1
Suffocation	19	4.9	2.17	9:2:1
Other pedestrian (non motor vehicle collision)	13	3.6	0.39	34:9:1
Other transport	5	0.4	0.20	24:2:1
Drowning	1	0.3	0.33	4:1:1
Other or not specified	1,164	123.4	10.72	109:12:1

*ED = Emergency Department

Findings

- Falls are, by far, the leading cause of injury-related ED visits, hospitalizations, and in-hospital deaths among older people.
- Older people are 14.7 times more likely to visit an ED for falls compared to motor vehicle collisions.
- Motor vehicle traffic is the second leading cause of injury-related hospitalizations and in-hospital deaths among older people.

Data sources: Canadian Institute for Health Information—National Ambulatory Care Reporting System and Discharge Abstract Database

5.3 Number of injury-related emergency department visits and rate per 100,000 population aged 65 years and older, by sex and common causes of injury, in Ontario, 2002/03

	Females		Males		Total	
Common Causes of Injury	Number of Injury-Related ED* Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population	Number of Injury-Related ED Visits	Rate of Injury-Related ED Visits per 100,000 Population
Fall	49,867	5,757	23,467	3,583	73,334	4,821
Cut/pierce	2,452	283	4,648	710	7,100	467
Struck by/against	3,721	430	3,243	495	6,964	458
Overexertion	3,463	400	2,136	326	5,599	368
Motor vehicle traffic	2,854	330	2,282	348	5,136	338
Natural/environmental	2,306	266	1,796	274	4,102	270
Poisoning	1,336	154	823	126	2,159	142
Other land transport	497	57	499	76	996	65
Machinery	64	7	745	114	809	53
Hot object/scald	471	54	294	45	765	50
Other bicycle (non motor vehicle collision)	118	14	245	37	363	24
Fire/flame	114	13	182	28	296	19
Suffocation	154	18	135	21	289	19
Other pedestrian (non motor vehicle collision)	116	13	87	13	203	13
Firearm	0	0	23	4	23	2
Drowning	10	1	8	1	18	1
Other or not specified	9,797	1,131	7,902	1,207	17,699	1,164

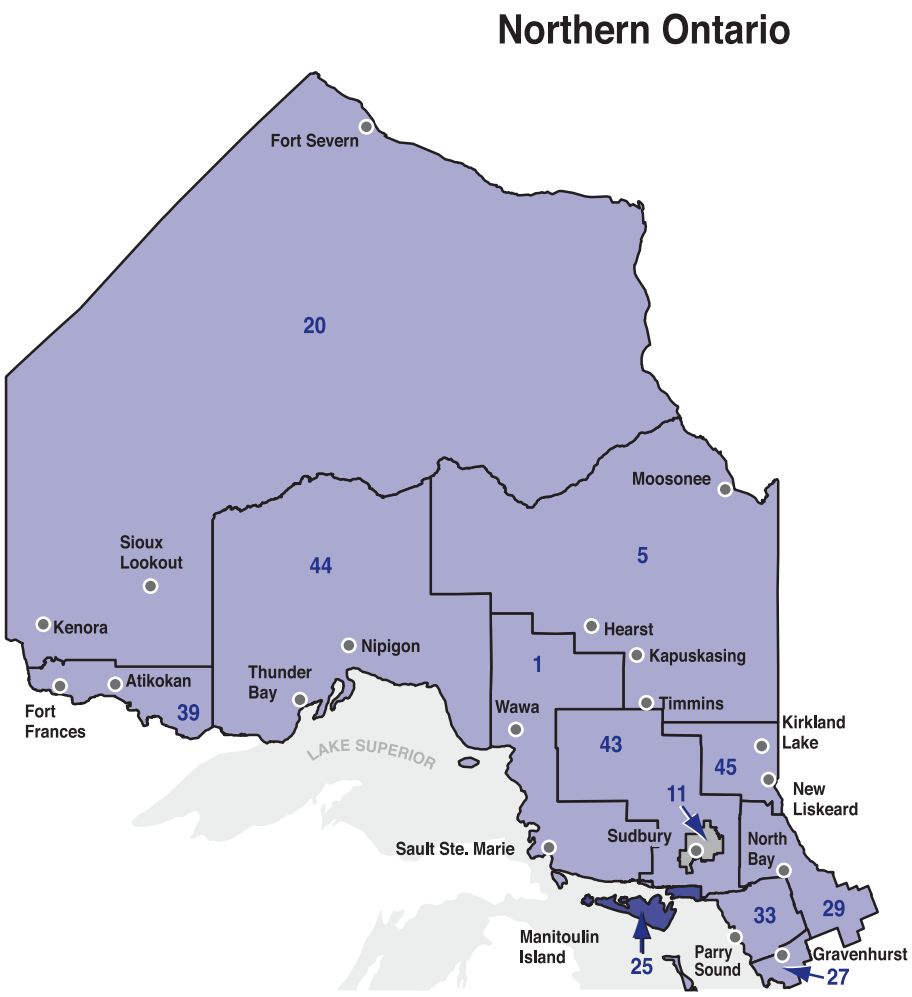
*ED = Emergency Department

Findings

- Older females are at greater risk than older males for visiting the ED for falls, overexertion (e.g., dehydration) poisoning and burn/scalds by a hot object or liquid.

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System

5.4 Rate of injury-related emergency departments visits per 100,000 population aged 65 years and older, by county, in Ontario, 2002/03



Ontario Counties

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2	Brant	27	Muskoka
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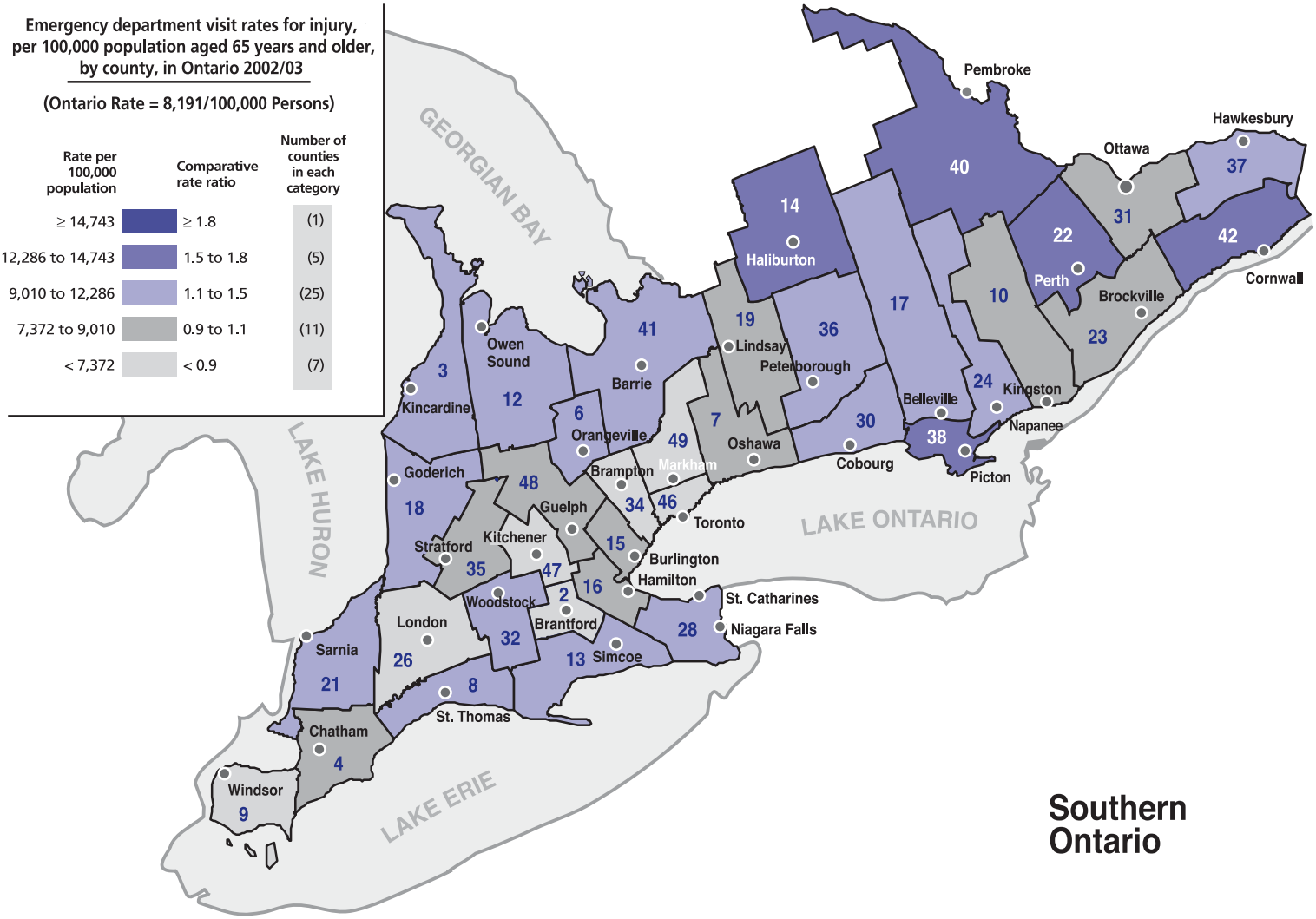
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- There is less county variation in the rate of ED* visits for older people than for other age groups.
- Only 1 county had an ED visit rate more than 80% higher than the provincial average.
- ED visit rates were lower than the provincial average in 7 counties, including 2 regions with large urban centre (Toronto and London).

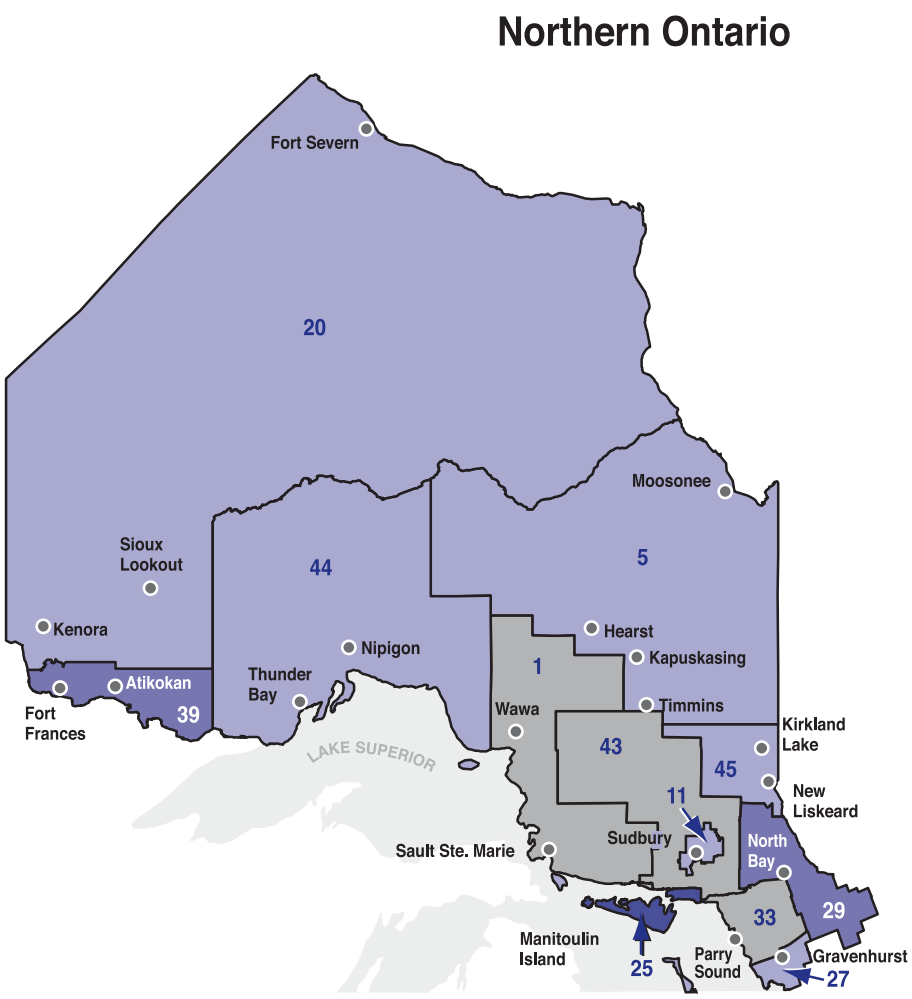
*ED = Emergency Department

Data source: Canadian Institute for Health Information—National Ambulatory Care Reporting System



Southern Ontario

5.5 Rate of injury-related hospitalizations per 100,000 population aged 65 years and older, by county, in Ontario, 2002/03



Ontario Counties

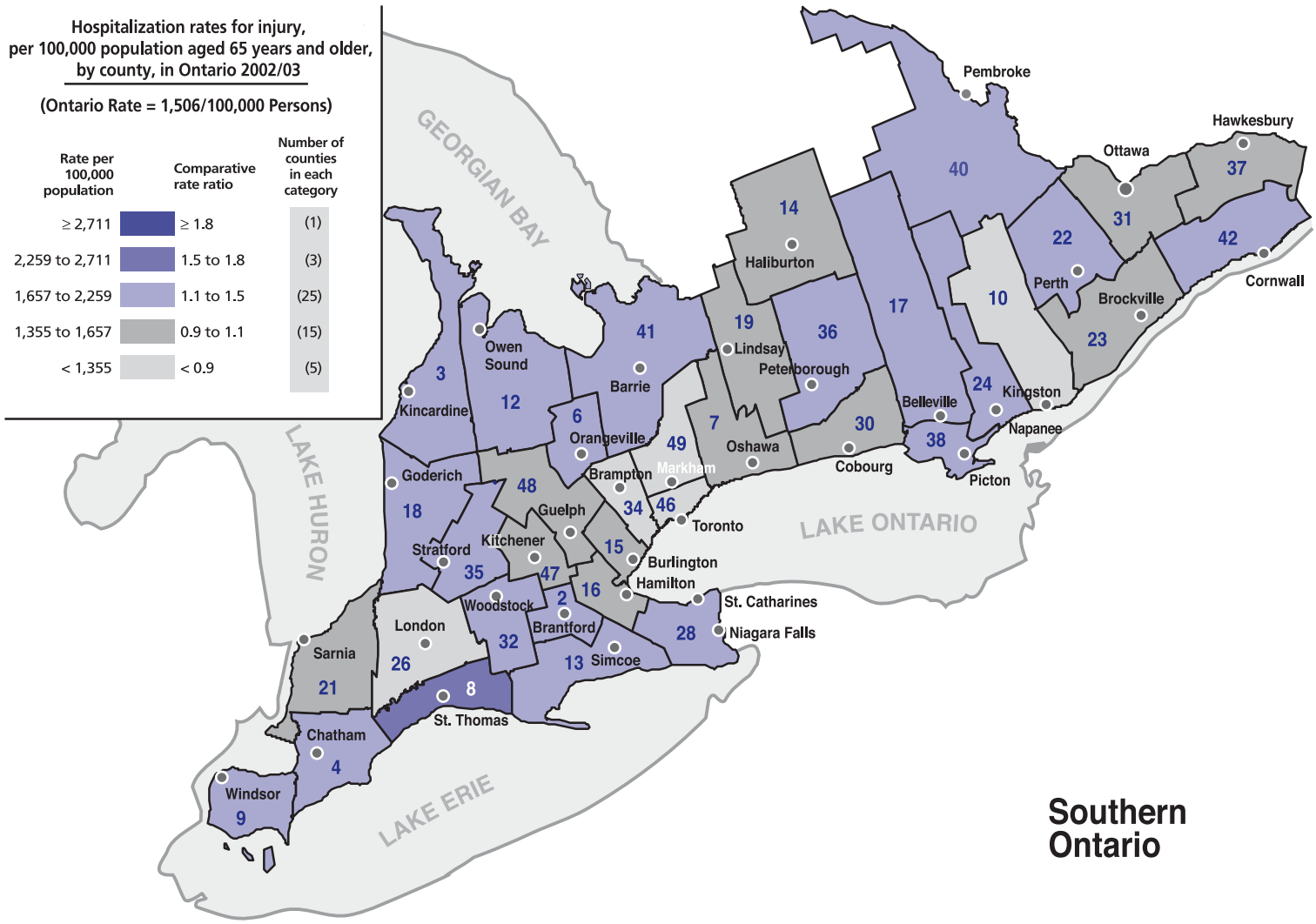
1	Algoma	26	Middlesex
2	Brant	27	Muskoka
3	Bruce	28	Niagara
4	Chatham-Kent	29	Nipissing
5	Cochrane	30	Northumberland
6	Dufferin	31	Ottawa
7	Durham	32	Oxford
8	Elgin	33	Parry Sound
9	Essex	34	Peel
10	Frontenac	35	Perth
11	Greater Sudbury	36	Peterborough
12	Grey	37	Prescott-Russell
13	Haldimand-Norfolk	38	Prince Edward
14	Haliburton	39	Rainy River
15	Halton	40	Renfrew
16	Hamilton	41	Simcoe
17	Hastings	42	Stormont-Dundas-Glengarry
18	Huron		
19	Kawartha Lakes	43	Sudbury
20	Kenora	44	Thunder Bay
21	Lambton	45	Timiskaming
22	Lanark	46	Toronto
23	Leeds-Grenville	47	Waterloo
24	Lennox-Addington	48	Wellington
25	Manitoulin	49	York

Findings

- County variation in the rate of injury-related hospitalization for older people is lower than for other age groups.
- Only 1 county had an ED* visit rate more than 80% higher than the provincial average.
- Five counties had hospitalization rates lower than the provincial average.

*ED = Emergency Department

Data source: Canadian Institute for Health Information—Discharge Abstract Database



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