

# Wheelchair or Adult Walker Falls

Each day in Ontario, nearly seven people visit an emergency department and two people are hospitalized due to a fall involving a wheelchair or adult walker.

## Results

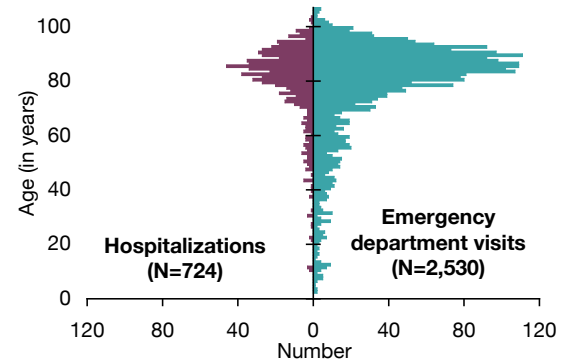
During the 2004/05 fiscal year, there were a total of 2,530 visits to an emergency department and 724 hospitalizations due to a fall involving a wheelchair or adult walker in Ontario. Of the emergency department visits, 54% were falls involving a wheelchair and 46% involved an adult walker (Table 1). For hospitalizations, 53% of the cases involved a fall with an adult walker and 47% were wheelchair-related falls.

Females accounted for about 67% of emergency department visits and 70% of hospitalizations due to a wheelchair or adult walker-related fall. For both emergency department visits and hospitalizations, peaks in the number of injuries were observed among Ontarians 75-94 years of age (Figure 1).

For emergency department visits, injuries to the lower limb or head were most common (Figure 2). More specifically, open wounds of the head or face and hip fractures were most frequent. For hospitalizations, lower limb injuries (in particular, hip fractures) were most common.

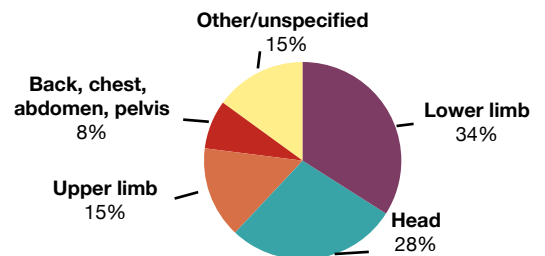
By region, the lowest rates of emergency department visits and hospitalizations were observed in the Central West region and the highest rates were seen in the North region (Table 2). Regional differences were also seen in the highest numbers and rates by age group (Table 3). In all regions, the highest injury rates were observed among those 90 years of age and older.

**FIGURE 1. Emergency department visits and hospitalizations for wheelchair and adult walker falls by age (Ontario, 2004/2005)**

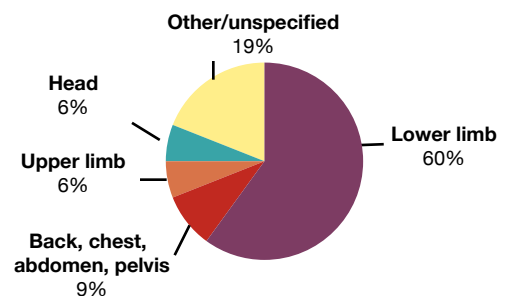


**FIGURE 2. Site of injury for wheelchair and adult walker falls (Most responsible diagnosis, Ontario, 2004/05)**

### Emergency Department Visits



### Hospitalizations



**TABLE 1. Breakdown of wheelchair and adult walker falls for emergency department visits and hospitalizations (Ontario, 2004/2005)**

Type	Emergency department visits	Hospitalizations
	Number (%)	Number (%)
Wheelchair	1,361 (54%)	340 (47%)
Adult walker	1,169 (46%)	384 (53%)
Total	2,530 (100%)	724 (100%)

**TABLE 2. Regional comparison of falls involving a wheelchair or adult walker (Ontario, 2004/05)**

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
<b>Emergency Department Visits</b>								
Number	294	307	274	437	508	426	277	2,530
Rate per 100,000 <sup>a</sup>	13.9	18.2	12.5	18.4	14.6	20.1	24.7	16.7
Average age (in years)	74	76	75	76	79	74	74	76
% female	63	69	68	65	68	70	64	67
<b>Hospitalizations</b>								
Number	114	84	91	117	111	99	108	724
Rate per 100,000 <sup>a</sup>	5.1	4.9	4.2	5.0	3.3	4.8	9.8	4.7
Average age (in years)	79	77	78	81	81	77	81	79
% female	63	75	71	76	72	69	66	70

a. Age-standardized rate per 100,000 population.

Note: Region of residence unknown/outside of Ontario for 7 emergency department visits.



## Ontario Injury Compass

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Edited by

**Philip Groff, PhD**

Director,  
Research and Evaluation  
**SMARTRISK**  
(416) 596-2718  
pgroff@smartrisk.ca

Principal Analyst

**Kelly Simpson, MSc**

Research Associate  
**SMARTRISK**  
(416) 596-2720  
ksimpson@smartrisk.ca

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Ontario Injury Compass  
please email your request to:  
[compass@smartrisk.ca](mailto:compass@smartrisk.ca)

**SMARTRISK**

790 Bay St.  
Suite 401  
Toronto, Ontario  
M5G 1N8  
(416) 977-7350  
[info@smartrisk.ca](mailto:info@smartrisk.ca)  
[www.smartrisk.ca](http://www.smartrisk.ca)

**TABLE 3. Regional comparison of falls involving a wheelchair or adult walker for select age groups (Ontario, 2004/05)**

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
<b>Emergency Department Visits - Rate per 100,000 population<sup>a</sup> (Number)</b>								
70-74 years	23.8 (13)	54.0 (24)	32.0 (19)	36.0 (24)	40.3 (35)	58.5 (32)	53.4 (18)	41.2 (165)
75-79 years	73.1 (34)	68.7 (27)	84.9 (40)	113.2 (58)	74.6 (55)	109.2 (49)	145.2 (39)	91.6 (302)
80-84 years	199.8 (68)	229.8 (66)	158.4 (51)	239.4 (83)	165.6 (89)	249.0 (83)	191.9 (34)	203.5 (477)
85-89 years	303.6 (50)	367.8 (48)	425.6 (62)	657.9 (108)	439.7 (109)	407.3 (67)	758.9 (63)	460.7 (507)
90+ years	530.8 (46)	850.1 (58)	587.5 (42)	926.0 (74)	887.3 (128)	876.6 (73)	1,294.3 (50)	824.5 (472)
<b>Hospitalizations - Rate per 100,000 population<sup>a</sup> (Number)</b>								
70-74 years	12.8 (7)	11.2 (5)	8.4 (5)	9.0 (6)	15.0 (13)	11.0 (6)	38.5 (13)	13.7 (55)
75-79 years	34.4 (16)	25.4 (10)	27.6 (13)	21.5 (11)	21.7 (16)	24.5 (11)	52.1 (14)	27.6 (91)
80-84 years	61.7 (21)	66.2 (19)	52.8 (17)	77.9 (27)	44.7 (24)	69.0 (23)	129.8 (23)	65.7 (154)
85-89 years	133.6 (22)	160.9 (21)	151.0 (22)	201.0 (33)	64.5 (16)	121.6 (20)	313.2 (26)	145.4 (160)
90+ years	346.2 (30)	175.9 (12)	223.8 (16)	300.3 (24)	221.8 (32)	240.2 (20)	517.7 (20)	269.0 (154)

a. Age-specific rate per 100,000 population.

Note: Region of residence unknown/outside of Ontario for 4 emergency department visits among those 70+ years of age.

About 72% of persons who visited an emergency department due to a fall involving a wheelchair or adult walker were discharged to their place of residence and 25% were admitted to the reporting facility. For hospitalized cases, 40% were discharged to a long-term care facility, 25% were discharged home, 24% were discharged to another facility providing inpatient care (e.g., rehabilitation centre), and 8% died after admission to hospital. The 724 hospitalized cases accounted for more than 8,100 days in acute care hospitals with an average length of stay of 11.3 days.

## Discussion

This Compass highlights patterns of emergency department visits and hospitalizations due to wheelchair or adult walker-related falls in Ontario. Few Canadian studies have examined injury patterns related to wheelchairs or adult walkers.<sup>1</sup>

Wheelchairs and walkers are used by many different populations, however, the largest group of consumers is older adults.<sup>2,3</sup> About 7.2% of Canadians 85 years and older used a wheelchair and 32% used another type of mobility device, such as a cane or crutches, in 2000/01. The use of mobility support devices in Ontario exceeded the national average.<sup>3</sup>

There are several risk factors associated with these types of falls, such as characteristics of the individual (e.g., health status, age, sex), design, use, and maintenance of mobility aids (e.g., improper prescription, lack of training, frequency of use), and environmental hazards (e.g., uneven terrain, slippery surfaces, tripping hazards).<sup>4-7</sup>

## References

1. Kirby RL, Ackroyd-Stolarz SA, Brown MG, et al. Wheelchair-related accidents caused by tips and falls among noninstitutionalized users of manually propelled wheelchairs in Nova Scotia. *Am J Phys Med Rehabil* 1994;73:319-30.
2. Clarke P, Colantonio A. Wheelchair use among community-dwelling older adults: Prevalence and risk factors in a national sample. *Can J Aging* 2004;24:191-8.
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4. Gavin-Dreschnack D, Nelson A, Fitzgerald S, et al. Wheelchair-related falls: current evidence and directions for improved quality care. *J Nurs Care Qual* 2005;20:119-27.
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7. Gaal RP, Rebholtz N, Hotchkiss RD, et al. Wheelchair rider injuries: causes and consequences for wheelchair design and selection. *J Rehabil Res Dev* 1997;34:58-71.

## Managing the risk

**In Ontario, wheelchairs and walkers are commonly used, especially among older adults and persons with disabilities. Here are some tips that can be used to help reduce the risks of falling:**

- ❖ Ensure wheelchairs and walkers are appropriately fit to meet your needs. Consult a health care professional (e.g., occupational therapist, physical therapist, or doctor).
- ❖ Keep mobility aids in good working condition. Have items such as brakes, locks, and wheels checked regularly.
- ❖ Learn proper techniques for using mobility aids, such as transferring to and from a wheelchair. Look ahead when using your walker and not at your feet.
- ❖ Check surroundings for obstacles and surfaces that may cause you to slip, trip or lose balance (e.g., throw rugs, clutter, uneven sidewalks). Be careful around pets and small children; they can be unpredictable and get in your path when you least expect it.
- ❖ Talk to your health care professional about keeping physically active. Get recommendations and choose appropriate activities.

### For Further Information

**Public Health Agency of Canada-Division of Aging and Seniors**  
[www.phac-aspc.gc.ca/seniors-aines](http://www.phac-aspc.gc.ca/seniors-aines)

**Active Living Resource Centre for Ontarians with a Disability**  
[www.getactivenow.ca](http://www.getactivenow.ca)

**Ontario Ministry of Community and Social Services**  
[www.mcsc.gov.on.ca](http://www.mcsc.gov.on.ca)

**Ontario March of Dimes**  
[www.marchofdimes.ca](http://www.marchofdimes.ca)

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## Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and data for acute care hospitalizations were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2004/05 fiscal year. Injuries due to falls involving a wheelchair or adult walker were classified according to the International Classification of Diseases, 10th revision (ICD-10) using codes W05.00 and W05.01. Note that some persons were seen in an emergency department and then admitted to hospital; however, persons can be admitted to hospital without visiting an emergency department. Regions were defined according to place of residence using the Ontario Ministry of Health Region Codes.