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# Falls from Beds

On average, every week 30 people are hospitalized for an injury due to falling from a bed. Injuries to the hip and thigh in females over 70 years of age are the most common.

## Results

During the 2005/06 fiscal year, there were a total of 9,520 emergency department visits and 1,457 hospitalizations for injuries from falling from a bed. (See Methods Section for Data Sources). These numbers translate into provincial rates of 79.6 per 100,000 population for emergency department visits and 9.9 per 100,000 for hospitalizations (Table 1).

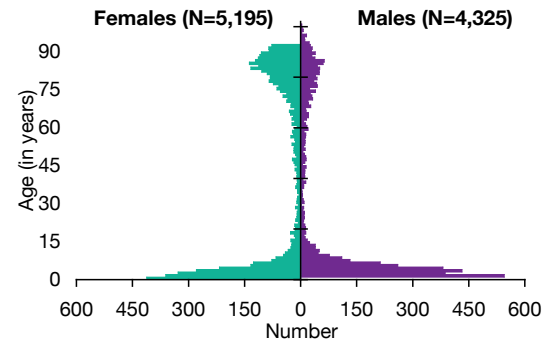
Overall, females accounted for 55% of emergency department visits and 62% of hospitalizations. Females over 75 years of age had the highest numbers of hospitalizations; however males under 4 years of age had the highest numbers of emergency department visits

For emergency department visits, injuries to the head and neck were the most common, accounting for 45% of all visits. For hospitalizations, injuries to the lower limb, including the ankle, foot, knee, lower leg, hip and thigh, were the most frequent, accounting for 38% of all hospitalizations with injuries to the hip and thigh accounting for approximately 36% of these injuries (Figure 2).

Injury rates varied by region, with the highest rate of both emergency department visits and hospitalizations for injuries due to falls from beds, reported in the Northern region of Ontario. (Table 1).

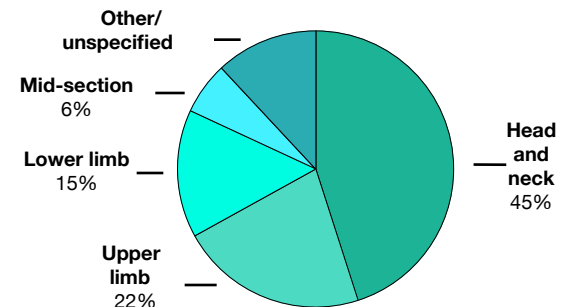
Over 75% of individuals who visited an emergency department for an injury due to falling from a bed, were discharged to their place of residence. For hospitalized cases, approximately 30% were transferred to a long term care facility and 24% of patients were discharged home. Fewer than 1% of individuals died after arrival in the emergency department, however a reported 13% died after hospital admission. The 1,457 hospitalized cases accounted for more than 15,709 days in acute care hospitals with an average length of stay of 11 days.

**FIGURE 1. Emergency department visits due to falls from beds by age and sex**

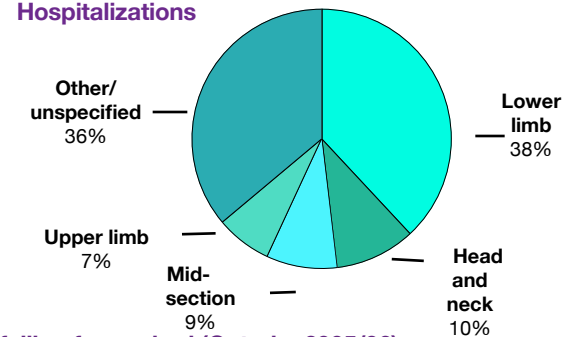


**FIGURE 2. Nature of injuries due to falls from beds (Most responsible diagnosis, Ontario, 2005/2006)**

### Emergency Department Visits



### Hospitalizations



**TABLE 1. Regional comparison of injuries due to falling from a bed (Ontario, 2005/06)**

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
<b>Emergency Department Visits</b>								
Number	1,275	992	1,367	1,605	1,991	1,293	839	9,520
Rate per 100,000 <sup>a</sup>	81.3	82.9	63.0	78.6	79.7	80.2	101.8	79.6
Average Age	37	39	32	35	35	41	39	36
% Female	57	52	54	54	53	57	55	55
<b>Hospitalizations</b>								
Number	240	137	201	239	243	215	171	1,457
Rate per 100,000 <sup>a</sup>	11.3	8.2	9.2	10.4	7.6	10.5	15.6	9.9
Average Age	75	74	69	70	69	72	73	72
% Female	65	59	64	63	58	63	60	62

a. Age-standardized rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 158 emergency department visits and 11 hospitalizations.

## Ontario Injury Compass

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**TABLE 2. Regional comparison of injuries due to falling from a bed by age group (Ontario, 2005/06)**

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
<b>Emergency Department Visits- Number (Rate per 100,000<sup>a</sup>)</b>								
0-4 years	520.1 (434)	551.8 (335)	416.6 (604)	492.7 (592)	588.7 (846)	519.9 (439)	640.8 (270)	530 (3602)
70-74 years	80.4 (44)	76.4 (34)	72.4 (43)	64.5 (43)	85.2 (74)	120.6 (66)	157.1 (53)	90.1 (361)
75-79 years	135.4 (63)	170.4 (67)	135.8 (64)	187.3 (96)	175.1 (129)	193.9 (87)	193.6 (52)	171.7 (566)
80-84 years	329.1 (112)	289 (83)	313.7 (101)	401 (139)	256.8 (138)	374.9 (125)	417.6 (74)	330.6 (775)
85-89 years	674 (111)	743.3 (97)	748.3 (109)	718.8 (118)	629.3 (156)	772 (127)	746.9 (62)	712.5 (784)
<b>Hospitalizations- Number (Rate per 100,000<sup>a</sup>)</b>								
0-4 years	13.2 (11)	13.2 (8)	15.2 (22)	14.1 (17)	15.3 (22)	20.1 (17)	21.4 (9)	15.9 (108)
70-74 years	34.7 (19)	31.5 (14)	27 (16)	18 (12)	16.1 (14)	38.4 (21)	65.2 (22)	30.2 (121)
75-79 years	58 (27)	45.8 (18)	55.2 (26)	78.1 (40)	40.7 (30)	55.7 (25)	100.5 (27)	59.5 (196)
80-84 years	158.7 (54)	97.5 (28)	99.4 (32)	144.2 (50)	109.8 (59)	129 (43)	169.3 (30)	126.3 (296)
85-89 years	285.4 (47)	229.9 (30)	260.9 (38)	225.4 (37)	157.3 (39)	279.6 (46)	325.3 (27)	242.6 (267)

a. Age-specific rate (and number) per 100,000 population. Note: Region of residence unknown/outside of Ontario for 158 emergency department visits and 11 hospitalizations.

## Discussion

This Compass highlights patterns of Ontario emergency department visits and hospitalizations for injuries sustained from falling from a bed.

Much of the literature on injuries sustained from falls from beds focuses on two age groups; children and older adults,<sup>1,2,3,4,5</sup> as the majority of injuries sustained as a result of falling from a bed occur in children under 4 and adults over 65. Preventing falls from beds in the home in addition to preventing falls from beds in hospital and residential (nursing homes) settings, is a predominant focus in much of the literature, as falls from beds in these environments are common.<sup>1,6,7</sup>

Young boys are at a higher risk than their female counterparts for a fall from a bed.<sup>1</sup> Bunk beds, in particular, which consist of two beds: one above the other, are often used in children's rooms and can dramatically increase the risk of a child suffering a serious injury such as an injury to the brain, face, head, or a fracture of one of the limbs.<sup>1,3</sup> It is important to note that, in general, injuries sustained by children after falling from a bunk bed are generally more serious than those injuries suffered after falling off of a conventional bed.<sup>1</sup> This illustrates the importance of targeting prevention efforts towards young children using these types of beds.

For males and females 65 years of age and older, injuries from falls are the leading cause of injury deaths and disabilities.<sup>8</sup> Much of the literature on falls among this age group focus on hospital inpatient settings and nursing home settings.<sup>6,7</sup> Hospital inpatient falls are significantly greater in geriatric departments than in surgical departments,<sup>7</sup> and hip

fractures are particularly common among this age group. Often, fracture to the hip often leads to a permanent decline in functioning.<sup>8</sup>

## Managing the risk

- ❖ Install bed side rails in geriatric settings as well as to the upper bed of bunk beds and remove bunk bed ladder when not being used.<sup>1</sup>
- ❖ Alternatives to restraints in geriatric settings include using high-low beds, placing pads next to beds, and placing beds against the wall.
- ❖ Ensure bunk bed meets provincial/federal safety standards and prohibit young children from using the top bunk or ladder.<sup>2</sup>
- ❖ Implement a multifaceted falls prevention program, which includes facets of education (individuals at high risk, health practitioners), cited best practice exercises (to improve bone strength), environmental modifications (to improve internal structure of hospital, for example), and medication monitoring/review.<sup>5,8</sup>
- ❖ Focus seniors fall prevention efforts on reducing the occurrence of hip fractures, in particular. e.g., encourage the use of hip protectors and educate those seniors taking blood pressure medication to sit on the edge of their bed for 10 seconds before standing up.<sup>9</sup> Identify those patients/residents at a high risk of falling and implement falls preventive strategies such as assigning these individuals beds which are low to the ground.<sup>7</sup>

## For Further Information

ThinkFirst Foundation of Canada: [www.thinkfirst.ca](http://www.thinkfirst.ca)

Ontario Neurotrauma Foundation: [www.onf.org](http://www.onf.org)

Institute for Clinical Evaluative Sciences: [www.ices.on.ca](http://www.ices.on.ca)

## Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and acute care hospitalization data were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2005/06 fiscal year. ICD-10 coding (W06) was used to isolate all emergency department visits and hospitalizations for injuries resulting from collisions with people in sports. 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. Deaths occurring outside of the hospital setting were not included in this analysis.

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