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National Trauma Registry 2006 Injury Hospitalizations Highlights Report

Introduction

The purpose of the 2006 National Trauma Registry Injury Hospitalizations Highlights Report is to provide an overview of patients hospitalized due to trauma in all acute care facilities in Canada for the 2004–2005 fiscal year (April 1, 2004 to March 31, 2005). This Highlights Report is a supplement to the release of the 2004–2005 fiscal year of data in the electronic reporting application for the trauma registry.

The data source for this report is the National Trauma Registry Minimal Data Set (NTR MDS), which is managed by the Canadian Institute for Health Information (CIHI). NTR MDS data are a subset of the Hospital Morbidity Database (HMDB), which is also managed by CIHI. Data for this report are based on the fiscal year of discharge and reports are based on the patients' residence code where applicable in order to facilitate the development and implementation of appropriate injury prevention strategies.

Trauma or injury cases were included if their external cause of injury codes met the NTR definition of trauma; generally, these are injuries resulting from a transfer of energy applied clinically. Examples of cases that are *excluded* from this definition are poisonings by drugs or gases, adverse effects of drugs or medicine, and late effects of injury.

2004–2005 Highlights

In Canada, there were 196,865 acute care hospitalizations due to injury in 2004–2005. These hospitalizations accounted for 1,943,660 days in hospital in 2004–2005. The national average (mean) hospital length of stay (LOS) was 10 days. Males comprised 53% of all cases and the mean age of all hospitalized cases was 53 years. In general, the mean LOS increased with age.

In 2004–2005, there were 7,076 injury cases that died in hospital. This represented 4% of all injury hospitalizations. These cases spent 132,113 days in hospital, representing 7% of all days in hospital due to injury. Of those who died, 86% were 60 years of age and over. The mean number of injuries per case for those who died in

hospital was 7.89, compared to 3.64 injuries for cases that survived. In general, the mean LOS for cases that died in hospital was more than double the mean LOS for those that survived.

Trend Analysis, 2001–2002 Through 2004–2005

Between 2001–2002 and 2003–2004, the number of injury hospitalizations decreased slightly (from 197,241 to 194,771). However, there was a slight increase in the number of hospitalizations between 2003–2004 and 2004–2005 (from 194,771 in 2003–2004 to 196,865 in 2004–2005). The mean age varied only slightly at 51 years in 2001–2002, 52 years in 2002–2003 and 2003–2004 and 53 years in 2004–2005. The mean LOS differed slightly in the years 2001–2002, 2002–2003, 2003–2004, and 2004–2005 (Table 1).

Table 1. Overview of Injury Hospitalizations by Fiscal Year

	Fiscal Year by Discharge Date			
	2001–2002	2002–2003	2003–2004	2004–2005
No. of hospitalizations	197,241	194,133	194,771	196,865
Mean age	51.42	51.92	52.37	52.91
No of patient Days	1,946,386	1,968,794	1,918,860	1,943,660
Mean LOS (days)	9.87	10.14	9.85	9.87
No. of injuries	783,683	764,821	734,867	747,097
Mean No. of injuries	3.97	3.94	3.77	3.79
No. of complications	54,112	53,243	42,855	41,945
No. of comorbidities	223,456	206,589	174,461	171,674

Variation by Province/Territory of Residence

In 2004–2005, the highest number of injury hospitalizations was seen in Ontario (33%, n = 64,420), followed by Quebec (21%, n = 42,086) and British Columbia (15%, n = 29,179), which when combined represent 69% of all injury hospitalizations in Canada for that year. The mean age of injury hospitalizations also varied by province. Ontario had the highest mean age (mean = 56 years) whereas Nunavut had the lowest (mean = 28 years).

In 2004–2005, the mean LOS among the provinces varied substantially. Manitoba had the longest mean LOS (16 days) among all injury hospitalizations and North West Territory had the shortest (4 days). The mean LOS for all injury hospitalizations in Canada was 10 days.

Causes of Injury

Overall

In 2004–2005, the leading cause of injury hospitalizations in Canada was unintentionally falling, which represented 57% (n = 112,846) of all injury hospitalizations. The second most common cause of injury was motor vehicle collisions (14% n = 26,676). Motor vehicle traffic collisions accounted for 72% (n = 19,274) of all motor vehicle injury hospitalizations.

Being struck by objects or colliding with another person was the third leading specific cause of injury (5%, n = 8,977) in 2004–2005, followed by injury purposely inflicted by another person (assault) (4%, n = 8,422).

By Age Group

In 2004–2005, persons under 20 years accounted for 16% (n = 30,534) of all injury hospitalizations. The most common causes of injury hospitalization in this age group were unintentional falls (38%, n = 11,696) and motor vehicle collisions (17%, n = 5,251).

Persons between the ages of 20 and 34 years accounted for 14% (n = 27,358) of all injury hospitalization in 2004–2005. The most common specific causes of injury hospitalizations in this age group were motor vehicle collisions (27%, n = 7,334) and unintentional falls (23%, n = 6,312).

In 2004–2005, homicide and injury purposefully inflicted (excluding poisoning) accounted for 13% (n = 3,633) of all injury hospitalizations in the 20 to 34 year age group. This age group represented the highest number of injury hospitalizations due to homicide and injury purposefully inflicted (excluding poisoning).

Persons between the ages of 35 and 64 years accounted for 30% (n = 58,922) of all injury hospitalizations in 2004–2005. The most common specified causes of injury hospitalization in this age group were unintentional falls (46%, n = 27,360). The second most common cause was motor vehicle collisions (17%, n = 10,220).

Persons aged 65 years and over accounted for 41% (n = 80,051) of all injury hospitalizations in 2004–2005. This age group represented the largest proportion of all injury hospitalizations. For this age group, unintentional falls accounted for 84% (n = 67,478) of all injury hospitalizations. Persons in this age group accounted for 60% of all unintentional fall hospitalizations in 2004–2005.

Unintentional Falls

In 2004–2005, more than one-half (57%, $n = 112,846$) of all injury hospitalizations were due to unintentional falls. These injuries accounted for 1,349,919 days in hospital in 2004–2005. This represented 69% of all patient days in hospital due to injury, in 2004–2005.

There were 5,486 in-hospital deaths among those hospitalized due to an unintentional fall in 2004–2005, representing over three-quarters of all injury in-hospital deaths. Those with fall-related injuries stayed in hospital for an average of 12.0 days. However those who died due to unintentional falls stayed in hospital for an average of 20.0 days in 2004–2005.

The most common specified cause of unintentional falls among all cases was slipping, tripping and stumbling ($n = 32,623$) representing 29% of all unintentional falls. This was the most common type of fall for all age groups, with the exception of children and youth. Among cases under 20 years of age, the most common type of fall was a fall from one level to another ($n = 4,433$) representing 38% of all unintentional falls ($n = 11,696$) in this age group.

Motor Vehicle Collisions

In 2004–2005, motor vehicle collisions accounted for 14% ($n = 26,676$) of all injury hospitalizations. Motor vehicle collisions were also responsible for 226,640 in-hospital days in 2004–2005 (12% of all days in hospital due to injury). There were 651 in-hospital deaths in 2004–2005 among those hospitalized due to motor vehicle collisions, representing 9% of all injury in-hospital deaths.

Motor vehicle traffic collisions accounted for 72% of all motor vehicle collision related hospitalizations ($n = 19,274$). Of all motor vehicle traffic related collisions, 2% died in hospital in 2004–2005 ($n = 569$). However of all motor vehicle non-traffic collisions in 2004–2005, 1% died in hospital ($n = 64$).

In 2004–2005, over one-half (54%, $n = 14,285$) of the injured persons hospitalized due to a motor vehicle collision were drivers. Of all motor vehicle traffic related hospitalizations in 2004–2005, 51% of injured persons were drivers ($n = 9,786$), 23% were passengers ($n = 4,386$), 13% were pedestrians ($n = 2,507$), and 4% ($n = 765$) were cyclists. In addition to the 2,507 pedestrians hospitalized due to motor vehicle collisions, there were 34 pedestrians injured at railways, 397 related to motor vehicle non-traffic incidents, and 179 with other causes, for a total of 3,117 pedestrian injury admissions in 2004–2005.

Injuries involving motorcycles (due to motor vehicle collisions traffic and non-traffic) accounted for a total of 2,859 hospitalizations in 2004–2005. Of those, 2,652 were drivers and 207 were passengers.

Injury Purposely Inflicted by Another Person

In 2004–2005, there were 8,422 injury hospitalizations due to injury purposely inflicted by another person (assault), accounting for 4% of all injury hospitalizations, and resulting in 41,760 patient days in hospital. This represented 2% of all days in hospital due to injury. The mean LOS in hospital was 5 days. Of these cases, 93 died while in hospital in 2004–2005, representing 1% of all injury in-hospital deaths. Persons aged 20 to 34 years comprised the greatest proportion of all assault-related injury hospitalizations (42%, n = 3,564).

Conclusion

Injuries have a major impact on the health and wellbeing of Canadians, representing a significant burden in terms of mortality, morbidity and economic cost. Injury is the leading cause of death in Canada among those under the age of 45 years and is a serious cause of disability.

Injuries, intentional and unintentional, are a large and neglected health problem in all regions of the world, accounting for 16% of the global burden of disease in 1998.¹ In Canada and the United States, injuries are the leading cause of death among those between the ages of 1 and 44 years, as they are in many other countries including Taiwan, Thailand, Latin America, and China.^{2, 3, 4, 5} Trauma is increasingly recognized as a global public health concern. At the same time, injuries are also considered one of the most preventable of major health problems; it has been estimated that 90% of injuries are preventable.⁶

Trauma registries play an important role in decreasing morbidity and mortality by providing accurate and comprehensive information on injury. Trauma care can be improved through the accumulation and assessment of local, regional, provincial and national trauma statistics.⁷ The prime objectives of registries are to collate information collected from defined groups over time that may be used toward:

- The prevention or treatment of disease or injury;
- The provision of care;
- The monitoring of changing patterns of disease or treatments; and
- The evaluation and planning of services provided.

To this end, the National Trauma Registry has developed an on line electronic reporting application, to provide improved access to national hospitalized injury statistics. The use of this tool will enable a greater understanding of the problem of injury in Canada. If you would like access to the electronic reporting application please go to

www.cihi.ca/ntr.

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This *National Trauma Registry 2006 Injury Hospitalizations Highlights Report* was prepared at CIHI under the direction of Caroline Heick, Director, Health Services Information, by:

- Consolata Oketch, Senior Analyst, Clinical Registries
- Ali Moses McKeag, Program Lead, Clinical Registries
- Margaret Keresteci, Manager, Clinical Registries

Questions regarding this report should be directed to:

Ali Moses McKeag
Program Lead, Clinical Registries
Canadian Institute for Health Information
90 Eglinton Avenue East, Suite 300
Toronto, Ontario M4P 2Y3

Phone: 416-481-2002 ext. 3554

Fax: 416-481-2950

email: ntr@cihi.ca

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