

CHIRPP INJURY BRIEF

Canadian Hospitals Injury Reporting and Prevention Program



Unintentional Drowning and Near-Drowning, 1990-2003, Ages 0-14 years

SOURCE OF THE STATISTICS

Injury data were obtained from the database of the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP). CHIRPP is an injury surveillance system operating in the emergency departments of 10 pediatric and 4 general hospitals in Canada. Data collection began in April 1990 at the pediatric hospitals and between 1991 and 1995 in the general hospitals. CHIRPP is a program of the Injury and Child Maltreatment Section of the Health Surveillance and Epidemiology Division, Public Health Agency of Canada.

Briefs and reports are updated when there is reason to believe the injuries or circumstances surrounding the injuries have changed. For example, the report of injuries associated with a specific product would be updated if the manufacturing regulations for the product are changed to include a new safety element. There is no need to update reports on a regular basis because the data collection sites are not a representative sample of all Canadian hospitals. Frequent updates would simply increase the number of records included in the report but not necessarily result in any change in the patterns and distributions found.

LIMITATIONS

It is important to note that the injuries described do not represent all injuries in Canada, but only those seen at the emergency departments of the 14 hospitals in the CHIRPP network. Since most of the data comes from the pediatric hospitals, which are in major cities, injuries suffered by the following people are under-represented in the CHIRPP database: older teenagers and adults, who are seen at general hospitals; native people; and people who live in rural areas. Fatal injuries are also under-represented in the CHIRPP database because the emergency department data do not capture people who died before they could be taken to hospital or those who died after being admitted.

INCLUSION AND EXCLUSION CRITERIA

A June 2005 search of the CHIRPP database for cases of drowning and near-drowning (ages 0-14 years; 1,051,174 records total, spanning 1990-2003) was conducted. Specifically, the CHIRPP nature of injury code for drowning, near-drowning or immersion (code 51) was searched for cases involving children and youth less than 180 months old. Cases involving self-inflicted injuries, assault and those of undetermined intent were removed. The search identified a total of 631 records.

RECOMMENDED CITATION

Injury briefs and reports and data from them may be copied and circulated freely provided that the source is acknowledged. The following citation is recommended:

Health Surveillance and Epidemiology Division (Public Health Agency of Canada). *Unintentional Drowning and Near-Drowning: Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) database, 1990-2003 (cumulative to June 2005), Children and Youth, 0-14 years, 631 records.*

FOR MORE INFORMATION

Please contact the Injury and Child Maltreatment Section, Health Surveillance and Epidemiology Division, by PHONE at (613) 957-4689, by FAX at (613) 941-9927 or visit our website at <http://www.phac-aspc.gc.ca/inj-bles/>

APPENDIX

Additional data are provided in the appendix. Mortality data are from Statistics Canada and hospitalization data are from the Canadian Institute for Health Information (CIHI). Analysis was done by the Health Surveillance and Epidemiology Division, Public Health Agency of Canada.



Overall and temporal Patterns

A total of 631 cases were identified, which represents 0.06% of all unintentional cases in CHIRPP, ages 0-179 months, over the same time period. Half (50.6%) of the incidents occurred in June/July and 36.3% happened on the weekend. Of the cases where the time of day was reported (68.3%), about one-quarter (26%) occurred between 4:00 pm and 5:59 pm.

Age and sex distribution

Table 1 provides details of the age and sex distribution. Infants were most frequent at 121.8 cases per 100,000 CHIRPP records of all types. The median age was 3.92 years, the interquartile range (25th and 75th percentiles) was 2.08 to 8.08 years, and the range was 0-177 months. There was a preponderance of males (58.3%).

Location

Table 2 shows the locations where the drowning events occurred. About one-third were in private homes and another third in pools of sports/recreation/commercial facilities. Of the cases occurring in private homes, 39% happened in the bathroom.

Disposition

Table 3 shows the treatment the patient received in the emergency department. Over half of the patients were admitted to hospital.

Table 1. Age and sex distribution of unintentional drowning and near-drowning cases, CHIRPP database as of June 2005 (1990-2003), ages 0-14 years

Age (years)	# cases (%)	#/100,000 CHIRPP ¹	% male	% male CHIRPP ²
0-11 months	62 (9.8)	121.8	43.6	53.9
1	85 (13.5)	79.3	49.4	56.0
2-4	219 (34.7)	90.2	61.6	57.5
5-9	158 (25.0)	52.9	63.9	58.5
10-14	107 (17.0)	30.4	58.9	61.4
Total	631 (100.0)	60.0	58.3	58.8

¹ Because CHIRPP collects information from ten children's hospitals and only five of the general hospitals, there is a high number of young children in the database. Using cases per 100,000 within an age group (instead of percentage by age group) adjusts for this uneven distribution.

² The proportion of males in the entire CHIRPP database for the given age group.

Table 2. Location, unintentional drowning and near-drowning cases, CHIRPP database as of June 2005 (1990-2003), ages 0-14 years

Location	# cases (%)
Private Home	224 (35.5)
patients own	176
<i>bathroom</i>	82
<i>yard</i>	44
<i>pool</i>	36
<i>other</i>	5
<i>unknown area</i>	9
other	48
<i>yard</i>	22
<i>pool</i>	18
<i>bathroom</i>	5
<i>other</i>	0
<i>unknown area</i>	3
Pool of Sports/Recreation/Commercial Facility	216 (34.2)
Natural body of water (excl. public park)	92 (14.6)
Public Park	22 (3.5)
pool	8
natural body of water	6
playground	2
unknown	6
School	10 (1.6)
pool	6
playground	2
unknown	2
Other/unknown	67 (10.6)
Total	631 (100.0)

Table 3. Treatment received in the emergency department, unintentional drowning and near-drowning cases, CHIRPP database as of June 2005 (1990-2003), ages 0-14 years

Disposition	# cases (%)	% cases CHIRPP ¹
Left without being seen	0 (0.0)	1.0
Advice only	76 (12.0)	21.2
Treated, medical follow-up if necessary	75 (11.9)	37.1
Treated, medical follow-up required	19 (3.0)	33.6
Short stay, observed in ED	71 (11.3)	1.7
Admitted to hospital	360 (57.1)	5.5
Fatal	30 (4.7)	<0.1
Unknown	0 (0.0)	<0.1
Total	631 (100.0)	100.0

¹ The proportion of cases in the entire CHIRPP database for the given disposition, over the same time period, ages 0-14 years.

APPENDIX
Mortality and Hospitalization Data

Table A1. Unintentional drowning mortality rates ¹, Canada, 1996-2002, Ages 0-14 years, both sexes

Year	Rate ²
1996	0.99
1997	1.04
1998	1.04
1999	0.98
2000	0.89
2001	0.70
2002	0.83

¹ Data source: Statistics Canada, analyzed by the Health Surveillance and Epidemiology Division, Public Health Agency of Canada

² Rate per 100,000 population, age-standardized to the population of Canada, 1991

Table A2. Unintentional drowning-related hospitalization rates ¹, Canada, 1996-1997 to 2002-2003 (fiscal years), Ages 0-14 years, both sexes

Year	Rate ²
1996	3.19
1997	2.95
1998	3.04
1999	2.71
2000	2.46
2001	2.56
2002	2.54

¹ Data source: Canadian Institute for Health Information, analyzed by the Health Surveillance and Epidemiology Division, Public Health Agency of Canada

² Rate per 100,000 population, age-standardized to the population of Canada, 1991