

CHIRPP INJURY BRIEF

Canadian Hospitals Injury Reporting and Prevention Program



Injuries associated with cheerleading

1990-2003, ages 5 years and older

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, Centre for Health Promotion, 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 Sept. 2005 search of the CHIRPP database (ages 5 years and older, 1,052,525 records total, spanning 1990-2003) for injuries associated with cheerleading (CHIRPP code 1154) was conducted. Cases were then reviewed individually to remove irrelevant records (e.g. "play cheerleading", "cheerleading coach"). Practices, games and competitions were included. The search identified a total of 595 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). *Injuries associated with cheerleading*: Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) database, 1990-2003 (cumulative to Sept. 2005), Ages 5 years and older, 595 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/>



Overall Pattern

Between 1990 and 2003, 595 cases were identified. This represents 0.13% of all CHIRPP cases for girls and less than 0.1% for boys over the same time period. Table 1 shows the proportion of cheerleading cases by year from 1993-2003. Data for 1990-1992 are not reported due to issues of data completeness in the start-up years of CHIRPP. Cheerleading injuries as a proportion of all injuries have remained relatively constant over the 10 year period.

Table 1. Cheerleading cases as a proportion of all CHIRPP cases, ages 5 years and older, both sexes, 1990-2003

Year	# records/100,000 ¹
1990	NA
1991	NA
1992	NA
1993	61.9
1994	66.3
1995	42.8
1996	60.0
1997	66.3
1998	52.3
1999	56.6
2000	55.3
2001	68.1
2002	64.8
2003	80.5

¹ Number of cases per 100,000 CHIRPP cases of all types, ages 5 years and older, for the given year

Age and sex distribution

Table 2 provides details of the age and sex distribution. Most (93.6%) cases involved girls. Females 15-19 years were most frequent at 590.3/100,000 CHIRPP records of all types (females). Overall, the median age was 15.7 years and the interquartile range (25th and 75th percentiles) was 14.4 to 17.2 years.

Table 2. Age and sex distribution of patients with cheerleading-associated injuries CHIRPP database, 1990-2003, 5 years and older

Age (months)	# cases (%)	% female	#/100,000 CHIRPP Females ¹	#/100,000 CHIRPP Males ¹
5-9	10 (1.7)	70.0	5.6	1.7
10-14	202 (33.9)	97.0	138.5	2.7
15-19	335 (56.3)	96.4	590.3	12.8
20+	48 (8.1)	64.6	33.6	11.9
Total	595 (100.0)	93.6	134.6	6.0

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.

Location

Table 3 shows the distribution of locations where the injury occurred. Almost three-quarters happened at school.

Table 3. Location of cheerleading-related injuries, CHIRPP, 1990-2003, ages 5 years and older

Location	# cases (%)
School	439 (73.8)
Sports facility	33 (5.5)
Public park	13 (2.2)
Private home	12 (2.0)
Other	27 (4.5)
Unknown	71 (11.9)
Total	595 (100.0)

Injuries

Table 4 shows the body region and the nature of injury. The upper extremity is the most frequently injured region. Fractures represent about 16% of all injuries and concussions 2.4%.

Table 4. Body part and nature of injury, cheerleading-related injuries, CHIRPP, 1990-2003, 5 years and older

Body part ¹ nature of injury	Number of cases (%)
Upper Extremity fracture, dislocation sprain, strain bruise, abrasion other upper extremity	220 (37.0) 67 61 61 31
Head, Face, Neck minor closed head injury concussion facial fracture eye injury skull fracture dental other head, face, neck	159 (26.7) 22 14 12 4 1 1 105
Lower Extremity sprain, strain bruise, abrasion fracture other lower extremity	153 (25.7) 71 38 23 21
Trunk back sprain, strain spinal fracture internal abdominal other trunk	53 (8.9) 11 2 1 39
Other/unknown	10 (1.7)
Total	595 (100.0)

¹ CHIRPP allows the reporting of up to 3 injuries. This table reports on the first, most serious injury

Month, day and time of day

One-third of the incidents occurred in October-November and over one-half (52.6%) on a Tuesday, Wednesday or Thursday. Incidents peaked (18.3%) during the period from 4:00-4:59 pm.

Mode of injury and direct cause

At least one-quarter of the incidents involved a fall from a height while attempting stunts. Another person was the direct cause of the injury in 39% of cases and a surface (floor, grass, sand, etc.) in 32%.

Treatment in Emergency

Table 5 depicts the distribution of the treatment received in the emergency department. One-quarter were treated with medical follow-up required and 2.2% were admitted to hospital.

Table 5. Treatment in the emergency department, cheerleading injuries, CHIRPP, 1990-2003, 5 years and older

Disposition	# cases (%)
Left without being seen	8 (1.3)
Advice only	123 (20.7)
Treated, medical follow-up if necessary	299 (50.3)
Treated, medical follow-up required	144 (24.2)
Short stay, observed in ED	8 (1.3)
Admitted to hospital	13 (2.2)
Fatal	0 (0.0)
Total	595 (100.0)