

CHIRPP INJURY BRIEF

Canadian Hospitals Injury Reporting and Prevention Program



INJURIES ASSOCIATED WITH MOTORIZED RIDE-ON TOYS

CHIRPP, As of September 2006, Ages 1-9 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, Center 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 September 2006 search of the CHIRPP database (ages 1-9 years, 725,948 records total) for injuries associated with motorized ride-on toys was conducted. Specifically, any of the six factor code fields containing the CHIRPP code for ride-on toys (583) were selected. The narratives of these records were then searched to identify any of the following text strings: 'MOTOR', 'JEEP', 'POWER WHEELS', 'BARBIE', 'CADILLAC', 'ELECTRIC', 'BATTERY' and '4-WHEELER'. This final dataset was then reviewed manually to confirm the cases.

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 Motorized Ride-On Toys*: Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) database, As of September 2006, ages 1-9 years, 33 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

Overall, 33 cases were identified, which represents 0.2% of all toy-related injuries in the same age-range.

Temporal pattern

Table 1 shows the temporal pattern. There has been a slight, but not statistically significant ($p=0.19$), increase in the number of cases in 2001-2003 compared to 1997-2000.

Table 1. Proportion of cases by period, Injuries associated with motorized ride-on toys, CHIRPP, 1990-2003, ages 1-9 years.

Year ¹	# cases	# cases/100,000 ²
1990-1996	5	1.6
1997-2000	14	6.9
2001-2003	13	8.8

¹ 2004/2005 are incomplete

² The number of cases per 100,000 CHIRPP cases of all types for the given period

Age and sex distribution

Table 2 provides details of the age and sex distribution. The age-specific proportion of motorized ride-on toy related injuries was highest among children 2-4 years old (6.6 cases per 100,000 same-aged CHIRPP cases). Overall, the median age was 4.1 years (the median age for all toy-related injuries is 3.6 years). There was a preponderance of males (69.7%).

Table 2. Injuries associated with motorized ride-on toys, age and sex distribution, CHIRPP database, As of September 2006, ages 1-9 years.

Agegroup (years)	# cases (%)	#/100,000 CHIRPP ¹	% male (% male all TOYS) ²
1	5 (15.2)	4.2	40.0 (62.2)
2-4	18 (54.6)	6.6	72.2 (63.5)
5-9	10 (30.3)	3.0	80.0 (63.0)
Total	33 (100.0)	4.5	69.7 (63.1)

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 percentage of males in all toy-related cases, for the given age group

Circumstances

Table 3 shows the distribution of specific circumstances of the injury event. About Two-thirds of the patients fell off of the toy.

Table 3. Circumstances of motorized ride-on toy-related injuries, CHIRPP, As of September 2006, ages 1-9 years

Circumstance	# cases (%)
Patient fell off toy, rollover	21 (63.6)
Pedestrian ¹	5 (15.2)
Patient injured while riding (did not fall off)	4 (12.1)
Collision with fixed object	2 (6.1)
Product malfunction	1 (3.0)
Total	33 (100.0)

¹ Another child playing with a child on the toy or another child playing in the vicinity

Injuries

Table 4 depicts the main injuries sustained (first reported injury). Almost half of the incidents involved the head and face. Just under one-third (27%) of cases were lacerations and 21% were fractures. There was one toe amputation.

Table 4. motorized ride-on toy-related injuries, CHIRPP, As of September 2006, ages 1-9 years

Body Region Nature of Injury	# cases (%)
Head and face facial laceration dental minor closed head injury, concussion scalp laceration Scalp, facial bruise/abrasion	15 (45.4) 4 3 2 3 3
Upper extremity fracture crushing injury (hand, fingers) bruise, abrasion, laceration (fingers)	11 (33.3) 6 2 3
Lower extremity bruise, abrasion (knee, foot) toe amputation shin fracture ankle sprain, strain	5 (15.2) 2 1 1 1
Trunk bruise, abrasion (pelvis, perineum)	2 (6.1) 2
Total	33 (100.0)

Treatment in Emergency

Table 5 shows the treatment received in the emergency department along with a comparison to all CHIRPP cases and all toy-related cases. Those injured while using motorized ride-on toys were 3 times more frequently admitted to hospital compared to injuries associated with all toys (9.1% vs. 3.1%).

Table 5. Motorized ride-on toy-related injuries, Treatment in emergency, CHIRPP, As of September 2006, ages 1-9 years

Disposition	# cases (%)	% cases CHIRPP ¹	% cases all TOYS ²
Left without being seen	0 (0.0)	1.3	1.5
Advice only	8 (24.2)	20.9	23.2
Treated, medical follow-up if necessary	8 (24.2)	38.0	41.4
Treated, medical follow-up required	13 (39.4)	32.7	30.3
Short stay, observed in ED	1 (3.0)	1.7	<1.0
Admitted to hospital	3 (9.1)	5.4	3.1
Fatal	0 (0.0)	<1.0	0.0
Unknown	0 (0.0)	<1.0	<1.0
Total	33 (100.0)	100.0	100.0

¹ Proportion of all CHIRPP cases (same age range and time frame) with the given disposition

² Proportion of all CHIRPP toy-related cases (same age range and time frame) with the given disposition

Hospital Admissions

Of the three children admitted to hospital, one had a toe amputation, one a minor closed head injury and the other a shin fracture.