

Lawn Mower Injuries

Each year in Ontario, more than 800 people visit an emergency department and about 80 people are hospitalized due to a lawn mower injury. May is the most common month of injury.

Results

During the 2004/05 fiscal year, there were a total of 815 visits to an emergency department and 79 hospitalizations due to contact with a powered lawn mower in Ontario. Males accounted for about 83% of emergency department visits and 80% of hospitalizations. For emergency department visits, a peak in the number of injuries was observed among males 32-68 years of age (Figure 1). Note that data for hospitalizations were not presented in some figures and tables due to small numbers.

For emergency department visits, injuries to the upper limb were most common, followed by injuries to the lower limb (Figure 2). More specifically, open wounds of hands or fingers were most frequent. In contrast, for hospitalizations, lower limb injuries were most frequent. In particular, traumatic amputations of the toes or fractures of the foot were common.

May was the most common month of injury, followed by June, July, and August. This pattern was observed for both emergency department visits and hospitalizations.

About 87% of persons who visited an emergency department due to contact with a powered lawn mower were discharged to their place of residence and 6% were admitted to the reporting facility. For hospitalized cases, nearly 94% were discharged home, 4% were discharged to another facility providing inpatient care (e.g., rehabilitation centre), and about 2% died after admission to hospital. The 79 hospitalized cases accounted for more than 350 days in acute care hospitals with an average length of stay of 4.7 days.

For lawn mower injuries, the provincial age-standardized rate for emergency department visits was 6.2 per 100,000 population and for hospitalizations was 0.6 per 100,000 population (Table 1).

FIGURE 1. Emergency department visits for lawn mower injuries by age and sex (Ontario, 2004/2005)

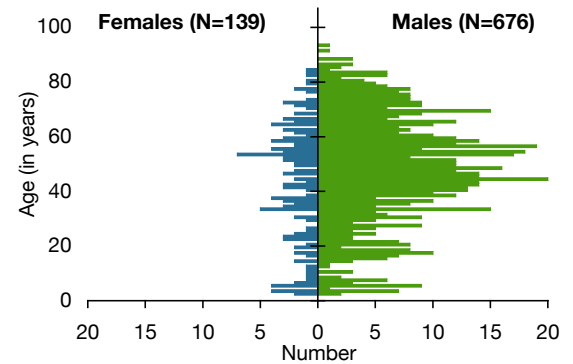
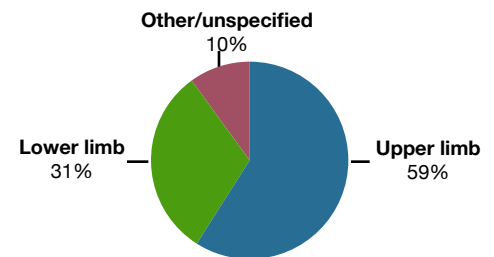


FIGURE 2. Site of injury for lawn mower injuries (Most responsible diagnosis, Ontario, 2004/05)

Emergency Department Visits



Hospitalizations

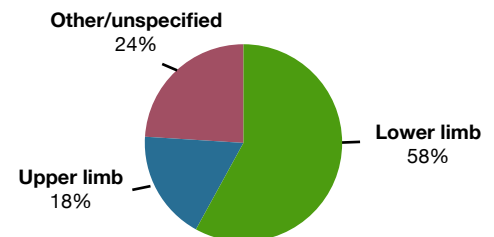


TABLE 1. Regional comparison of lawn mower injuries (Ontario, 2004/05)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits								
Number	172	114	77	189	71	126	60	815
Rate per 100,000 ^a	10.4	9.0	3.2	8.3	2.3	7.2	6.4	6.2
Average age (in years)	45	48	48	45	48	46	47	46
% male	83	91	86	81	79	91	78	83
Hospitalizations								
Number	26	13	8	14	<5	8	8	79
Rate per 100,000 ^a	1.6	1.1	0.3	0.7	*	0.5	0.8	0.6
Average age (in years)	37	38	39	32	*	37	54	38
% male	81	69	88	86	*	75	75	80

a. Age-standardized rate per 100,000 population. * Data suppressed due to small numbers. Note: Region of residence unknown/outside of Ontario for 6 emergency department visits.



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TABLE 2. Regional comparison of lawn mower injuries for select age groups (Ontario, 2004/05)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits - Rate per 100,000 population^a (Number)								
35-39 years	11.6 (13)	10.3 (9)	2.5 (5)	7.4 (13)	3.2 (7)	8.8 (11)	3.3 (<5)	6.1 (60)
40-44 years	7.7 (10)	13.0 (13)	4.7 (10)	11.3 (23)	1.4 (<5)	11.1 (16)	12.1 (9)	7.8 (85)
45-49 years	13.2 (16)	8.6 (8)	5.5 (10)	9.5 (17)	3.2 (6)	9.1 (12)	4.2 (<5)	7.6 (73)
50-54 years	17.9 (19)	9.8 (8)	5.3 (8)	16.1 (24)	3.0 (5)	8.7 (10)	12.7 (8)	9.9 (82)
55-59 years	21.3 (20)	6.9 (5)	7.1 (9)	18.3 (23)	5.6 (8)	11.8 (12)	7.1 (<5)	11.4 (82)
60-64 years	12.3 (9)	14.1 (8)	3.3 (<5)	14.2 (13)	3.8 (<5)	11.6 (9)	13.2 (6)	10.0 (54)
65-69 years	14.8 (9)	8.4 (<5)	7.1 (5)	14.5 (11)	9.7 (9)	12.7 (8)	10.3 (<5)	11.1 (50)

a. Age-specific rate per 100,000 population.

Note: Region of residence unknown/outside of Ontario for 5 emergency department visits among those 35-69 years of age.

By region, the lowest numbers and rates of emergency department visits and hospitalizations were observed in the Toronto region (Table 1). In contrast, the highest rates for both emergency department visits and hospitalizations were seen in the South West region.

In Ontario, the highest age-specific injury rates were observed among those over 50 years of age (Table 2). Regional variations were seen in the numbers and rates of injury by age group. For example, in the South West region, the highest injury rate was seen among the 55-59 year age group, compared to the East region where the highest rate for emergency department visits was observed among the 65-69 year age group.

Discussion

This Compass highlights patterns of emergency department visits and hospitalizations due to powered lawn mower injuries in Ontario. Few Canadian studies have examined injury patterns related to lawn mowers.¹⁻² While limb amputations and fractures are some of the most serious injuries sustained, cuts, bruises, sprains, strains, and burns are some of the most common injuries from lawn mower use. One recent study suggests that there was an increasing trend of lawn mower injuries in the United States in the last nine years.³

Lawn mower injuries can occur in a variety of settings, such as at home or the workplace (e.g., on a farm).¹⁻⁵ Several factors have been associated with lawn mower injuries, such as projectiles from debris under the mower hitting a body part or entering the eye, mowing on uneven ground, and carrying passengers on a riding lawn mower.^{1-3,5}

In an Ontario research study of lawn mower injuries among children, four recommendations for prevention were proposed: children under 15 years should not operate lawn mowers, children should not be in the yard when the grass is being cut, no passengers should be carried on a riding mower, and hard close-toed shoes should always be worn.¹

References

1. Chopra P, Soucy P, Laberge JM, Laberge L, Giguere L. Know before you mow: a review of lawn mower injuries in children, 1990-1998. *J Pediatr Surg* 2000;35:665-8.
2. Letts RM, Mardirosian A. Lawnmower injuries in children. *Can Med Assoc J* 1977;116:1151-3.
3. Costilla V, Bishai DM. Lawnmower injuries in the United States: 1996 to 2004. *Ann Emerg Med* 2006;47:567-73.
4. Canadian Agricultural Injury Surveillance Program (CAISP). *Agricultural Injuries in Canada for 1990-2000*. Kingston: CAISP, 2003.
5. Smith GA; Committee on Injury and Poison Prevention. Technical report: lawn mower-related injuries to children. *Pediatrics* 2001;107:E106.

Managing the risk

Mowing the lawn is a regular chore for homeowners. Here are some tips that can be used to help reduce the risks for injury:

- ❖ Wear long pants, non-slip safety toe footwear (not sandals or sneakers), eye and ear protection.
- ❖ Check the surroundings. Before mowing, check the area for rocks, debris, and other potential projectiles. Make sure that people stay well back and supervise children. Be sure to look behind you before backing up.
- ❖ Make sure the mower is in good working order. Consult the owner's manual. Check that the blades are sharp and secured, and that the discharge chute is clear. Use all safety devices, switches and guards as directed.
- ❖ Turn off (and unplug, if electric) and ensure the blades have stopped spinning before unclogging, cleaning or adjusting the mower.
- ❖ Mow the lawn when the grass is dry to avoid slipping and shocks (from electric mowers).
- ❖ Do not give children (or adults) rides on riding lawn mowers.
- ❖ When not in use, lawn mowers should be turned off and left inoperable, even for a short time. When finished using a riding mower, remove the ignition key and store out of the reach of children.

For Further Information

Safe Kids Canada
www.safekidscanada.ca
Canadian Centre for Occupational Health and Safety
www.ccohs.ca
Health Canada-It's Your Health-Garden Safety
www.hc-sc.gc.ca/iyh-vsv/life-vie/garden-jardin_e.html
Farm Safety Association
www.farmsafety.ca
Canadian Agricultural Injury Surveillance Program
www.caisp.ca
SMARTRISK
www.smartrisk.ca

Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and data for acute care hospitalizations were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2004/05 fiscal year. Injuries due to contact with a powered lawn mower were classified according to the International Classification of Diseases, 10th revision (ICD-10) using code W28. 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.