

Household machinery injuries

On average, each day over 30 people are seen in an emergency department for an injury from household machinery or a powered hand tool. Middle-aged males have the highest injury rate.

Results

For the purposes of this report, household injuries include those incidents involving contact with powered hand tools and household machinery, including blenders, powered can-openers, chain-saws, do-it-yourself tools, garden tools, hedge-trimmers, knives, sewing-machines, spin-dryers, and washing-machines.

During the 2005/06 fiscal year, there were a total of 10,504 emergency department visits and 275 hospitalizations for household injuries (See Methods Section for Data Sources). These numbers translate into provincial rates of 82.8 per 100,000 population for emergency department visits and 2.1 per 100,000 for hospitalizations (Table 1).

Males represented over 85% of emergency department visits and over 90% of hospitalizations. For emergency department visits and hospitalizations, peaks in the number of household machinery injuries were seen in middle aged adults (40-64 years of age) as well as in young adults aged 20-29 years (Figure 1).

Injuries to the upper limbs were the most common, accounting for 81% and 57% of emergency department visits and hospitalizations respectively. Injuries to the lower limbs were the next most common type of injury for emergency department visits as well as for those admitted to hospital, accounting for 12% and 27% of emergency department visits and hospital admissions respectively. Specifically, open wounds of the wrist and hand were the most commonly presented injuries for emergency department visits and traumatic amputation of the wrist and hand was the most frequently presented injury which required hospitalization (Figure 2).

Injury rates varied by region, with the highest overall rates reported in the northern region of the province. The south west region had the second highest rates of emergency department visits at 117.0 (Table 1).

FIGURE 1. Emergency department visits for household injuries by age and sex (Ontario, 2005/2006)

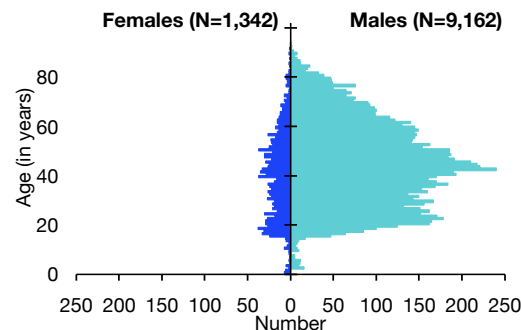
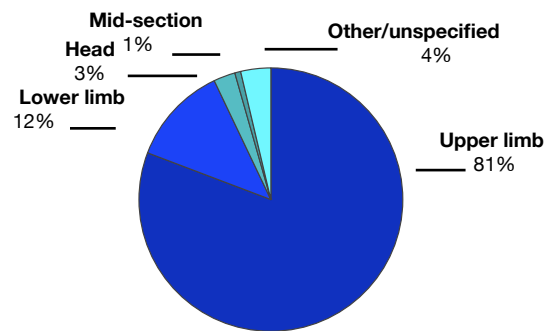


FIGURE 2. Nature of household injuries (Most responsible diagnosis, Ontario, 2005/2006)

Emergency Department Visits



Hospitalizations

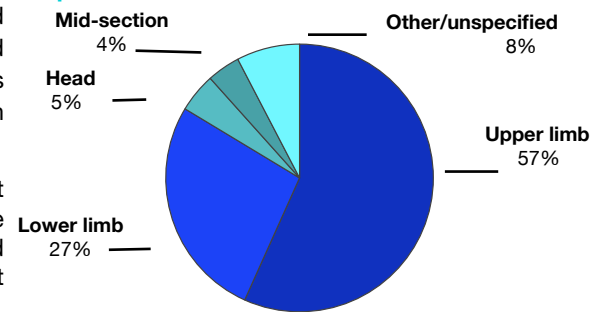


TABLE 1. Regional comparison of household injuries (Ontario, 2005/06)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits								
Number	1,861	1,264	1,426	1,915	1,103	1,556	1,236	10,504
Rate per 100,000 ^a	117.0	104.2	61.0	88.2	40.5	90.7	138.0	82.8
Average Age	42	43	41	42	42	44	45	43
% Male	87	89	86	88	83	89	89	87
Hospitalizations								
Number	44	33	55	34	41	32	30	275
Rate per 100,000 ^a	2.5	2.8	2.3	1.5	1.5	1.8	3.1	2.1
Average Age	47	42	43	40	37	44	51	43
% Male	91	91	96	91	93	91	97	93

a. Age-standardized rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 143 emergency department visits and 6 hospitalizations.



Ontario Injury Compass

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TABLE 2. Regional comparison of ER visits for household injuries in the adult population, by age group (Ontario, 2005/06)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits- Rate per 100,000^a								
40-44 years	158 (205)	134.2 (134)	77.6 (165)	121.5 (248)	68.8 (150)	104.3 (151)	217 (161)	113.2 (1226)
45-49 years	150.5 (182)	152 (141)	74.8 (135)	106.5 (191)	54.2 (103)	126.8 (167)	186.3 (133)	110.2 (1065)
50-54 years	146.1 (155)	135.3 (110)	72.6 (109)	97.1 (145)	56.2 (93)	124.4 (143)	172.8 (109)	105.2 (873)
55-59 years	160.1 (150)	129.9 (94)	75.3 (96)	108.7 (137)	50.1 (71)	137.3 (140)	183.9 (104)	111.7 (804)
60-64 years	143.5 (105)	133.7 (76)	92.4 (85)	130.8 (120)	57.9 (61)	144.7 (112)	162.4 (74)	118.8 (644)

a. Age-specific rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 143 emergency department visits.

For each region, middle aged adults represented the highest rates of emergency department visits (Table 2). Although not shown, young adults between 20 and 29 years of age also had a relatively high rate of both emergency department visits and hospitalizations in each region of Ontario.

Of the 1515 individuals who visited an emergency department for injuries due to household machinery, 95% were discharged to their place of residence. For hospitalized cases, over 10% were discharged to a home setting with support services and just under 5% were transferred to another facility providing inpatient hospital care, which includes acute, sub acute, and rehabilitation care. Approximately 85% were discharged home. Less than 1% of individuals died after arrival in the emergency department and less than 1% died after hospital admission. The 275 hospitalized cases accounted for more than 750 days in acute care hospitals with an average length of stay of 2.73 days.

Discussion

This Compass highlights patterns of emergency department visits and hospitalizations for injuries from household machinery use, including, but not limited to blenders, chain-saws, hedge-trimmers, knives, sewing-machines, and washing-machines in Ontario and its regions.

The ability to perform 'do it yourself' projects in the home is an excellent skill to have. It saves one the time and effort of having to hire outside help, in addition to saving money from having to pay a contractor to do the job (if the project is done correctly the first time)! Without the necessary training or education on how to use the power tools, machinery, and other equipment involved in home projects and daily tasks such as doing the laundry or hemming your favourite pair of pants, there is an increased risk of becoming injured. Even skilled trades people are at risk of becoming injured if tools and machinery are not used properly or maintained adequately. The following Managing the Risk section outlines ways in which public health can work with the community to help reduce the risk of injury related to the use of household machinery.

References

1. SMARTRISK. SMARTRISK No Regrets Youth Program. The Five Key Messages. www.smartrisknoregrets.ca

Managing the risk

❖ Buckle Up

- Ensure all hard hats, goggles, and other protective equipment is on securely and buckled up (when possible).
- Ensure all shoelaces, pant strings, and other loose articles are tied up securely.

❖ Look First

- Ensure the environment you are working in is free from clutter.
- Make sure there are no objects on the floor which could pose a tripping hazard.
- Exercise a large amount of caution when using power tools.

❖ Wear the Gear

- Ensure you, and all individuals working with you, are wearing the proper protective equipment. This includes, but is not limited to, safety goggles, hard hats or construction helmets, and work gloves.
- Become informed on what you need to be wearing to adequately protect yourself. Different projects will require different protective equipment.
- In addition, wear suitable clothing that will give you added protection when you are using power tools. For example, always wear long pants and steel-toed shoes.

❖ Get Trained

- Read all manuals before operating any machine, power tool, or piece of equipment.
- If operating heavy or dangerous machinery, get advice and supervision from an expert.
- If unsure how to use machinery, even after reading a manual, ask for help.
- Local colleges may offer vocational classes for the home handyman and home building stores often offer simple training courses. Learn building skills by volunteering under a skilled professional for an organization such as Habitat for Humanity. Understand when something is beyond your skill level and hire a professional.

❖ Be Sober

- Never operate machinery if you are overly tired, on drugs, heavy medication, or have been drinking.
- Devote 100% of your attention to the task at hand.

❖ For Further Information:

SMARTRISK

www.smartrisknoregrets.ca

www.smartrisk.ca

Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and acute care hospitalization data were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2005/06 fiscal year. ICD-10 coding (W29) was used to isolate all emergency department visits and hospitalizations for household injuries. 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. Deaths occurring outside of the hospital setting were not included in this analysis.