

Contact with hot water and food.

On average, each month, close to 700 people visit an emergency department for injuries from contact with hot water or food. The highest rates are found among young children.

Results

During the 2005/06 fiscal year, there were a total of 8,340 emergency department visits and 340 hospitalizations for injuries from contact with hot water and food. (See Methods Section for Data Sources). These numbers translate into provincial rates of 70.0 per 100,000 population for emergency department visits and 2.9 per 100,000 for hospitalizations (Table 1).

Overall, females represent a slightly higher proportion of emergency department visits, whereas males have a marginally higher representation of hospitalizations for injuries due to incidents involving contact with hot water and food. For emergency department visits, children under the age of 5 had the highest provincial numbers and rates, followed by teenagers and young adults aged 15 to 24. For hospitalizations, children under 5 years of age had the highest number and rates with all other age groups representing much lower rates.

For emergency department visits, burns and corrosions of the wrist and hand were the most common. Emergency department visits for burn and corrosion of the trunk, hip, lower limb, head, and neck were the next most common, all with relatively the same frequency. Burn and corrosion of the trunk was the most common type of injury for those being hospitalized, accounting for 28% of all hospital admissions (Figure 2).

Injury rates varied by region, with the highest rate of both emergency department visits and hospitalizations for injuries due to contact with hot water and food, reported in the Northern region of Ontario (Table 1).

Over 90% of individuals who visited an emergency department for injuries due to contact with hot water or food were discharged to their place of residence. For hospitalized cases, approximately 10% were transferred to another facility providing

FIGURE 1. Emergency department visits for injuries from contact with hot water and food by age and sex (Ontario, 2005/2006)

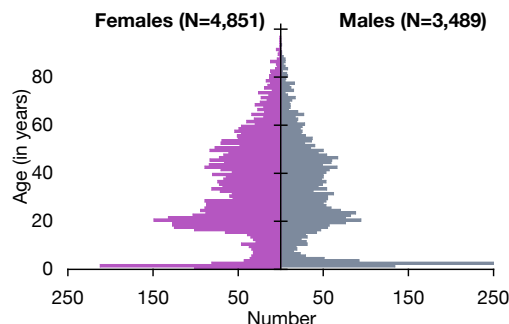
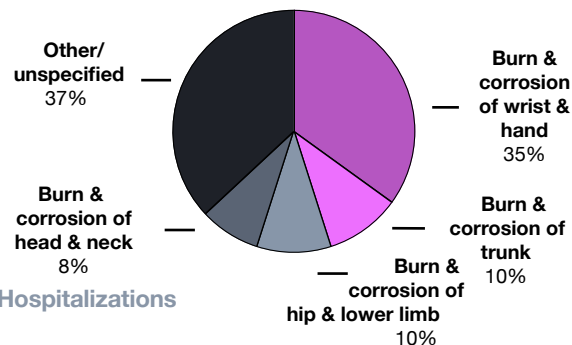


FIGURE 2. Nature of injuries due to contact with hot water and food (Most responsible diagnosis, Ontario, 2005/2006)

Emergency Department Visits



Hospitalizations

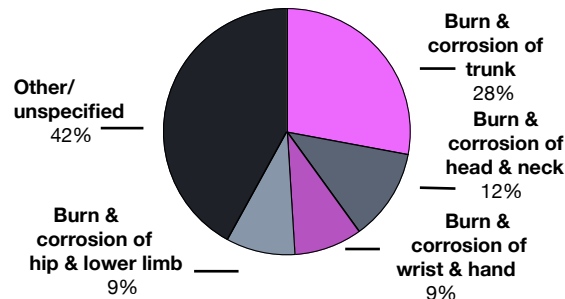
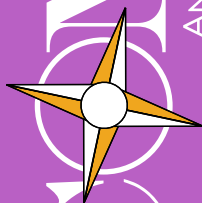


TABLE 1. Regional comparison of injuries from contact with hot water and food (Ontario, 2005/06)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits								
Number	1,370	954	1,131	1,262	1,462	1,186	846	8,340
Rate per 100,000 ^a	92.0	84.4	49.5	61.0	58.1	76.5	101.3	70.0
Average Age	32	32	30	30	32	32	35	32
% Male	37	41	45	43	43	41	42	42
Hospitalizations								
Number	34	36	48	47	104	31	36	340
Rate per 100,000 ^a	2.3	3.2	2.1	2.3	4.3	2.0	4.6	2.9
Average Age	36	34	23	26	25	33	32	28
% Male	47	58	58	38	54	58	67	54

a. Age-standardized rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 129 emergency department visits and <5 hospitalizations.



Ontario Injury Compass

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TABLE 2. Regional comparison of injuries from contact with hot water and food (Ontario, 2005/06)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits- Rate per 100,000^a (Number)								
0-4 years	190.5 (159)	187.8 (114)	100 (145)	156.5 (188)	180.9 (260)	163.4 (138)	161.4 (68)	160.8 (1093)
5-9 years	31.2 (31)	32.8 (24)	33.7 (55)	34.2 (50)	36.9 (55)	37.6 (37)	40.8 (21)	35.2 (275)
10-14 years	63.7 (69)	35.9 (29)	31 (52)	36.2 (58)	35.7 (53)	29.2 (32)	57.6 (34)	40.4 (337)
15-19 years	132.9 (147)	147.6 (121)	83.8 (135)	91.4 (144)	48.2 (71)	141 (154)	147.3 (91)	105.4 (874)
20-24 years	133.4 (148)	135 (109)	77.7 (127)	98.5 (141)	76.1 (137)	135.7 (150)	193.5 (111)	111.2 (941)
Hospitalizations- Rate per 100,000^a (Number)								
0-4 years	9.6 (8)	19.8 (12)	13.8 (20)	19.1 (23)	28.5 (41)	10.7 (9)	26.1 (11)	18.5 (126)
5-9 years	0 (<5)	0 (<5)	0.6 (<5)	1.4 (<5)	6.7 (10)	1 (<5)	0 (<5)	1.8 (14)
10-14 years	0.9 (<5)	0 (<5)	3.6 (6)	0.6 (<5)	0.7 (<5)	0.9 (<5)	0 (<5)	1.2 (10)
15-19 years	3.6 (<5)	1.2 (<5)	0 (<5)	0 (<5)	1.4 (<5)	2.7 (<5)	0 (<5)	1.2 (10)
20-24 years	1.8 (<5)	1.2 (<5)	0.6 (<5)	0.7 (<5)	2.8 (5)	0 (<5)	1.7 (<5)	1.3 (11)

a. Age-specific rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 129 emergency department visits and <5 hospitalizations.

inpatient hospital care, which includes acute, sub acute, and rehabilitation care. Approximately 50% were discharged home and another 35% were discharged home with support services. Fewer than 1% of individuals died after arrival in the emergency department and just over 1% died after hospital admission. The 340 hospitalized cases accounted for more than 2,941 days in acute care hospitals with an average length of stay of 8.65 days.

Discussion

This Compass highlights patterns of Ontario emergency department visits and hospitalizations for injuries from contact with hot water and food. Hot water vapour (steam) was also included in the analysis.

Children, in particular, are at a high risk of burns and scalds when in contact with hot liquid or food as their skin is thinner than an adult's and thus will burn more quickly and deeply than would the skin of an adult in contact with something of the same temperature.¹

A ten year epidemiological study of burns in Canadian children revealed that males and children younger than 5 years of age were at the highest risk of injury, and children 1 to 5 years of age were at the highest risk of death.²

Although this same study found that there has been a decline in injuries from burns for all age groups, this type of injury is, nonetheless, an issue for young children in Canada.²

As stated in an article focussing on community based interventions for scalds and burns in children, it is important that any prevention framework designed to address the issue of scalds and burns in children, be designed with prevention in mind.⁵

Community based interventions need to continue to be evaluated and should include effective strategies to reduce the incidence of childhood burns and scalds from hot water and food.

References

1. Safe Kids Canada. Scalds and Burns; 2008 www.safekidscanada.ca/SKCFForParents/.
2. Spinks A, Wasiak J, Cleland H, Beben N, Macpherson AK. Ten-year epidemiological study of pediatric burns in Canada. *J Burn Care Res* 2008; 29(3):482-8.
3. Lowell G, Quinlan K, Gottlieb LJ. Preventing unintentional scald burns: moving beyond tap water. *Pediatrics* 2008; 122(4):799-804.
4. Han RK, Ungar WJ, Macarthur C. Cost-effectiveness analysis of a proposed public health legislative/educational strategy to reduce tap water scald injuries in children. *Injury Prevention* 2007; 13(4):248-53.
5. Turner C, Spinks A, McClure R, Nixon J. Community-based interventions for the prevention of burns and scalds in children. *Cochrane Database Syst Rev* 2004; (3): CD004335.

Managing the risk

❖ Public Health professionals can work with local parent groups to ensure the following messages are communicated effectively and regularly:

- Keep children away from hot liquids, such as tea, coffee, soup, and hot water.
- Install a tap guard to prevent children from accessing the hot water.
- Keep children out of the way when cooking. For example, place them in a secure high chair, at the table, or use a safety gate to keep them out of the kitchen, altogether.
- Turn pot handles inward, toward the back of the stove.
- Cook on rear burners whenever possible.
- Keep children away from microwaves at all times.³
- For a bath, run cold water first and then gradually add hot until desired temperature is reached.
- Install mixing valves to control the temperature of hot water before it comes out of the taps.
- Check the water temperature before placing a child into the bath or before getting into the tub yourself.
- Seat your child away from the faucet handles in the bath.

❖ Public Health is encouraged to propose and support lower thermostat legislation settings and annual educational notices.⁴

- Thermostat settings on domestic water heaters should be such that they produce a temperature of 49 C for gas and oil-fired water heaters and 60 C for electric water heaters.

❖ Public Health is encouraged to work with utility companies on the practice of regular, mandatory domestic water heater inspections.

❖ For Further Information

Safe Kids Canada www.safekidscanada.ca

Public Health Agency of Canada www.phac-aspc.gc.ca

National Center for Injury Prevention and Control www.cdc.gov

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 (X10-X13) was used to isolate all emergency department visits and hospitalizations for injuries from contact with hot water and food. 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.