

# Drowning-Related ED Visits in Ontario: A focus on infants, children and youth

## Understanding the Issue

Children are naturally curious around the water, but do not understand the risks.

Infants, children and youth (those aged 0 - 14) are at a high risk of drowning for a number of reasons. Younger children are naturally curious around the water, but do not understand the associated risks. In addition, their smaller

lungs are susceptible to harm from a smaller amount of water when compared to adults. Older children may better understand the risks, but are more likely to take risks and tend to overestimate their ability. This Ontario Injury Compass highlights risk factors for drowning, as well as leading prevention strategies to address this injury issue.

## Risk Factors

### Age

Age is an important risk factor for drowning. Figure 1 demonstrates that the majority of emergency department (ED) visits in Ontario associated with drowning occurred among children 14 years and under (40%) during the 2005/06 - 2009/10 timeframe. Considering males and females combined, 1-4-year-olds accounted for 16%, followed by 5-9-year-olds at 10%, and 10-14-year olds 9%.

### Sex

Males are more likely than females to be involved in a drowning-related incident leading to an ED visit. Between 2005/06 and 2009/10, males accounted for 67% of ED visits in Ontario related to drowning, illustrated in Figure 1. This is consistent with fatality data, which indicates males drown more often than females.<sup>1</sup>

### Location

Infants, children and youth can be at risk around any source of water, even buckets, toilets and other sources containing small amounts. Table 1 provides analysis, by location, for incidents among children 14 years and younger, which required an ED visit between 2005/06 and 2009/10. Among infants (less than one year of age), 53% of ED visits associated with drownings involved a bathtub, in contrast with only 6.4% among 1-4 year olds. Children and youth (ages 1 - 14) were most commonly injured while swimming in a

FIGURE 1. ED Visits Associated with Drowning, MF combined, by age and sex, NACRS, Ontario, 2005/06 - 2009/10

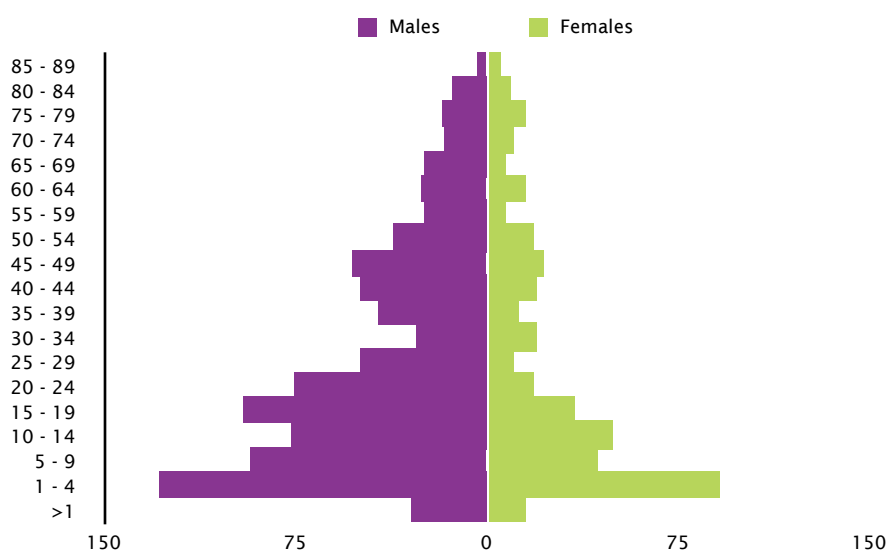


TABLE 1. ED Visits Associated with Drowning, MF combined, ages 0 - 14, NACRS, Ontario, 2005/06 - 2009/10

Age group (years)	Bathtub	While in Swimming Pool	Fall into Swimming Pool	While in Natural Water	Fall into Natural Water	Other	TOTALS
< 1	24	*	*	*	*	16	45
1 - 4	14	46	62	7	10	81	220
5 - 9	5	40	22	17	8	44	136
10 - 14	*	30	18	*	15	50	126
							527

\*Suppressed due to small number of cases or value of zero.

pool (24.1%) or following a fall into a pool (21.2%), as indicated in Table 1.

## Trends

### Drowning-related ED visits among infants, children and youth have remained stable in recent years.

Considering the time period between 2005/06 and 2009/10, the trend for drowning-related ED visits in Ontario appears to be relatively stable, as illustrated in Figure 2. This trend emphasizes the importance of continually improving prevention efforts.

## Leading Prevention Strategies

### Four-Sided Pool Fencing

Evidence suggests the majority of drownings that occur in backyard swimming pools could be prevented with four-sided pool fencing.<sup>2</sup> To be most effective, fencing should completely enclose the pool and leave no direct access to the pool from the house. Fencing should be at least four feet high, and have a self-closing, self-latching gate. For more information on pool fencing guidelines and legislation visit:

[www.parachutecanada.org](http://www.parachutecanada.org)

### Swimming Lessons

Swimming lessons provide many benefits for children. These include: water safety training, increased confidence around the water, and improved swimming skills. Becoming a good swimmer does not eliminate drowning risks; all children still need to be actively supervised around water.

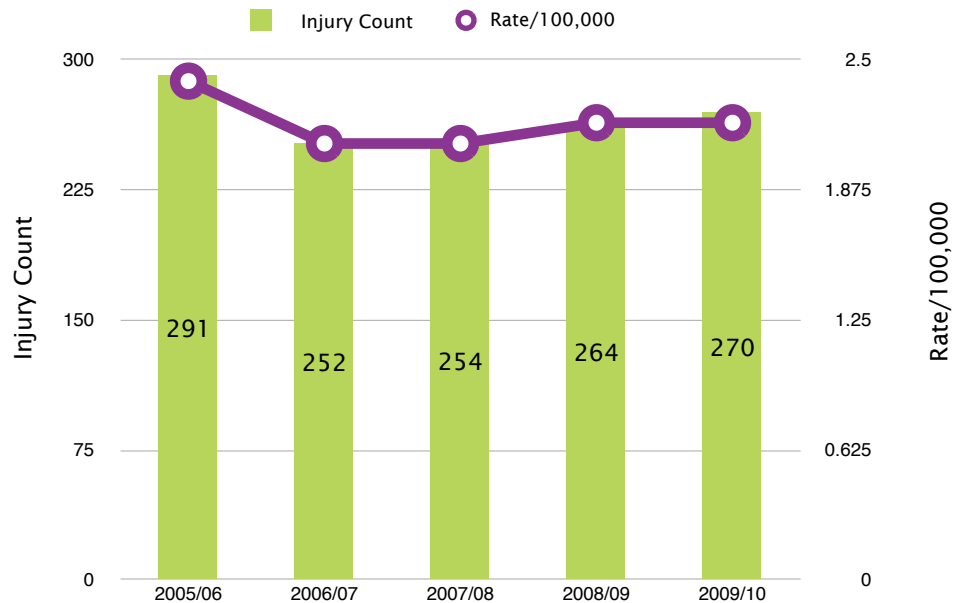
### Active Supervision

Regardless of water depth, swimming ability or age, all children should be supervised around water. As Table 1 shows, many drowning-related injuries follow a fall into a water source. If a child falls into water, having an adult close by can make all the difference.

### Lifejackets

Lifejackets help prevent injury and death associated with drowning, es-

FIGURE 2. ED Visits Associated with Drowning, MF combined, all ages, NACRS, Ontario, 2005/06 - 2009/10



pecially considering the number of incidents that occur due to an unexpected fall into water. Children should wear a properly fitting life-jacket when they are in, on or around the water.

### CPR Training

While not a primary prevention effort, CPR training is encouraged for parents and supervisors. If a child gets into trouble in the water, having CPR training can help to ensure the best possible outcome of an incident.

## Methodology

Emergency room data were obtained from the National Ambulatory Care Reporting System (NACRS) at the Canadian Institute for Health Information (CIHI) for fiscal years (April 1 - March 31) 2005/06 through 2009/10. The Public Health Agency of Canada

provided the data and analysis for this report. The International Statistical Classification of Disease and Related Health Problems, 10th Revision (ICD-10) is an international standard for classifying diseases and external cause of injury. ICD-10 coding was used to isolate all ED visits related to drowning (W65 - W74).

## References

1. WHO Fact Sheet on Drowning (2014). Retrieved May 23, 2014, retrieved from <http://www.who.int/mediacentre/factsheets/fs347/en/>
2. Thompson, D.C., & Rivara, F.P. (2000). Pool fencing for preventing drowning in children. Cochrane Database Systematic Review, CD001047.

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