

Hospitalizations Associated with Drowning in Canada: 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 about the water, but unable to

understand the associated danger. In addition, their lungs are small compared to adults. A little bit of water is all it takes to put them at risk. Older children are better able to understand the safety concerns, but are more likely to take risks and overestimate their ability.

FIGURE 1. Hospitalizations Associated with Drowning, MF combined, by age and sex, HMDB 2006/07 - 2010/11

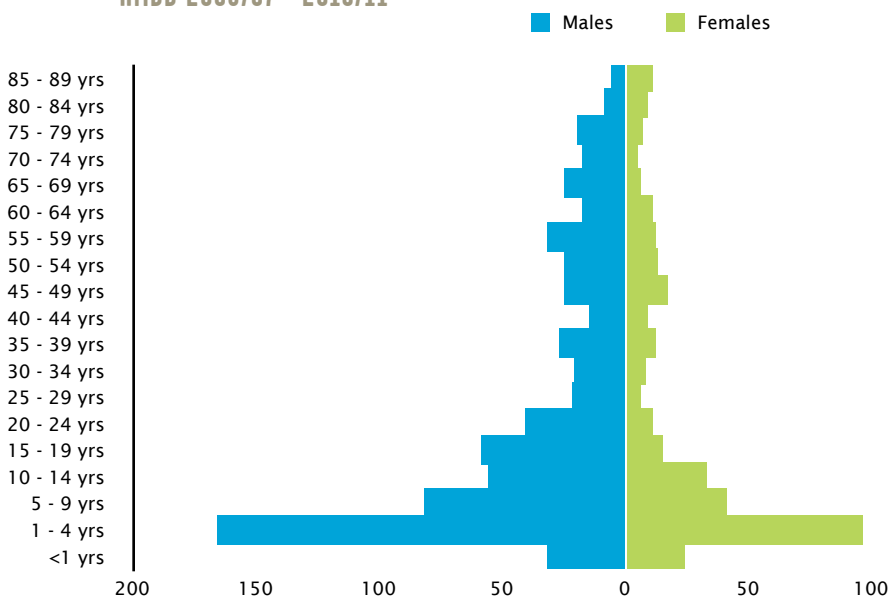


TABLE 1. Hospitalizations Associated with Drowning, MF combined, by age, HMDB 2006/07 - 2010/11

Age group (years)	Bathtub	While in Swimming Pool	Fall into Swimming Pool	While in Natural Water	Fall into Natural Water	Other Specified**	Unspecified	TOTALS
< 1	42	*	*	*	*	5	9	56
1 - 4	23	83	58	12	14	16	56	262
5 - 9	5	68	10	9	*	*	25	123
10 - 14	5	49	8	8	8	*	10	89

*Suppressed due to small number of cases or value of zero.
**E.g., Buckets, Toilets

Identifying Risk Factors

Age

Age is an important risk factor for drowning. As illustrated in Figure 1, the majority of hospital admissions associated with drowning are among those aged 1 - 4. Considering males and females combined, those aged 1 - 4 represented 24% of hospitalizations associated with drowning between 2006 and 2010, those aged 5 - 9 represented 11% and those aged 10 - 14 represented 8%.

Sex

In terms of sex, males are more likely to be admitted to the hospital for a drowning-related incident than females. Overall, males represented 66% of hospitalizations between 2006 and 2010. This is consistent with fatality data, where males also drown more often than females.¹

Location

Infants, children and youth can be injured around any source of water, even buckets, toilets and other sources containing small amounts. This analysis shows the most common locations for incidents that required admission to the hospital. As shown in Table 1, 75% of hospitalizations associated with drownings among infants (less than 1 year of age) involved a bathtub, as opposed to only 9% among 1-4 year olds. Children and youth were most commonly injured (59%) while

swimming in a pool, or due to a fall into a pool, as indicated in Table 1.

Trends

Hospitalizations among infants, children and youth have remained stable in recent years.

Considering all hospital admissions associated with drowning among infants, children and youth over the past five years for which data is available, there appears to be a relatively stable trend, as shown in Figure 2. This illustrates the importance of continually improving prevention efforts.

Leading Prevention Strategies

Four Sided Pool Fencing

Research estimates the majority of drownings that occur in backyard swimming pools could be prevented with four-sided pool fencing.² The safest fence should completely enclose the pool, leaving no direct entrance from the house. It should be a minimum of four feet high, and have a self-closing and self-latching gate. Visit www.parachute.ca for more information on pool fencing legislation.

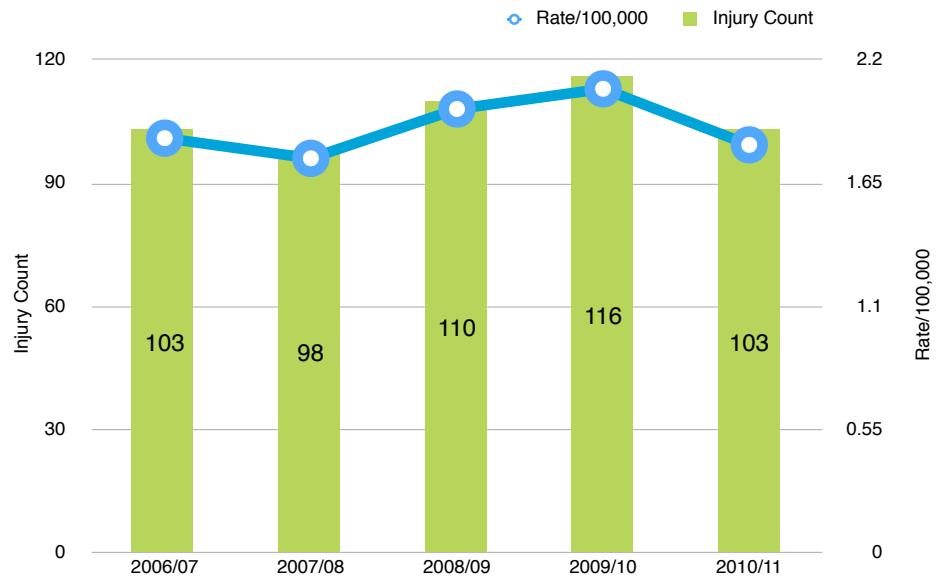
Swimming Lessons

Swimming lessons provide many benefits for children, including water safety training, improved confidence around the water, and improved swimming skills. Becoming a good swimmer does not eliminate the risk; all children need to be supervised by an adult around water.

Active Supervision

Regardless of water depth, swimming ability or age, all children should be supervised around water. As shown in Table 1, many incidents occur because of a fall into a pool or water. If that happens, having an

FIGURE 2. Hospitalizations Associated with Drowning, MF combined, ages 0 -14, HMDB 2006/07 - 2010/11



adult close by can make all the difference.

Lifejackets

Lifejackets help prevent injury and death associated with drowning, especially considering the number of incidents that occur due to an unexpected fall. Children should wear a properly fitting lifejacket when they are in, on or around the water.

CPR Training

While not a primary prevention effort, CPR training is encouraged for all 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

Hospital separation data were obtained from the Hospital Morbidity Database (HMDB) for fiscal (April 1 - March 31) years 2006-07 through 2010-11, collected by the Canadian

Institute for Health Information. The **Public Health Agency of Canada** provided the data and the 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 hospitalizations 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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