



Layers of Protection: The Proven Approach to a Safe Pool Environment

Pool & Hot Tub Council of Canada

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Introduction

Over the past many decades, the pool industry, the Red Cross, the Royal Life Saving Society, and many others have worked hard to establish layered pool safety. This has included efforts to educate consumers, advocate on the vital importance of supervision, and introduce safety devices, enclosure by-laws, and awareness campaigns. Considerable collaboration among these groups has occurred as all share the same overall goal of creating a safe pool environment by working to reduce the number of incidents of drowning and pool related injuries to zero. While these groups have the same goal in sight, ideas about how best to reach it can vary. This is primarily due to the fact there is not a “one size fits all” solution.

The Pool and Hot Tub Council of Canada (PHTCC) has long been committed to swimming pool safety and accident prevention and considerable progress has been made on this issue. According to reports published by the Red Cross and Lifesaving Society, the number of residential pool drownings has been declining over time, and this has taken place over a span when the number of pools in use has been on the increase. Over a five-year period the number of drownings in backyard swimming pools in all of Canada had dropped from 138 to 103 (includes all age categories). Nevertheless, efforts must continue.

Recently the Council has prepared the following document, *“Layers of Protection: The Proven Approach to a Safe Pool Environment”* for three reasons: 1) to share and more fully educate the position of adopting a layered approach to pool and spa safety, 2) to provide an overview of options that are aligned with this position, and 3) to dispel a number of myths that continue to prevail on this subject.

Our recommendations on this important issue are based on the collective knowledge and experience of the more than three hundred Member companies that design, build and service swimming pools across the country and our many international industry association partners.

Position of the PHTCC: A layered approach

The PHTCC strongly encourages a layered approach to pool safety that includes a series of safeguards to protect end-users. The primary layer is supervision, but it does not stop there. Additional devices should be deployed to provide greater protection around the pool. No one mechanism should be relied upon to provide absolute safety for all pool users, particularly non-swimmers and children. Moreover, circumstances may warrant multiple solutions depending upon existing conditions.

There are a wide variety of modern safety mechanisms commercially available that, when used in combination, produce extremely effective barriers for children. These include window locks, window limitation devices, door locks, door alarms, Julian gates, safety covers, access alarms, and wave sensors, among others. Additional information on these specific pieces of equipment is described in the Recommended Guideline G-0209, entitled “**General Safety Provisions for Pools and Hot Tubs**”, which may be downloaded for free from the PHTCC website at www.poolcouncil.ca.

Many of the discussions on pool safety in recent years have focussed on enclosures, and specifically four-sided fencing. In this context it is important to differentiate between a four-sided fence and a four-sided barrier. A four-sided fence encloses the pool on four sides and allows for access through a gate. A four-sided barrier permits the building to be used as a barrier on one (or more) of the four sides, and where the access point consists of a self-latching, self-locking door outfitted with an access alarm in combination with windows that have restricted openings, the four-sided barrier offers a higher level of protection.

The PHTCC accepts a four-sided barrier as a viable layer of safety, however, based on the available evidence, we do not believe four-sided fencing is the finite solution to pool safety. Experience with four-sided fencing has shown the following:

- i) Gate self-closures are not reliable.
- ii) Some parents develop complacency and subsequently let down their guard.
- iii) On too many occasions adults and older children prop the gate open.
- iv) Any motivation for a homeowner to install an additional pool safety device seems to disappear.

Statistics validate these concerns, as outlined below:

- British Columbia

The Special Report on Drowning released by the British Columbia Office of the Chief Coroner in 2007 noted that 67% of the children who drowned in a fenced environment had gained access through a gate left open.

- Australia and New Zealand

Two States in Australia have enacted four-sided fencing regulations. However, one of these states had no fencing requirements whatsoever beforehand. In Canada, most jurisdictions have some fencing requirements already in place. Consequently, it would be misguided to extrapolate and generate projections for a reduction in the number of incidents in Canada based on the Australian experience because, clearly, the starting points were not the same. In the Canadian context, preliminary predictions of anticipated improvement appear to have been severely overstated.

This has proven to be the case elsewhere as well. Professor Philip Ley of the University of Sydney revisited the issue after the enforcement of four-sided fencing came into effect. Of specific significance to any consideration of mandating four-sided isolation fences around pools and spas is Dr. Ley's finding that, in New South Wales, more than 70 percent of drownings occurred in pools with such fencing. After an exhaustive analysis of the statistics, Dr. Ley concluded...

"There is no scientific evidence that fencing will reduce drownings. Australian studies suggest no effect, or a slight negative effect. New Zealand data shows short-term rises in drownings of children under five in domestic pools following the recent introduction of compulsory fencing. In addition, it seems probable that a pool fenced on three sides, with the house wall forming the fourth side, is much safer than a pool with an isolation fence."

Further, he noted that...

"It is apparent that those who have advocated isolation fencing have adopted a crude, naïve, mechanistic view of the matter, and ignored the complications likely to arise when a safety procedure is heavily dependent on human behaviour for its efficacy."

- France

In 2003, France introduced legislation that required domestic pools to be surrounded by fencing on all four sides. Recently, following an investigation of incidents, France has amended the regulation to allow for sensible alternatives to four-sided fencing, such as safety covers, perimeter alarms, wave alarms, and rigid enclosures.

- Québec and Toronto
The Province of Québec enacted legislation on pool enclosures in 2008. In that same year, the City of Toronto introduced four-sided barrier type fencing regulations. In both instances, it was recognized that four-sided fencing would not work in all situations. As a result, Julian fencing, using the building as part of the enclosure, and limiting window access became parts of the solution for these jurisdictions.
- London and Chatham
In 2008, the city of Chatham studied the issue, and took the decision to sustain a layered approach to pool safety. Recently, the Council of London/Middlesex voted against a proposed amendment to enact four-sided fencing, and chose instead to preserve the existing layered approach and expand the district's public awareness campaign on pool safety.
- Arizona
In the mid-eighties, the drowning death rate in Arizona's preschoolers ranked as the highest in the country. When the Phoenix Children's Hospital conducted a study of the issue, it came to the rather startling conclusion that one half of the child drownings that occurred in Phoenix between 1982 and 1989 took place in 1% of all residential pools – those which had four-sided fences. As a result, many communities in the state of Arizona that had enacted four-sided fencing legislation have since rescinded the regulations.
- United States of America
In December of 2007, the United States of America introduced the Virginia Graeme Baker Pool and Spa Safety Act. The law addresses safety issues related to swimming pool construction, and supports a layered approach to safety. The VGBA has been endorsed by key organizations such as the National Drowning Prevention Alliance and SafeKids U.S.A.

Consequently, we encourage a more comprehensive and holistic approach brought about by implementing layers of safety. As an example, a four-sided barrier that includes an access alarm on a self-closing, self-locking backdoor along with restricted openings on windows offers greater protection than a four-sided fence.

The Importance of Supervision

Findings from a Washington State study released in 2006 identified 'lack of effective supervision' as the most significant risk factor in drowning related fatalities in North America. Sixty-eight percent (68%) of the drowning deaths in 2005 were the result of inadequate supervision. These results have been substantiated by other studies carried out in recent years.

Regardless of what mechanical or electronic devices are installed, there is absolutely no substitute for adult supervision when it comes to the security of young children. The importance of this cannot be overstated. If significant progress is to be made in terms of saving lives, public education will be critical. The cornerstones of any public sector program initiated must be to: 1) increase general awareness of pool/spa safety issues, and 2) emphasize the importance of supervision.

Representatives of the PHTCC would be pleased to be involved in such a program, having gained experience in other regions of the country, as well as the United States. A sample copy of a safety brochure that was prepared in co-operation with the London/Middlesex region is available upon request from the PHTCC office.

Summary

The position of the Pool & Hot Tub Council of Canada is to support a layered approach to water safety. The combination of education, adult supervision and a series of barriers and warning devices is the most effective way to prevent drownings of young children. While four-sided fencing may be part of the mix, it should not be made mandatory as the only, "catch all" solution. Use of fencing should not preclude the strategic use of other modern, effective safeguards.

Research has shown that four-sided isolation fencing is far from the cure-all that some have proclaimed. The fence is only as effective as its gate, and gates are too frequently left ajar. The false sense of security that often results with its exclusive use is a dangerous option that we cannot endorse. Therefore, we strongly advocate that four-sided fencing should not be made compulsory. Other equally effective alternatives should be allowed and additionally promoted. The layered approach is clearly the "best practice" approach moving forward.

Substantial progress in researching this issue has been made in the past decade, and a growing body of knowledge is being compiled. We can learn from the experiences of others. We can also take advantage of the new technologies that have become available in recent years. Canada should be progressive in this regard.

The PHTCC continues to work with sister organizations in promoting a safe pool and spa environment. Enclosed is a sign of *Backyard Pool and Spa Safety Rules* that has been prepared by Red Cross Canada, the Lifesaving Society, St. John Ambulance•Canada and the Council. We also draw your attention to the website www.safepools.ca for more information on the subject.

References

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- 3) *Special Report on Drowning*, Office of the Chief Coroner, Child Death Review Unit, British Columbia, Canada 2007
- 4) *President Bush Signs Into Law the Virginia Graeme Baker Pool and Spa Safety Act of 2007*, Safe Kids USA Action Center Release, United States of America, 2007
- 5) *Safety Barrier Guidelines for Home Pools*, U.S. Consumer Product Safety Commission, United States of America
- 6) *Does Isolation Fencing Save Lives? The Case Against Further Retrospective Legislation Concerning NSW Domestic Swimming Pools*, P. Ley, Australia
- 7) *Home Truths on Pool Drownings*, M. Devine, The Sydney Morning Herald, Australia, December 5, 2009
- 8) *Child Submersion Accidents and Pool/Spa Isolation Barriers: A Clear Look at the Facts*, California Spa and Pool Industry Education Council, United States of America 1994
- 9) *All About Pools*, L. Grys, Holmes Magazine, Canada, May/June 2010

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