

# Private Pool Safety Standards

July 2004



LIFESAVING SOCIETY®

*The Lifeguarding Experts*

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*Public Aquatic Facility Safety Standards:* designed to assist public aquatic facility owners and operators in providing a safe aquatic environment. It recommends minimum safety standards for public aquatic facility operation.

*Semipublic Swimming Pool Safety Standards:* designed to assist semipublic swimming pool owners and operators in providing a safe aquatic environment. It recommends minimum safety standards for semipublic swimming pool operation.

*Public Wading Pool Safety Standards:* designed to assist public wading pool owners and operators in providing a safe aquatic environment. It recommends a minimum safety standards for public wading pool operation.

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# PRIVATE POOL SAFETY STANDARDS

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The Lifesaving Society is Canada's lifeguarding experts. The Society is a national charitable organization working to prevent drowning and water-related injuries through lifeguard, lifesaving, and swimming training, competitive lifesaving, safety management standards and services, and Water Smart® public education.

The Society is an independent, charitable organization educating Canadian lifesavers since the first Lifesaving Society Bronze Medallion Award was earned in 1896.

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## EXECUTIVE SUMMARY

Every owner of a private swimming pool and whirlpool has an obligation to provide a safe environment for every user of the pool. This obligation has been very clearly identified and affirmed by court decisions across Canada. In order to meet this obligation, you need the assistance of the experts – the Lifesaving Society. The Lifesaving Society is the authority in aquatic standards and safety. Our standards and expertise are based on extensive research and over 100 years of public safety education and service. We are leaders in research and prevention of injury and drowning.

The Lifesaving Society has a mandate for public safety. The Lifesaving Society *Private Pool Safety Standards* are your source of information about how to provide a safe environment and understand the regulations and standards that you must follow to achieve this goal. The Society developed and published these standards to educate pool owners about what they can do to safely operate their pool. Applying these standards to your pool will help you protect your family, friends and guests. It will also help you reduce the risk of injury or legal actions resulting from injuries.

The information in the Lifesaving Society *Private Pool Safety Standards* is organized in a logical order to help you understand the material and take the necessary actions to create and maintain a safe environment for your pool users. The following sections of the Standards address information for specific needs:

- **The Drowning Problem** - Provides you with information from the Lifesaving Society Drowning Research about who is at risk of drowning or being injured at your pool and the behaviors that may result in injuries.
- **Definitions** - Definitions of terms used in the standards.
- **Risk Management** - Provides you with information about your responsibility as the pool owner for the safe operation of your pool. Explains the risk management process that you can use to analyze and understand the risks associated with your private pool and take steps to eliminate or reduce these risks.
- **Supervision** - Explains the requirements for supervising bathers in your pool. It also includes recommendations for lifesaving and first aid training that will help prepare you to respond to an emergency.
- **Emergency Procedures** - Emergency procedures are those steps you can take to respond to an incident or help an injured person. This section provides guidance to help you identify and plan for the procedures you will need for your pool and select the required emergency equipment.
- **Safety Systems** - Safety systems are the day to day actions and policies established to prevent incidents and injuries. They include

such things as pool rules and how they are to be implemented, procedures for controlling access to the pool and suggestions for signs to educate users about hazards and safe behaviors for using the pool.

- **Pool Operation** - Presents recommendations for the procedures used to operate the pool and maintain a safe pool. This includes maintaining safe water quality, handling pool chemicals, and inspecting and testing pool equipment.
- **Safe Environment** - This section provides you with direction about how to make the physical environment of the pool safe. This includes items such as fencing, gates, pool covers, recreational equipment such as diving boards, safe water quality, pool and equipment maintenance and much more.
- **Resources** - This section includes information about additional support resources and information available from the Lifesaving Society. This includes Lifesaving Society links to Government resources and other organizations which can assist aquatic facility owners and operators to provide a safe environment. The *Safety Management* section of the Lifesaving Society website, [www.lifesaving.org](http://www.lifesaving.org), is your key to the most complete and current resources from the Society.

The Lifesaving Society recommends that you read the Lifesaving Society *Private Pool Safety Standards* and use this document to evaluate your pool and determine what steps you can take to create a safe environment for your family, friends and guests. Contact the Lifesaving Society for assistance to understand, interpret and implement the recommendations in the Standards. The Society contact information is located on the inside back cover.

**Note:** Except where indicated, these standards apply to swimming pools and whirlpools.



## FOREWORD

Faced with the potential for multi-million dollar lawsuits, private pool owners are becoming more proactive in assessing and managing risk in their aquatic environment. The Lifesaving Society believes that many incidents are foreseeable and therefore preventable.

As the lifeguarding experts, the Lifesaving Society is the authority in aquatic standards and safety. The Society establishes standards for public safety and consults on aquatic safety issues. The Society sets public safety standards for the aquatic industry such as the owners and operators of swimming pools, interprets safety standards for aquatic facility owners, advises government and serves as an expert witness in legal cases involving aquatic safety issues. The Lifesaving Society *Private Pool Safety Standards* present the Lifesaving Society standards and recommendations for the safe operation of private pools and whirlpools.

The Lifesaving Society has developed and published safety standards for aquatic activities and facilities throughout our history. The Lifesaving Society Safety Standards are compilations of aquatic safety guidance from Lifesaving Society research that has been published over many years in a variety of Society manuals and publications as well as external publications. The scope of Society research into public safety and risk management practices includes research and real operational experience from across Canada and around the world. In turn, the Society's expertise is shared internationally with the Royal Life Saving Society Branches throughout the Commonwealth and with the International Life Saving Federation.

The Lifesaving Society *Private Pool Safety Standards* assembles the standards published in these many different sources into a single document to make this information available and readily accessible to the private pool owner. This document provides owners of private pools a set of clear recommendations from the Lifesaving Society for the safe operation of their pool. In addition to the Society's recommendations, this document also refers private pool owners to other codes, regulations, statutes or standards that should be considered when developing safe operating practices for their pool. This document does not in any way replace or supersede current legislation. Owners and users must obey all provincial and municipal legislation, regulations and by-laws specific to their private pool and community.

The Lifesaving Society recognizes that the recommendations provided in the Lifesaving Society *Private Pool Safety Standards* are not the only solutions that private pool owners can use to provide a safe environment for their family and guests. The Lifesaving Society also recognizes that each private pool has unique features. No single document can address every situation and need. In situations where owners implement alternative safety measures, the Society

recommends that they thoroughly evaluate and document these measures. Contact the Lifesaving Society for assistance to understand, interpret and implement the recommendations in the Standards.

## THE DROWNING PROBLEM

Drowning is the second leading cause of preventable death in Canada amongst those under 5 years. Preventable, because these deaths don't have to happen.

Each year about 30 people die in private pools and whirlpools across Canada. Drowning fatalities in children under the age of 5 are more than double that of any other age group. A major contributing factor in the deaths of children is the lack of adult supervision. For children under 5 years old, 85% were unsupervised when they drowned. For children age 5-12, 61% were unsupervised and in the age group from 13-15, 34% were unsupervised. These are alarming statistics, and speak volumes to the need for supervision of your private pool.

### Children & Your Pool

The vast majority of these young victims are the children or relatives of the private pool owner. Many drown while simply playing around the house or in the yard. The caregiver has turned away for a moment or is busy in another part of the house. Because the children are at home, caregivers often don't feel the need to watch them, or young visitors, every single moment.

They may think the children are playing in a different part of the house or being watched by another member of the family or even taking a nap in their bedrooms.

Toddlers and preschoolers are naturally curious about water. They are persistent and ingenious in finding a way to it. Tragedy can strike quickly. Ten seconds of unsupervised play or exploration can result in a drowning. That's all the time it takes!

Most young children can't swim or they lack the strength to keep themselves afloat very long, or to pull themselves from the water. They drown when falling into the pool, when reaching to retrieve a toy, or running around the deck near the edge.

You can't rely on a cry for help to alert you, or splashing or waving. Usually, there are none of these sounds or reactions: the child slips quietly under the surface and can't be seen from the house. Drowning victims can't be heard, since they don't have the swimming ability to stay near the surface. It's usually much later when someone notices the youngster missing. But even mere minutes can be too late.

To prevent such tragedies, you need to take a series of steps and measures. We'll talk more about specific strategies further along in the Lifesaving Society *Private Pool Safety Standards*. But first and foremost, you must stop children from reaching the pool when it is unsupervised.

This is your responsibility as a pool owner. You need to protect the unsupervised child from getting into the pool area in the first place. It's as simple as that, and as difficult as that!

This means never underestimating the abilities of young children. It means setting up layers of protection or barriers to stop them from reaching your private pool. One strategy alone won't work. Kids are too smart and too quick.

## Adults at Risk

Children aren't the only ones at risk of drowning in the private pool. Adults are the second largest group at risk after young children under the age of 5.

Drowning usually occurs when the adult goes for a dip alone. Maybe it's a hot day and he or she simply wants to cool down after work. Or maybe no one else is home to supervise or go for a swim too. That also means nobody's around if the adult gets into difficulty in the water. Nobody is around to notice, let alone give assistance or get help.

The adult at risk of drowning, like the young child, swims unsupervised. And that's where the greatest danger lies!

## Diving & Shallow Water

Another group at great risk are divers. They risk hitting the bottom head-first and injuring their spine from the impact. Many of these victims are young men.

The consequences are tragic. Death sometimes occurs, but most times, the person is paralyzed. One dive into your private pool can change their quality of life forever.

Approximately 34 Canadians become partially or completely paralyzed each year as a result of breaking their necks in water-related incidents.

Most of these injuries occur while diving into shallow water. They also occur as a result of roughness or "horseplay" around the pool – throwing or pushing a person into the water, diving from high heights, diving off shoulders, or being "boosted" into the air by another swimmer.

## Alcohol

Alcoholic beverages are involved in approximately one-third (36%) of all Canadian preventable water-related deaths, and half (48%) of fatalities where the victim was 18 to 34 years of age.

Entertaining and private pools often go hand-in-hand during the hot summer months. The high incidence of drowning and alcohol is an important factor for the private pool owner to keep in mind. A few cool alcoholic beverages by the poolside can lead to tragedy.

## DEFINITIONS

- q **Private swimming pool** means a swimming pool that is constructed for the use of a single family dwelling unit and used only by the owners and their guests.
- q **Whirlpool** means a swimming pool designed primarily for therapeutic or recreational use that:
- Is not drained, cleaned or refilled before use by each individual; and
  - Utilizes hydrojet circulation, air induction bubbles or hot water or any combination of them.
- q **Owner** means the person who owns a Private pool.
- q **Operator** means a person designated by the owner as being responsible for the operation of the Private pool.
- q **Supervisor** means a person designated by the owner or the operator to watch the people in the pool, to supervise their safety, and to respond to emergency situations.
- q **Swimmer or Bather** means a person participating in any recreational activity in or on the water.
- q **Deck** means the area immediately surrounding the pool.
- q **General Area** means an area adjacent to the deck within the pool enclosure that is used for activities other than swimming.
- q **Diving Board** means a flexible board intended for use by divers.
- q **Diving Platform** means a rigid board or platform intended for use by divers.
- q **Current Award** means a training certification which is valid for a specified period from the date of certification or examination. The length of time that a certificate is current is set by the certifying body and/or government regulation. For example, the Lifesaving Standard First Aid award is current for 3 years from the date of certification.
- q **Supervision** is the deliberate and conscious act of observing facility users to ensure the supervisor is immediately aware of any incident or behavior which may prove life-threatening or injurious.

## RISK MANAGEMENT

### Who is Responsible?

The owner of the private pool is responsible for the safe operation of the pool. This includes family members, guests and even people who may enter the yard uninvited and enter the pool .

Homeowners need to understand the responsibility they assume by owning a private pool. The Lifesaving Society *Private Pool Safety Standards* outlines the Lifesaving Society's recommendations for minimum safety requirements for private pools. Safety must be the primary concern of homeowners. Homeowners are encouraged to go beyond the minimum requirements in their mandate to provide a safe swimming environment. This means practising risk management: working diligently to prevent emergencies, but also responding to them quickly and efficiently if they do happen.

### Risk Management Process

Risk Management is an ongoing process that is used to identify risks associated with your pool and activities in the pool and take measures to reduce risk and prevent incidents and injuries. The process includes the following steps:

1. Identify risks
2. Evaluate: Why are they happening? What is the source?
3. Develop controls and strategies to minimize or eliminate risks including education of facility users regarding safe behaviors
4. Implement
5. Monitor efforts and evaluate results

### Preventing Incidents

Prevention is the key to ensuring the safety of family, friends, and other users of your private pool.

Being aware of common situations and behaviors that lead to drowning and groups at high risk is an important first step in incident prevention. It gives you the knowledge to identify safe and unsafe behaviours around your private pool.

Facility analysis is an important means to reduce risk. Is equipment in good working order? Are there danger zones where incidents tend to occur or may occur? Are there problems created by structures or design? How secure is the area? Are the fencing and locking systems adequate? Can these be changed or the potential risk be reduced?

## Insurance

The owner of a private pool should make certain that an insurance policy and liability coverage are in place to cover the private pool and the pool users. Often this will be included in the homeowner policy. If you plan to offer activities such as swimming lessons or pool parties, you may need additional insurance coverage for these activities. Check with your insurance broker or agent to make certain that you have the appropriate insurance coverage and understand any requirements, limitations, or exclusions that may be conditions of the insurance policy.

## SUPERVISION

### Supervision Systems

Private pool owners should establish systems to provide effective supervision of all persons and activities within the pool area. The minimum requirement should be a buddy system and a strict policy that does not permit anyone to swim alone. To ensure continuous supervision of groups, designate a pool supervisor to supervise any people in the pool area.

For some activities, supervision should be provided by a person who has been trained and certified for this role. This includes activities such as teaching swimming lessons or pool parties for school groups or birthday parties. The Supervisor for these activities should hold current certifications that are appropriate for the activities. Anyone teaching swimming lessons should hold at least the minimum qualifications for an Aquatic Instructor. Activities such as pool parties should be lifeguarded by a person who holds at least the minimum qualifications for a lifeguard.

### Supervision Guidelines

Supervision of private pools and whirlpools is critical to incident prevention. It is the owner's and operator's responsibility to ensure that no person is ever alone in the private pool or pool area.

- Children under seven years of age require special attention. Ensure one-to-one adult supervision any time young children are in the pool area. ***If you're not within arms' reach, you've gone too far.***
- Children under seven years or nonswimmers, who are in chest deep water or deeper, should wear a lifejacket or PFD (personal flotation device) if the adult supervisor is not in the water, but actively watching from the pool area. Water wings, flotation toys and inflatable tubes do not safeguard your child from injury or drowning. They are not a replacement for direct supervision.
- Do not leave children alone in your house or yard – even at a far distance from the pool without ensuring your “barriers of protection” are secure and access cannot be gained to the pool area. Remember: Drowning happens in seconds and is often silent.
- Supervise children sitting on or in pool toys. Only allow these toys in the pool with direct adult supervision. Many incidents occur when children slip or fall unnoticed off pool toys into the water.
- Never leave toys in the pool when the pool is not in use. Young children will be attracted to the pool because of the toys, and can easily fall into the water reaching for them.
- Adults, older children, and teenagers require supervision too. Insist upon supervision for all pool users, even good swimmers! The buddy



system ensures that they swim with a partner and everybody is responsible for each other's safety.

## Supervisor: Suggested Training

Persons assigned to act in a supervision role need the judgement, skills, and training to maintain a safe environment and respond to an emergency. The Lifesaving Society suggests:

- Minimum age 14;
- Be trained in the private pool safety rules and emergency procedures;
- It is strongly recommended that they have first aid training which includes CPR skills for children and adults. This training is included in the CPR C certification. Additional first aid training such as Lifesaving Emergency First Aid, Lifesaving Standard First Aid, or Aquatic Emergency Care is recommended;
- The Lifesaving Society encourages you to obtain lifesaving training such as the Lifesaving Society Bronze Medallion.

## Lifeguard Qualifications

Lifeguard - Required minimum qualifications:

- Minimum age 16;
- Hold a current National Lifeguard award;
- Hold a current Standard First Aid award (Aquatic Emergency Care or Lifesaving Standard First Aid recommended);
- Be trained in the private pool safety rules and emergency procedures.

## Aquatic Instructor Qualifications

Aquatic Instructors - Required minimum qualifications:

- Minimum age 16;
- Hold a current Instructor award such as Swim for Life Instructor or Lifesaving Instructor;
- Hold the required minimum qualifications for a lifeguard.

## Orientation Training

All individuals in a supervision role should receive orientation training before assuming their supervision duties. This training should include:

- Introduction to and evaluation of hazards and risks in the private pool, and a review of pool rules and policies concerning them;
- Specific training that is relevant to the operation and maintenance of the pool (i.e. ability to do a water test to ensure pool water is safe for swimmers);
- Specific training in the pool's safety systems and emergency procedures, as well as in the use of rescue, safety and/or first aid equipment;
- Safe handling procedures appropriate to any chemicals they may have to handle.

## EMERGENCY PROCEDURES

In spite of the best attempts to prevent incidents and reduce risk, aquatic emergencies do happen. All homeowners must be ready and able to respond to the aquatic emergency quickly and appropriately to minimize injury. This means training in emergency procedures relevant to their private pool, and their role in the emergency, and ensuring rescue equipment is available and in good working order.

Emergency procedures are those steps taken to respond to an incident. They include water rescue, first aid, and other actions a person may take to respond to a situation. It is imperative that whenever the pool is being used, someone trained in basic emergency procedures be present.

### Designing Emergency Procedures

An emergency procedure is a planned response to an emergency. It is a step by step procedure that a rescuer will follow to respond to an emergency. It includes the steps to signal an emergency, recruit assistance, rescue the victim, provide treatment and follow-up after the incident. The following steps can be used as a template to design your emergency procedures:

- Use your signaling device (such as a whistle or alarm) to let others know there is an emergency and their assistance is needed;
- Clear the pool and call for help;
- Check for hazards and remove if needed. Do not become a second victim;
- Perform the rescue and prevent further injury to the victim;
- Immediately call 911 or your local Emergency Medical Services (EMS) telephone number if the victim is unconscious;
- Place the victim in semiprone position (unless the type of injury calls for other treatment);
- Contact the EMS (if you haven't already);
- Give first aid. Provide treatment according to your first aid training;
- After the incident, evaluate what could have been done to prevent it and what could be done to improve the emergency response and procedure.

### Specialized Procedures

Specialized procedures are designed to address very specific situations that may require very clear, detailed procedures. Homeowners should analyse the types of situations that would benefit from specialized procedures and develop the appropriate emergency procedures. Other situations such as the treatment of possible spinal injuries benefit from developing very clear and detailed procedures which can be practised and developed to a competent and consistent level of skill.

Examples of common specialized emergency procedures include:

- **Lightning.** If you hear thunder or see lightning, clear the pool immediately and move everyone indoors. Do not re-enter the pool area until the storm has passed and there is no thunder or lightning.
- **Spinal procedures.** For example, if a person dives into shallow water or falls from a height and may have a broken neck. The Lifesaving Society Aquatic Emergency Care and Bronze Medallion courses include training to care for a victim with a spinal injury. The Canadian Lifesaving Manual also includes these procedures.
- **Pool chemical spill.** Develop a procedure to safely clean up and dispose of a spilled chemical. This may be available on the chemical container or from the supplier.

## Emergency Signals

The Lifesaving Society recommends a signalling device of some sort (such as a whistle or alarm) be used to alert other adults or responsible people that an emergency has occurred and their assistance is required. All swimmers should be instructed that if they hear this, they should exit the pool immediately.

## Required Emergency Equipment

All pool equipment shall be checked at the beginning of the season to ensure that is in good condition. Some of this equipment may not be required for a whirlpool because of its small size.

Ensure the pool has the following emergency equipment available and appropriately located for use in an emergency.

- q *Buoy line:* Position the buoy line in shallow water at least 30 cm or 1 ft. from the slope where the pool drops off toward the deep end.
- q *Reaching pole:* At least 3 metres in length. Ideally the pole should have a large hook that can be used to pull a person to safety. It is very effective for rescuing a nonswimmer. One just needs to lay down, extend the pole, “hook” the person and pull them to the side.
- q *Buoyant throwing assist with a buoyant line attached:* The length of the line should be at least the width of the pool.
- q *Sound signaling device:* For example, a loud whistle or personal alarm.
- q *First aid kit:* that can be used for basic first aid. It is recommended that barrier devices be provided to prevent disease transmission. This includes pocket masks and vinyl gloves.
- q *Telephone:* Locate telephone at poolside.

## Contacting Emergency Services

Every private pool shall have a telephone which is easily accessible from the pool. Options include a telephone at poolside with an external phone jack, a portable phone or a cell phone.

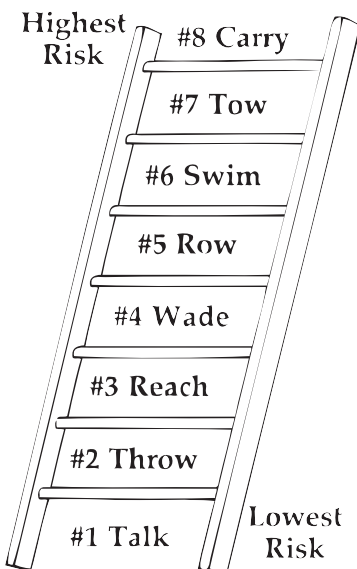
Emergency contact telephone numbers should be posted by the telephone.

It is recommended that a script for the emergency call be posted beside the telephone. The script should be designed to provide the information required to direct the request for emergency assistance. This may include information such as: address, phone number, a prompt to describe the nature of the emergency, the location for emergency access, etc. If a portable phone is used, the battery must be fully charged and in good condition.

## Water Rescue

Best efforts in facility analysis, supervising the pool, and providing safe pool design and equipment may not be able to prevent an emergency. Your pool supervisor should be ready and able to respond appropriately.

Water rescue is based upon the safety of the rescuer first. The rescuer must decide which type of rescue presents the lowest risk to his or her safety. This is depicted in the diagram of the ladder approach listed below. As you go up the ladder, your risk increases. Always choose the lowest risk possible.



1. **Talk Rescue:** From a dry, safe position, talk to the victim and encourage him to safety.
2. **Throw Rescue:** From a dry, safe position, throw a buoyant assist to the victim and talk him to safety.
3. **Reach Rescue:** From a dry, safe position, reach with an assist to the victim and pull him to safety. The assist may be buoyant or not; it may also be a buoyant assist on a rope.
4. **Wade Rescue:** Wade into shallow water and extend an assist to the victim. Or enter deep water while holding onto the edge of the pool and extend an assist to the victim.
5. **Row Rescue:** Row to the victim in a watercraft and extend an assist while staying in the craft.
6. **Swim Rescue:** Swim to the victim, push a buoyant assist to him and talk him to safety without making direct contact.
7. **Tow Rescue:** Swim to the victim, push a buoyant assist to him and tow him to safety while keeping the assist between you and the victim.
8. **Carry Rescue:** Swim to the victim and while holding directly onto him, carry him to safety. **Note:** This is an extremely high risk rescue and should be used only as a last resort if a lower risk rescue is not possible.

A thorough, in-depth explanation of water rescue and the ladder approach can be found in Chapter 4 of the Lifesaving Society *Canadian Lifesaving Manual*.

## Critical Incident Stress

After responding to an emergency, persons involved such as rescuers or bystanders may experience strong reactions known as Critical Incident Stress. In the event of a serious injury incident, all responders should be provided access to Critical Incident Stress Management (CISM) education and support.

## SAFETY SYSTEMS

Private pool owners shall develop and document a set of safety systems appropriate to the needs of the pool. Safety systems are the day to day actions and policies established to prevent incidents and injuries. They include such things as pool rules and how they are to be implemented, and procedures for controlling access to the pool. Policies should be set to ensure safety, and all private pool users should be educated on these policies and required to obey them. Pool users should be encouraged to adopt a drowning prevention focus. Safety systems are an important part of minimizing risk and preventing injury.

### Pool Safety Rules

Every private pool shall develop and apply a set of rules to guide safe use of the pool and its equipment. These rules are intended to reasonably control the risks associated with the use of the pool while also facilitating the enjoyment of the aquatic recreation experience. Safety rules should be designed to prevent users from injuring themselves or others or to prevent damage to the pool and equipment. The rules should be documented and posted. Homeowners should carefully analyse the facility and equipment to identify risks which may be inherent in their design and construction.

Samples of pool safety rules include:

- Walk, don't run.
- Always swim with a buddy.
- Jump, don't dive into shallow water.
- Play safe. Don't push others into the pool.
- Always enter from the poolside or diving board. Never dive or jump into the water from any other structure.
- Swim only in daylight unless the pool is properly lighted.
- Prevent anyone who is intoxicated from using the pool. Recognize the risks associated with drinking alcohol and swimming and supervising others. Drink responsibly.
- Directly supervise people using diving boards and slides. Allow only one person at a time on this equipment.
- Be Sun Smart and protect yourself from the hazards of the sun.

### Prevent Contamination

The Lifesaving Society recommends that every bather take a cleansing shower before they swim, and that people with a communicable disease or open sores not be permitted to use the pool. All efforts should be taken to keep the pool free from debris, and any in the pool should be removed immediately.

## Safe Diving

Diving injuries are a leading cause of spinal injuries. Over 90% of aquatic spinal injuries occur in water less than 1.8 metres (6 feet) deep. Based on this research, the Lifesaving Society's Standard for a minimum safe water depth for diving entries off the side of a pool is 2.5 metres. Establish rules for safe diving in your pool and educate your guests. If you have a diving board, check to make sure the pool is designed for safe diving off the diving board. (see diving boards in Recreational Equipment Safety Standards).

## Recreational Equipment

Rules for the safe use of recreational equipment such as diving boards and platforms, slides, inflatables, etc. should be developed. These rules should include directions for safe use as well as any necessary restrictions such as age or height restrictions.

## Pool Access Control and Admission Policies

Every private pool owner shall implement a system to control access to the pool and surrounding deck and pool areas. This includes providing effective locks, key control procedures and policies for access control. The pool area shall be locked and not accessible at all times when effective supervision is not available.

Children should gain permission to use the pool, and only when a supervisor is present. Adults should ensure that another person is present and not swim alone. Guests to the pool should understand the rules for proper use and conduct in the pool, and children visiting should have their parents' permission to use the pool. Anyone using the pool should communicate any medical conditions that may affect their safety; ie. seizure disorder. Anyone who is intoxicated or under the influence of drugs or alcohol should be prevented from using the pool.

## Number of Bathers

It is crucial that you are able to see the bottom of the pool at all times and see any bather under the water surface. **Note:** For a whirlpool, this may not be a realistic expectation when the jets are running. Control the number of people in the pool to allow safe supervision. Avoid crowding which could lead to injury. As well, with large bather loads, be prepared to frequently test the water and take measures to maintain good water quality and visibility.

## Signage

Signs serve two functions in a private pool: to inform users/guests about the rules for safe use of the pool and to warn them of hazards and ways to avoid these hazards.

For signs to have the optimum effect, it is important to have them posted in a conspicuous location, and in an appropriate location (i.e. diving board signage beside the diving board).

Where possible, utilize signs which use pictures to convey the message. Use of universal symbols provides instant recognition and avoids confusion if readers cannot read or do not read English.

Universal standards for signage include color specifications. A red slash indicates the activity is prohibited (i.e. a red slash through a picture of someone diving indicates diving is not permitted in that area); a yellow background indicates warning or caution to the user; and a green border indicates the activity is permitted.

Private pool owners have a responsibility to post rules which clearly indicate which activities are prohibited or permitted. They also have a duty to warn users of any hazards, and the risk or consequence of the hazard and how to avoid it. This warning should be posted at the hazard and where possible, at the access points or routes.

### *Suggested Information for Signage*

- q List of Pool Safety Rules for your pool.
- q Recreational equipment such as waterslides, diving boards or rope swings require specific rules and restrictions for safe use of each item. These rules may include number of users, how to use it safely, checking for swimmers before using. These rules should be posted in a readily visible location near each piece of equipment.
- q Maximum number of swimmers permitted
- q Location of emergency telephone
- q Specific rules for whirlpools. Some examples include:
  - Check for safe temperature - a maximum of 40C;
  - Enter and exit slowly. Headache or dizziness are signs to leave the water immediately;
  - Do not use the whirlpool alone;
  - Limit length of use to 10 - 15 minutes at one time (**Note:** A clock should be clearly visible from the whirlpool);
  - Children under 12 years of age should be supervised by an adult at all times. Children under five years of age are not allowed in the whirlpool;
  - Pregnant women should use a whirlpool only with the approval of their doctor;
  - Persons suffering from heart disease, diabetes and high or low blood pressure should consult their doctor prior to use;
  - Do not use the whirlpool while under the influence of alcohol, antihistamines, anticoagulants, vasoconstrictors, vasodilators, tranquilizers, stimulants or narcotics.



## POOL OPERATION

### Water Quality

Maintaining excellent water quality is a critical component of operating a safe environment for your pool users. The water quality shall protect the health and safety of the users by protecting them from disease transmission and maintaining balanced water to prevent injury from chemicals in the water. Good water quality also contributes to protecting the pool and its equipment and the swimmer's enjoyment of the pool.

#### *Disinfection and Water Balance*

Effective pool disinfection and water balance shall be maintained at all times in the private pool. These procedures shall meet or exceed the minimum standards required in the Swimming Pool Regulation. Specifically, the free available chlorine residual shall be maintained at a minimum of 1.0 ppm for any swimming pool with an operating temperature of not more than 30 degrees Celsius, and 2.0 ppm for any pool with an operating temperature of more than 30 degrees Celsius. The pH value shall be maintained at not less than 7.0 ppm and not more than 7.6 ppm.

The Centres for Disease Control (CDC) has published a standard for the disinfection of water in a whirlpool which is significantly higher than the minimum required under the Swimming Pool Regulation. A minimum free available chlorine (FAC) of 4.0 - 5.0 ppm should be maintained in all whirlpools. This standard is a result of research into exposure to Legionella and Pseudomonas in public pools. The Lifesaving Society recommends that the CDC standard should be used for the disinfection of all whirlpools.

For private pools, the Lifesaving Society recommends that pool water be tested daily and before anyone enters the pool, to ensure appropriate levels. If any of the above is out of range, no one should be allowed to use the pool until it has been brought back in to the acceptable range.

#### *Pool Water Clarity*

The pool water clarity or the visibility of the pool bottom shall be evaluated regularly throughout each day that the pool is in use. You must be able to clearly see the pattern of the pool drain when standing on the edge of the pool at the deep end.

If the water clarity does not meet this standard, there is a strong probability that a submerged victim will not be clearly visible to supervisors.

Good bottom visibility is imperative to safe supervision and cannot be compromised. If there is any doubt about water clarity, close the pool until water clarity can be restored.

### *Pool Fouling*

Private pool owners should develop a procedure to deal with a pool fouling incident. This procedure must be able to provide for the removal of the contaminating material and provide effective disinfection of the pool.

Visit the Lifesaving Society website for information about pool fouling procedures. A pool fouling incident may involve the release of feces, vomit, blood or other organic, potentially infective material into the pool water.

Measures shall be implemented which minimize the probability of a pool fouling incident. Children who have not been toilet trained shall be required to wear a cloth or pool diaper covered by an impermeable pant with closures that seal around the leg and waist openings. Persons with diarrhea shall be directed to stay out of the pool until they are well.

Pool fouling is a serious concern. Incidents involving E Coli and cryptosporidium have been traced to exposure in Aquatic Facilities.

## Chemicals

Take care when handling and storing pool chemicals as mishandling can be fatal. Ensure the following safety guidelines are adhered to:

- Lock all pool chemicals in an appropriate storage facility. Never leave chemicals outside the storage facility;
- Ensure only those people who know how to handle the chemicals have access to them and the storage facility;
- Follow manufacturers' directions for storage and handling.

## Mechanical and Chemical Maintenance

All facility mechanical systems and chemical handling should be maintained and operated in a manner which protects the users and homeowners. These practices should be documented and followed by anyone who is responsible for handling chemicals or the mechanical systems. An example is written procedures explaining how to clean the pool filter or vacuum the pool.

Reference sources for these practices include:

- Manufacturer directions provided with your pool;
- Instructions provided with your pool chemicals and Material Safety Data Sheets (MSDS);
- WHMIS regulations and training;
- Pool operator manuals and training programs;
- Occupational Health and Safety regulations.

## Inspections & Testing

All areas of the private pool and equipment shall be inspected and tested on a regular schedule. The schedule should be designed for the needs of the specific equipment or area of the facility. This may range from a simple visual inspection to a process to test the safe operation of the equipment. Tools such as checklists should be used to document the inspection results and insure that the inspection process is consistent and comprehensive. Any deficiencies identified should be documented and recommendations for corrective measures identified.

Deficiencies which affect the safe operation of the pool or equipment should be corrected immediately. If this is not possible, it may be necessary to close the facility or equipment until it can be returned to a safe condition.

### ***Recreational Equipment***

All recreational equipment (eg. waterslides, diving boards) should be inspected regularly. If it is used heavily, this may need to be done daily. Equipment in unsafe condition should be closed until repairs can be completed and evaluated.

### ***Emergency Equipment***

Facility emergency equipment should be inspected daily. All equipment shall be maintained in a state of readiness. Any deficient equipment shall be repaired or replaced immediately.

### ***Suction Hazards***

All pool water outlet covers shall be inspected regularly (eg. monthly) when the pool is in operation. If any of the pool's water outlet covers are loose or missing the pool shall be closed until the cover is repaired or replaced.

**Note:** An outlet is an opening in the pool that can generate suction (eg. main drain, vacuum fitting or skimmers). Loose or missing outlet covers have caused fatalities and serious injuries in Aquatic Facilities. Regular inspection of these outlets must be established.

Private pool owners must not underestimate the power or danger of suction. Outlet cover inspections should be undertaken with extreme caution to ensure one's safety. The inspection procedure should include:

- Shutting down the filter system and ensuring that:
  - There is no suction in the system;
  - The system is locked down or supervised to ensure that it is not turned on during the inspection;
- A diagram of the pool depicting the outlet covers will guide the inspection. Each outlet cover should be assigned a number to help the accurate recording of inspection results;
- A second person should be present as an emergency back-up during the inspection;
- Record the inspection results and any remedial action required and completed.

**Note:** Some pool and whirlpool circulation systems include pool skimmers with equalizer fittings located in the pool wall below water level. All equalizer fittings must be permanently plugged and disabled so that there is no possibility that these fittings could create a suction hazard.

Any pool with only one drain should have an anti-entrapment device installed and maintained. Suction from the main drain in pools with only one drain has caused drownings and serious injury in the past. An anti-entrapment device can prevent this.

### ***Fittings, Grates & Drains***

Keep inlet and outlet fittings, grates, and skimmer and the main drain covers **in good repair.**

- Keep them in place at all times and secure them so that they cannot be removed without tools.
- Instruct children not to play with these devices.
- Instruct everyone with long hair to tie up his or her hair and avoid an outlet or main drain. Outlet drains present a special danger because of their significant suction. The suction is strong enough to hold hair or clothing, or pull hair or clothing into the outlet. This may result in injury or fatality.

Ensure users are aware of the location and method to disable filter pumps so that circulation and suction will be stopped.

### ***GFI - Ground Fault Interrupters***

All GFIs shall be tested at least monthly. Any GFI that fails the test shall be disabled and the circuit it controls removed from use until the GFI can be repaired or replaced.

## SAFE ENVIRONMENT

The private pool owners should be familiar with all codes and regulations that apply to the operation of a private pool. This includes the building code which sets minimum construction standards for a private swimming pool.

Owners shall be aware that it is their responsibility to comply with the Alberta Building Code, as well as specific local standards and regulations in their community that may also apply. The building code has specific requirements for fencing, gates and access control that are designed to prevent unauthorized entry to the pool and protect the public. This is the law. Contact your municipal planning office for the required codes. Every owner and operator must comply with all legislation and municipal by-laws specific to their private swimming pool. The following recommendations for facility analysis and design features do not replace the Alberta Building Code or local requirements.

### Facility Analysis

Every owner and operator shall evaluate the private pool to determine if access to the pool is controlled and that safeguards are in place. This is an important step in incident prevention.

- q One measure to prevent access is not enough. Layers of protection or multiple strategies are needed to prevent young children from getting into the pool.
- q Set up at least two barriers to the water. These barriers might include two fences, or a fence and an alarm system. The private pool might have one fence around the yard for privacy, for example, and another around the pool area to prevent access to the pool. At least one of the fences should meet the recommended standard as described below in the section *Fences*.

### Pool Area

The pool area is defined as the area inside the last barrier to the poolside.

- q Ensure adequate space between the poolside and the last barrier to perform a rescue using a reaching pole.
- q Do not allow children to play in the pool area without direct supervision.
- q Keep the pool area clear of obstacles and toys. There are many accounts of children falling into the water while playing or riding a tricycle around the deck.
- q Keep the pool area clear of hazardous materials such as glass, or electrical devices and appliances.
- q Keep the pool area clear of pool maintenance chemicals and equipment.
- q Keep chemicals away from the pool area and locked in an appropriate storage facility.

## The Fence

- q Required *minimum* height is 1.8 m.
- q Construct the fence to be difficult to climb.
- q Put all framing braces on the inside of the fence.
- q Use vertical, not horizontal, slats.
- q Construct the fence so a child cannot slip through it, yet you can still see through the slats.
- q Maximum space between slats: (vertical bars) 10cm or 4 inches (although “tighter” spacing is recommended).
- q Maximum space between chain link fencing as per local by-laws.
- q Construct the fence with continuous footings, or ensure it is imbedded into the earth to a depth of at least 15cm or 6 inches. Continuous footings or an imbedded fence are recommended to prevent children from pushing or digging their way under the bottom of the fence. In some situations, a dog has dug a hole large enough for a child to gain access to the pool area.
- q Do not keep any structure beside or near the fence that would allow a person to climb over the fence and gain access to the pool area. Examples include trees, hedges, and lawn furniture.
- q A fence that encompasses the entire yard and not only the pool area must still meet the requirements in the regulations.
- q Never allow unsupervised use of the yard. Follow the recommendations outlined in the Supervision section.
- q Construct an additional fence to encompass the pool area to prevent access if the yard is used as a play area.
- q Protect the pool area with a barrier alarm if an additional fence is not practical or feasible. Direct supervision of children in the play area and yard is a requirement!
- q Many types of alarms are available. Examples include a beam alarm that encompasses the pool, and a motion or pool alarm.
- q Never use an alarm to replace a fence.
- q Never use an alarm as the only barrier preventing access to the pool. Use an alarm as a secondary barrier or an extra precaution when surrounding your private pool with “layers of protection”.

## Gates and Doors

Construct the gate to include features that lessen the risk of children entering the pool area when unsupervised.

- q Incorporate all the features recommended for the fence.
- q Gate/Door is the same height as the fence.
- q Always keep the gate locked when no supervisor is present. Lock the gate with a combination lock rather than a key. Make a neighbour aware of the combination in case of an emergency.
- q Ensure the gate latch is equipped with a self-latching device on the inside of the gate, located at least 1.5 m above ground level.
- q Place a sign on the gate stating: This yard contains a swimming pool. Do not enter without permission.

- q If a door from the house provides direct access to the pool area, the door should be equipped with a locking latch located at least 1.5m above floor level. Using a double cylinder deadbolt and removing the key when locked will reduce the risk of it being opened inadvertently or by small children.

## Above-Ground Pools

The standards for fencing and gates apply to above-ground pools as well as in-ground pools.

- q The above-ground pool represents a danger to young children, some private pool owners have sense of security based on the assumption that the pool is locked and children cannot get in.
- q The same percentage of drownings occurs in above-ground pools as in-ground pools.
- q Many above-ground pools are designed so that the walls of the pool form a barrier, and a removable ladder is the only access to the pool. Always remove this ladder when the pool is not in use.
- q If the above-ground pool is surrounded by a deck, restrict access to the deck and ensure the gate is locked.

## Pool Covers

- q Keep pool covers rolled and stored away from the pool area, or ensure they completely cover the pool. Never leave pool covers partially on.
- q Do not consider the pool cover as a barrier from entry into the pool unless it is specifically designed and constructed as a barrier. Most pool covers will not support the weight of a small child.
- q Drain or suction off rain water that collects on the surface of the pool cover. The rain water can be deep enough to drown a young child.

## Whirlpools

Whirlpools are subject to the same regulations regarding access and fencing as a pool is unless it meets all of the following criteria:

- q It does not exceed 2.4m (8.0 ft.) across the widest portion of the water surface;
- q Is provided with a cover that has the strength to support the weight of an adult walking across the top;
- q Is provided with lockable cover to prevent access to the water by unauthorized persons; and
- q The cover must remain in place and locked at all times when the whirlpool is unsupervised.

The Lifesaving Society recommends that a combination lock be used to lock whirlpools. Small children can open key locks once they know where the key is kept.



## Recreational Equipment Safety Standards

### *Pool Slides*

Pool slides shall be maintained and inspected according to the instructions supplied by the manufacturer. Controls should be implemented which minimize the risk of collision or injury within the slide or in pool at the bottom of the slide.

### *Diving Boards and Platforms*

Minimum standards for safe entries off a diving board or platform are provided in the FINA (Federation Internationale de Natation Amateur) preferred standard. The latest version of the standard was published in March 1991 and is available from the Lifesaving Society, through links at the Lifesaving Society website, or in the Alberta Building Code.

The FINA standards were designed to protect skilled competitive divers who are trained and supervised by diving coaches. Untrained recreational divers may experience a greater level of injury risk than competitive divers.

Many older pools have diving boards and/or platforms that were installed according to an early standard and may not be able to meet the current FINA preferred standard. The Lifesaving Society recommends that diving boards and platforms which cannot meet the current FINA preferred standard be removed from use.

### *Other Recreational Equipment*

Other recreational equipment such as rope swings or large inflatable structures shall be installed and maintained in accordance with the manufacturers' instructions. These installations should be analysed to identify any hazards or risks and steps taken to control these risks. Where entry from a height is involved, the FINA Diving standard may be useful for evaluating safe depth requirements.



## RESOURCES

### Lifesaving Society Resources

Many resources are available from the Lifesaving Society to assist aquatic facility owners and operators to evaluate the safety needs of their facility and to develop practices for the safe operation of the facility. These resources include information about safety standards, training programs, resource manuals, sample practices, forms and much more. Visit the *Safety Management* section of the Lifesaving Society website, [www.lifesaving.org](http://www.lifesaving.org), for the most complete and current list and links to resources from the Society. You can also contact the Lifesaving Society with questions or requests for assistance.

Lifesaving Society standards, programs, products and services include:

- *Lifesaving Society Safety Standards*: designed to assist aquatic facility owners and operators in providing a safe aquatic environment. Includes standards for public facilities, semipublic pools, wading pools, beaches and private pools.
- *Lifesaving Society Reference Manuals*: examples include Canadian Lifesaving Manual (definitive lifesaving training reference) and Alert: lifeguarding in action (the lifeguard training reference).
- *Lifesaving Society Training Programs*: Swim for Life Learn to Swim Program - the national standard for swimming; Canadian Lifesaving Program - lifesaving training including the Bronze Cross award; National Lifeguard Program - training awards for lifeguards at pools, waterparks, waterfronts and surf beaches; Lifesaving First Aid - includes CPR, Lifesaving Emergency and Standard First Aid, Aquatic Emergency Care, Oxygen Administration; and more.
- *Lifesaving Society Position Statements*: formal Society Positions on a variety of topics such as use of defibrillators by lifeguards and sun protection in aquatic environments.
- *Risk Management Articles*: used to educate facility owners about public safety issues and the measures they can take to create safe environments and enhance public safety. Sample topics include: pool color and design, inservice training, facility lighting, lifeguard positioning, suction hazards, and pool fouling.
- *Drowning Research*: Drowning Reports – analysis of the Society’s annual drowning research.
- *Public Education*: Water Smart® messages about choices to reduce risks in, on and around the water; Within Arm’s Reach video, brochure and posters; Sudden Impact video, and much more.
- Sample forms and tools for developing risk management practices for your facility. Examples include first aid forms, major incident documentation, EMS telephone scripts, Critical Incident Stress Management, suggested contents for Aquatic Staff Manual.
- *Aquatic Safety Management Services*: Lifesaving Society services to help you operate a safe aquatic environment. Includes aquatic safety

audits, facility design and operation consulting, safety standards and expert witness services.

- 1 *Safety Equipment and Training products*: includes spineboards and head immobilizers, barrier devices such as pocket masks, whistles, rescue tubes, lifeguard clothing, Actar CPR training manikins and much more.

**Note:** Visit the Lifesaving Society website to find new resources, products and services that are added and updated regularly on the website.

## Government Resources

The Lifesaving Society *Private Pool Safety Standards* summarizes standards, guidelines and recommendations from the Lifesaving Society intended to provide guidance for the safe operation of private pools. This guidance is not intended to replace requirements that may be included in statutes, regulations or guidelines of the Government. Private pool owners should also be aware of these government requirements. Information about these requirements and links to government websites are included in the *Safety Management* section of the Lifesaving Society website: [www.lifesaving.org](http://www.lifesaving.org).

Relevant Provincial Government statutes, regulations or guidelines may include:

- Alberta Building Code
- Fire Regulations
- WHMIS
- Swimming Pool Regulation of the Public Health Act
- Occupiers Liability Act

## Other Relevant Resources

Resources from other organizations such as the Centres for Disease Control (CDC) and FINA are valuable resources to assist aquatic facility owners to evaluate the safety needs of their facilities and to develop practices for the safe operation of their aquatic facilities. Information about these organizations and links to their websites are included in the *Safety Management* section of the Lifesaving Society website: [www.lifesaving.org](http://www.lifesaving.org).

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For more information about Lifesaving Society programs and services, contact the branch in your area.

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