Liability

Public Swimming Pools

Report Number: LB-30-63
Release Date: July 26, 2012
Section Title: Premises/Operations

Abstract

Liability exposures associated with swimming facilities include premises-related exposures, such as slips and falls, and liability exposures associated with the operation and supervision of the pool area. This report provides an overview of liability exposures associated with public swimming pools and offers risk control recommendations to mitigate these hazards. Wave pools, water slides, and other specialty water parks are not covered in this report. The report does not address product liability aspects of swimming pool design and construction.

Introduction

Swimming is the third most popular U.S. sport or exercise activity. For the purpose of this report, “public swimming pools” refers to facilities intended for use by the public in such areas as parks, hotels, motels, resorts, multiple-family apartment complexes, municipal pools, commercial public facilities, schools, universities, swim clubs, golf clubs, tennis clubs, and fitness clubs. Sometimes a distinction is made between pools open to the general public and pools provided in conjunction with lodging or other services. These second types of pools may be called “semi-public” pools. The distinction is not important for this report.

Swimming pools vary significantly in terms of size, shape, depth, accessory equipment, physical layout, circulation and sanitation systems, and customer characteristics. They may be used for a variety of programmed and unprogrammed activities, including recreational swimming, lap swimming, swim meets, wading, diving, aquatic exercise, water polo, scuba classes, and lifesaving classes.

Pools may be open for seasonal use or open year-round. Outdoor pools typically have large deck areas where people may sun themselves. These outdoor deck areas may also be used for special events, such as receptions or barbecues. Pools where swimming competitions are held may have spectator areas with bleachers or grandstands. Pools typically will have locker rooms with showers and toilets where people may change into and out of their swimwear.

Pool operations and maintenance may be performed by the pool owner or contracted out to a firm specializing in one or more aspects of aquatic facility management. Independent instructors may be used to teach and supervise programmed activity in the pool. In addition, the facility may be rented or leased to others for competitions or special events.

This report covers liability exposures associated with public swimming pool operation. Wave pools, water slides, and other specialty water parks are not covered in this report.

See Business Links Report BL-20-40, *Swimming Pool Facilities,* for more line of business information about identifying, assessing, and controlling loss exposures commonly associated with swimming pool facilities.

EngineeringAndSafety@ISO.COM

Common Hazards for Swimming Pool Facilities

The following items should be considered when evaluating a public swimming pool for liability exposures:

- Does a fence or other enclosure restrict access to the pool?
- Does the pool have depth and lane markers?
- Are depth markers accurate?
- Does the pool have any objects protruding under the water surface?
- Is access to deep-water areas restricted?
- Does the pool have diving boards or slides? Are these structures properly anchored and in good condition?
- Are electrical wiring, fixtures, and equipment appropriate for wet areas?
- Are rules posted describing appropriate and inappropriate user conduct?
- Is there an emergency action plan?
- Is emergency equipment available and accessible?
- Are emergency procedures posted?
- Is staff trained in emergency procedures?
- Is a sufficient number of lifeguards present?
- Are lifeguards trained or certified?
- Who is responsible for maintaining the pool?
- How frequently are pool chemical levels checked?
- Are pool chemicals handled and stored according to manufacturer's instructions?
- Are decks free of standing water?
- Are all chairs, cots, and lounges in good condition?
- Are locker room floors kept as dry as possible and inspected regularly for possible slippery and unsafe conditions?
- Are locker room furnishings, lockers, and baskets regularly inspected?
- Is the temperature of shower water regulated?
- Is there a Recreational Water Illness (RWI) prevention and awareness program in place?
- Is there a log maintained that tracks RWI activities?

EngineeringAndSafety@ISO.COM

Risk Control Strategies

Pools should be designed, constructed, and operated to prevent drowning and other injuries and illnesses. Compliance with state and local municipal codes (e.g., fire, public health, building, and electrical codes) affecting swimming pool operation will serve as the basis for most liability risk control programs. All states have requirements for public swimming pool operation. Compliance with these codes is extremely important. Noncompliance with code requirements may be used in lawsuits as evidence of negligence. In addition, pools used for special uses, such as competition swimming pools, may have to meet specific facility operation requirements as part of the rules of the competition organization. Pools should ensure that user health and safety are addressed in their business operations.

Regulatory Compliance

Facility operators should identify and comply with all state and municipal codes (e.g., fire, public health, building, and electrical codes) affecting their operation. All states have requirements for the operation of 'public swimming pools.' Compliance with these codes is critical as noncompliance with code requirements may be used in lawsuits as evidence of operator negligence. In some cases, noncompliance with code requirements may be considered negligence.

Operator Certification

A person who has demonstrated competence in pool management should manage public pools. Many states, including Arkansas, Colorado, Iowa, Minnesota, New York, New Jersey, and Utah, require managers of commercial pools to be certified. Certifications may be granted by states after completing a state-specific course or a recognized third-party training program, such as the Certified Pool Operator (CPO) program of the National Swimming Pool Foundation (NSPF), Aquatic Facility Operation (AFO) of the National Recreation and Parks Association, or the Pool Tech certification of the National Spa and Pool Institute (NSPI).

Risk Control Program

Public swimming pools should establish an organized system for managing liability loss exposures. This system should define the policies and procedures that the organization will take to eliminate or control potential loss exposures. It should include provisions for: regular inspection of premises for loss exposures; documentation of inspection results and corrective actions taken, if any; accident reporting and investigation; loss analysis and plan auditing; and staff training in the system. When pools are part of a larger business operation, such as a health club, these plans should be integrated into the organization's risk control management program to make implementing the program easier.

Employees should receive orientation in their responsibilities under the program when first hired. Retraining should be provided on a regular basis.

See Liability Report LB-20-01, *Loss Control Management Program,* for more information about developing loss control management programs.

Contractual Risk Transfer

Pools that charge fees or require membership should use contractual risk transfer mechanisms, such as liability waivers, to limit their liability exposures. These forms should be drafted by someone who is familiar with the law affecting such provisions in the state where the pool is located. In addition, all sales and marketing materials should be reviewed for misrepresentations. Misrepresentations contained in this material may support lawsuits premised on unfair business practices or invalidate otherwise valid releases.

See Liability Report LB-20-05, *Contractual Risk Transfer Issues: Reviewing Certificates of Insurance*, for more information.

EngineeringAndSafety@ISO.COM

Independent Contractors

Liability exposures created by the use of independent contractors can be managed through contractor selection, contractual agreements, and certificates of insurance. Once on site, the contractors should be made familiar with the pool's policies for user safety. This should include what to do in case of an incident.

Recordkeeping

Pool operators should maintain an organized system for collecting and keeping important business records. Such records may include safety policies, standard operating procedures, equipment manuals and guides, personnel credentials, professional standards and guidelines, pool chemistry checks, RWI logs, inspection records, records of training, and membership information.

Pool Design and Construction

Pools should be designed and constructed according to state and local requirements. Permits for their construction are required in most areas from local and state boards of health, as well as the departments of building, plumbing, and electricity. Many local authorities also require inspections of new and existing facilities before they are opened to the public and periodic inspections during the operating season to ensure that the facility is properly operated and maintained according to local regulations.

Several organizations publish design and construction standards for swimming pools and aquatic facilities. These include the NSPI, the Federation Internationale de Natoria Amateur (FINA), U.S. Swimming (USS), U.S. Diving (USD), the National Collegiate Athletic Association (NCAA), and American Public Health Association (APHA). The American National Standards Institute (ANSI) recognizes NSPI-1, *Standard for Public Swimming Pools*, as an American National Standard.

The Center for Disease Control and Prevention (CDC), through an initial grant from the National Swimming Pool Foundation, is working with public health and industry representatives across the United States to build a Model Aquatic Health Code (MAHC). The MAHC will serve as a guide for local and state agencies needing to update or implement swimming pool and spa code, rules, regulations, guidance, laws, or standards governing the design, construction, operation, and maintenance of swimming pools, spas, hot tubs, and other treated or disinfected aquatic facilities.

More information about the MAHC is available at http://www.cdc.gov/healthywater/swimming/pools/mahc/.

The following sections highlight important design and construction requirements for swimming pools. The requirements are derived from ANSI/NSPI-1, unless otherwise noted.

Location

Pools should be segregated for other areas of the facility. There should be at least 6 ft (2.2 m) of unobstructed deck space surrounding the pool. If wading pools or spas are present, these structures should be separated from the main pool by at least 6 ft (2.2 m).

Accessibility

The Department of Justice 2010 Accessibility standards include provisions for accessible means of entry to swimming pools, wading pools, and spas in Sections 242 and 1009. Under the Americans with Disabilities Act (ADA), regulations in either Title II (municipal pools, school pools, government-owned pools, etc.) or Title III (place of recreation, place of lodging), which addresses public accommodations, must be followed. Permitted means of access are pool lifts, sloped entries (ramps), transfer walls, transfer systems, or stairs. The criteria that each of these means of access must meet can be found in Chapter 10, Section 1009, of the revised ADA guidelines. What type of means of access that must be used and how many means of access required, depend on the structure. These same requirements are also found in the International Code

Council Accessibility Standard, A117.1, Section 1109. Building departments typically rely on this document.

Barriers

A fence, wall, building, or other enclosure should protect pools, and the entrances to the enclosure should be provided with hardware for locking. Within the pool, ropes with buoys or other means should be used to separate beginner or wading areas from diving areas and deeper parts of the pool. According to the Consumer Product Safety Commission (CPSC), a successful pool barrier prevents a child from getting over, under, or through and keeps the child from gaining access to the pool except when supervising adults are present. The following recommendations from the CPSC address barriers:

- Fencing completely around the pool perimeter, at least four feet or higher to comply with local codes in limiting access.
- Self-closing gates that are self-locking at entrance points.
- Key-code access on doors leading to pools.
- Night illumination of pool and adjacent areas.
- Closed-circuit television monitoring for horseplay or unauthorized entry (this monitoring is not constant and does not take the place of a lifeguard).

Surfaces

All surfaces within the pool intended to provide footing should be slip-resistant. Pool floors and walls should be lightly colored. The colors, patterns, or finishes of the pool interior should not obscure the existence or presence of objects or surfaces within the pool. There should be no protrusions or other obstructions in the swimming area that can cause entrapment or injury. All interior surfaces should have uniform slopes. Pool decks should be sloped away from pools.

Markings

The depth of the water should be marked at or above the water surface on the edge of the deck or the walk next to the pool. Depth markers should be installed at the minimum and maximum water depths and at all points of slope change. Markers should also be installed at intermediate increments of water depth not to exceed two feet, nor spaced at distances greater than twenty-five-foot intervals. Markers should be arranged uniformly on both sides of the pool. In addition, each pool should have appropriate lane markings.

Drains

Pools should have at least two drains located at the bottom of the pool. All drains and suction fittings should be guarded by anti-vortex covers or other means to prevent entrapment. In addition, circulating system designs should conform to Virginia Graeme Baker (VGB) Pool & Spa Safety Act mandating requirements for reducing entrapment hazards in pools. The law requires that all pool drain covers manufactured, distributed, or entered into commerce on or after Dec. 19, 2008 meet the ASME/ANSI A112.19.8, *Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs* standard. It also requires that:

- All pools, new or existing, must be equipped with anti-entrapment drain covers conforming to ASME/ANSI A112.19.8 effective December 20, 2008.
- All pools that have a single main drain, other than an unblockable drain, must be provided with one or more additional devices or systems designed to prevent suction entrapment, such as safety vacuum release systems, suction-limiting vents, gravity drainage systems or automatic pump shut-offs.

EngineeringAndSafety@ISO.COM

Public Swimming Pools

It is important to be in compliance with the law for the safety of guests, but also to ensure permit renewal with the local authority having jurisdiction. The majority of pools built in the last decade may only require an anti-entrapment drain cover at a minimal expense. Older pools may require a shut-off valve or the splitting of the single drain. Federal law and a growing number of state laws now require those operating public or semi-public pools or spas to install drain covers designed to prevent drain suction in pools and many hot tubs. Older-style drain covers have often proved inadequate to prevent people, most often children, from being trapped by the suction around a pool's drain, which pulls water out of the pool for recirculation.

Electrical Systems

All electrical wiring and equipment in or adjacent to swimming pools should comply with local electrical safety codes and the *National Electrical Code (NEC)*. The primary requirements for pools are currently located in Article 680, "*Swimming Pools, Fountains, and Similar Installations*." These requirements include separation distances for electrical conductors; requirements for underwater lighting and audio equipment; grounding requirements for certain electrical equipment; and mandatory bonding of metallic pool structural elements, lighting systems, and electrical equipment associated with pool water circulating systems.

Lighting

All lighting over swimming pools should comply with NEC requirements. In addition, all light bulbs should be heavy-duty bulbs, encased in sleeves, or otherwise protected from breakage.

Pool Equipment

Pools should be equipped with water circulation, filtration, and disinfection equipment. This equipment should comply with NSF Standard 50, *Circulation System Components for Swimming Pools, Spas, or Hot Tubs.* All equipment should be installed and operated according to the manufacturer's instructions.

Emergency Shutdown

An emergency shutdown station should be provided. This station should disable all pool circulation, mechanical, chemical feed, and electrical devices.

Other Structures

Diving structures used for competitive diving should comply with USD, FINA, or other requirements. Slides should comply with the CPSC *Safety Standard for Pool Slides*.

Pool Operation and Maintenance

Pool operators should take steps to ensure that water in the pool is sanitary and that the pool structure and equipment are properly maintained. All inspections and corrective actions should be documented in an operations or maintenance log.

Water Level

Water level should be monitored on a regular basis. Make-up water should be added as necessary to maintain marked levels. Signs should be posted warning guests if water level has been significantly lowered or if the pool has been drained for repairs or maintenance.

Water Clarity

Water should be filtered and treated to maintain clarity. Clarity is important for making swimmers aware of the depth of the water and the presence of any below water obstructions. In addition, unclear water can prevent a lifeguard from being able to monitor the pool bottom for people in need of assistance or interfere with a rescue operation.

EngineeringAndSafety@ISO.COM

Public Swimming Pools

Water Quality

Pool water should be regularly filtered and treated to provide sanitary conditions for the pool users. Public health codes typically specify requirements for the amount of time that water must be filtered on a daily basis, as well as requirements for disinfection levels, chemical values, biological values, and turbidity of pool water. Someone who is familiar with pool chemistry should regularly monitor water quality. Pool use should be suspended if water quality drops below acceptable levels and people not allowed to swim until the water quality is restored. The Centers for Disease Control and Prevention (CDC) has issued specific recommendations that pool operators should take to prevent disease transmission in pools. Resources are available at http://www.cdc.gov/healthywater/swimming/pools/disinfection-remediation-pools-hot-tubs.html.

Pool Cleaning

Maintenance staff should remove sediment, sludge, and other waste accumulations from the bottom of pools on a regular basis. Staff should regularly clean skimmer baskets or other devices used to remove floating debris from the surface of the pool. Large items, such as branches, should be removed as necessary.

Pool Equipment

All diving boards, slides, ropes, and other pool equipment should be inspected regularly. Damaged items should be removed until they can be repaired. If the item cannot be removed, the item should be tagged as being damaged, and signs placed to warn against using the item until it can be repaired.

Repairs should be supervised. If done in-house, employees should be trained in proper maintenance techniques. Repairs done by outside contractors should be inspected before the item is put back in service. A log should be kept of when the item was repaired and by whom, and stickers placed on it as a means of identification.

Chemical Handling and Storage

Pool treatment chemicals should be handled and stored in accordance with local codes and industry standards. These requirements will vary depending upon the chemical used. In general, pool chemicals should be stored in original containers in a secure, cool, dry, and ventilated area; separated from incompatible substances; and kept out of the reach of visitors. The Chlorine Institute provides detailed recommendations for handling and storing chlorine at public swimming pools. NFPA 400*, Hazardous Materials Code,* is another frequently referenced source of requirements.

The U.S. Environmental Protection Agency publishes pool chemical storage information. For more information, see *Safe Storage and Handling of Swimming Pool Chemicals* at http://www.epa.gov/osweroe1/docs/chem/spalert.pdf.

Pool Decks

Pool decks should be inspected on a regular basis for cracks, obstructions, and other hazardous conditions. Pool decks should be cleaned and sanitized using an approved cleanser. Signs should be posted during any cleaning operation to warn pool users of any hazards created by the cleaning operation (e.g., exposure to harmful chemicals or presence of water puddles).

Pool Furniture

If pool furniture and accessories (e.g., tables, pool umbrellas, etc.) are provided for pool users, this furniture should be inspected regularly. Areas of inspection include damaged or uneven chair and table legs; rough surfaces, splinters, chips or cracks; loose or missing fasteners; and protruding springs. Damaged items should be removed until they can be repaired. Also, pool furniture should be cleaned and sanitized on a regular basis.

EngineeringAndSafety@ISO.COM

Amusement Devices

Pool owners may provide amusement devices, such as volleyball nets, floating baskets, floats, or other devices. Users should have to sign these devices out and return them when they are finished. The devices should be kept in good condition and regularly inspected before each use. Pools should not provide or allow the use of weighted dive sticks as these devices may pose impalement hazards.

Supervision

Pool operators should take steps to ensure that swimmers and other pool users are warned of hazards associated with pool use and adequately supervised. In addition, pools should be prepared to respond to emergency situations likely to occur at the facility.

Access Restrictions

Pools should be limited to authorized users. Users should be required to sign in and out of the pool area. The sign-in sheet should include the statement that the user is aware of the dangers of swimming and agrees to abide by the rules of conduct of the facility. Once the pool area has reached its stated capacity, access to the area should be restricted until the pool loading decreases.

Lifeguards

Public pools should have lifeguards in charge of the safety at the facility. The number of lifeguards present will depend upon the size of the pool and the number of users expected in the facility at one time. This requirement is typically specified in local pool safety regulations. Lifeguards should be attired so that they are readily identifiable as members of the lifeguard staff.

Lifeguards should be competently trained, be certified in first aid and cardiopulmonary resuscitation, and have completed a nationally recognized lifeguard training program, such as the American Red Cross Basic Lifeguarding, YMCA lifeguarding, or National Pool and Waterpark Lifeguard training. Facilities should maintain a file of all current certifications, including expiration dates. These records should be stored securely to comply with privacy and confidentiality laws.

Pools should have elevated lifeguard chairs to improve the lifeguard's ability to supervise the pool. The number of chairs required will vary depending upon the size of the pool. Lifeguards should be assigned no other duties while they are overseeing the pool.

Some states do not require lifeguards at semi-public pools. If the facility chooses not to provide a lifeguard in these situations, a warning sign saying "WARNING: NO LIFEGUARD ON DUTY" or similar wording should be prominently posted at the location where people enter the pool area. Operators should provide an emergency phone and instructions regarding emergency calls. Also, a staff person capable of initiating emergency procedures should regularly monitor the pool area.

Signs

Operators should post safety-related regulations in the pool area. These should include: the maximum capacity of the pool; the normal hours that the pool is open; a prohibition against using the pool when it is closed; a prohibition against diving, unless the area meets minimum requirements for diving; and a prohibition against other inappropriate pool conduct (e.g., spitting). Lifeguards should have the authority to enforce these requirements, including the ability to exclude or remove unruly people from the pool.

Pool users should be notified of temporary conditions that make swimming inappropriate, such as when pool water is being treated to restore sanitary conditions. Pool users should also be warned about temporary conditions making the pool area more hazardous, such as deck cleaning or repair operations.

EngineeringAndSafety@ISO.COM

Safety Equipment

The pool should maintain appropriate life-saving equipment. This should include a backboard; reaching pole with body hook (also known as a “Shepherd’s Crook”); and lines with flotation devices (e.g., rescue tube and ring buoy) attached. Other devices may be required at larger pools. Local codes usually specify the exact items and number of equipment that must be on hand. This equipment should be mounted in conspicuous places, distributed around the swimming pool deck, readily accessible, and kept in repair and ready condition.

Pools should have at least one working telephone or emergency call device within or adjacent to the pool area. These devices should be clearly identified by sign and distinct color. Emergency procedures should be posted on, or near, all calling devices. These signs should include any special dialing instructions (e.g., dial “9” to access an outside line).

First Aid Equipment

The pool should have at least one first-aid kit in a location that staff can access. The kit should comply with the recommendations of either the American Red Cross or the American College of Sports medicine. The contents of the kit should be checked at least monthly and restocked as necessary.

See Occupational Safety Report OS-92-81, *First-Aid Kit Supplies*, for more information about what should be included in a first-aid kit.

Emergency Procedures

Pools should have a written emergency plan describing the steps that should be taken in the event of an emergency. This plan should include procedures for water emergencies, such as drowning, as well as evacuations and fire-related emergencies. Staff should be trained in the plan procedures. Drills should be performed on a regular basis to maintain staff readiness. Also, pool staff should never delay or refuse to call 911 for a guest in an emergency situation.

Programmed Activity

Pool operators should post schedules of programmed activities, such as aquatic exercise or water sports. Participants in such activities should be required to complete assumption of risk, prospective release, or waiver of claim forms prior to engaging in such activities. If necessary, the pool should be closed to other users while these activities are being performed.

Other Exposures

The following sections describe controls for other common liability exposures at swimming pool facilities.

See Business Links Report BL-20-31, *Restaurants,* for information on controlling liability exposures associated with food services.

Electrical Storms

Local code requirements may provide specific guidelines concerning the timing as to clearing a facility of patrons during an electrical storm, particularly as it affects indoor pools. Power may be interrupted, causing lights to go out, causing a dangerous environment in indoor or outdoor pools during the evening due to lack of light. The American Red Cross advises pool operators to clear patrons from the water at the first sound of thunder. The NFPA 780, *Standard for the Installation of Lightning Protection Systems,* offers pool operators requirements to follow including how to conduct a lightning risk assessment.

Indoor Air Quality

Air circulation in the indoor pool and spa environment is at risk for airborne contaminants. This condition may lead to respiratory problems or complaints among patrons and workers. Indoor swimming pools found in hotels, water parks, and other recreational facilities could pose health risks to the swimmers and lifeguards if the water and air quality are not managed properly. The air above the pool water needs to be assessed and managed as carefully as the water.

The chlorine used to disinfect swimming pools combines with nitrogen compounds from swimmers in the form of perspiration, urine, personal care products, skin flakes, nasal discharge, and fecal matter. This forms the disinfection byproducts called chloramines. Poor movement of fresh air over the pool surface may cause the air to be saturated with chloramines so that new chloramines being produced cannot off-gas. These irritants will accumulate in the water creating an unhealthy environment.

The ventilation system must be able to remove contaminants and moisture and provide a supply of outdoor air at an exchange rate in accordance with ASHRAE (American Society of Heating, Refrigerating & Air Conditioning Engineers) guidelines through a properly designed distribution system. The indoor pool/spa area should have between six to eight complete air exchanges per hour in accordance with ANSI/ASHRAE Standard 62.1 *Ventilation for Acceptable Indoor Air Quality*.

Locker Rooms

Changing rooms pose several injury hazards, including slips and falls due to wet surfaces, scalds from improper plumbing, shock and electrocution from electrical equipment, and abrasions and injuries from damaged or collapsing benches.

In general:

- Slip-resistant flooring should be used to reduce slipping injuries.
- Floors should be regularly inspected for cracks and other surface defects.
- Floors in showers should be sloped to drains.
- Walls and floors should be kept in a clean condition and regularly sanitized.
- Seated dressing space should be located out of main circulation paths.
- Bench tops should be finished and free of rough surfaces.
- Basket racks or lockers should be firmly secured to walls or floors.
- Baskets and lockers should be regularly inspected for sharp edges, protrusions, or other hazardous conditions.
- Mirrors should be made of materials resistant to breakage.
- Sinks and showers should be provided with tempering devices or mixing valves to prevent scalding.
- Ground fault protection should be provided for all electrical receptacles in outdoor locations and frequently-wet areas.

Spectator Areas

Pools that host swimming competitions typically have areas for spectators to watch the event. These areas should be located slightly above the deck level and be separated from the pool deck. Spectator seating

should be constructed to building code standards. Existing bleachers should be retrofit to CPSC recommendations. Bleachers should be regularly inspected and maintained.

Parking Lots

Parking lots should be designed without wheel stops or speed bumps. Gratings, posts, or other obstructions, or changes of surface, should be clearly marked. Designated walkways or sidewalks should be provided. Sidewalks should meet building code requirements and should not be obstructed with garbage or other debris. The parking lot should be well-lighted.

The parking lot should be posted with signs or markings indicating where vehicles are to travel and other appropriate signs and warnings, such as safe speed limits or warnings about the presence of speed bumps or other obstructions. The markings should be easily visible and understandable.

Summary

Swimming pool liability requires a pool owner or operator to develop a risk management program addressing several key factors. The risk management plan should incorporate procedures that limit negligence, adhere to best practices for pool operations, and act with reasonable care toward patrons and staff to ensure that there is no unreasonable risk of harm. Swimming pools can be an attractive nuisance and can pose a serious injury risk to visitors and trespassers. However, some simple measures can reduce the exposure to swimming pool liability.

Being aware of ways to prevent water-related adverse health events, such as sunburn and other injuries, drowning, and recreational water illnesses (RWIs) helps reduce the chance of injury. The code requirements for preventing and responding to RWIs can vary significantly among local and state agencies. The Model Aquatic Health Code (MAHC) is a guideline intended to prevent diseases and injuries and promote healthy recreational water experiences.

The CDC's Healthy Swimming program provides information for the public and health professionals on a variety of subjects, such as outbreak response toolkits. Swimming pools and spas have unique design, operation, and maintenance specifications. The importance of training in areas of water quality, water chemistry, fencing, barriers, and ventilation cannot be overstated. Owners and operators of swimming pools should ensure that the staff is responsible for the supervision and safety of the pool. A number of standards, regulations, and guidelines are available to assist pool owners and operators provide a safe environment for the community being served.

References

1. 16 CFR § 1207 (2012). Available at http://www.gpo.gov/fdsys/pkg/CFR-2012-title16-vol2/pdf/CFR-2012-title16-vol2-sec1207-4.pdf.

2. American National Standards Institute. ANSI/APSP: *Standard for Public Swimming Pools*. 2003.

3. Center for Disease Control and Prevention. *Irritants (Chloramines) & Indoor Pool Air Quality*. Atlanta, GA: CDC, 2010. http://www.cdc.gov/healthywater/swimming/pools/irritants-indoor-pool-air-quality.html.

4. ---. *Pools & Hot Tubs*. Atlanta, GA: CDC, 2012. http://www.cdc.gov/healthywater/swimming/pools/.

5. ---. *Prevention & Control of Cryptosporidiosis*. Atlanta, GA: CDC, 2009. http://www.cdc.gov/parasites/crypto/prevention.html.

6. ---. *Violations Identified from Routine Swimming Pool Inspections---Selected States and Counties, United States, 2008*. Morbidity and Mortality Weekly Report, 2010. Atlanta, GA: CDC, 2010. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5919a2.htm.

7. Colorado Intergovernmental Risk Sharing Agency (CIRSA). Recreation Center Safety Manual. Denver, CO: CIRSA, 1998. http://www.cirsa.org/products/Recreation-Center-Safety-Manual.html.

8. Consumer Product Safety Commission (CPSC). *Pool or Spa Submersion: Estimated Injuries and Reported Fatalities 2012 Report*. Bethesda, MD: CPSC, 2012. http://www.cpsc.gov/library/foia/foia12/os/poolsub2012.pdf.

9. ---. Pool Safely. *The Virginia Graeme Baker Pool & Spa Safety Act Requirements*. Bethesda, MD: CPSC, 2012. http://www.poolsafely.gov.

10. ---. *2006 Pool Drowning Memorandum*. Washington, DC: CPSC, 2006. http://www.cpsc.gov/LIBRARY/FOIA/FOIA06/os/drownMemo.pdf.

11. ---. *Don't Swim with Shocks*. *Electrical Safety In and Around Pools, Hot Tubs, & Spas*. Washington, DC: CPSC, 2003. http://www.cpsc.gov/cpscpub/pubs/519.pdf.

12. International Code Council. *International Swimming Pool and Spa Code*. Country Club Hills, IL: ICC, 2011. http://www.iccsafe.org/cs/ISPSC/Pages/default.aspx.

13. Major, John F. *Negligent Operation of Public Swimming Pool*. 34 Am. Jur POF 2d 63. 2012.

14. Miller, R. *Liability of a Hotel, Motel, Resort, or Private Membership Club or Association Operating Swimming Pool for Injury or Death of Guest or Member*. 55 A.L.R. 5th 463 2012.

15. National Fire Protection Association (NFPA). *Hazardous Materials*. NFPA 400. Quincy, MA: NFPA, 2010.

16. ---. *National Electrical Code.* NFPA 70. Quincy, MA: NFPA, 2011.

17. ---.*Sprinkler Protection for Swimming Pool Chemicals*. NFPA Journal. July/August, 2004.

18. ---. NFPA. *Standard for the Installation of Lightning Protection Systems*. NFPA 780. Quincy, MA: NFPA, 2011.

19. National Swimming Pool Foundation. *Aquatic Risk Management*. Colorado Springs, CO: NSPF, 2009.

20. ---. *Aquatic* Facility *Audits*. Colorado Springs, CO: NSPF, 2010.

21. ---. *Pool and Spa Operator Handbook*. Colorado Springs, CO: NSPF, 2012.

22. USA Swimming. Safety/Loss Control Manual. Colorado Springs, CO: USA Swimming, 2009. http://www.usaswimming.org.

